UNIT – 2: MARKET FAILURE/ GOVERNMENT INTERVENTION TO CORRECT MARKET FAILURE

LEARNING OUTCOMES

After studying this unit, you will be able to –

- Define the concept of market failure
- Describe the different sources of market failure
- Explain various government interventions for correcting market failure

CHAPTER OVERVIEW

2.1 INTRODUCTION

The market is an environment where buyers and sellers transact or exchange goods and services. Economists presume that people will make choices in their own self-interest. They will choose those things that provide the greatest personal benefit, and keep themselves away from those that are not valuable and worth seeking. In other words, individuals will behave rationally.

The general belief is that since rational individuals act to maximise self interest, a perfectly working market system is, by default, efficient and will effectively allocate scarce economic resources in the best possible manner. In other words, in a well functioning market, prices provide the accurate signals to producers and consumers and the right quantity of whatever consumers choose to consume will be produced and supplied at the right price. However, this is not always true. Under certain circumstances, 'market failure' occurs, i.e. the market fails to allocate resources efficiently and therefore, market outcomes become inefficient.

2.2 THE CONCEPT OF MARKET FAILURE

The inefficient allocation of resources in an economy is described as market failure. The term "market failure" does not mean the market is not working at all, it only means that the market does not function in the way that it should. 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. There are two types of market failure namely;

1. Complete market failure. This is a case of "missing markets" and occurs when the market does not supply products at all despite the fact that such products and services are wanted by people. E.g. Pure public goods.
2. Partial market failure occurs when the market does actually function, but it produces either the wrong quantity of a product or at the wrong price. This results in loss of economic welfare.

2.3 WHY DO MARKETS FAIL?

The pertinent question here is why do markets fail? Or why do markets fail to produce the ideal outcome that economic theory predicts? Perfectly competitive markets will generate outcomes in which the economy's resources are allocated to their 'highest valued uses' and no one person can be made better off without making at least another person worse off.

Though perfectly competitive markets work efficiently, in the real world, conditions necessary for efficient outcome namely, perfect competition is not practical. We know that conditions such as large number of small firms, perfect knowledge, homogenous products etc. are not generally present in most markets. We shall first try to understand why markets fail and then proceed to identify the role of government in dealing with market failure.

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.

2.3.1 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 restrict output (i.e produce and sell less output than would be produced in a competitive market) and charge price higher than what would prevail under perfect competition. These profits are not achieved due to operating efficiency, but due to market power and dominance. Thus, market fails to produce the right quantity of goods and services at the right price.

2.3.2 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, when a consumption or production activity has an indirect effect (either positive or negative) on consumption or production activities of others and such effects are not reflected directly in market prices, we call it an externality.

Externalities are costs (negative externalities) or benefits (positive externalities), which are not reflected in free market prices. They are called externalities because they are "external" to the market. 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. 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 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.

Production Externalities

A negative production 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 is received in consumption 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.
- A negative production externality is received in production when pollution of river affects fish output as there will be less catch for fishermen due to loss of fish resources.

The firm, however, has no incentive to account for the external costs that it imposes on consumers of river water or on fishermen when making its production decision. Additionally, these external costs are never reflected in the price of the product.

A positive production externality initiated in production that confers external benefits on others may be received in production or in consumption.

- A firm which offers training to its employees for increasing their skills generates positive benefits on other firms when they hire such workers as they change their jobs.
- 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.

Consumption Externalities

Negative consumption externalities initiated in consumption which produce external costs on others may be received in consumption or in production.

- 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 are examples of negative consumption externalities affecting consumption
- The act of undisciplined students talking and creating disturbance in a class preventing teachers from making effective instruction and the case of excessive consumption of alcohol causing impairment in efficiency for work and production are instances of negative consumption externalities affecting production.

A positive consumption externality initiated in consumption that confers external benefits on others may be received in consumption or in production.

- 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 money cost of production incurred by the firm i.e. costs such as wages, raw materials, heating and lighting which must be paid to carry out production, and these which would appear in the firm's accounts. The supply curve here corresponds to only the private marginal costs.

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

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 market prices determined without incorporating externalities are not ideal as they do not reflect all social costs and benefits. Such prices send incorrect signals to producers and consumers and cause either overproduction or underproduction. Thus, we conclude that when there is externality, a competitive market will produce a level of output which is not socially optimal. This is a clear case of market failure.

2.4 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.

Most of the goods produced and consumed in an economy are private goods. Since they are scarce, anyone who wants to consume them must purchase them at a price. Private goods do not face any have free-rider problem. 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. 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. Normally, the market will efficiently allocate resources for the production of private goods. A few examples are: food items, clothing, movie ticket, television, cars, houses etc.

Public goods are products (goods or services) whose consumption is essentially collective in nature. 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. For example, if, you eat your apple, (a private good) 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 another individuals' consumption. 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. Each individual may consume all of the good i.e. the total amount consumed is the same for each individual. Once a public good is provided, the additional resource cost of another person consuming the goods is 'zero'. No direct payment by the consumer is involved in the case of pure public goods. 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.

Public goods are generally more vulnerable to issues such as externalities, inadequate property rights, and free rider problems. 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. There is no incentive for people to pay for the good because they can consume it without paying for it. Since private goods are excludable, free-riding mostly occurs in the case of public goods.

If individuals make no offer to pay for public goods, there is market failure in the case of these goods and the profit-maximizing firms will not produce them. 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. Thus, there is market failure in the case of public goods.

2.5 INCOMPLETE INFORMATION

Complete information is an important element of a 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 because of

- complexity of products and services (e.g. cardiac surgery, financial products like mutual funds),
- difficulty of getting correct information, and
- deliberate misinformation by interested parties (e.g. highly persuasive advertisements). Information failure results in market failure.

2.5.1 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 the tenants,
- a borrower knows more about their ability to repay a loan than the lender,
- a used-car seller knows more about the vehicle quality than the buyer,
- health insurance buyers know more about their 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 is an important source of market failure. Adverse selection and moral hazard are two central concepts related to the problem of information gaps in many markets

Adverse Selection

Asymmetric information generates adverse selection and affects a transaction before it occurs. When one party to a contract or negotiation, say X, possesses information relevant to the contract or negotiation that the other party Y does not have, the expected value of the transaction is known more accurately to X due to asymmetry of information. Then, the party which has more information i.e. X may take advantage Y's ignorance and this could potentially put the ignorant party Y at a loss.

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-risks buyers. As a matter of fact, compared to insurance buyers, insurance companies 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. Due to heavy insurance claims, the premium of insurance rises so that the more healthy people being 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 upwards. The process continues until most people who want to buy insurance are unhealthy.

Having more unhealthy insurance buyers make insurance very expensive. In the extreme case, the 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 'lemons problem' developed by George Akerlof in relation to the used car market. Second-hand cars may be good quality cars or poor quality cars defined as "lemons". 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. Since there is quality uncertainty, to account for this risk, the price offered for any used car is likely to be less.

Since the price offered in the market is lower than the acceptable one, sellers of good quality cars will not be inclined to place the car for sale sell in the used car market. They are kept by their owners or sold only to relatives or friends. The good-quality cars disappear from the market and the market becomes flooded with 'lemons' and eventually the market may offer nothing but 'lemons'. This is the case of market failure because the market has only 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.

Thus, asymmetric information leads to elimination of high-quality goods from the market. Economic agents end up either selecting a sub-standard product or leaving the market altogether.

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 by himself.

In the insurance market, moral hazard refers to a situation that increases the probability of occurrence of a loss or a larger than normal loss because of a change in the insurance policy holders' behaviour after buying the policy. For example, a driver who has a comprehensive insurance tends to be less careful while driving and may increase the probability of insurance claims. When someone is protected from paying the full costs of their harmful actions, they tend to act irresponsibly, making the harmful consequences more likely.

In the case of medical insurance, the more one's costs 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.

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 accident is genuine or the outcome of lack of caution on the part of the insured. Therefore the expected outflow in terms of insurance claims is higher and the insurance companies may be forced to increase premiums for everyone or may, at the extreme, even refuse to sell insurance at all in which case it is a case of missing markets.

Having discussed market failure in detail, we shall now look into the intervention mechanisms which governments adopt for combating market failures so as to ensure greater welfare to the society.

The existence of a free market does not altogether eliminate the need for government intervention for the efficient functioning of markets. 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 is discussed below.

Government plays a vital role in ensure a well functioning market by:

- creating the necessary physical infrastructure such as roads, bridges, airports and waterways
- provision of institutional infrastructure such as legal and regulatory framework, establishment of the 'rule of law', protection of property rights, ensuring performance of contracts are to
- ensuring an appropriately framed competition and consumer law framework that regulates the activities of firms and individuals in their market exchanges

We shall try to have a discussion on the forms of government intervention to address market failure.

2.6 GOVERNMENT INTERVENTION TO MINIMIZE MARKET POWER

Because of the social costs imposed by monopoly, governments intervene by establishing rules and regulations designed to promote competition and prohibit actions that are likely to restrain competition. These legislations differ from country to country. For example, in India, we have the Competition Act, 2002 (as amended by the Competition (Amendment) Act, 2007) to promote and sustain competition in markets. The Antitrust laws in the US and the Competition Act, 1998 of UK etc are designed to promote competitive economy by prohibiting actions that are likely to restrain competition. Such legislations generally aim at prohibiting contracts, combinations and collusions among producers or traders which are in restraint of trade and other anticompetitive actions such as predatory pricing.

Other measures include:

- Market liberalisation by introducing competition in previously monopolistic sectors such as energy, telecommunication etc.
- Controls on mergers and acquisitions if there is possible market domination

- Price capping and price regulation
- Profit or rate of return regulation
- Patronage to consumer associations
- Tough investigations into cartelisation and unfair practices such as collusion and predatory pricing
- Restrictions on monopsony power of firms
- Reduction in import controls and
- Nationalisation

However, sometimes we find that governments protect monopoly positions of firms that have developed unique innovations. For example, patent and copyright laws grant exclusive rights of products or processes to provide incentives for invention and innovation.

Another example is that of permitted natural monopoly. Natural monopolies can produce the entire output of the market at a cost that is lower than what it would be if there were several firms. Examples of such natural monopoly are electricity, gas and water supplies. In order to control the market power of such natural monopolies, governments usually regulate the price of the goods and services provided by them.

2.7 GOVERNMENT INTERVENTION TO CORRECT EXTERNALITIES

As you may easily recall, freely functioning markets produce externalities because producers and consumers need to consider only their private costs and benefits and not the full social costs. To promote the overall welfare of all members of society, social returns should be maximized and social costs minimized. This implies that all costs and benefits (both private and external) need to be internalized by consumers and producers while making buying and production decisions.

An externality is internalised if the ones that generated the externality incorporate into their private or internal cost- benefit calculations the external benefits (in the case of positive externality) and external costs (in the case of negative externality) that third parties bear. In other words, the key to internalizing an externality (both external costs and benefits) is to ensure that those who create the externalities include them while making decisions.

Governments have numerous methods to reduce the effects of negative externalities and to promote positive externalities. We shall first examine how government regulation can deal with the inefficiencies that arise from negative externalities. Since the most commonly referred negative externality is pollution, we shall take it as an example in the following discussion.

Government initiatives towards negative externalities may be classified as:

1. Direct controls or regulations that openly regulate the actions of those involved in generating negative externalities, and
2. 'Market-based' policies that would provide economic incentives

Direct controls, also known as command solutions, prohibit specific activities that explicitly create negative externalities or require that the negative externality be limited to a certain level. A few examples are:

- The government may, through legislation, fix emissions standard which is the legal limit on how much pollutant a firm can emit. If the firm exceeds the limit, it can invite monetary penalties or/and criminal liabilities.
- Licensing, production quotas and mandates regarding acceptable production processes are other examples of direct intervention by governments.
- Production, use and sale of many commodities and services are prohibited in our country.
- Smoking is completely banned in many public places.
- Stringent rules are in place in respect of tobacco advertising, packaging and labeling etc.
- Governments may pass laws to alleviate the effects of negative externalities. Government stipulated environmental standards are rules that protect the environment by specifying actions by producers and consumers. For example, India has enacted the Environment (Protection) Act, 1986.
- Government may limit the amounts of certain pollutants released into water and air by individual firms or make it mandatory to use pollution control devices.
- Government may insist that the polluting firms install pollution-abatement mechanisms to ensure adherence to the emission standards. This means additional expenditure to the firm leading to rise in the firm's average cost. New firms will find it profitable to enter the industry only if the price of the product is greater than the average cost of production plus abatement expenditure.
- Governments may also form special bodies/ boards to specifically address the problem: for instance the Ministry of Environment & Forest, the Pollution Control Board of India and the State Pollution Control Boards.

The market-based approaches –environmental taxes and cap-and-trade – operate through price mechanism to create an incentive for change. In other words, the government tries to alter the prices of goods through taxes and subsidies and thus change the behaviour of market

participants. This is achieved by:

1. Setting the price directly through a pollution tax
2. Setting the price indirectly through the establishment of the cap-and-trade system.

One method of ensuring internalization of negative externalities is imposing pollution taxes. These taxes are named Pigouvian taxes after A.C. Pigou. The size of the tax depends on the amount of pollution a firm produces. These taxes have the effect of 'making the polluter pay'. Tax increases the private cost of production or consumption as the case may be, and would decrease the quantity demanded and therefore the output of the good which creates negative externality.

However, there are problems in administering an efficient pollution tax.

- Pollution taxes are difficult to determine and administer because it involves the use of complex and costly administrative procedures for monitoring the polluters.
- If the demand for the good is inelastic, the tax may have only an insignificant effect in reducing demand. In such cases, the producers will be able to easily shift the tax burden in the form of higher product prices.
- Pollution taxes also have potential negative consequences on employment and investments because high pollution taxes in one country may encourage producers to shift their production facilities to those countries with lower taxes.

The second approach to establishing prices indirectly is 'tradable emissions permits'. You might have heard of 'carbon credits'. The use of tradable permits to limit emissions is often called 'cap and trade'. A tradable permit is a license that allows a company to release a unit of pollution into the environment over some period of time. By issuing a fixed number of permits, the government determines the total level of pollution that can be legally emitted during each period (the 'cap'). Each firm has permits specifying the number of units of emissions that the firm is allowed to generate. A firm that generates emissions above what is allowed by the permit is penalized with substantial fines.

The firms can sell their government-issued permits to other firms in an organized market. Since the permits are tradable (the firm can sell for a price), a polluting firm faces an opportunity cost i.e. for each unit of pollution that it creates, it must either buy a permit, or it must forgo the revenue it could earn by selling the permit to some other firm. A firm which produces less pollution can sell their permits and earn money.

A firm whose technology would make it very costly to reduce pollution generally buys permits in the market. At the same time, a firm whose technology enables it to discharge less pollution or can reduce pollution rather cheaply will sell its permits.

The high polluters have to buy more permits, which increases their costs, and makes them less competitive and less profitable. The low polluters receive extra revenue from selling their surplus permits, which makes them more competitive and more profitable. Therefore, firms will have an incentive not to pollute.

Tradable permits have been used since the early 1980s to reduce several types of pollution in the United States. In 1994 the United States began a cap and trade system for sulphur dioxide emissions that cause acid rain by issuing permits to power plants based on their historical consumption of coal. India does not have an explicit carbon price or a market-based mechanism such as cap-and-trade; but India has many schemes and mechanisms that put an implicit price on carbon. For example, the Perform, Achieve & Trade (PAT) scheme, carbon tax in the form of a cess on coal, lignite and peat, Renewable Purchase Obligations (RPO) and Renewable Energy Certificates (REC), Internal Carbon Pricing (ICP) etc. In 2017, the coal cess was abolished and replaced by the GST compensation cess since it failed to achieve the desired outcomes. The Energy Conservation (Amendment) Bill, 2022 empowers the central government to specify a carbon credit trading scheme and to stipulate energy consumption standards.

The cap and trade method is administratively cheap and simple to implement and ensures that pollution is minimised in the most cost-effective way. The 'cap' puts a clear upper limit on the quantity of pollution that may be generated in each period. However, firms with a relatively inelastic demand for its product can easily shift the extra cost incurred for procuring additional permits in the form of higher price.

The two interventions mentioned above i.e. permits and taxes make use of market forces to encourage consumers and producers to take externalities into account when planning their consumption and production. In other words, the polluters are forced to consider pollution as a private cost.

So far we have been discussing about negative externality. We shall now look into positive externality. Though positive externality is associated with external benefits, we still call it a market failure because, left to market, there will be less than optimal output. Since positive externalities promote welfare, governments implement policies that promote positive externalities. When positive externalities are present, government may attempt to solve the problem through -

- corrective subsidies to the producers aimed at increasing the supply of the good
- corrective subsidies to consumers aimed at increasing the demand for the good.

As we are aware, a corrective production subsidy involves government paying part of the cost to the firms in order to promote the production of goods having positive externalities. This is in fact a market-based policy as subsidies to producers would lower their cost of production.

E.g. fertilizer subsidy. A subsidy on fee for education is an example of consumption subsidy.

In the case of products and services whose externalities are vastly positive, the government enters the market directly as an entrepreneur to produce and provide them. Public education, health care and fundamental research are the obvious examples. Governments also engage in direct production of environmental quality. Examples are: aforestation, reforestation, protection of water bodies, treatment of sewage and cleaning of toxic waste sites.

2.8 GOVERNMENT INTERVENTION IN THE CASE OF MERIT GOODS

Merit goods are goods that have substantial positive externalities and hence they are socially desirable. Merit goods can be provided through the market, but are likely to be under-produced and under-consumed through the market mechanism so that social welfare will not be maximized. Examples of merit goods include education, health care, welfare services, housing, fire protection, waste management, public libraries, museum, public parks etc.

The possible government responses to under-provision of merit goods are regulation, subsidies, direct government provision and a combination of government provision and market provision.

Regulation determines how a private activity may be conducted. For example, the way in which education is to be imparted is government regulated. Governments can prohibit some type of goods and activities, set standards and issue mandates making others oblige. For example, government may make it compulsory to avail insurance protection. Compulsory immunization may be insisted upon as it helps not only the individual but also the society at large. Government could also use legislation to enforce the consumption of a good which generates positive externalities. E.g. use of helmets, seat belts etc.

An additional option is to compel individuals to consume the good or service that generates the external benefit. The Right of Children to Free and Compulsory Education Act, 2009 which mandates free and compulsory education for every child of the age of six to fourteen years is another example. If suspected of having a contagious disease such as COVID, an individual may be forced to get medical treatment.

The ultimate encouragement to consume is to make the good completely free at the point of consumption: for example freely available hospital treatment for various diseases. When merit goods are directly provided free of cost by government, there will be substantial demand for the same.

2.9 GOVERNMENT INTERVENTION IN THE CASE OF DEMERIT GOODS

Demerit goods are goods which are believed to be socially undesirable. Examples of demerit goods are cigarettes, alcohol, intoxicating drugs etc. The consumption of demerit goods imposes significant negative externalities on the society as a whole. However, it should be kept in mind that all goods with negative externalities are not essentially demerit goods; e.g. Production of steel causes pollution, but steel is not a socially undesirable good.

The production and consumption of demerit goods are likely to be more than optimal under free markets. The government should therefore intervene in the marketplace to discourage their production and consumption. How do governments correct market failure resulting from demerit goods?

- At the extreme, the government may enforce complete ban on a demerit good. e.g. the possession, trading or consumption of intoxicating drugs is made illegal.
- Through persuasion which is mainly intended to be achieved by negative advertising campaigns which emphasize the dangers associated with consumption of demerit goods.
- Through legislations that prohibit the advertising or promotion of demerit goods in whatsoever manner.
- Strict regulations of the market for the good may be put in place so as to limit access to the good, especially by vulnerable groups such as children and adolescents.
- Regulatory controls in the form of spatial restrictions e.g. smoking in public places, sale of tobacco to be away from schools, and time restrictions under which sale at particular times during the day is banned.
- Imposing unusually high taxes on producing or purchasing the good making them very costly and unaffordable to many is perhaps the most commonly used method for reducing the consumption of a demerit good. Refer the GST rates in India for demerit goods, you will find how high they are.
- The government can fix a minimum price below which the demerit good should not be exchanged.

The demand for demerit goods such as, cigarettes and alcohol is often highly inelastic, so that any increase in their price resulting from additional taxation causes a less than proportionate decrease in demand. Also, sellers can always shift the taxes to consumers without losing customers.

The effect of stringent regulation such as total ban is seldom realized in the form of complete elimination of the demerit good; conversely such goods are secretly driven underground and traded in a hidden market.

2.10 GOVERNMENT INTERVENTION IN THE CASE OF PUBLIC GOODS

Direct provision of a public good by government can help overcome the free-rider problem which leads to market failure. The most important public goods like defence, establishment and maintenance of legal system, fire protection, disease prevention etc are invariably provided by the government.

Excludable public goods such as parks, universities, museums etc can be provided by government and the same can be financed through entry fees. Government may grant licenses to private firms to build a public good facility and charge fee from the user. In such cases, the government regulates the level of entry fee chargeable from the public and keeps strict watch on the functioning of the licensee to guarantee equitable distribution of welfare. Some public goods are provided by voluntary contributions and private donations by corporate entities and nongovernmental organisations.

Some goods are produced and consumed as public goods and services despite the fact that they can be produced or consumed as private goods. This is because, left to the markets and profit motives, these may prove dangerous to the society. Examples are scientific approval of drugs, production of strategic products such as atomic energy, provision of security at airports etc.

2.11 PRICE INTERVENTION: NON-MARKET PRICING

Price intervention generally takes the form of price controls which are legal restrictions on price. Price controls may take the form of either a price floor (a minimum price buyers are required to pay) or a price ceiling (a maximum price sellers are allowed to charge for a good or service). Fixing of minimum wages and rent controls are examples of such market intervention.

Government usually intervenes in many primary markets which are subject to extreme as well as unpredictable fluctuations in price. For example in India, in the case of many crops the government has initiated the Minimum Support Price (MSP) programme as well as procurement by government agencies at the set support prices. The objective is to guarantee steady and assured incomes to farmers.

When prices of certain essential commodities rise excessively, government may resort to controls in the form of price ceilings (also called maximum price) for making a resource or commodity available to all at reasonable prices. For example: maximum prices of food grains and essential items are set by government during times of scarcity.

With the objective of ensuring stability in prices and distribution, governments often intervene in grain markets by building and maintenance of buffer stocks. It involves purchases from the market during good harvest and releasing stocks during periods when production is below average.

2.12 GOVERNMENT INTERVENTION FOR CORRECTING INFORMATION FAILURE

Governments actively intervene in the market for combating the problem of market failure due to information problems and considering the importance of information in making rational choices. A few examples are:

- Government makes it mandatory to have accurate labeling and content disclosures by producers. E.g. Labeling on cigarette packets, display of nutritional information on food packages.
- Mandatory disclosure of information, for example: SEBI requires that accurate information be provided to prospective buyers of new stocks.
- Public dissemination of information to improve knowledge
- Regulation of advertising and setting of advertising standards to make advertising more responsible, informative and less persuasive.

2.13 GOVERNMENT INTERVENTION FOR EQUITABLE DISTRIBUTION

One of the most important activities of the government is to redistribute incomes so that there is equity and fairness in the society. Some common policy interventions include: progressive income tax, targeted budgetary allocations, unemployment compensation, transfer payments, subsidies, social security schemes, job reservations, land reforms, gender sensitive budgeting etc.

Government also intervenes to combat black economy and market distortions associated with a parallel black economy. Government intervention in a market that reduces efficiency while increasing equity is often justified because equity is greatly appreciated by society.

The discussion above is far from being comprehensive; yet it points toward the numerous ways in which governments intervene in the markets. However, we cannot be sure whether the government interventions would be effective or whether it would make the functioning of the economy less efficient. Government failures where government intervention in the economy to correct a market failure creates inefficiency and leads to a misallocation of scarce resources occur very often. Government failure occurs when:

- intervention is ineffective causing wastage of resources expended for the intervention
- intervention produces fresh and more serious problems

There are costs and benefits associated with any government intervention in the market, and it is important that policy makers consider all the costs and benefits of a policy intervention.

SUMMARY

- ♦ 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.
- ♦ There are two types of market failure: complete market failure or "missing markets" and partial market failure
- ♦ 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 what would be produced in a competitive market and charge higher prices.
- ♦ Externalities also referred to as 'spill over 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 are initiated and experienced, not through the operation of the price system, but outside the market and therefore, are external to the market.
- ♦ Externalities can be positive or negative. Negative externalities occur when the action of one party imposes costs on a third party who is not part of the transaction. Positive externalities occur when the action of one party confers benefits a third 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 and 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.

- 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. Social Cost =Private Cost + External Cost.
- The firm or the consumer as the case may be, however, has no incentive to account for the external costs that it imposes on others.
- When firms do not have to worry about negative externalities associated with their production, the result is excess production and unnecessary social costs
- Public good (also referred to as a collective consumption good or a social good) are those which are indivisible, nonrival, non-excludable and enjoyed in common by all individuals. They are vulnerable to externalities and free rider problems.
- 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.
- Private goods are 'rivalrous' 'and excludable' and less likely to have the free rider problem.
- Complete information is an essential element of competitive market.
- 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.
- 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 lower prices and the good quality 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.
- Governments intervene in various ways to correct market failure.

- Because of the social costs imposed by monopoly, governments intervene by establishing rules and regulations designed to promote competition and prohibit actions that are likely to restrain competition.
- Natural monopolies such as electricity, gas and water supplies are usually subject to price controls.
- Government initiatives towards combating market failures due to negative externalities are either direct controls or market-based policies.
- Direct controls prohibit specific activities that explicitly create negative externalities or require that the negative externality be limited to a certain level, for instance limiting emissions.
- Government may pass laws to alleviate the effects of negative externalities or fix emissions standard which is a legal limit on how much pollutant a firm can emit. It may charge emission fee which is levied on each unit of a firm's emissions.
- The market-based approaches– environmental taxes and cap-and-trade – operate through price mechanism to create an incentive for change.
- The key is to internalizing an externality (both external costs and benefits) is to ensure that those who create the externalities include them while making decisions.
- One method of ensuring internalization of negative externalities is imposing pollution taxes. (Pigouvian taxes). By 'making the polluter pay', pollution taxes seek to internalize external costs into the price of a product or activity.
- Pollution taxes are difficult to determine and administer due to difficulty to discover the right level of taxation, problems associated with inelastic nature of demand for the good and the problem of possible capital flight.
- Tradable emission permits are marketable licenses to emit limited quantities of pollutants and can be bought and sold by polluters. The high polluters have to buy more permits and the low polluters receive extra revenue from selling their surplus permits.
- The system is administratively cheap and simple, allows flexibility and reward efficiency and provides strong incentives for innovation.
- Subsidy is a market-based policy and involves the government paying part of the cost to the firms in order to promote the production of goods having positive externalities.
- Merit goods such as education, health care etc are socially desirable and have substantial positive externalities. Left to the market, merit goods are likely to be under-produced and under- consumed so that social welfare will not be maximized.

- The possible government responses to under-provision of merit goods are regulation, legislation, subsidies, direct government provision and a combination of government provision and market provision.
- Demerit goods are goods which impose significant negative externalities on the society as a whole and are believed to be socially undesirable. The production and consumption of demerit goods are likely to be more than optimal under free markets.
- Steps taken by government to limit demerit goods include complete ban of the good, legislations, persuasion and advertising campaigns, limiting access to the good, especially by vulnerable groups.
- In the case of non excludable pure public goods where entry fees cannot be charged, direct provision by governments through the use of general government tax revenues is the only option.
- A very commonly followed method in the case of excludable public good is to grant licenses to private firms to build a facility and then the government regulates the level of the entry fee chargeable from the public.
- Due to strategic and security reasons, certain goods are produced and consumed as public goods and services despite the fact that they can be produced or consumed as private goods.
- Price controls may take the form of either a price floor (a minimum price buyers are required to pay) or a price ceiling (a maximum price sellers are allowed to charge for a good or service).
- When prices of certain essential commodities rise excessively government may resort to controls in the form of price ceilings (also called maximum price) for making a resource or commodity available to all at reasonable prices.
- With the objective of ensuring stability in prices and distribution, governments often intervene in grain markets through building and maintenance of buffer stocks.
- Government failure occurs when intervention is ineffective causing wastage of resources expended for the intervention and/or when intervention produces fresh and more serious problems. This creates inefficiency and leads to a misallocation of scare resources.

TEST YOUR KNOWLEDGE

Multiple Choice Questions

1. *'Market failure' is a situation which occurs when*
   - *(a) private goods are not sufficiently provided by the market*
   - *(b) public goods are not sufficiently provided by public sector*
   - *(c) The market fail to form or they allocate resources efficiently*
   - *(d) (b) and (c) above*
2. *Which of the following is an example of market failure?*
   - *(a) Prices of goods tend to rise because of shortages*
   - *(b) Merit goods are not sufficiently produced and supplied*
   - *(c) Prices fall leading to fall in profits and closure of firms*
   - *(d) None of the above*
3. *Which of the following is an outcome of market power?*
   - *(a) makes price equal to marginal cost and produce a positive external benefit on others*
   - *(b) can cause markets to be efficient due to reduction in costs*
   - *(c) makes the firms price makers and restrict output so as to make allocation inefficient*
   - *(d) (b) and(c) above*
4. *Markets do not exist*
   - *(a) for goods which have positive externalities*
   - *(b) for pure public goods*
   - *(c) for goods which have negative externalities*
   - *(d) none of the above*
5. *Which of the following is the right argument for provision of public good by government?*
   - *(a) Governments have huge resources at their disposal*
   - *(b) Public goods will never cause any type of externality*
   - *(c) Markets are unlikely to produce sufficient quantity of public goods*

(d) *Provision of public goods are very profitable for any government*

6. *Adequate amount of a pure public good will not be provided by the private market because of*

(a) *the possibility of free riding*

(b) *the existence of very low prices and low profits*

(c) *governments would any way produce them, so there will be overproduction*

(d) *there are restrictions as well as taxes on production of public goods*

7. *The free rider problem arises because of*

(a) *ability of participants to produce goods at zero marginal cost*

(b) *marginal benefit cannot be calculated due to externalities present*

(c) *the good or service is non excludable*

(d) *general poverty and unemployment of people*

8. *A chemical factory has full information regarding the risks of a product, but continues to sell it. This is possible because of*

(a) *asymmetric information*

(b) *moral hazard*

(c) *free riding*

(d) *(a) and (c) above*

9. *If an individual tends to drive his car in a dangerously high speed because he has a comprehensive insurance cover, it is a case of*

(a) *free riding*

(b) *moral hazard*

(c) *poor upbringing*

(d) *Inefficiency*

10. *Smoking in public is a case of*

(a) *Negative consumption externality*

(b) *Negative production externality*

(c) *Internalising externality*

(d) *None of the above*

11. *Read the following statements*

I The market-based approaches to control externalities operate through price mechanism

II. When externalities are present, the welfare loss would be eliminated

III. The key is to internalizing an externality is to ensure that those who create the externalities include them while making decisions

Of the above statements

(a) II and III are correct

(b) I only is correct

(c) II only is correct

(d) I and III are correct

12. *Which of the following statements is false?*

(a) Tradable permits provide incentive to innovate and reduce negative externalities

(b) A subsidy on a good which has substantial positive externalities would reduce its cost and consequently its price would be lower

(c) Substantial negative externalities are involved in the consumption of merit goods.

(d) Merit goods are likely to be under-produced and under consumed through the market mechanism

13. *Which one of the following would you suggest for reducing negative externality?*

(a) Production subsidies

(b) Excise duty

(c) Pigouvian taxes

(d) All of the above

14. *A Pigouvian subsidy*

(a) cannot be present when externalities are present

(b) is a good solution for negative externality as prices will increase

(c) is not measurable in terms of money and therefore not practical

(d) may help production to be socially optimal when positive externalities are present

15. *If governments make it compulsory to avail insurance protection, it is because*

    (a) *Insurance companies need to be running profitably*

    (b) *Insurance will generate moral hazard and adverse selection*

    (c) *Insurance is a merit good and government wants people to consume it*

    (d) *None of the above*

16. *The Competition Act, 2002 aims to -*

    (a) *protect monopoly positions of firms that have developed unique innovations*

    (b) *to promote and sustain competition in markets*

    (c) *to determine pricing under natural monopoly.*

    (d) *None of the above*

17. *Rules regarding product labelling*

    (a) *Seeks to correct market failure due to externalities*

    (b) *Is a method of solving the problem of public good*

    (c) *May help solve market failure due to information failure*

    (d) *Reduce the problem of monopolies in the product market*

18. *Identify the incorrect statement*

    (a) *A minimum support price for agricultural goods is a market intervention method to guarantee steady and assured incomes to farmers.*

    (b) *An externality is internalised if the ones that generated the externality incorporate them into their private cost- benefit analysis*

    (c) *The production and consumption of demerit goods are likely to be less than optimal under free markets*

    (d) *Compared to pollution taxes, the cap and trade method is administratively cheap and simple to implement and ensures that pollution is minimised in the most cost-effective way.*

19. *The incentive to let other people pay for a good or service, the benefits of which are enjoyed by an individual*

    (a) *Is a case of negative externality*

    (b) *Is a case of market efficiency*

    (c) *Is a case of free riding*

(d) *Is inappropriate and warrant action*

20. *A government subsidy*

(a) *is a market-based policy*

(b) *involves the government paying part of the cost to the firms in order to promote the production of goods having positive externalities*

(c) *is generally provided for merit goods*

(d) *all the above*

21. *The production and consumption of demerit goods are*

(a) *likely to be more than optimal under free markets.*

(b) *likely to be less than optimal under free markets*

(c) *likely to be subjected to price intervention by government*

(d) *a) and c) above*

22. *The argument for education subsidy is based on*

(a) *Education is costly*

(b) *the ground that education is merit good*

(c) *education creates positive externalities*

(d) *b) and c) above*

23. *Read the following statements*

I. *Social costs are the total costs incurred by the society when a good is consumed or produced.*

II *The external costs are not included in firms' income statements or consumers' decisions*

III. *Each firm's cost which is considered for determining output would be only private cost or direct cost of production which does not include external costs*

IV. *Production and consumption decisions are efficient only when private costs are considered*

Of the above

(a) *Statements I and III are correct*

(b) *Statements I,II and III are correct*

(c) *Statement I only is correct*

(d) All the above are correct

24. Government failure occurs when

(a) Government fails to implement its election promises on policies

(b) A government is unable to get reelected

(c) Government intervention is ineffective and produces fresh and more serious problems

(d) None of the above

ANSWERS

1.	**(c)**	2	**(b)**	3	**(c)**	4.	**(b)**	5.	**(c)**	6.	**(a)**
7.	**(c)**	8.	**(a)**	9.	**(b)**	10.	**(a)**	11.	**(d)**	12.	**(c)**
13.	**(c)**	14.	**(d)**	15.	**(c)**	16.	**(b)**	17.	**(c)**	18.	**(c)**
19.	**(c)**	20.	**(d)**	21.	**(d)**	22.	**(d)**	23.	**(b)**	24.	**(c)**