

Germany people are conscious about the size of the family. Thus in these countries fertility rate is low and with increased life span the proportion of aging population has been increasing over time. In contrast, in a country like India, proportion of young population is fairly high and is expected to increase further. From business point of view this is a preferable situation *as propensity to consume of the younger people is fairly high leading to a large demand*. Moreover, *younger people have preference for all good things of life*. This creates much scope for the production of more and more new things. In contrast, large elderly population will have a preference for savings which is not very conducive for the business activity. *Elderly population by cutting down its demand causes a disincentive to business units* which normally has a tendency to push the economy towards a recessionary situation.

Urban-Rural Population

Proportion of urban population *vis-a-vis* rural population has been increasing in all the developing countries. For example, in India urban population has increased from 17.3 per cent of the total population in 1951 to 27.78 per cent of the total population in 2001. It is already very high in developed countries and there is little scope left for further urbanisation in these countries. In any case, the average income of the urban people is higher than that of the people living in rural areas. Hence *with increasing urbanisation, demand for industrial products increases which in turn enlarges scope for business activity*.

The Burden of Population on Environment

Much of the concern over environmental issues arises from the fear that we may reach a limit to the number of people whose needs can be met by the global resources. Some economists have argued that this fear is unfounded as technological innovations and progress can fulfill the needs of the growing population. For instance, during 1950s and 1960s it was widely believed that the developing countries — particularly China, India and Indonesia — would not be able to feed their rapidly growing populations. However, thanks to green revolution in agriculture, the doomsday scenario of famines and starvations did not materialise in these overpopulated, developing countries. *In the 1960s and 1970s the Club of Rome and many other groups forecast that the Earth would rapidly run out of key natural resources*. However, this has not happened so far as changes in technology and preferences have allowed the substitution of new resources in place of the existing ones. Nevertheless, all economists agree that *the rate at which environmental degradation is taking place in the present carries a serious risk and jeopardises the ability of the present and future generations to meet their business requirements*.

During the last sixty years, the world's population increased by more than 3.5 billion and 85 per cent of this increase was in the developing and transition economies. The number of people living in fragile rural areas in developing countries doubled posing a serious threat to the rural environment. There was a sharp increase in the urban population of these countries as well because of natural increase of population as a result of excess of births over deaths on the one hand, and migration from rural areas on the other hand. Both, pull factors and push factors, have operated together to swell the flow of people from rural areas to urban areas. The 'pull factors' include the promise of better employment opportunities in urban areas, better income, better education and health facilities, and in general, a better life style. The push factors include low levels of agricultural productivity in rural areas, widespread open and disguised unemployment, and wide disparity between urban and rural levels of income. As a result of all these mutually dependent and mutually reinforcing factors, the growth of population in urban areas has increased considerably putting severe pressure on urban facilities and resulting in environmental degradation in the form of water pollution, air pollution, noise pollution, increased accumulation of solid wastes, garbage, polythene bags, chemicals, toxic elements etc. in urban areas. According to *World Development Report, 2003*, in the next 30 to 50 years, the world population is expected to increase by 2 billion to 3 billion and this increase will almost be exclusively (97 per cent) in developing and transition economies. Moreover, this entire increase is expected to be in urban areas. The *Report* estimates that as many as 2 billion people will live in two areas that are difficult to manage: fragile rural areas and megacities.⁸ Obviously this is not an encouraging situation from the point of view of business. Since prevention and control of natural environment degradation makes heavy demands on resources, the business activity may suffer on account of paucity of resources. Further, utilisation of resources on prevention and control of environmental degradation may consume resources which may otherwise be used for personal household consumption. Thus business may be confronted with a situation of declining effective demand. Obviously this will adversely affect business.

■■■■ TECHNOLOGICAL ENVIRONMENT ■■■■

Meaning of Technology

Technology is often identified with the knowledge about machines and processes. In a broader sense, it refers to the body of "skills, knowledge and procedures for making, using and doing useful things." Technology thus includes methods used in non-marketed activities as well as marketed ones. "It includes the nature and specification of what is produced — the product design — as well as how it is produced. It encompasses managerial and marketing techniques as well as techniques directly involved in production. Technology extends to services — administration, education, banking and the law, for example — as well as to manufacturing and agriculture. A complete description of the technology in use in a country would include the organisation of productive units in terms of scale and ownership."⁹

Technology consists of a series of techniques. The development of techniques is essentially a historical process in which one technique with one set of characteristics replaces another in the light of the historical and economic circumstances of the time. Most of the technology used today has been developed in the Western countries during the period of the last two centuries or so (i.e. after the advent of the industrial revolution). This is often referred to as 'modern technology' to distinguish it from the technology used in earlier periods in the Western countries. The latter termed as 'traditional technology' continues to be used in many underdeveloped countries even today particularly in the field of agriculture and small-scale and cottage industries.

Technology and Business Environment

The history of modern technology in the western countries starts with the industrial revolution. Propelled by new scientific inventions, entrepreneurs launched upon various innovations¹⁰ and soon a whole breed of new commodities entered the markets. Technical improvements were also made in the production of new commodities. Once industrial revolution started gaining ground, it gave encouragement to the discovery of new inventions and innovations and soon a competition for more and more advanced technology ensued among the producers with each producer trying to outsell his competitors by presenting more sophisticated and technically superior goods to the consumers.

Positive Role of Technology. *Inventions and innovations in one field stimulate inventions and innovations in other fields as well.* Soon the competition spread beyond national boundaries into the field of international trade as countries trading with one another tried to outsell their competitors by presenting more sophisticated and technically superior goods. In fact, the spread effects of the inventions and innovations were felt over the entire productive systems of the western countries and rapid technological progress took place. This, in turn, increased productivity manifold and firmly set these countries on the path of economic progress. *Development of business as an ongoing process rests on the constant injection of the new technology and on the capacity to generate and absorb technical change.* The experience of the western countries provides an ample proof of the truth of this statement.

Innovations in the western world were both cost-reducing and demand-increasing. In fact, both fed upon each other. Inventions and innovations during the initial period of the industrial revolution reduced the costs of production and also brought a whole breed of new consumer goods in the market. As more and more consumers sought to purchase the new variety of goods, the pressure of demand increased and this encouraged the entrepreneurs to come forward with more new and improved products. Increased demand of the consumers played an important role in the industrial development of the western countries by providing a continuously expanding market for the industrial goods. Therefore, the importance of 'demonstration effect' in the growing business activity of the western countries must be duly acknowledged. The force of the demonstration effect brought forth numerous demand-induced innovations and helped in the continuous upgradation of technology in these countries. This gave a boost to economic growth.

To investigate the role of technology in the development of business one can also cite the example of Japan in addition to that of western countries. As noted by Cairncross, before economic growth began to accelerate a century ago in this country, it was highly dependent on agriculture like other pre-industrial societies, as would be clear from the fact that about 75 per cent of its population was engaged in agriculture. However, what distinguished this country from other underdeveloped countries was that unlike these other countries, the economic backwardness of Japan was not paralleled by a similar backwardness in education, urban culture, managerial experience, and social and political institutions. Also, "there was from the outset a deliberate effort to acquire experience abroad. Many Japanese went overseas to study industrial practice and

the government set out to build new industries using foreign equipment and methods. There was an outlook congenial to the importation of technology and continuous search for those areas where technological transfer had most to offer or would encounter least difficulty."¹¹

In addition to the massive importation of technology, the Japanese made serious efforts to absorb, adopt and expand it according to their own requirements and also to generate their own advanced technology. As noted by Cairncross, Japan has probably more trained engineers per head than any other country and this has enabled it to adapt foreign technology to its own requirements, carry out necessary modifications in design or production planning to suit Japanese conditions, and to evolve its own technology. The last factor is important because there was throughout a determination to follow the 'do-it-yourself' policy. As a result, heavy reliance was placed by Japan on educating and training its own population.

The rapid economic progress of the western countries and Japan brings out clearly the importance of technology as a factor promoting business activity. *Technology has led to greater output, shorter working hours, the creation of a host of skilled jobs in design, maintenance, and engineering, safer working conditions, production of new and better goods of standardized quality with more efficient use of raw materials, etc.*

Negative Effects of Technology. After having discussed the positive effects of technology on business activity, let us now turn to some of its negative effects. *The most dreaded negative effect of technological innovations is that they lead to displacement of labour and thus cause unemployment.* However, a number of economists argue against this possibility. According to them, if the introduction of technical change leads to a reduction in labour costs, the decrease in cost would in time be transmitted to consumers of the product. If the demand for the product is elastic, demand would increase considerably leading to an increase in employment. If the demand is inelastic, some workers would be displaced. But since the goods are now available at a lower price, the consumers would have some money to spare which would be spent on other goods. Thus employment opportunities would expand in other industries. Thus it is argued that, in the long run, no technological unemployment is possible. However, this argument has been challenged by trade unions because they are worried about the short run consequences of displacement of labour. They argue that technical changes often impose great burden on the displaced workers, who may remain idle for months or even years, or eventually find employment at lower levels of skill and at lower wages. At times, because of age and immobility, they may face permanent idleness.

Usually the adverse impact of technical change is likely to remain restricted to some workers, while the benefits are diffused throughout the economy. Technical change, like other risks, is inevitable in a growing and changing economy and its adverse impact may fall either upon the worker or upon the businessman who may be adversely affected by the innovations of his competitors. However, this argument ignores the basic difference between the attitudes of the businessmen and the workers. While the former recognize that gains and losses are the essence of business, the latter are interested only in a fixed amount of money — their wage. Moreover, while businessmen have a good amount of reserve money to fall back upon in a crisis, the workers have simply nothing with them except their meagre savings which get exhausted in a few days. The strains and stresses of unemployment are, therefore, too much for them to bear. The crux of the matter is that while "economists are prone to stress the beneficial results of technical change, its effect on productivity and consumption, the trade unions are likely to regard technical change from the point of view of its effect upon the employment and income of the particular group affected."¹²

Technical progress and innovations also bring about a profound change in the socio-economic environment. The standards of living improve, the basis for a fast growing urban and industrial system is laid, and boundless opportunities for progress unfold themselves. However, side by side, environmental pollution increases, anxiety and insecurity rises, and old crafts and craftsmanship declines. Man becomes a machine and gradually loses his identity in a fast changing society. Despite these disadvantages of technology which are now coming more and more to the fore in the advanced industrialized countries of the world, the developing countries are putting in their best efforts for the promotion of technological innovations (if necessary, by an import of technology from advanced countries) because to them, technology seems to be the only hope for economic development. They realize, and quite rightly so, that unless technological changes are introduced into their stagnant, backward economies, the masses of the people will remain at alarmingly low levels of living.

Technology in Developing Countries

Technology has a major role to play in the industrial development of a country. Apart from massive use of capital, highly sophisticated technology has played a significant role in the recent development of Western

Europe, America and Japan. Underdeveloped countries need not undertake independent scientific research to acquire this knowledge. They are, nonetheless, confronted with some practical difficulties in adopting capital-intensive techniques of the West.

The techniques of production in developing countries are backward and they often determine the boundaries of what is possible for business in these countries to do. However, position is fast changing in modern large-scale industries. For example, in the Third World countries wherever oil refineries or iron and steel, heavy engineering, machine tools and chemicals industries have been set up, most sophisticated techniques have been preferred. In small-scale and cottage industries sector, however, little attempt has been made to replace labour-intensive technique by what we may call intermediate technology. Apart from economic reasons, the government policy is responsible for the use of labour-intensive techniques in the small-scale industrial sector. This policy under given circumstances may be rational, yet the fact remains that the use of labour-intensive techniques in countries is both a sign of their backwardness and a major obstacle to their prospective industrial development.

Summing Up

Technology available to a particular country is all those techniques it knows about or may obtain knowledge about them without much difficulty. It can acquire these techniques without much effort and at low cost. In contrast, the technology in use is that subset of techniques it *has* acquired. *For a business firm engaged in production both technology available and technology in use are important.*

In developed countries, technology in use changes with little time lag when new technology becomes available. Therefore, in these countries the rate of obsolescence is quite high. At present *any business firm serious about its international competitiveness cannot persist with outdated techniques.* However, in a protected market, technological changes are slow and often business firms survive quite long without making technological changes. In India, this happened in automobile industry for about four decades since Independence. Lately because of the liberalisation in the industrial sector, automobile technology is changing fast and no company can hope to survive in this sector if it fails to retain its competitiveness through technological sophistication. Sometimes even in a protected market plant technology has to be changed due to domestic competition. This has to be done in cotton textile industry in India. With the opening up of the Indian economy, the steel industry in this country is facing problems on account of technological obsolescence. In other countries, technology in steel industry is changing fast. Hence, if our industrial units lag behind other countries in technological changes, we will lose competitiveness in international markets.

Technological environment affects business from the demand side as well. In a country where power is scarce, demand for electrical appliances will be limited. Erratic power supply and frequent load shedding creates market for inverters. In India, electrical appliances are designed for 220-250 volts while in the USA and some other western countries power supply comes at 110 volts. Therefore, a business firm producing electrical goods for both domestic and foreign markets must design its products to conform to the technological requirements of these markets.

■■■■ NATURAL ENVIRONMENT ■■■■

Despite scientific and technological development, natural environment retains its relevance for business activity. It is true that certain business units can be set up anywhere in the world. However, industrial units using weight-losing inputs are to be set up at the sources of these inputs. Sugar industry has thus been developed in the regions where sugarcane is grown because of suitable climatic and soil conditions. Likewise iron and steel industrial units have been set up near coal mines. These examples can be multiplied to show that industrial activity is not entirely independent of nature.

Till recently the business had not cared for ecological effects of its activities. Guided entirely by its profit maximisation goal the industry caused tremendous damage to exhaustible natural resources such as minerals and forests. It also contaminated water and polluted air. These externalities imposed by the industry on the society were overlooked both by the government and the people until such time the environmentalists pointed out the harm industry has done to human well-being by causing environmental damage.

The observations of the *World Development Report 1992*, given in Box 4.1 are damning indictment of business for its role in environmental degradation. The business has so far got away in most countries with its callous indifference towards environmental damage which its activities cause. When this happens, externalities

of the business activities will have to be internalised. This implies that the social cost which business presently imposes on others will assume the form of private cost and make dent into its profits.

BOX 4.1. Industry and the Environmental Problems

Three factors intensify the environmental problems associated with rapid industrial development. First, as emissions from existing activities increase, they pass the point at which they can be readily assimilated by the environment. Second, as industrial towns expand, more people are exposed to pollution. Third, within industry the structure shifts away from activities that are moderately polluting, such as textiles, wood products and food processing, and toward others with much greater potential for causing environmental harm, such as metals, chemicals, and paper.

The derelict or highly polluted industrial areas and rivers to be found in all high-income countries represent both a warning and a challenge for the developing world. The challenge is to avoid passing through the "dark satanic mills" phase of industrial growth. The policy response will need to address the rather different pollution problems

posed by large plants and mines and large numbers of small industries. A few industries dominated by large plants are responsible for a significant share of industrial pollution. In addition to energy supply, these include ferrous and non-ferrous metallurgy, industrial chemicals, paper and pulp, cement and mining. Unchecked, the pollutants discharged by these industries damage the health of local people, reduce output from local agriculture and industry, and damage infrastructure and buildings. Small and medium-scale industries, which provide much employment and productivity growth in developing countries, cause many of the same kinds of pollution as larger enterprises and are especially important sources of organic wastes in water effluents and of inadequately handled hazardous wastes.

Source: *World Development Report 1992*, pp. 126-7.

Now we propose to discuss natural environment-economy linkage, linkages between economic growth and natural environment, and the issue of environment as a necessity.

Natural Environment-Economy Linkage

Natural environment performs four functions in supporting economic activity:

1. Life support
2. Supply of natural resources
3. Absorption of waste products
4. Supply of amenity resources

1. Life support. Natural environment provides a biological chemical and physical system that enables human life to exist. This system includes the atmosphere (air), river systems (water), land resources, and a diversity of plant and animal life. No business activity can be conceived without these 'environmental services' which are essential to life. Large reductions in these services can have disastrous consequences for life.

2. Supply of natural resources. Natural environment provides raw materials and energy for economic production and household activity. These natural resources are of two types: renewable and non-renewable. For example, while forests and fisheries are renewable resources, minerals are non-renewable resources. As is obvious, while use of non-renewable resources reduces their finite stock forever, this risk is not present in the case of renewable resources. However, excessive use of renewable resources or their mismanagement is not advisable as it can result in the complete loss of the resources, for example desertification can follow deforestation.

3. Absorption of waste products. The waste products resulting from the production activity and household activity (in fact, all economic activities) are absorbed by the natural environment. This is known as the 'sink function'. This sink function allows much of such waste to be disposed of safely. However, there are certain wastes that are difficult or impossible for the natural environment to dispose of safely, for example long lived radioactive materials and other metals. Specific arrangements are required to be made for such waste. As correctly pointed out by A.P. Thirlwall, "The ability of the natural environment to absorb waste is not infinite. For example the natural break down of effluents in the sea and rivers will not give rise to serious pollution as long as the discharges are below some threshold levels, but above these levels discharges will give rise to rapid increases in pollution."¹³

4. Supply of amenity services. The natural environment also provides amenity services, for example natural beauty and space for outdoor pursuits. These services are 'consumed'. However, their consumption is not crucial for human life.

Parts of the natural environment may serve more than one function. For example, oceans are important in determining the life-support systems of the global and micro climates; they are sources of many minerals and other resources; they assimilate many different wastes; and they also provide the space and opportunity for marine pastimes.

■■■■ ECONOMIC GROWTH AND THE NATURAL ENVIRONMENT ■■■■

In recent decades, a number of economists and many environmentalists have underlined the fact that economic growth, particularly industrialisation has, over the years, led to environmental degradation on a massive scale accompanied by large scale resource depletion.

In their study published in 1995, P. G. Grossman and A. Krueger had argued that in the early stages of economic development the level of environmental degradation increases, but after this phase the environment improves with economic development.¹⁴ According to this view, *the relationship between GDP per capita and the quality of environment is 'U-shaped' — that is, the quality of the environment deteriorates initially as GDP per capita increases, and then improves after a certain critical value of per capita GDP has been reached.* This model is referred to as *the environmental Kuznets curve*. Practically a similar point of view was propounded by the World Bank in its *World Development Report, 1992. On the basis of cross-country regression analysis of data from the 1980s, the Report found that while some environmental problems increase with economic growth, some environmental problems increase till a particular level of economic growth and then start declining.*¹⁵ *The report observed that as the level of income increases, municipal wastes per capita and carbon dioxide emissions per capita increase.* On the other hand, the number of people without safe water and the number of people without adequate sanitation declines as the level of income increases.

From the above study conducted for different countries, the *World Development Report, 1992*, derives the following 'patterns' of the linkages between economic growth and environment:

1. Some environmental problems decline as income increases. This is because increasing income provides the sources for public services such as sanitation and rural electricity. When individuals no longer have to worry about day-to-day survival, they can devote resources to profitable investments in conservation.
2. Some problems initially worsen but then improve as incomes increase. Most forms of air and water pollution fit into this category, as do some types of deforestation and encroachment on natural habitats. There is nothing automatic about this improvement; it occurs only when countries deliberately introduce policies to ensure that additional resources are devoted to dealing with environmental problems.
3. Some indicators of environmental stress worsen as incomes increase. Emissions of carbon and of nitrogen oxides are current examples. In these cases abatement is relatively expensive and the costs associated with emissions and wastes are not yet perceived to be high — often because they are borne by someone else.

For detailed analysis of links between business and natural environment refer to Chapter 5.

■■■■ NOTES ■■■■

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2. *Ibid*, p. 24.
3. Heinz Wehrich, *Management-A Global Perspective*, (New York, 1993), p. 67.
4. Aijaz Ahmad, "Politics of Culture", *Social Scientist*, Sept.-Oct 1999 p. 65.
5. James A.F. Stoner, R. Edward Freeman, Daniel R. Gillert, Jr., *Management* (New Delhi, 1999), p. 181.
6. As quoted in *Ibid.*, p. 186.
7. C.K. Prahlad quoted in 'Poverty and Profit', *The Times of India*, (New Delhi), December 27, 2004.
8. The World Bank, *World Development Report 2003* (New York, 2003), pp. 7-8.
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15. World Bank, *World Development Report 1992*, (New York, 1992), p. 10.

NATURAL ENVIRONMENT AND BUSINESS

Environmental Protection and Sustainable Industrial Development

- Sustainable Development

Environmental Degradation

Business and Natural Environment in India

- Environmental Damages • Environmental Accountability

Environmental Policy

- Criteria to Assess Policy Instruments • Environmental Policy Instruments • Enforcement Agency—Private versus Public

Choice of Environmental Policy Instruments in Practice

Environmental Concern in Developing Countries

- Legislative Action in India

The Global Concerns

- The Global Environmental Threat—Greenhouse Gases and Ozone Depletion • Global Agenda

During the last three-four decades, many experts have drawn attention to the close links between environment and business. *The mad rush for industrial growth has, over the years, led to environmental degradation on a large-scale accompanied by massive resource depletion.* In their study *The Limits to Growth* published in 1972, D.H. Meadows, D.L. Meadows and R. Randers drew attention to the fact that there are a number of non-renewable resources whose present levels of consumption are such that the known reserves will be exhausted in not so distant future. Many later studies have also highlighted the danger of environmental degradation. Thus the focus has now shifted to 'environmental protection'. While examining the close links between natural environment and business we shall analyse the following issues:

- Why is environmental protection necessary for industrial development: Does it sustain overall economic growth and business activity ?
- What are the main health and productivity consequences of environmental degradation ?
- What type of relationship business has with natural environment ? This we shall explain with particular reference to India.
- How is environmental degradation a clear case of environmental policy ?
- Why markets frequently do not reflect social value of environment ? Which policy instruments are most effective to deal with environmental degradation ?
- How and why decision makers prefer using particular environmental policy instruments ?
- Why economists, environmentalists and decision makers in the government feel concerned about global sustainability of industrial activity ?

■■■■ ENVIRONMENTAL PROTECTION AND SUSTAINABLE INDUSTRIAL DEVELOPMENT ■■■■

Sustainable Development

According to the *World Development Report 1992*, environmental problems can undermine the goals of development in two ways, "First, environmental quality — water that is safe and plentiful and air that is healthy — is itself part of the improvement in welfare that development attempts to bring. If the benefits from rising incomes are offset by the costs imposed on health and the quality of life by pollution, this cannot be called development. Second, environmental damage can undermine future productivity. Soils that are degraded, aquifers that are depleted, and ecosystems that are destroyed in the name of raising incomes today can jeopardise the prospects for earning income tomorrow."¹ Therefore *environmental protection should form a part of any comprehensive programme of industrial development*. In this context, the economists now emphasise the concept of *sustainable development*. This term first came into prominence in the *World Conservation Strategy*, presented in 1980 by the International Union for the Conservation of Nature and Natural Resources. It was defined clearly in the Brundtland Report *Our Common Future* (1987) in the following words: "*sustainable development seeks to meet the needs and aspirations of the present without compromising the ability of future generations to meet their own needs.*"

Sustainable development can be achieved only if the natural environment is conserved and improved. Therefore, a development path is sustainable "if and only if the stock of overall capital assets remains constant or rises over time."² This implies keeping the stock of *natural capital* at least constant. More strictly, "the requirement is for non-negative change in the stock of natural resources and environmental quality. In basic terms, the environment should not be degraded further but improvements would be welcome."³ The argument quite simply is that the resource base of a country and the quality of its air, water, and land represents a common heritage for all generations. To destroy that endowment in the pursuit of short-term business gains compromises the gains of future generations and is thus undesirable.

■■■■ ENVIRONMENTAL DEGRADATION ■■■■

Table 5.1 reproduced from *World Development Report, 1992*, summarises the main health and productivity consequences of environmental damage in the developing countries. *It divides this damage into seven categories: water pollution and water scarcity, air pollution, solid and hazardous waste, soil degradation, deforestation, loss of biodiversity, and atmospheric changes.*

Water Pollution. Water quality has continued to deteriorate world over because of a number of factors. The most widespread contamination of water occurs from industrial waste. Where industry and mining are expanding, rivers become contaminated with toxic chemicals and with heavy metals such as lead and mercury. These pollutants are hard to remove from drinking water with standard purification facilities. The capacity of rivers to support aquatic life is decreased. Not only surface water near towns and cities has become increasingly polluted over the years, even groundwater has been contaminated as a result of seepage from the improper use and disposal of heavy metals, synthetic chemicals, and other hazardous wastes. Sometimes, industrial effluents are discharged directly into groundwater.

Water pollution is the most serious environmental problem for the 1 billion people in developing countries who do not have access to clean water and the 1.7 billion who lack access to sanitation. The direct impact of waterborne diseases is huge, especially for children and the poor (who are most at risk). Unsafe water is implicated in many cases of diarrheal diseases, which, as a group, kill more than 3 million people, mostly children, and cause about 900 million episodes of illness every year.

Air Pollution. Air pollution has three principal man-made sources—energy use, vehicular emissions, and industrial production. The problem is that as industrial growth picks up in developing countries, all these are likely to increase resulting in more air pollution in coming years. The environmentalists usually highlight two specific problems of air pollution with regard to their effect on human suffering:

1. Suspended Particulate Matter (SPM). In the second half of the 1980s about 1.3 billion people worldwide lived in urban areas that did not meet the standards for particulate matter (airborne dust and smoke) set by the World Health Organisation (WHO). Thus *one-fifth* of humanity is exposed to unsafe levels of urban air pollution and is faced with the threat of serious respiratory disorders and cancers. It has been estimated that if unhealthy levels of SPM were brought down to the annual average level that WHO considers safe, between

TABLE 5.1. Principal Health and Productivity Consequences of Environmental Damage

<i>Environmental Problem</i>	<i>Effect on Health</i>	<i>Effect on Productivity</i>
Water pollution and water scarcity	More than 2 million deaths and billions of illnesses a year attributable to pollution; poor household hygiene and added health risks caused by water scarcity	Declining fisheries; rural household time and municipal costs of providing safe water; aquifer depletion leading to irreversible compaction; constraint on economic activity because of water shortages
Air pollution	Many acute and chronic health impacts: excessive urban particulate matter levels are responsible for 300,000—700,000 premature deaths annually and for half of childhood chronic coughing; 400 million—700 million people, mainly women and children in poor rural areas, affected by smoky indoor air	Restrictions on vehicle and industrial activity during critical episodes; effect of acid rain on forests and water bodies
Solid and hazardous wastes	Diseases spread by rotting garbage and blocked drains. Risks from hazardous wastes typically local but often acute.	Pollution of groundwater resources
Soil degradation	Reduced nutrition for poor farmers on depleted soils; greater susceptibility to drought	Field productivity losses in range of 0.5—1.5 per cent of gross national product (GNP) common on tropical soils; offsite siltation of reservoirs, river-transport channels, and other hydrologic investments
Deforestation	Localized flooding, leading to death and disease	Loss of sustainable logging potential and of erosion prevention, watershed stability, and carbon sequestration provided by forests
Loss of biodiversity	Potential loss of new drugs	Reduction of ecosystem adaptability and loss of genetic resources
Atmospheric changes	Possible shifts in vector-borne diseases; risks from climatic natural disasters; diseases attributable to ozone depletion (perhaps 300,000 additional cases of skin cancer a year worldwide; 1.7 million cases of cataracts)	Sea-rise damage to coastal investments; regional changes in agricultural productivity; disruption of marine food chain

Source: World Bank, *World Development Report, 1992* (New York: Oxford University Press, 1992), Table 1, p. 4.

300,000 and 700,000 premature deaths a year could be averted in the developing countries. This is equivalent to 2-5 per cent of all the deaths in urban areas that have excessive levels of particulates.

2. Lead. High levels of lead, primarily from vehicle emissions, have been identified as the greatest environmental damage in a number of large cities in the developing world. High levels in children are linked with hindered neurological development, including lower IQ and agility. Estimates for Bangkok suggest that the average child has lost four or more IQ points by the age of seven because of elevated exposure to lead, with enduring implications for adult productivity. In adults the consequences include risks of higher blood pressure and higher risks of heart attacks, strokes and death. In Mexico City exposure to lead may contribute to as much as 20 per cent of the incidence of hypertension, while in Bangkok excessive exposure causes 200,000 - 500,000 cases of hypertension, resulting in upto 400 deaths a year. Sulphur dioxide concentrations are also serious in countries that rely on high-sulphur fuels.

Solid and Hazardous Wastes. Many cities generate more solid wastes than they can collect or dispose off. *World Development Report* notes that about 30 per cent of solid wastes generated in Jakarta, four-fifths of refuse in Dar es Salaam, and more than two-thirds of solid wastes in Karachi go uncollected. Even where provision for collection is satisfactory, safe disposal of collected wastes often remains a problem. In many developing countries, open dumping and uncontrolled landfilling are resorted to.

Inadequate collection and unmanaged disposal present a number of problems for human health and productivity. As noted by the *Report*, "uncollected refuse dumped in public areas or into waterways contributes to the spread of disease. In low-income neighbourhoods that lack sanitation facilities, trash heaps become

mixed with human excreta. Municipal solid wastes sites often receive industrial and hazardous wastes, which may then seep into water supplied."⁴ Thus, in addition to spreading disease, solid and hazardous wastes pollute groundwater resources.

Soil Degradation. A study sponsored by United Nations Environment Programme (UNEP) in 1990 revealed that 1.2 billion hectares—almost 11 per cent of the earth's vegetated surface has undergone moderate or worse soil degradation over the forty-five year period 1945-90 because of human activity. Business has however not contributed to soil degradation directly. One of the chief forms of soil degradation is soil erosion. Several country studies that extrapolate from test-plot measurements of gross soil loss to effects on agricultural productivity indicate substantial economic losses running into about 0.5—1.5 per cent of GNP annually for countries such as Costa Rica, Malawi, Mali, and Mexico, thus offsetting a significant part of economic growth as conventionally measured. In addition to denuding the agricultural land of its top fertile layer, soil erosion also harms productivity by depositing silt in dams, irrigation systems, and river transport channels and by damaging fisheries.

Salinization and waterlogging are other serious forms of soil degradation. Globally, perhaps about 950 million hectares, or nearly one-third of arable land, are affected by elevated salt concentrations. Most of this salinization occurs naturally. However, according to *World Development Report*, about 60 million hectares, or some 24 per cent of all irrigated land, suffer from salinization caused by bad irrigation practices. Severe decline in productivity affects about 24 million hectares, or about one-tenth of irrigated land.

Deforestation. Forests are of immense value in protecting the environment. They provide a livelihood and cultural integrity for forest dwellers and a habitat for a wealth of plants and animals. They protect and enrich soils, provide natural regulation of the hydrologic cycle, affect local and regional climate through evaporation, influence watershed flows of surface and groundwater, and help to stabilise the global climate by sequestering carbon as they grow. Therefore, they play a useful role in preserving the ecological and environmental balance and in maintaining the biodiversity and ecosystems. However, unmindful of these facts, deforestation has continued unabated and at a fast rate all over the world as man has cleared forests for extending agriculture and obtaining firewood, industrial wood, timber and construction materials.

Modern industrial development has done considerable damage to forests. Ramprasad Sengupta points out, "The industrial pollution of sulphuric oxides and nitric oxides emission are a source of great risk for forest. When combined with rain water they form weak acid lowering the pH level. Acid rain stresses the biotic components of terrestrial and aquatic system destroying the photosynthetic tissues of plant and stunting their autotrophic activities. Ultraviolet radiation too produces photochemical smog out of nitric oxides and unburnt hydrocarbons. Smog affects the productivity of vegetation of the ecosystem since air pollutants can travel over long distances."⁵

Loss of Biodiversity. "Biological diversity—a composite of genetic information, species, and ecosystems—provides material wealth in the form of food, fibre, medicine and inputs into industrial processes. It supplies the raw material that may assist human communities to adapt to future and unforeseen environmental stresses. Furthermore, many people value sharing the earth with numerous other forms of life and want to bequeath this heritage to future generations."⁶ Loss of biodiversity jeopardises all this. *World Development Report* presents some information on species that have already become extinct. This extinction has been caused principally by human activity. Tropical forests have the most intense concentrations of species and it is these forests that have shrunk at unprecedented rates. But other habitats—coastal and freshwater wetlands and coral reefs—are also suffering from serious degradation and loss. Studies conducted in mid-1980s have shown that 65 per cent of original wildlife habitat in tropical Africa and 68 per cent in tropical South and East Asian countries have been converted to other uses.

Atmospheric Changes. Indiscriminate industrialization, urbanization and environmental pollution are bringing about certain atmospheric changes which are likely to cause uncertain and irreversible hazards to future generations. Though complete knowledge regarding these hazards does not exist, the scientists have already drawn attention to two hazards—greenhouse warming and ozone depletion.

1. Greenhouse Effect. The processes of industrialisation and urbanization have led to the emission of greenhouse gases into the atmosphere leading to rise in global temperature. The earth's temperature is driven by solar radiation. In the long-term, the energy absorbed from the sun must be balanced by outgoing radiation from the earth and the atmosphere. Part of this outgoing energy is absorbed and re-emitted by radiative atmospheric gases ("greenhouse gases"), thereby reducing net emission of energy to space. To maintain the global energy balances, both the atmosphere and the surface will warm until the outgoing energy equals the incoming energy. This is the 'greenhouse effect'.⁷ The main natural greenhouse gases (CHG) are water vapour,

carbon dioxide, methane, nitrous oxide, and ozone. There are also purely man-made greenhouse gases, including many ozone-depleting substances such as CFCs. Although the likely effects of CHG concentrations in future are not yet known, the scientists expect 'heat trapping' resulting in 'global warming'. This could, in turn, result in drier soils in mid continental areas and substantial rise in sea levels. Tropical storms could also become more frequent. According to Ramprasad Sengupta, "The economic effect of global warming is quite difficult to estimate in view of the vast uncertainties regarding the spatial distribution of the climatic variation. However, agriculture, coastal activities, aquaculture and forestry sectors would have some direct effect due to the links of these economic activities with the climate and ecosystem's functioning. The rise in sea level would also involve substantive economic loss due to submergence and destruction of life, land and other natural and man made assets."⁸

2. Ozone Depletion. Ozone depletion is mainly the result of increasing atmospheric concentrations of chlorine originating from CFCs. Although the industrial man-made chemicals CFCs are useful compounds they do not dissolve in rain nor react with other gases in the atmosphere. The CFC gas molecules therefore rise very high up in the atmosphere to cause substantive damage to deplete ozone layer. An important consequence of ozone depletion is an increase in solar ultraviolet (UV) radiation received at the earth's surface. Ozone depletion could result in an increase in skin cancers of about 25 per cent (300,000 additional cases a year) within several decades and an increase in eye damage from cataracts of about 7 per cent (1.7 million cases a year). Increased UV radiation could also have adverse impact on plant productivity, forestry and natural ecosystems, including disruption of marine or aquatic food chain. *Thus, the CFCs indiscriminately used by certain industries are a serious threat to the life support system on earth.*

■■■■ BUSINESS AND NATURAL ENVIRONMENT IN INDIA ■■■■

Business has a two way relationship with natural environment. On the one hand, it needs natural resources to set up certain industries and on the other, it causes damage to environment in the process of production. Among modern businessmen there are not many who attribute a dominant role to natural resources. Today natural resources may be of little consequence for industrial development but this was not so in the nineteenth century. Thus, the role of natural resources in an economy will depend upon the specific conditions prevailing in the economy and also on the level of development.

Environmental Damages

Industries are often seen as a destroyer of environment. True, *industries bring economic prosperity, but at the same time they impose heavy social costs on the society.* Modern businessmen oblivious of people's perception about industry's role in environmental damage usually dismiss all protest movements as political stunts. But the position is not so simple. Now the business people also know that in the present day world, industry and transport are the major polluters and the business cannot get away easily shirking its responsibility. Extensive research by the academics and environmentalists has provided abundant information which easily fixes responsibility on business for most of the environmental damage that has occurred over the past one hundred years.

In India, precise quantification of environmental damage has not been done; at the same there is a lot of incontrovertible evidence that suggests that industrial units in different parts of the country have done irreparable harm to environment. In the following pages we shall refer to some most obvious cases.

In India, virtually all industrial belts particularly the chemical and petrochemical ones are a living ecological disaster. Chemical industries have been set up around the road from Ahmedabad to Mumbai. These industries have already polluted all the rivers which pass through this belt. A lengthy quote from Nityanand Jayaraman's study reproduced in Box 5.1 vividly shows the amount of damage industrial units have caused to the environment.

At present the problem is colossal in India. Vinish Kathuria, Visiting Researcher, Environmental Economics Unit, University of Gotelorg, Sweden has provided estimates of illegal, unauthorised and non-conforming industrial units in eight cities of India. Today all the way from Kolkata in the East to Jetpur in the West, Amritsar in the North to Ambur in the South the polluting industrial units operate in residential areas making India's urban environment one of the most dirty in the world.

Hitherto the business units in their attempts to maximise private gains have been indifferent to environmental degradation caused by their myopic vision. These business units do not realise that good environment makes sound business sense. If the industrial units continue dumping untreated effluents in rivers, lakes and canals and pollute the surrounding area, it will someday surely lead to a public uproar and a demand

to shut down the factories. The High Courts and the Supreme Court may in such situations intervene in a decisive manner against the erring business units. Sunita Narain, Director, Science and Environment, a Delhi based NGO says, "Gone are the days when companies could say that they don't give a damn about the environment. Everybody today at the least pays lip service to going green."⁹ It seems that most of the companies are not serious about their responsibility towards environment. But Sunita Narain is hopeful that they will mend their approach. Says Sunita Narain, "Perhaps financial incentives and low-cost pollution control technologies will help them become environmentally responsible."¹⁰

BOX 5.1. Industrial Pollution

India's toxic corridor

The road from Ahmedabad to Mumbai runs through what the rulers of Gujarat proudly refer as the "Golden Corridor" of Chemical Industries. Others know it as the armpit of industrial civilization in India, as the cancer corridor or the toxic corridor.

At least 2,000 industries compete for resources in this narrow belt of land hemmed in by gently sloping hills on the one side and the Gulf of Khambat on the other. Virtually every river—Sabarmati, Mini, Tapi, Narmada, Par, Kolak, Damanganga—that enters the corridor leaves carrying lethal loads of industrial poisons. A July 2000 World Bank sponsored State Environmental Action plan report lists sections of all these rivers as "critically polluted". That means the rivers are close to losing all capacity to sustain life.

The same report also indicates that the groundwater in at least, 74 out of 184 talukas in Gujarat is poisonous because of industrial pollution. Another estimate cited by a high powered committee of the Supreme Court says an alarming 70 per cent of Gujarat's water resource, is now contaminated by industrial pollution.

Evidence of pollutants

The carrying capacity of the land in this part of the country is visibly strained and that is telling on the lives of the people living in these areas.

- Villagers in Haria, Umarsadi, Sarigam, Kolak, Ankleshwar and

Sarangpur complain that groundwater containing industrial poisons is affecting their health and causing falling agricultural yields.

- Environmental surveys conducted by Greenpeace confirm the widespread presence of industrial poisons in the environment, including dangerous levels of heavy metal and persistent organic pollutants.
- Emerging evidence indicates that the pollutants have entered the human food chain through vegetable and fish from the region.
- Reports from villages surrounding Vapi, Atul and Ankleshwar claim that infertility is on the rise, that young women suffer from frequent miscarriages; and that respiratory and skin diseases are common- place.
- In Kolak village, which is sandwiched between the Damanganga and Kolak, both of which are polluted by the Vapi industries, villagers report more than 70 cancer fatalities in 10 years.
- The Mitna Machhi, an adivasi community that sustained itself by gathering fish and mud-skippers from muddy river banks, is now supportless because mudskippers are locally extinct owing to pollution.

Source: Nityanand Jayaraman, "Industrial Pollution: Pollute first, Plan later", *The Hindu Survey of the Environment 2001* (Chennai, 2001), pp. 53-4.

Environmental Accountability

Ravi Uppal, Vice chairman and Managing Director, ABB India, has recently argued that there is a need for environmental accountability from the corporate world. He states, "corporates must realise their responsibility to all their stakeholders — going beyond investors and returns. There is wider acknowledgment today that caring for environmental issues also makes direct 'business sense' besides playing a significant role in shaping reputations and building brand equity."¹¹ However, a 1995 survey conducted by Central Pollution Control Board recalled the utter callousness of industry in protecting environment. The survey "identified 22 sites in 16 States as critical for ground water pollution, the primary cause being industrial effluents"¹² *Negative attitude of business towards the victims of environmental damage can be best understood from the approach of the Union Carbide after the Bhopal gas leak. More than twenty years after the Union Carbide leak tragedy, people around the factory site live with the polluting after effects.*

■■■■ ENVIRONMENTAL POLICY ■■■■

Regulatory instruments are common in current environmental policy in both developed and underdeveloped countries. However, with this type of instruments alone demands for a broadening and intensification of environmental policy cannot be met. Regulatory instruments also known as command and control (CAC) type instruments are not considered efficient because they lead to non-optimal allocation of environmental abatement measures across sources. They involve large information, monitoring and enforcement costs. A second drawback of the common CAC instruments of environmental policy is their increasing burden on the administrator.

Economists have generally advocated economic instruments. However search for new instruments of environmental policy continues and, as a result, new policy instruments are being added to the instrument set.

Criteria to Assess Policy Instruments

The more important issue now is to decide which instruments are appropriate for particular purpose and in particular circumstances. But how to judge the performance of policy instruments? In a recent publication, Organisation for Economic Cooperation and Development (OECD) has identified the following criteria to assess the performance of environmental policy instruments:¹³

1. Environmental effectiveness
2. Economic efficiency
3. Equity
4. Administrative feasibility and costs
5. Acceptability.

1. Environmental effectiveness. Since all environmental policy instruments attempt to achieve certain environmental goals, they are to be best judged on the basis of their environmental effectiveness. An instrument ineffective in realizing environmental goals or targets is considered to be badly performing irrespective of its performance with respect to some other criteria. Effectiveness of environmental policy instruments depends usually on the response of the polluters. If the polluting agents can be made to comply with the standards set by the environmental agency, the environmental policy instrument should be considered as effective. If, on the other hand, goals or targets remain unrealised because polluters can successfully evade some policy instruments, then it is surely an ineffective policy measure.

2. Economic efficiency. Environmental policy instruments should be able to influence producers' decisions such that they become economically efficient. Individual producers have a tendency to ignore external cost in their decision making. But what happens in the process is that external cost falls on the neighbours or society at large. If an environmental policy instrument corrects this situation by internalizing the social cost of pollution, the producers' decision with respect to output will become economically efficient.

3. Equity. Environmental policy instruments invariably affect the distribution of income and wealth. In the absence of any environmental policy instruments, polluters will get away without paying for the pollution they do. Once environmental policy instruments are applied, whatever be their forms, there is some economic cost that the polluters must bear.

4. Administrative feasibility and costs. An environmental policy instrument to be effective should be administratively feasible at a reasonable cost. It is not enough from the point of view of efficiency that a particular instrument is such that the cost of adjustment and implementation gets minimised. What is also necessary is that the total costs of adjustment, enforcement, implementation and administration are minimised. Thus, administrative feasibility and enforcement costs are important considerations in the choice of instruments.

5. Acceptability. An environmental policy instrument should be acceptable to the concerned group of people. If a particular instrument is opposed by the target groups because they consider it unfair or too complex, its enforcement costs would increase considerably. This may adversely affect the overall efficiency and effectiveness of the instrument concerned. According to the OECD, the acceptability of environmental policy instruments can be increased by undertaking the following measures:

- (i) By providing adequate and timely information about the specific features of the instruments to target groups;
- (ii) By having consultation with the target groups in respect of execution of the instrument; and
- (iii) By progressive implementation to give sufficient time to the polluters to adjust to the new situation.

Since the polluter pays principle (PPP) is acceptable internationally, the acceptability of an instrument increases if it is in conformity with this principle.

Polluter pays principle suggests that the polluter should bear the cost of pollution abatement. The polluter is generally the producer who in order to minimise his cost adopts highly pollution prone technology. There is no justification to subsidise such an erring producer to abate pollution. Sometimes consumers are equally guilty. In order to get cheaper goods, they do not mind if the producers have employed such technologies to produce these goods which are highly polluting. In such cases consumers should also be made to pay for pollution abatement. This objective can be realised by levying a tax on emission of pollutants. The producers who generally bear the impact of such a tax will shift a part of the burden to consumers.

Though theoretically PPP is a non-subsidy principle, in practice financial assistance for pollution control measures has not been completely ruled out. Usually in two cases subsidisation is not considered to be in

conflict with the PPP. *First*, subsidy for R & D in clean technology is seen conforming to the PPP. *Second*, in cases where cost of pollution reduction for industry is disproportionately high, financial assistance is seen as PPP compatible.

O.J. Kuik et.al. argue that “*environmental policy instruments may affect international competitiveness and trade, and policy areas, such as economic policy, income policy and sectoral policies. In evaluating the performance of policy instruments, their impacts on these policy areas should also be considered.*”¹⁴ Economic policy covers so many aspects but in the environmental context issues that should receive particular attention are whether policy instruments increase or decrease market efficiency and flexibility, and how these instruments will impact government budget, particularly the level of public expenditure and international competitiveness.

Environmental Policy Instruments

There are following three types of environmental policy instruments :

- Communicative instruments
- Economic instruments
- Regulative instruments

Of these no single type of instrument is superior in all circumstances. In most situations when different types of instruments complement each other, they are more effective than what they do when adopted alone. Nevertheless, it is always possible to suggest as to which instruments will be most effective in particular circumstances.

Communicative Instruments. Communicative instruments, such as information on cleaner alternatives, persuasion, voluntary environmental management at the firm level and so forth are effective only when their adoption is relatively less expensive or if firms find them economically beneficial. The firms can hope to benefit by preventing pollution at their level in two ways. *First*, if they build up environment friendly image, it may benefit them in the consumer market. *Second*, their pollution prevention cost may be lower if they voluntarily decide to abate pollution. However, if there are economic disadvantages in voluntary pollution abatement, then firms will not modify their behaviour. In other words, effectiveness of communicative instruments is doubtful when changing pollution prone behaviour is not in self-interest. P. Bohan and C.S. Russell have identified three situations where communicative instruments can be effectively used. *First*, if for political reasons use of other instruments is not possible. In the absence of support for legal action, information and moral suasion can be used to create conditions which may be conducive to adopting more stringent policies at a later stage. *Second*, if monitoring required for regulatory schemes or economic instruments are prohibitively expensive or technically infeasible. *Third*, in cases where immediate action is required while economic instruments and regulatory schemes are either too slow or too cumbersome.¹⁵

Economic Instruments. Economic instruments influence the behaviour of polluters by offering economic incentives to renounce their pollution prone behaviour. The system of fees/taxes per unit of pollution discharged, subsidy for pollution abatement technology and selling of pollution rights are the most common economic instruments adopted for pollution abatement. Among other instruments, deposit-refund system and liability legislation deserve particular attention.

The system of pollution fees or charges implies levying of a pollution charge per unit of pollution discharged. Pollution charges offer both static and dynamic efficiency. They offer static efficiency as they allow firms to find most cost effective devices to abate pollution. A firm confronted with a pollution charge can also decide how much pollution it should abate. From the firm's point of view optimum level of pollution abatement is that where the marginal cost of pollution abatement is equal to fees or charges per unit of pollution. Pollution charges carry a dynamic effect as they offer a continuous incentive to the polluting firm to develop and adopt the more cost effective devices. However, the impact of pollution charges on innovation of pollution abatement technology is not clearly known.

Tradeable permits or marketable 'rights' as they are usually known, offer flexibility to the polluter to decide how much pollution he would do. If the polluter does not want to pollute to the extent his permit allows, he can sell the surplus permit to another firm which would like to pollute more than allowed by its own permit. The price of pollution permits/rights is freely determined in the market by the forces of demand and supply. Any individual firm while selling its surplus permits will compare the return from this transaction with the cost of pollution abatement and it will choose that alternative which it finds is beneficial to itself. The system of tradeable pollution permits has an advantage over the system of levying pollution charges, as the former allows the administrator to know in advance as to how much pollution reduction would materialise. This usually is

not possible in respect of pollution charges. However, a major problem with the system of tradeable pollution permits or rights is that the market for these instruments is usually thin.

Subsidies for pollution abatement may be effective in individual cases but to industry as a whole they do not give right price signals. W.J. Baumol and W.E. Oates refer to their perverse environmental effects. In their opinion, since subsidies decrease average costs, they may thus lead to a higher volume of output causing greater pollution. Moreover, subsidies cause burden on common tax payers who feel penalised for the fault of the polluters. Subsidies are thus violative of the polluters pays principle (PPP) in both, the letter and spirit of the principle.

Deposit refund systems require that a potential polluter is taxed in advance and the tax is refunded if a proof is provided that the specified environmental damage has not occurred. Deposit refund systems are common instruments to prevent littering and uncontrolled disposal of hazardous materials. This instrument is preferred in cases where it is difficult to monitor discharges of pollution. In this system, since the burden of proof is on the potential polluter, the governments usually find it attractive. However, the government must ensure that providing proof is both inexpensive and technically feasible.

Liability legislation requires the polluter to compensate the environmental damage he caused. It thus provides a financial incentive to prevent pollution. However, effectiveness of this instrument is doubtful because in most cases it is not possible to fix up responsibility for environmental damage caused by specific discharge of pollutants. Sometimes environmental damage can be assessed but it is not possible to identify the specific source of pollutants. However, when liability for causing environmental damage can be determined, potential polluters become cautious and take measures to abate pollution. Thus liability legislation may create incentives for efficient levels of pollution.

Regulatory Instruments. *Regulatory instruments (Command and Control Policies) are the most common environment policy instruments world over though economists are highly critical of them.*

In their choice of policies, regulators are required to take three related decisions. *First*, whether regulation is likely to be more effective than on relying economic incentives. *Second*, should the environmental policies target the damaging activities directly or indirectly? *Third*, should policies address the quantity or the price of pollution, or resource use or should they specify pollution abatement technologies.¹⁶

Since policies differ substantially in effectiveness and costs, and developing countries always feel constrained about resources, the choice of policy measures must invariably be guided by cost-effectiveness of the instrument. However, cost effective policy depends on the environmental problem to be tackled as well as capabilities of regulatory authorities.

Regulatory instruments which are used extensively in both developed and underdeveloped countries, are best suited to cases where only a few public enterprises and noncompetitive private firms are involved. This is particularly true when the technologies for pollution control are uniform and can be easily specified. Another area in which regulation may be considered appropriate is land use. A government may use zoning regulations to protect human habitats from air pollution and water contamination caused by industrial units.

The Scientific Council for Government Policy (WRR) in Netherlands has recommended direct regulation for economic activities with serious health hazard, such as use of specific types of asbestos, for situations which are to be solved in extremely short period of time and in cases where non-attainment of environmental targets involves large risks as in the case of storage of nuclear waste.¹⁷

We have described above the various environmental policy instruments which are currently in use across the world. We may sum up the discussion as follows:

1. Communicative instruments:

information, education, moral suasion;
covenants, voluntary agreements;

2. Economic instruments:

pollution fees/charges/tax-per unit of emission;
tradeable permits or marketable pollution rights;
subsidies for R & D and public provisions;
deposit-refund systems, liability legislation.

3. Regulatory instruments:

emission standards: specifying allowable emission per time unit;
design standards: specify pollution control technology or process characteristics.

Not every one of these instruments is equally effective in all situations. Suitability of an environmental policy instrument depends very much on the specific circumstances called situation-characteristics in which it is to be adopted. A.L. Bovenberg *et al.* distinguish between three important classes of situation-characteristics:¹⁸

1. Character of pollution
2. Character of polluting processes
3. Character of the target group and the market

Enforcement Agency — Private Versus Public

So far in most countries, environmental regulation had been done entirely by the State. Private agencies were suspect and were not relied upon for controlling behaviour of polluters who are mostly private producers. Now with the ascendancy of neo-liberal ideology doubts are expressed about the capabilities of the public agencies. Lately, economists and research agencies have emphasised the complementarity and substitutability of private and public action in the field of environmental regulation. However, no one seems to be suggesting that private agencies should be involved directly in environmental regulation. Indirectly private enforcement of environmental regulation may be productive. The pressure on public agencies to enforce environmental regulation can be reduced if the corporations are legally required to regularly prepare and publish environmental accounts as they are obliged to prepare and publish financial accounts.

The Dutch Scientific Council of Government Policy (WRR 1992) has stated that the government has three options to influence the behaviour of polluters. These are communicate instruments, economic instruments and direct regulation or command and control (CAC) instruments. WRR calls these instruments *persuasion*, *transaction* and *coercion*. Box 5.2 presents government's options with respect to environmental management.

BOX 5.2. Governments' Options with Respect to Environmental Management

Persuasion	Environmental accounting Environmental labelling Mass information campaigns Subsidies to environmental organisations
Transaction	Charges/fees Subsidies to polluters Tradeable permits Liability law Deposit refund systems
Coercion	Public law Direct regulation

■■■■ CHOICE OF ENVIRONMENTAL POLICY INSTRUMENTS IN PRACTICE ■■■■

Though there is a strong case for adoption of economic instruments for environmental protection, in practice world over instruments of direct regulation have been preferred. This phenomenon requires careful analysis of the specific interests of the various institutions/groups concerned with environmental policy making. Among the various stakeholders, the approach and behaviour pattern of the following deserves particular attention:

1. Policy makers and administrators
2. Polluting firms and individuals
3. Environmental pressure groups
4. Trade unions and consumer organisations

1. The policy makers and administrators. Public authorities involved in environmental matters play a dual role of policy makers and administrators. Usually both policy makers and administrators wish to realise quick results in environmental improvement and for this purpose they think that public law and direct regulation are the most appropriate instruments. However, in practice, direct regulatory instruments are not easy to enforce. In contrast, economic instruments are likely to show better results because polluters will have incentive

to modify their behaviour in their own interest. Moreover, public authorities can hope to raise substantial revenue if economic instruments are operated effectively.

Notwithstanding merits of economic instruments, public authorities — both policy makers and administrators — prefer direct regulation to economic instruments because they wish to retain their control over the polluters. Moreover, direct regulation requires elaborate administrative machinery and the authorities develop vested interests in not only retaining it but also continuously expanding it. Finally, administrators are familiar with regulatory system while fixed measures and procedures are not to their liking because they usually lack the expertise required for the latter's implementation.

2. Polluting firms and individuals. Polluters in general whether they are polluting business firms or individuals, prefer subsidy for pollution reduction. But since this subsidy violates the polluter pays principle (PPP) it is no longer allowed in a large number of countries. In several developed countries now industry has also reconciled itself to the fact that the government would not grant subsidy for pollution reduction. Probably, the 'second best' instrument from the point of view of the polluters is the voluntary agreement to reduce pollution, provided it is not possible for outsider to circumvent the provisions of the agreement and thus have an advantage over those who are party to the agreement.

Between direct regulation and economic instruments, polluters' general preference is for the former. Both industrial organisations and individuals are usually reluctant to pay for pollution reduction. Therefore, their obvious choice is for direct regulation, the financial burden of which falls on the government exchequer. Although polluting industrial units can shift part of the pollution tax to consumers they find that economic cost of direct regulation is usually lower than the part of the pollution tax that is not shifted. J.M. Buchanan and G. Tullock have shown that polluters usually find that direct controls are less costly to them than the pollution tax alternative.¹⁹

Second, when standards are formulated for polluting industrial units, the 'new consumers' are required to meet more stringent requirements than the established firms. Thus the latter enjoy a kind of protection from competition of the newcomers. In contrast, economic instruments are less vulnerable for serving protectionist interests and thus do not allow the kind of rent seeking which is there in direct regulation.

The third reason for the polluting firms' preference for direct regulation is that they often manage to bargain on standards for pollution control while pollution charges and taxes are not susceptible to negotiations. In many countries while tax ratios have to be laid down in law, determination of standards is left to the discretion of the administrator whom individual industrial units as well as industry as a whole influence in more than one way. From the practical experience, it is possible to say that polluters generally succeed in getting lenient standards. Polluters sometimes do get some concessions in pollution tax by exercising pressure on the government but influencing the government is far more difficult than influencing the administrator. Thus polluting industrial units' choice for direct regulation *vis-a-vis* economic instruments, particularly pollution tax/charge is understandable.

3. Environmental pressure groups. Environmental pressure groups now operate in both developed and developing countries. These groups presumably act on behalf of victims of pollution. Between direct regulation and economic instruments their preference is for the direct regulation. Since they think that value of environment cannot be measured in money terms they dislike the approach of selling the right to pollute environment to the highest bidder. In recent years, some environmental groups have come to realise that pollution charges and taxes can be as much effective instruments of pollution control as direct regulation. However, environmentalists still do not consider economic instruments as an alternative to direct regulation. Now direct regulation and pollution charges and taxes are seen as complementary. But environmental groups insist that the industrial units must pay for the pollution they do. Therefore pollution charges should not be shiftable. However, the polluting firms always find that they can shift a part of the pollution charge to users of the product by raising the price.

4. Trade unions and consumer organisations. The citizens also try to influence environmental policy decisions through organisations which represent their interests. In both developed and developing countries trade unions and consumer organisations are best organised to represent citizens in environmental matters. These organisations are generally opposed to imposition of pollution or emission charges or taxes because they know that eventually the industrial units shift them to consumers by raising the prices of their products. They favour direct regulation with the presumption that the cost of environmental management will be widely distributed and their members will be gainer in the sense that they will get clean environment at low cost. Lately in some countries with the new awareness about clean environment consumer organisations seem to be agreeable

to making sacrifices and moderate their demands for material goods in exchange for effective environmental policy measures. Still consumers' preference for direct regulation remains. Between emission charges and product charges their choice is usually for the former because they think that the former initially hit the producers only.

In contrast, product charges are believed to be shiftable completely to the consumers of the product. Like consumer organisations, trade unions also dislike economic instruments because their common perception is that workers are invariably made to bear the burden of charges and taxes as the employers have a tendency to lower down the wages and raise the prices of products.

■■■■ ENVIRONMENTAL CONCERN IN DEVELOPING COUNTRIES ■■■■

Environmental concern in developing countries like India rests not as much on health considerations as on survival and livelihood grounds. No doubt health considerations are important for the people in developing countries but livelihood issues which are directly connected with economic growth are far more important for the vast majority in these countries. There is awareness in these countries that economic growth often leads to environment degradation but, for the vast majority, benefits of economic growth outweigh its adverse environmental impact. Mrs. Indira Gandhi had emphasised the primacy of economic growth when in her address at the United Nations Conference on Human Environment at Stockholm in June 1972, she remarked, "the environment cannot be improved in conditions of poverty. Nor can poverty be eradicated without the use of science and technology."²⁰

Mrs. Gandhi nonetheless took several constitutional and legislative measures to improve environment. The need for environmental protection was incorporated in the Constitution by the Constitution (42nd Amendment) Act of 1976. Article 48 A was added to the Directive Principles of State Policy in 1976 which states, "*The State shall endeavour to protect and improve the environment.*"

Legislative Action in India

1972 is a landmark in the history of legislative action in India. In the wake of the Stockholm Conference, the National Committee on Environmental Planning and Coordination (NCEPC) was set up in 1972. The NCEPC was entrusted with the responsibility of reviewing environmental policies and programmes. Its initiatives resulted in a beginning of new legislative activity and institution building for environmental regulation. The Water (Prevention and Control of Pollution) Act was enacted in 1974. This was the first serious attempt to curb water pollution as against several piecemeal and sporadic attempts in the past. Under the new law, Boards for Prevention and Control of Pollution of Water were established both at the Central and State levels. The Boards had the legal power to initiate legal action against all those who violated the law and indulged in water pollution. For meeting the expenses of the Boards, the Water Cess Act was enacted in 1977 which required industries to pay a cess on their water consumption.

A separate Act — the Air (Prevention and Control of Pollution) Act was enacted in 1981 to take steps to control air pollution. Following an integrated approach to pollution control, the government authorised the Water Pollution Control Boards to deal with air pollution as well. The approach of the Boards was judicial and the legal actions initiated by them were time consuming. Thus, usually polluters got away with minor penalties which were no deterrent.

The Bhopal Gas Tragedy of December 3, 1984 involving death of over 3,500 people and injuring another 2 lakh people led to a further legislative activity and tightening up of the implementation of environmental laws. The Environment (Protection) Act was enacted in 1986. It empowered the government to take whatever measures it deemed fit to prevent, abate and control pollution. O.J. Kuik *et. al.* consider this Act as a definite improvement over earlier legislative actions. They remark, "unlike the earlier Acts, the scope of Environment (Protection) Act is broad, covering water, air, land and the interrelationships that exist among water, air, land and human beings and other living creatures."²¹

The Bhopal Gas Tragedy proved to be a warning to the government that industrial corporates would continue to endanger lives of thousands of people by mishandling of hazardous substances if the former did not take effective legislative measures to compel the latter to provide for adequate safety measures in the handling of hazardous chemicals, gases and wastes. The important legislations thus enacted are the Hazardous Waste (Management and Handling) Rules 1989; the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 and the Public Liability Insurance Act, 1991. The last legislation is to provide prompt relief to victims of accidents occurring while handling hazardous wastes or chemicals.

Over the past fifteen years India has been actively participating in the global efforts to prevent further environmental disruption in the form of growing pollution. India has signed the Convention on Biodiversity and the U.N. Framework on climate change in 1992. India is also a signatory to the Montreal Protocol on Ozone Layer Protection along with its London amendment. At the implementation level, India has started the process of phasing out ozone depleting goods and other substances.

BOX 5.3. Recent Environmental Regulations in India

- 1974 : The Water (Prevention and Control of Pollution) Act
- 1981 : The Air (Prevention and Control of Pollution) Act
- 1986 : The Environment (Protection) Act
- 1989 : The Hazardous Wastes (Management and Handling) Rules
- 1991 : The Public Liability Insurance Act
- 1995 : The National Environment Tribunal Act
- 1998 : The Bio-Medical Wastes (Management and Handling) Act
- 1999 : Regulation of Recycling of Waste Oil and Non-Ferrous Scrap
- 2000 : Ozone Depleting Substances (Regulation and Control) Rules
- 2001 : Batteries (Management and Handling) Rules

■■■■ THE GLOBAL CONCERNS ■■■■

In this last section, we propose to discuss some major issues relating to global environment that have attracted the increasing attention of economists, environmentalists, industrialists and the governments. These concerns stem from the fear regarding the 'global sustainability' of economic development and business activity.

The Global Environmental Threat: Greenhouse Gases and Ozone Depletion

The rapid increase in production of pollutants, particularly by the industrial units had led to dramatic increase in the levels of concentration of a number of greenhouse and ozone depleting gases. The inevitable result has been global warming and damage to the ozone layer. The burning of fossil fuels by automobiles and industry are the major sources of greenhouse gases. Other sources include deforestation, animal husbandry, decomposition of waste, and coal mining. A number of gases, including CFCs, carbon dioxide, methane, sulphur dioxide, and nitrous oxides, contribute significantly to the stock of greenhouse gases. However, carbon dioxide has the biggest impact due to its relatively long lifetime in the atmosphere and the massive quantities produced globally. In this context, the main culprits are the industrialised countries of the West. For example, *with just 15 per cent of the world population, rich countries account for 45 per cent of carbon dioxide emission.* Sub-Saharan Africa also accounts for around 11 per cent of the world population, but represents 2 per cent of global emissions. Low income countries as a group account for one-third of the world's population, but for just 7 per cent of the emissions.²² In fact, *the level of per capita emissions of carbon dioxide in USA is 19 times higher than the average African's, and 23 times higher than the average Indian's.*²³

Since 1950, the US has contributed 186.1 billion tonnes of carbon dioxide, EU 127.8 billion tonnes, Russia 68.4 billion tonnes and China 57.6 billion tonnes. Over this period a small country like Canada contribute as much carbon dioxide as India. In 1950, the global carbon dioxide level of the atmosphere was roughly 280 parts per million (ppm), whereas by the mid-1990s it had increased to approximately 360 ppm. Concentration of methane has increased from 0.7 ppm four centuries ago to 1.7 ppm in 1988 largely due to the industrial activity in the west.²⁴

Global Agenda

Recognising that visionless industrialisation and fossil fuel era had unleashed atmosphere and climate deestablishing forces, delegates from fifty countries met in May 1988 to initiate steps to control this disastrous happening. This was the first International Conference on the changing atmosphere.

In June 1992, at the Earth Summit in Rio, Brazil, heads of State from 132 countries approved the Framework Convention on Climatic Change. The Convention was signed by more than 160 countries. It thus provided a negotiating mechanism to arrive at an agreement among all nations as how to respond to growing climate threat. In 1994, the Inter-governmental Panel on Climate Change in its report noted that the emissions from burning of coal and oil are trapping more of the sun's heat than is normal. These serious changes in atmosphere were expected to inevitably lead to extreme high temperatures, floods and droughts in some regions.

Kyoto Protocol. In December 1997, the Climate Change Convention was held in Kyoto, Japan, to decide the targets and time-schedules for reducing greenhouse gas emissions. The Kyoto Protocol provides a multilateral framework that sets limits on greenhouse emissions. Negotiated under the auspices of the UNFCCC, it took 5 years to reach an agreement – and another 8 years before that agreement was ratified by enough countries to become operational.²⁵ USA and Australia did not ratify the treaty.

The headline target for greenhouse gas emissions cuts was 5 per cent from 1990 levels. The reductions are to be achieved by 2008–2012. *Thus 2012 is the year of the expiry of current commitment under the Kyoto Protocol.* Measured in terms of aggregate global emissions the Kyoto protocol did not set particularly ambitious targets. Moreover, quantitative ceilings were not applied to developing countries. The decisions of Australia and the United States not to ratify the Protocol further limited the size of the intended cuts. The implications of these exceptions can be illustrated with reference to energy – related carbon dioxide emissions. From the 1990 base year the commitment made under the Kyoto Protocol translates into a 2.5 per cent reduction of energy – related carbon dioxide emissions in real terms by 2010/2012 target date.

As pointed out by Human Development Report 2007/2008, *delivery against the targets has been disappointing so far.* In 2004, overall greenhouse emissions for Annex I countries were 3 per cent below 1990 levels. However, the headline figure masks two major problems:²⁶

First, since 1991 overall emissions have been on a rising trend, raising questions about whether the overall target will be achieved.

Second, there are large variations in country performance. Much of the overall decline can be traced to deep reductions in emission in the Russian Federation and other transition economies – in some cases in excess of 30 per cent. According to *HDR*, this outcome owes less to energy policy than to the effects of deep economic recession in the 1990s. Emissions are now rising with economic recovery. As a group, non-transition Annex I parties – broadly the OECD — have increased emissions by 11 per cent from 1990 to 2004. In fact, most 68 countries are off track.

HDR points out three important lessons from country-experiences under the Kyoto Protocol.²⁷

- *The first lesson is that the level of ambition matters.* Targets adopted under the first commitment period were modest, averaging around 5 per cent for developed countries.
- *The second lesson is that binding targets matter.* Most countries are off track for delivering on their Kyoto commitments.
- *The third lesson is that the multilateral framework has to cover all major emitting nations:* Under the current Protocol two major developed countries – Australia and the United States – signed the agreement but did not ratify it creating an exemption for the targets. There are also no quantitative targets for developing countries.

Bali Summit. A 15 day UN climate change conference was held at Bali, Indonesia, in December 2007 under the auspices of the UNFCCC (United Nations Framework Convention on Climate Change) which was attended by more 10,000 people from delegations representing over 190 countries, observer NGOs and global media. The aims of the Bali conference were three fold : (1) launch negotiations on a climate – change deal for the post – 2012 period when the Kyoto Protocol expires; (2) set the agenda for these negotiations; and (3) reach agreement on when these negotiations will have to be concluded. The countries agreed to launch negotiations on a new pact to fight global warming after a reversal by the United States (which opposed the adoption of the agreement till the very last day) allowed a historic break though.

The Bali meeting approved a “road map” for two years of talks to adopt a new treaty to succeed the Kyoto Protocol beyond 2009, widening it to the USA and developing nations such as China and India.

BOX 5.4. The Road Map Accepted at Bali

- The roadmap sets the framework for negotiations for a long term agreement on emission cuts.
- The negotiations will wrap up in Copenhagen by 2009-end. Implementation by end of 2012.
- Developing countries will be urged to take “Measurable and verifiable” actions for tackling emissions.

In the face of bitter US opposition, the Bali talks failed to set fix emission reduction goals. Instead, Canada and the 36 other rich countries that ratified the Kyoto treaty will meet again to set tougher targets for themselves, hopefully setting emission cuts at 25–40 per cent below 1990 levels by 2020. The remaining 150 countries like India, China and the US have, however, not pledged to specific emission cuts.

The Bali road map is still being labelled a success because it has succeeded in making a signatory out of the US, which had refused to ratify the Kyoto Protocol.

Bali Roadmap and India. The head of the Indian delegation at the Bali Conference described the Bali roadmap as a 'historical breakthrough'. However, *this roadmap places new responsibilities on developing countries like India and China.* This is due to the reason that the roadmap recommends that developing countries declare their national targets to curb emissions and move toward a less carbon intensive economy. Thus, India may have to initiate domestic action on climate change. However, while an 'adaptation fund' has been approved to help developing nations adapt to climate change effects, India will not benefit as it is not on the top of the list of recipients. The corpus is meant more for least developed countries and small island States.

Similarly, while the Bali roadmap approved financial assistance for developing countries protecting their forest, India does not benefit.

Fighting Climate Change : The *HDR* Recommendations

UNDP released its Human Development Report 2007/2008 titled *Fighting Climate Change : Human Solidarity in a Divided World* in November 2007. The main findings of the Report are as under :

1. World's 40 million poor will bear brunt of climate change, although they contribute the least.
2. In South and East Asia, changes in rainfall, temperatures and availability of water will cause great losses in productivity of food staples, thereby thwarting efforts to curb poverty.
3. India, China, Japan, the Russian Federation and USA account for more than half of world's carbon emission.
4. If developing world's people generate greenhouse gases at the same rate as some developed countries, we will need nine planets to survive.
5. People living in banks of Ganga and Nile face biggest risk of all.
6. High growth in China and India leading to emission on par with developed countries.
7. People facing malnutrition would rise by 600 million by 2080.

The main recommendations of the Report are presented in Box 5.5.

BOX 5.5. Main Recommendations on Fighting Climate Change

- Set stabilization target for atmospheric concentrations of carbon dioxide at 450 parts per million.
- Agree to a global sustainable emission pathway aimed at 50 per cent reductions of greenhouse gas emissions by 2050 from 1990 levels.
- By 2050, developed countries should cut their emissions by at least 80 per cent of the emission levels prevailing in 1990, with 20–50 per cent of the cuts effective by 2020.
- The developing countries should accept 20 per cent cuts by 2050 with emissions allowed to peak by 2020.
- Put a price on carbon budget through taxation or cap-and-trade programmes.
- Develop international cooperation to enhance access to modern energy services and reduce dependence on biomass, the primary source of energy for about 2.5 billion people.
- Create a Climate Change Mitigation Facility (CCMF) to mobilise the US \$ 25 – 50 billion needed annually to support low carbon transitions in developing countries.
- Develop international incentives for the conservation and sustainable management of rain forests.
- Extend carbon financing beyond industrial sector mitigation to land use programmes – such as forest conservation and grasslands restoration – that offer benefits for the poor.

Source : UNDP, *Human Development Report, 2007/2008* (New Delhi, 2007), pp. 17–18.

As is clear from Box 5.5, the UNDP has suggested mandatory cuts in emissions by developing countries. However, these countries are not keen on accepting such mandatory cuts as this will involve significant expenditure in clean technology, crimping their ability to spend on developmental projects. In fact, while releasing the Report on November 27, 2007 the Deputy Chairman of the Planning Commission, Montek Singh Ahluwalia called it "*fundamentally misconceived*" and not based on "*equity*". He pointed out that the Report completely ignores the per capita emissions. India's per capita emissions are 20 times lower than that of the US and about 10 times lower than that of the UK. *Ahluwalia's comments underscore India's position : That it will not cut emissions because (i) the problem was created by the west; (ii) India's per capita emissions are still very low, at least five times lower than in developed countries, and (iii) that it's a developing country that cannot afford the impact of emission control.*²⁸

However, environmentalists have argued that the above position is not tenable. Given the fast pace of

increasing 'carbon blanket', India must consider total, rather than per capita, emissions. Also, India's current position would devastate its national and global ecology, and stop it from developing new technologies and energy sources. Thus, Rajesh Gajra argues in favour of a more progressive policy approach from the Government of India – an approach that would agree to reduce emissions while (i) accepting that the developed world gives India access to new clean technologies at reasonable prices; (ii) the cost of these technologies would be paid through subsidised loans from global institutions such as the World Bank; and (iii) India introduces a rigorous policy of encouraging public transportation and technologies such as clean coal, nuclear fusion as well as wind, solar and biomass. Nevertheless, it has to be appreciated that agreeing to reduce carbon emissions could mean a difficult trade-off for India – giving up some economic growth in exchange for discharging its responsibilities to the global community. Moreover, changing energy strategy or reducing our dependence on coal, the main energy source, will impose huge costs.²⁹

■■■■ NOTES ■■■■

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UNIT 2

Basic Framework of Economic Environment of Business

- 6. Economic Systems : Market, Economic Planning and Controls**
- 7. Economic Fluctuations**
- 8. Economic Growth, Development and Business**

"The profit motive, in conjunction with competition among capitalists, is responsible for an instability in the accumulation and distribution of income which led to the catastrophically severe depression. Unlimited competition leads to a large mass of labor with no income, misdirection of individuals. This crippling of individuals is central to the present crisis of capitalism."

— Albert Einstein

ECONOMIC SYSTEMS : MARKET, ECONOMIC PLANNING AND CONTROLS

Capitalism

- Characteristics of the Capitalist System

Socialism

- Salient Features of the Socialist Economic System

Mixed Economy

- Characteristics of a Mixed Economy

The Market Mechanism

- Functions of the Market • Case Against the Market Regulated System

Economic Planning

- Meaning of Economic Planning • Planning by Direction and Planning through the Market • Disenchantment with Planning

Economic Controls

- Meaning of Economic Controls • Need for Controls • Common Physical Controls • Limitations of Physical Controls

Economic system of a country provides its broad economic environment. In a capitalist economy activities of a business firm are by and large market determined whereas in a socialist economy production activities are carried out largely in the public sector. Besides these two types of economies there exists a mixed economy which is essentially a variant of capitalist economy. Mixed economy is characterised by the co-existence of public and private sectors. For explaining that the scope of private business is not the same in these economic systems, we shall attempt to address following issues:

- Characteristics of the capitalist system and how it works.
- Salient features of the socialist economic system and how the system limits the scope of private business.
- Characteristics of the mixed economy and how its working suffers from various problems.

We shall also undertake the discussion of the role and functions of the market, issues concerning economic planning and the need, types and limitations of economic controls. In this context, we shall address the following issues :

- What are the functions of the market and is there a case against the market regulated system?
- What is meant by economic planning and how one distinguishes between planning by direction and planning through the market?
- Why is there disillusionment in developing countries with economic planning and what are the factors responsible for plan failures?
- What is meant by economic controls and what are the most common physical controls to be found in the third world countries?
- What are the limitations of physical controls ? Why are physical controls not considered to be the best available tools of economic management?

■■■■ CAPITALISM ■■■■

Presently a large number of countries of the world notably the USA, Japan, Germany, France, the UK and Italy have the capitalist economic system. This system developed after the breakdown of the feudal system. According to some, capitalism is considered to be based on private enterprise which is in no way controlled by means of State intervention. This and other similar definitions of capitalism cannot be considered to be satisfactory, because it would amount to making no distinction between a capitalist economy and an economic system based on *laissez faire*. From a scientific point of view it is very difficult to argue that an economy based on capitalist relations of production and *laissez faire* system are one and the same. This is because in the modern capitalist economy of today monopolist elements have replaced competitive ones, and moreover, State intervention through monetary and fiscal policies is now a normal practice.

The definition of the capitalist economic system by G.D.H. Cole rests on the relations of production. According to him, *capitalism is that profit-oriented system which is characterized by private ownership of objects of labour, instruments of labour and means of labour. Production is mainly carried out with the help of labour services rendered by the working class in return for wages and the class of capitalists has the right to whatever output is produced within the system.*

Cole's definition of capitalism is scientific. It clearly underlines the fact of the private ownership of the means of production the implication of which is that the capitalist economic system offers ample scope for private business.

Characteristics Of The Capitalist System

The nature of the capitalist system is not the same in the various countries where it is found to prevail. Thus, even though the USA, Spain, England, Sweden, Russia and South Korea all subscribe to capitalism, one can discern some subtle differences in the manner in which their economies operate in practice. For example, Sweden as a welfare State has provided for numerous schemes enhancing social welfare and also has tried to reduce, with the help of an appropriate fiscal policy, disparities in the distribution of income. In the USA before the adoption of neo-liberal policies some measures were undertaken to provide social security to the people. In contrast, the economy of Spain even today functions not very much differently than the 19th century capitalist economy of Europe. Nevertheless, in spite of such differences the economies of these countries remain basically capitalist in nature and are characterised by the following salient features:

1. Private ownership of means of production. One of the most essential features of capitalism is the *private ownership of the means of production* and it is this fact which distinguishes it from socialism. Under the capitalist system anything which helps man in the production process like machinery, tools, land, raw materials, etc., is owned by the capitalist class. The capitalists with the help of the means of production which they own do not themselves undertake material production. Since the majority of the population does not have any access to means of production, it is compelled to sell its labour power to the capitalist in order to earn a livelihood. The capitalists on purchasing the labour power of these individuals use it along with their means of production in the production process which gives them claim to the resulting output.

2. Production for the market. One major difference between the capitalist economy and other economies is that under capitalism business firms produce mainly with the aim of selling the output in the market. Wherever any good is produced for the market it is termed as a commodity and any economy in which production is undertaken with the sole object of exchange, is called a commodity economy.

3. Price mechanism. In a capitalist economy neither an individual nor any institution takes decisions in a planned manner concerning its day-to-day functioning. That is, there is no conscious effort to arrive at some kind of solution to its central problems.

The price system regulates the capitalist economy. In other words, the solution to the central problems (what to produce, how to produce and for whom to produce) is obtained with the help of the price mechanism. The way in which the price mechanism functions and the manner in which the state of equilibrium is reached can be understood with the help of Figure 6.1.

It is clear from the diagram that the preferences of the people with regard to consumption goods and their income which they wish to spend on them will together determine the demand for various goods in the market. The production function or alternatively the quantity and proportion in which labour, capital, land and other factors are used in the productive process determine the supply of products in the market. It is these conditions of demand and supply in the commodity market which determine the prices of all products which enter it. In the various factor markets wage rate, interest rate, rent, etc., are determined in more or less the same manner.

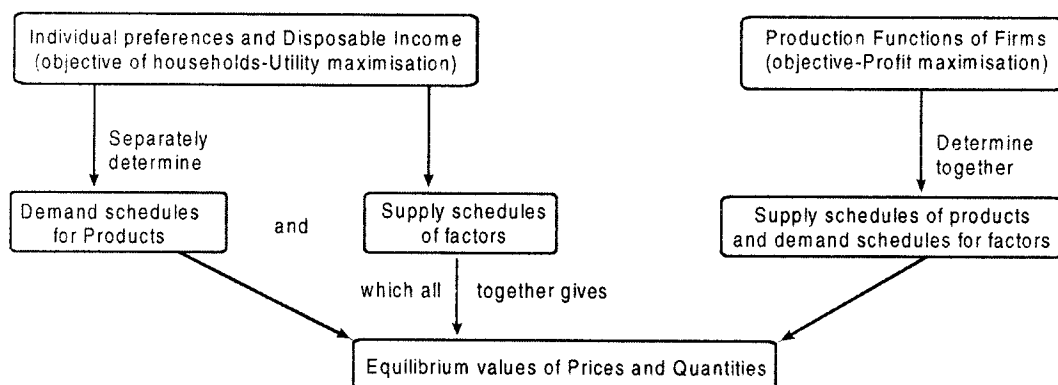


Fig. 6.1: Working of Price Mechanism

It is through the working of this price mechanism that the free enterprise economy takes decisions regarding the three central problems *viz.*, what to produce, how to produce and for whom to produce in favour of maximum social welfare.

Some limitations of the price mechanism in a present day capitalist economy are as follows:

(i) The growth of monopoly firms in the market has put an end to the consumer's sovereignty. J.K. Galbraith asserts that the giant corporations by spending huge amounts of money on advertisement campaigns distort the demand pattern of consumers.¹

(ii) If the economy depends solely on the price mechanism to solve its central problems, then given the income and wealth inequalities there is a possibility that a large number of people die of starvation while a handful possess the good things of life very much in excess of what is required by them.

(iii) Generally the price mechanism due to the individualistic orientation of human behaviour cannot adequately provide for education, medical facilities and other social services. If in any society in addition to the above mentioned services, the level of production of such other services of immense national importance, like transportation, communications, water and electricity, is also to be determined by the price mechanism alone, then it is likely to result in a very short supply of each one of them.

4. Labour power as a commodity. An important feature of the capitalist system is that under it the labour power of man becomes a commodity and can be bought and sold just like any other commodity. In a capitalist economy, majority of the people own only one thing *viz.*, their capacity to work or their labour power. Whatever be the nature of the economy, man has always possessed his labour power. But what distinguishes the capitalist system from the rest in this particular aspect is that capitalism alone allows the labour power to acquire the form of a commodity and thereby to be bought and sold in the market. Labour power just like any other commodity commands a price which is equivalent to the cost of those commodities which are essential for the maintenance of the workers and their family members.

5. Exploitation of labour. Workers are exploited under capitalism. Very often due to the freedom granted to the workers at a formal level, many people are wrongly given to believe that the workers by bargaining in the free market are able to get a fair price in return for their labour power. The truth of the matter is, however, greatly at variance from this view. Not only did Marx shed light on the exploitation of workers in the capitalist system but also Joan Robinson, an eminent British economist, has explained how under imperfect competition in the labour market, business firms determine the wage rate of workers well below the marginal productivity of their labour.

6. Growing wealth of the capitalists. In a capitalist economy the wealth of the capitalist class increases in a sustained manner. There are now two ways by which the capitalists for whom the driving motive force is profit try to achieve control over greater wealth. Under capitalism generally every firm makes the utmost effort to eliminate every other firm which behaves as its competitor from the market in which it operates. Since the law of competition does not show any leniency towards anybody, a firm which loses out to others in the game of competition is destroyed and its market share captured by successful ones. In this way only a handful of firms manage to survive in every industry and with them large wealth is concentrated. This concentration of wealth is the universal law ruling all capitalist economies. The second method by which wealth is accumulated by the capitalists is through exploitation of workers. If the capitalists cease to exploit workers, then within no time their present stock of wealth will dwindle into nothing.

7. Emergence of the working class. The class of workers under capitalism not having access to any means of production is totally dependent on the capitalist class for its livelihood. The freedom enjoyed by the working class is only at a formal level. The workers are now tied with invisible bonds to their masters and have to bear punishment if they show disregard for the orders issued to them. Under capitalism the increasing use of machinery leads to widespread unemployment and an increase in the rate of exploitation of workers which implies a decline in the share of workers in the national income over time. This is actually the situation prevailing in all capitalist countries. For example, in the United States of America the share of the working class in national income declined from 54 per cent prior to World War II to 22 per cent in the post War period. England too registered a decline over the same time span from 45 per cent to 40 per cent. The relative position of the working class in the USA, England and other capitalist countries of the West has deteriorated over the years. In underdeveloped capitalist countries the condition of the working class is even worse.

8. Class contradiction. The capitalist system rests fundamentally on class distinctions. As capitalism develops, the society gets divided into two mutually hostile classes. On the one hand are the handful of capitalists with whom wealth is concentrated. Since they exercise control over means of production it is possible for them to appropriate the return on social labour without hindrance posed by outside elements. However, despite the enormous power vested in the capitalist class, it cannot do without the workers. Machines are not self-operative and the factories cannot churn out goods without the labourers working in them.

Hence, the two major classes found in a capitalist society are those of the capitalists and the workers. The clash of interests of the capitalists and the workers takes the form of the class conflict with the further development of capitalism. The workers in order to obtain higher wages and improved working conditions collectively bargain through their trade unions and at times even go on strikes to exercise some kind of pressure on the capitalists. The capitalist class, on the other hand, resorts to the use of counter-weapons like retrenchment of workers and lockouts.

■■■■ SOCIALISM ■■■■

According to Paul M. Sweezy "Socialism is a complete social system which differs from capitalism not only in the absence of private ownership of means of production but also in its basic structure and mode of functioning."² *Under socialism not only is there social ownership of the means of production but also the functioning of the economy is such so as to maximise social benefit rather than private benefit. Unlike capitalism, in a socialist society the market mechanism does not play the all dominating role of determining the type and quantity of various commodities produced, their priority sequences and the necessary allocation of resources.* All such functions of the market mechanism are taken over by the nation's planning agency which after making an estimate of the goods and services required to maximise social welfare, draws out on this basis the production and development plans for the economy. Hence, the scope for private business is non-existent in a socialist economy.

The socialist system was established first in Russia after the Communist Revolution in 1917. After the World War II some other countries of eastern Europe also adopted the socialist system. In 1949 the communists came to power in China and thus the biggest country became a socialist economy. In the early 1990s, the Soviet Union disintegrated and other east European countries abandoned the socialist economic system. At this juncture some experts proclaimed that socialism has lived its life and now it has no future. But is it really so? The performance of the Chinese economy during the last three decades candidly contradicts the assessment of these experts (see Box 6.1).

Salient Features Of The Socialist Economic System

Marx and Engels had visualised the socialist system as one in which there would not be private ownership of the means of production. The practical functioning of a socialist society became clearer after the Communist Revolution in Russia. The salient features of a socialist economy are as follows:

1. Social ownership of the means of production. *In a socialist society private ownership of the means of production is abolished in the various sectors of the economy.* It is only in the transition period that some amount of private property is allowed because it is not possible to transform completely the capitalist mode of production into the socialist one immediately after the socialist revolution. Lately, with some liberalisation in socialist economies some private ownership of means of production has been allowed and this in turn has created some scope for private business.

BOX 6.1. The Chinese Economic Miracle

By now there is a general consensus that the Chinese economic performance since 1978... is an even bigger miracle than the East Asian, involving Singapore, Hongkong, Taiwan and South Korea. China's GDP growth averaged nearly 10 per cent over the two decades beginning 1978. But even more impressive has been its success in reducing poverty. The percentage of rural poor — by the international poverty line norm of \$ 1 a day, using 1985 purchasing power parity— fell from 60 per cent in 1978 to 11.5 per cent in 1999. And based on the Chinese official poverty line (\$ 0.7 a day), the percentage of rural poor was lower—33.5 per cent in 1978 and 4.6 per cent in 1999....

According to the World Bank, it took the US 50 years and Japan 60 years to achieve a structural transformation similar to China's. Despite rising urban-rural and regional inequalities in the post-reform period,

the benefits of growth were widely shared. During 1978-1995, 20 Chinese provinces had per capita growth rates higher than any other country. Over the last two decades, China's share in world trade jumped from 1 per cent to about 4 per cent (India's is only 0.6 per cent) and is projected (by the World Bank) to touch 10 per cent by 2020. Foreign direct investment (FDI) flows into China rose from near zero in 1978 to more than \$ 40 billion in 2000 (contrast this with India's \$ 2.3 billion). Whichever way one looks at it, China's economic performance is nothing short of a miracle. One often wonders why China has done so well while countries such as India are woefully lagging.

Source : Alok Ray, (Professor of Economics, IIM, Kolkata), "The Chinese Economic Miracle", *The Hindu Business Line*, New Delhi, November 29, 2001.

2. Predominance of public sector. *An important precondition for the establishment of socialism is the existence of the public sector which is founded on the principle of social ownership of the means of production.*

In the economic system prior to socialism, it is possible for one type of private sector to co-exist with another type of private sector for long periods of time. For example, in India itself within the overall framework of capitalism, feudal production relations continue to dominate in agriculture even today. The co-existence of diverse economic structures can be explained with the help of one reason alone, viz., that they all have a common basis. All these systems in some way or other are based on the concept of private property. Socialism in principle does not allow for any kind of private property.

3. Decisive role of economic planning. *Economic planning under socialism plays exactly the same role as is played by the price mechanism in a capitalist economy.* The Planning Commission, in other words, is required to solve the basic central problems of what to produce, how to produce and for whom to produce. In order to do this the Planning Commission has to, on the one hand, make an estimate of the entire economic, human and natural resources at its command, while on the other it has to determine the requirements of the nation for various goods and services. To put it more clearly, the Commission has to decide upon the various commodities which the economy should produce with the available resources. There can be many different ways of achieving the output targets.

Prices play a secondary role in the working of a socialist economy. They perform the following two functions in a socialist economy. In the first place it is the prices of consumer goods which determine the distribution of these goods amongst the people. Secondly, prices are essential for carrying out rational economic calculations for the nation. In a socialist economy, therefore, two types of prices can be seen to prevail. In case of goods and services for which a market exists, viz., consumer goods, the equilibrium prices or the market prices are determined at a point at which the demand for each one of them is matched by their respective supplies. On the other hand, for producer goods accounting prices are used. These prices are set by the Planning Commission on the basis of historically given prices and thus are not arbitrarily determined. These accounting prices of means of production and the market prices of consumer goods are used for the purpose of economic calculation and decision-making in the planning process of the country.

4. Production guided by social benefit. The Planning Commission in a socialist country takes into consideration the social aspect and the development related goals of the nation while choosing the technique of production to be used. The price mechanism in a capitalist economy operates in such a way that production takes place only to meet the demands of all those people who have considerable amount of disposable income. Under this system not much attention is generally paid to the production of those commodities which belong to the poor man's basket. *In a socialist economy, however, income inequalities are drastically reduced so that everyone has an adequate amount of disposable income. While determining the pattern and size of output the Planning Commission has to see to it that its decisions in this regard are such that they ensure the availability of commodities for all in the market.*

5. Abolition of exploitation of labour. The working class collectively owns the means of production under a socialist set-up which makes it possible for the people to use these means of production for their welfare. The workers working in the various industries, agriculture, transportation and the other sectors of the

economy are the collective owners of the output in these spheres which results from the use of their labour power in conjunction with means of production. *Once the development of human society reaches the stage of socialism, exploitation of man by man comes to an end.*

■■■■ MIXED ECONOMY ■■■■

Today in a discussion pertaining to the various socio-economic systems, the concept of mixed economy very often finds a place. However, what exactly is a mixed economy is not very clear to most people and the commonly held notion is that the concept refers to such a system in which one finds elements of capitalism and socialism co-existing. The economic freedom characteristic of capitalism and centralised planning, the most distinctive feature of socialism, blend together to produce a socio-economic system which is superior to both capitalism and socialism. Thinking along these lines, however, has no scientific basis. Now the pertinent question which arises is that if a mixed economy is not a system combining the elements of both capitalism and socialism, then what is it? According to Samuelson, *a mixed economy is characterised by the existence of both public and private institutions exercising economic controls.* In this sense any economy in which private corporate enterprises and public sector enterprises exist side-by-side, and decisions taken through market mechanism are supplemented by some form of partial planning, is to be described as a mixed economy. Samuelson thus argues that American economy is a mixed economy. Most economists, however, disagree with him. J.K. Galbraith, for example, believes that American economy is essentially a capitalist economy.

In the present day world certain developing economies while retaining their basically capitalist framework have adopted supportive economic planning. In these countries objectives and strategy of development have been laid down by the State. In the field of production though market has been allowed to play an important role, at the same time priorities related to production are being determined by the State. Apart from performing regulatory activities through monetary and fiscal devices as well as administrative measures, the State has created a large public sector which is expected to become prime mover of growth. These are truly speaking *mixed economies.*

India is perhaps the best example of such an economy and can legitimately be called a mixed economy.

Characteristics of a Mixed Economy

A mixed economy resembles a capitalist economy in more than one respect. This is not surprising because while building a mixed economy no attempt is made to eliminate the basic characteristics of a capitalist economy. In fact, the essential institutions of the capitalist economy are strenuously preserved. What is actually done in a mixed economy is that the State attempts to moderate the working of these institutions through its activities. The readers will, therefore, note close similarities between the characteristics of the two systems, viz., the mixed economy and capitalism. To be precise, the following are the important characteristics of a mixed economy:

1. Private and State ownership of the means of production and profit induced private business. In a mixed economy people enjoy right of property through constitutional provisions. In practice this results in private ownership of means of production. Generally, in a mixed economy almost whole of cultivable land belongs to individuals, and production is done either for self-consumption or for the market. In the industrial sector a big segment remains in private hands. Although industries set-up in the public sector sometimes account for a substantial portion of the industrial output, the main objective of their activity nevertheless is determined by the requirements of the private sector. This explains why the role of public sector in the mixed economies is supplementary and supportive to the role of the private sector. Profit induced private sector generally accounts for three-fourths or even more of the material production in mixed economies. Obviously major part of this production is done for the market and the activities of the producers operating in the private sector are motivated primarily by profit. Only in agriculture the behaviour of small and marginal farmers may not be responsive to market changes as they usually do not have any marketable surplus.

2. Decisive role of market mechanism. Market mechanism has a predominant position in a mixed economy. In such an economy markets exist not only for various products, but also for productive factors, such as labour and capital. In terms of organisation all the commodity and factor markets may not be very well integrated, but prices of most of the commodities and factors of production are determined by the interplay of demand and supply forces. Prices of various commodities and changes therein from time to time along with future price expectations, influence the decisions of the producers. Factor prices, to a great extent, also determine

techniques of production. Financial markets in these economies comprising diversified financial institutions are somewhat better organised. Though some of these institutions have been set-up in the State sector or have been nationalised, their working as well as their business dealings with producers in the private sector are generally determined according to the laws of the market. Production in the State sector is however guided by social benefit. The amount of investment and its form is greatly influenced by the interest rates that prevail in the money market. In the stock market too, the fluctuations in the share prices not only reflect the prospects of different companies, but they also determine whether particular companies can obtain equity capital for their expansion.

3. Interventionist role of the State. *The market mechanism in a mixed economy may not be entirely free from State control. Often legislative measures are undertaken to provide a regulatory system for industrial activity in the country.* The system of industrial licensing is evolved and is viewed as an instrument of industrial planning. It is a different matter that this measure sometimes fails to realise the desired results. Apart from the licensing system, the government in a mixed economy introduces certain other controls and incentive measures for influencing the decisions that are arrived at in the markets. Among these, most notable are import controls, distribution of essential goods at fair prices shops and government purchase of agricultural products at support prices. These controls and incentive measures, however, do not alter the basic character of market mechanism. *Their importance lies only in their capacity to correct the irrationality of certain market decisions by changing them for the better.*

4. Public sector activities are supposedly guided by social benefit. Presence of a large public sector in modern developing economies alongwith free enterprise business units makes the character of these economies as mixed. The public sector was developed in these economies after they got independence in the post-World War II period. *Activities of the public enterprises are considered to be guided by the social benefit. Thus performance of these enterprises is often judged on the criterion of social benefit and thus most of these enterprises ignore profit maximisation goal.* Less developed countries had not developed public sector for any ideological reasons. Its creation in these countries has been a historical necessity. At the time of their independence the private enterprise in these countries had neither the resources nor the will to undertake the task of industrial development on a massive scale. Furthermore, the transport system, energy sources and certain other components of the infrastructure were undeveloped.

Though the economies emerging from their colonial past needed a 'big push', the conditions prevailing in these countries were hardly conducive to development in general and industrialisation in particular. At this juncture, an effective intervention of the State in the economy was an imperative condition to break the low level equilibrium trap in which these countries were caught during the colonial period.

5. Supportive role of economic planning. Economic planning is another factor that often creates confusion about the character of certain mixed economies. Because planning was first adopted in the erstwhile Soviet Union, and thereafter other socialist countries also followed the path of planned economic development, planning got so much identified with socialism that many people now mistakenly characterise all planned economies, irrespective of the form of planning, as the socialist economies. No doubt, economic planning is an essential ingredient of a socialist economy, but all planned economies are not necessarily socialist economies.

A country can adopt planning while retaining its capitalistic structure, but in its form and range planning in a capitalist economy would be different from the one in a socialist economy. *Moreover, the role of economic planning in basically capitalistic economic framework is supportive. Hence planning in these economies is usually indicative in nature. Economic planning in developing economies, in which both private and public sectors co-exist, has nothing to do with socialism.*

The mixed economy is viewed by many simply as a variant of capitalism which has a built-in tendency to slide back and finally emerge as a pure market economy. This view is corroborated by the experience of the Indian economy in recent years. In India the policy of drifting away from economic planning is being pursued. The public sector is now invariably condemned for its poor performance and by implication it is suggested that with increased privatisation of productive activities the overall performance of the economy might improve. This is not necessarily correct. However, once in a mixed economy a new capitalist class grows, often propped up by the public sector and physical controls, it starts exercising pressures for dismantling the regulatory structure. At this stage merit is invented in market mechanism and competition for which scope is provided by the government. This eventually results in emergence of pure capitalism. Sukhamoy Chakravarty had remarked about 20 years ago *"As of now, there is no evidence that despite the growth of large public sector, India has moved to any significant extent closer to a 'socialist society,' in any meaningful sense of*

*the term. If the present trends are not going to be reversed, it is possible that India will witness in the closing decade of this century a considerably enlarged private sector with further erosion of the role of planning in the traditional sense of the term.*²³ This is not something unusual. India which began as a mixed economy has resorted to the policy of privatisation since the early 1990s. It is now getting transformed into a purely capitalistic economy.

BOX 6.2. Comparing Economic Systems

Capitalism	Socialism	Mixed Economy
<ul style="list-style-type: none"> ● Private ownership of means of production ● Predominance of private sector ● Decisive role of market ● Profit induced business ● Exploitation of labour ● Restricted role of the government 	<ul style="list-style-type: none"> ● State ownership of means of production ● Predominance of public sector ● Decisive role of planning ● Production guided by social benefit ● Abolition of exploitation of labour ● Dominant role of the State 	<ul style="list-style-type: none"> ● Private and the State ownership of means of production ● Co-existence of private and public sectors ● Decisive role of market and supportive role of planning ● Profit induced private business ● Production in the State sector guided by social benefit ● The interventionist role of the State

■■■■ THE MARKET MECHANISM ■■■■

Modern economies rely mainly on two institutions, viz., the market and the planning for solving their economic problems. *In the capitalist economies, market holds the predominant position and the role of planning is ancillary. The socialist countries, in contrast, greatly rely on economic planning.* No doubt market does exist in these countries, but its role as the decision maker is secondary to that of the government. In mixed economies like India both market and planning have been assigned specific roles which quite often overlap.

Adam Smith, the great classical economist, was enamoured of the working of the market mechanism. According to him, when everyone in a market economy acts in his own interest, social benefit automatically gets maximised. Apparently what Adam Smith argued sounds logical. Producers looking at their own interest carry out production. They want to maximise their profits for which they have to produce commodities which the consumers wish to buy. In other words, the producers in their self-interest produce only those goods which the consumers find useful for themselves. This has been characterised by Adam Smith as the principle of "invisible hand."⁴ Adam Smith was deeply impressed by the principle of *invisible hand*.

In a modern capitalist economy market system operates efficiently under perfect competition, but conditions of perfect competition are very difficult to obtain. Big monopolies control the capital invested in the industrial sector. The government also participates in production through public enterprises. Advertisements now mould the tastes and wants of the people; and thus consumer's sovereignty has been greatly eroded. Under such conditions market alone cannot be relied upon to maintain order in the economy, especially in the field of production.

Functions of the Market

The market is an essential element of all modern societies and performs many useful functions as would be clear from the discussion below:

1. Allocation of a given stock of consumer goods. In an economy based on division of labour, production is rarely done for self-consumption. What actually happens is that each person does some specialised work for which he is paid, and whatever he receives by way of his earnings enables him to obtain an assortment of goods and services. This system in a modern economy looks so simple that no one ever cares to think as to how one manages to get anything, if not everything, he wishes to have. In the whole process the role of market is quite important. *The market rations consumer goods among consumers in accordance with the purchasing power they have. If the given income distribution is not to be questioned, then in a competitive market, distribution of goods among the consumers may be efficient and fair.* However, in reality due to inequity in income distribution, the distribution of consumer goods among the people is invariably discriminatory.

2. Allocation of production between commodities. With given resources people in a country can produce a limited number of goods and services and their quantities also cannot be unlimited. Therefore, whatever be the nature of the economy, it faces a basic problem as to what goods and services it has to produce. Whether it will produce more of consumer goods like bread, butter, clothes, etc., or defence products like guns, bombs, tanks, etc., cannot be decided *a priori*. In a socialist economy, decisions with regard to the pattern of output are taken at the governmental level, and the resources are allocated accordingly. In a capitalist country, on the contrary, no such decision is taken at the governmental level. *In a capitalist economy, the market directs the allocation of production between commodities, according to the criterion of maximum profit.* According to the protagonists of the market economy, this corresponds to social usefulness.

3. Allocation of the factors of production among their various uses. Since no country has an unlimited supply of the factors of production, their judicious allocation is a problem which every country has to overcome for optimising the socially necessary output on the one hand, and for maximising the factor incomes on the other. In planned economies, the problem of resource allocation is tackled by the State in accordance with the set priorities. Obviously such a thing is ruled out in a free enterprise economy. In the latter, *markets for different factors of production exist where free play of forces of demand and supply determine factor prices. These factor prices act like guide posts. Producers in order to minimise their costs look for factors which are relatively cheap.* Since in most cases technological coefficients are not fixed, it is not difficult for them to substitute a cheaper factor for a relatively dearer factor. Owners of the factors on the other hand, look for the buyers who offer the highest. With this objective when the factor suppliers operate in their respective markets, they maximise their incomes and the factors get employed in industries/productive units where their demand is most pressing.

These are static functions, but the market also provides incentives to economic growth. In respect of these static functions it has to be noted that the maximisation of efficiency in a market economy depends upon a host of restrictive conditions such as—perfect competition must prevail in product as well as factor markets, reliable information must be available about present and future price and non-price variables, consumers' tastes must be given, producers must attempt to maximise profits, there must not be increasing returns to scale, capital must be divisible in small units and external economies must not be occurring. However, in reality these conditions are never met. Even supposing these conditions existed it does not follow that uncontrolled market would be the most ideal in a developing country like ours.

Case Against The Market Regulated System

The case against market regulated system is formidable. It rests on the following counts :

1. Widespread imperfections in the markets of developing economies. The widespread imperfections in the markets of various countries prevent them from performing their functions efficiently. One can easily identify three major imperfections in the markets of developing countries.

First, these markets lack information and as a result most producers and consumers are confronted with great uncertainty.

Secondly, due to economies of scale and relatively limited size of domestic market, effective competition is lacking in most of the developing countries.

A *third* major imperfection in developing countries' markets is presence of externalities. Michael P. Tadoro has remarked, "Many goods may have a high social value that is not reflected in their market price. Since such goods—including for example, education and health services—must be provided at a price below their cost or even free, the private sector has no incentive to produce them. Thus, the government must often be responsible for providing these goods, in order to ensure a minimum of welfare."⁵

2. Market decisions do not ensure optimum allocation of resources. As Paul N. Rosenstein Rodan has pointed out, individual investment decisions in a free market economy do not necessarily lead to optimum allocation of resources on account of following reasons:

- (a) Market enables individual investors to maximise the private product, not the social net marginal product. Individual investors relying on market indicators often fail to exploit external economies.
- (b) Capital equipment lasts long and the individual investors with their myopic vision cannot always take correct decisions with respect to investment in them.
- (c) The assumption of small changes in capital is altogether unrealistic. With the extensive use of capital-intensive technology capital's indivisibility has considered increased.
- (d) Capital markets are often imperfect due to institutional and traditional quotas.⁶

3. Market cannot ensure equilibrium between aggregate demand and aggregate supply. It is now widely admitted that a free market economy cannot ensure an equilibrium of aggregate demand and aggregate supply. J.M. Keynes has stated emphatically that a conscious policy is required for achieving this objective. Rosenstein Rodan commenting on the limitations of the market mechanism argues, "Without an equilibrium of aggregate demand and aggregate supply, however, prices cease to be reliable parameters of choice and the price mechanism breaks down."⁷

4. Market mechanism ignores equity. *The market mechanism does not attempt to foster equity. It at best leads to an income distribution which may be Pareto optimal.* However, as Keith B.Griffin and John Enos assert, "There is no suggestion that the distribution of income under a Pareto optimum is ideal or even acceptable."⁸

BOX 6.3. Market Failure and the State

When market fails due to	The State intervenes actively in two ways
1. Imperfections in the market 2. Market decisions not ensuring optimum allocation of resources 3. Market failing to ensure equilibrium between aggregate demand and aggregate supply 4. Market mechanism ignoring equity	1. Through economic planning which may be A. By direction or B. Through the market 2. Through economic controls such as A. Price controls and rationing B. Industrial controls C. Trade controls D. Exchange controls

■■■■ ECONOMIC PLANNING ■■■■

A completely *laissez faire* economy has now become a relic of history. True, planning does not exist in the capitalist countries in the form it now exists in the socialist countries, yet there is no denying the fact that the State now regulates economic activity even in the most advanced capitalist countries of the West. *The need for State intervention in the capitalist economies arises from the market failures.*

Meaning of Economic Planning

Since economic planning has assumed different forms in different countries, there is little agreement among economists on the concept of economic planning. However, in order to minimise the prevailing confusion with regard to the concept of economic planning, it is necessary to distinguish between:

- (a) Planning meaning simply the *intervention of the Government in a particular industry* at a time when the greater part of the economy still remains in private hands, and
- (b) Planning which results in the *general supersession of individual enterprises* as the source of economic decisions."⁹

Durbin asserts, "*This distinction is of importance, because the basis of authority and the probable results of the two types of planning are quite different.*"¹⁰ Those who believe that comprehensive economic planning is merely the sum of a large number of government interferences with a free enterprise economy are perhaps not right. The two types of planned systems clearly distinguished by Durbin differ from each other in their system of economic management. In the first type of economic planning, the source of authority is private firm, and the State intervenes merely to regulate output and prices. In the Chinese type of comprehensive economic planning, firms or individual producers do not remain the source of authority. In fact, they are replaced by some inter-industrial body which takes all important decisions pertaining to the size of output and prices. Social interests are thus more strongly represented in the machinery of comprehensive planning than in particular intervention. In view of these basic differences in both approach and content of these two types of economic planning, it is not very much correct to address both of them by the same name.

In developing countries most development plans are formulated and carried out within the framework of the mixed economy. Mixed economies are characterised by the co-existence of private and public sectors. The private sector typically comprises four distinct productive activities: (1) Subsistence farming and handicrafts; (2) Small-scale individual and family owned commercial business and industry; (3) Medium sized commercial

enterprises in industry, trade, transport and agriculture; and (4) Large manufacturing enterprises, mining companies and plantations, producing for domestic and/or foreign markets. The public sector generally remains confined to infrastructure and basic and heavy industries. In such an institutional setting of most of the developing countries, one can identify two principal components of economic planning:

1. The governments mobilise domestic resources and also raise foreign finance to carry out such projects which are expected to induce productive activities in the private sector. From this point of view development of infrastructure, particularly railways, hydroelectric projects and irrigation system receives overriding priority. The other activity that invites government's direct involvement is setting up of heavy industries involving finance and long gestation period.

2. The governments adopt on the one hand certain economic policies (e.g., taxation, industrial licensing, tariffs, wages, prices and interest rates) which stimulate private economic activity, and on the other introduce restrictive physical controls in order to ensure a harmony between the social objectives of the government and the behaviour of the private producers and business firms.

From the above characteristics of planning in mixed developing economies, it is clear that economic planning in these countries does not entirely replace market. In fact, *the market and economic planning are complementary to one another.*

Planning by Direction and Planning Through the Market

Planning by Direction. *Planning by direction refers to a system of planning under which the State has complete control over the means of production.* There is also a central planning authority which formulates a plan for the entire economy in the light of goals set by the government. Obviously, this type of planning is highly centralised and relies greatly on administrative orders. The various units "are required to do certain things, for instance to produce such and such thing in such and such quantity. The resources which are necessary for that purpose, both material and financial are allocated in an administrative way."¹¹

Planning by direction has a highly successful record. In the former Soviet Union, China and other socialist countries, it transformed underdeveloped economies into reasonably developed economies in relatively short periods. In fact, no where in the world growth performance has been comparable to the growth record of these economies which consistently practised planning by direction over long periods.

Planning through the Market. The second type of planning is planning through the market. It is also known as *planning by inducement or indicative planning.* This type of economic planning has been practised since World War II in both developed and underdeveloped mixed economies. *Under planning by inducement free markets are being preserved. Firms operating in both private and public sectors are left free to adjust their activities to market conditions.* Normally the State does not regulate the activities of private firms directly. Controls are avoided as far as possible, but there is no sanctity about freedom from all regulatory measures. This, however, does not limit the scope of planning. The State can go to any extent in the pursuit of planning by controlling the market which controls the producer. This type of planning thus not only preserves consumer's sovereignty but also ensures various economic freedoms which are not to be found under planning by direction.

Tools of planning under this system are rather subtle. The State largely relies on monetary and fiscal measures. For example, if the State wishes to encourage production of a commodity, it can subsidise its producers. Conversely, if the production of some commodity is to be restricted, it may be taxed heavily. This kind of planning does not require any control on production. Even in the sphere of exports or capital formation desired results can be obtained by recourse to fiscal and monetary measures. If exports are to be encouraged the State may either alter the foreign exchange rate or cut the domestic demand by increasing taxation, or it can pay even subsidies on exports. In order to induce capital formation it can, on the one hand, provide some tax relief to the savers and on the other subsidise investment. According to Arthur Lewis, "In every case there is the choice between direction and inducement, and in every case inducement brings the same final results, without the cost of bureaucratic control."¹²

Disenchantment with Planning

Experience of development planning in the developing countries has not been very encouraging. It neither succeeded in stepping up the rates of growth in these countries nor ensured social justice. The reasons for plan failures are many. In some cases the theoretical limitations of development planning explain the poor performance of the plans; in other cases plans have failed because either they have been scuttled at the implementation level or they faced some other practical difficulties. In any case, the outcome of plan failures in developing countries

has been great disillusionment with planning so much so that economic liberalisation in the form of dismantling of controls and other planning devices is increasingly being advocated by a number of people as the panacea of all economic ills. Let us now examine the main reasons for plan failures in developing countries.

1. Inconsistencies in plan objectives. Generally in the plans of less developed countries every conceivable objective is listed in order to please the various sections of the society. But broadly the stress is on growth with social justice. *The assumption of the planners in most cases is that there is no conflict between the objectives of economic growth, employment generation, poverty alleviation, income inequality reduction, and modernisation. The experiences of the various countries, however, suggest that this assumption rarely holds good.* In the earlier phase of economic development any attempt to step up the rate of economic growth normally results in trickle up rather than trickle down. Hence the objective of reduction in income inequality is not easy to accomplish.

2. Inappropriate plan strategies. Plans have failed often due to wrong strategies. In most less developed countries, there has always been a strong desire to transform agrarian economies into modern industrial economies. Therefore, in the development plans of these countries often high priority was given to heavy capital goods industries with stress on import-substitution. To begin with this strategy was correct, as some industrial base in any case had to be created. But attempt to overstretch this strategy created a number of problems. Absorption of massive resources in setting up heavy industries left little resources for development of sectors which met consumption demand of the people. This strategy had little to tackle the problems of poverty, unemployment and income inequality. It is now being increasingly realised that for most less developed countries where agriculture has been the predominant form of occupation the appropriate strategy of planned development would have been some variant of what is now known as Agricultural Development-Led Growth Strategy.

3. Insufficient and unreliable data. The quality of a development plan depends crucially on the availability of necessary data. *In less developed countries, too many data gaps exist.* Further, whatever data are available are of poor quality and are highly unreliable. With this kind of statistical information even the most competent planners would fail to produce a technically sound and consistent plan. But in most less developed countries qualified economists, statisticians and other planning personnel are generally in short supply. Therefore, those of the people who are associated with the framing of plans generally lack the required skill. *The plans thus formulated are of extremely poor quality. Often in these plans targets are laid down without ensuring the required supply of resources needed to realise them.*

4. Institutional weaknesses. Most developing countries lack the right kind of institutional structure for economic planning. In these countries, continuous interaction between the planning agency and the day-to-day decision making machinery of the government is generally lacking. Therefore, often bureaucrats and politicians are seen pushing the policies of the government in directions which are not in harmony with the explicitly stated objectives of the plans. In addition, the incompetence of civil servants, red tapism in bureaucratic functioning, resistance to innovation and change, rivalries and conflicts between various ministries, lack of commitment to national goals and widespread corruption at all levels in the government prevent efficient implementation of the plans in developing countries. *These institutional weaknesses in Third World countries are so formidable that even the most rational and technically sound development plan fails to show the desired results.*

5. Lack of political will. It has now become increasingly clear that in most cases *the ultimate cause of planning failures in developing countries is lack of commitment and political will on the part of political leaders and high-level decision-makers.* Albert Waterston has argued, "The available evidence makes it clear that in countries with development plans, lack of adequate government support is the prime reason why most are never carried out. Conversely, the cardinal lesson that emerges from planning experience of developing countries is that the sustained commitment of a politically stable government is the *sine qua non* for development. Where a country's political leadership makes development a central concern the people can also be interested through a judicious use of economic incentives. And although it is never easy to reform administrative and institutional inefficiency, commitment by political leaders is a necessary condition for reform; without it reform is impossible."¹³

Development implies eliminating poverty, inequality and unemployment alongwith a rise in per capita GNP. Therefore, any development plan stating these as social goals often comes in conflict with the vested interests. It requires great skill on the part of national leaders to persuade the powerful elites to become agreeable to larger national goals. In case, the reason does not appeal to those who are required to relinquish certain privileges which they have enjoyed in the past, then a great deal of political courage would be needed

to coerce them. In most developing countries, the political leaders have often bungled in this respect and as a result their development plans have met a disastrous end.

■■■■ ECONOMIC CONTROLS ■■■■

In some capitalist countries, comprehensive regulatory devices have been evolved to give economy a sense of direction. These control measures are generally meant to influence people's economic behaviour in some particular respect. They are far more flexible than long-range policy measures and are continually adjusted to changing economic conditions in the country. Economic controls are rarely integrated with the long-term policy measures of the government. They are introduced by the government from time to time purely on an *ad hoc* basis to realise some specific objectives.

Meaning of Economic Controls

Economic controls refer to all those regulatory devices whereby the behaviour of consumers, savers, investors, producers, traders, exporters and importers is influenced. Thus in the package of controls, we not only include the system of rationing and price control, compulsory saving schemes, licensing of various activities conducted by private enterprise, import and export regulatory devices and exchange control, but also the fiscal and monetary policies which exercise their control over economic activities only indirectly.

However, the two types of regulatory measures, viz., *physical controls and economic policies are to be distinguished from each other.* Whereas the economic policies are only indirect control measures, the price control and rationing, licensing or import and export quota systems are direct measures to influence various economic activities. The direct control measures are often designated as physical controls and till recently have been in use on an extensive scale. We shall discuss economic policies such as fiscal and monetary policies later in this book. In this chapter, analysis will be restricted only to physical controls.

Need for Controls

Thomas Wilson has aptly remarked, "*Planning and physical controls have become so closely associated as to be regarded as almost inseparable.*"¹⁴ But why is it so? Is it not possible for the mixed economies of our times to adopt economic planning without any dependence on physical controls? We now propose to answer these questions.

Mixed capitalist economies—both developed and underdeveloped—cannot wholly rely on the public sector as an instrument of planning. Since in these economies there exists a large private sector which attempts to maximise the private profit rather than social welfare, it is necessary to evolve a system of controls which enables the government to compel the business units to behave in accordance with the plan strategy. Thus, *in the mixed economies, control measures are often adopted as an alternative to the public sector.*

Controls are sometimes needed to supplant the market. Given the income distribution, a free market is believed to allocate resources in a rational manner. But in case income distribution itself is not very desirable, the market will certainly result in an equally inappropriate allocation of resources. Moreover, in any society where income distribution is highly skewed, distribution of food and other necessities if available in short supplies cannot be left to market forces because it will inevitably lead to such high increase in their prices that the poor cannot simply pay them and as a consequence many of them will have to go without these goods. This situation in any case has to be averted and for this market is to be supplanted by a system of price control and rationing.

Market mechanism results in some other kinds of distortions also. For example, in the developing countries there is now an increasing tendency towards introducing highly capital-intensive technology though labour in these countries is still in abundant supply. If in such a situation the State fails to intervene, not only the unemployment problem will become still more acute, but the problems of poverty and destitution will also appear in their ugliest forms. Administrative controls, however, can tackle this and such other distortions. Similarly, exchange controls can effectively deal with the distortions which are likely to crop up in the foreign trade sector if importers and exporters have a free hand.

To sum up, *the need for economic controls in developing mixed economies arises from the limitations of the market. Since these economies do not permit the public sector to reach the commanding heights, they look for a package of operational controls which will enable them to operate in accordance with their development strategy.* The need for such controls had risen in the Western countries during the War time, and they were not required in normal times. In the developing Third World countries, the need for these controls

is much greater and more pressing. Myrdal argues that the basic reason why the countries of South Asia created a control system "are the region's poverty and underdevelopment—which is reflected in the traditional, less than market-oriented character of business enterprises in an economy where bottlenecks and surplus are more normal than a balance between demand and supply and its interests in engendering and directing development."¹⁵

Common Physical Controls

Price Controls and Rationing. *The system of price control implies the fixation of maximum prices at which commodities are to be sold. Since the aim of the control authorities is to make commodities available to the people at prices which they can pay, the maximum price for each commodity is set below the market equilibrium price.* Once this is done the equilibrium price would no longer be obtainable to the sellers. Under these circumstances, while the quantity demanded will expand, the quantity supplied will fall unless the production of the commodity in question is subsidised. If no subsidy is given to the producers a shortage of the commodity will develop. In other words, the quantity demanded will exceed the quantity supplied at the controlled price. In this system price is not allowed to change so as to allocate the scarce supply amongst the would-be-buyers. Hence, some other methods of allocation are adopted.

One possibility is that firms sell their available supplies on first come first served basis. This policy of the sellers will lead to formation of long queues even much more before the market opens. Alternatively, shopkeepers can decide to sell scarce goods at controlled prices only to people with particular affiliations or to follow some other rule. Obviously these are arbitrary systems of allocation and often disliked by the people and central authorities alike. This arbitrariness, however, can be removed if the central authorities decide to introduce the cumbersome rationing system. Under the system of rationing, ration coupons or cards are issued to the households. The authorities follow a conscious policy and lay down some criteria for the allocation of the available supply. The system of price control with or without rationing often gives rise to a black market, because in an unequalitarian society there are always some people willing to pay very much more than the controlled price for the limited amounts of the commodity that are available. The administrative machinery in most of the developing countries unfortunately lacks both capabilities and commitment to deal with the problem of black market and, as a consequence, a parallel economy develops in these countries.

Controls in the Manufacturing Sector. Developing economies are characterised by a curious mixture of the modern and the primitive in industrial sector. Even though the traditional sector is far larger in these countries, the organised sector is particularly important from the point of view of economic development. Development of the organised sector in these countries has assumed an enclave type form, and the central authorities rightly believe that it is easier to subject it to all kinds of discretionary and non-discretionary controls. In most of the developing countries, "direct" or "physical" controls were adopted during World War II by their foreign rulers. When these countries got freedom after the War was over, independent governments in these countries inherited most of these discretionary controls. If that did not happen, then the Western War time controls at least provided a model for them to copy.

In India, for example, the manufacturing sector has been subject to various negative discretionary controls. The new security issues of the companies were controlled by the government under the capital issues (control) legislation. Apart from this statutory control there was the Industries (Development and Regulation) Act, 1951, under which the government had extensive powers to regulate industries in the private sector.

Making his observations on this system of controls Myrdal remarks, "The consequence of these and other many faceted... negative discretionary controls is not merely that, as in Western countries, private business must operate within a framework set by public laws and regulations. The fact is that no major and, indeed few minor business decisions can be taken except with the prior permission of the administrative authorities or at the risk of subsequent government disapproval."¹⁶ It is, however, to be noted that negative discretionary controls are never fully enforced. In most cases they set the limits within which the private enterprise is expected to operate.

Direct Controls in the Foreign Trade Sector. Developing countries often regulate their trade in order to realise two objectives. In the first place, these countries invariably face balance of payments problems created by their own development efforts and in restrictive import devices they find an answer to these problems. Secondly, in order to provide protection to their domestic industries the developing countries apart from erecting tariff walls resort to quantitative trade restrictions.

The use of trade restrictions is quite old. Even some of the developed countries of our times in their initial phase of industrial development had relied on direct trade restrictions. After the first World War and the inter-war period trade restrictions were imposed on an increasing scale. However, during the last few decades some international organisations (GATT, WTO and IMF) dealing with international trade have made serious

attempts to discourage the use of restrictive trade practices. Since these proposals serve the interests of developed countries better, they have been far more acceptable to them. Yet, even these countries have refused to dismantle trade barriers completely. They often resort to them when pressed by balance of payments difficulties. For developing countries quantitative trade restrictions have been important policy measures for controlling imports. However, as members of the WTO, they have no choice but to abandon quantitative restrictions.

It is often argued that import quota system shows no better result than tariffs because the two limit imports by the same amount. This contention is valid only on the condition that perfectly competitive conditions prevail in the foreign market, in the domestic import-competing industry and among quota holders. But this condition is generally not satisfied; and therefore imposition of tariff would not yield the results as the fixation of import quota would do. Sodersten rightly states, "A country confronted with an elastic supply of exports of certain goods would find it difficult to limit imports of the goods by way of a tariff. Under these circumstances, a tariff would primarily give the tariff imposing country a large improvement in its terms of trade, but it would fail to protect domestic production of the goods by a limit of imports."¹⁷

Import quota may sometimes have important repercussions on the market structure in the country which imposes it. The foremost of these is the rise of monopoly. When the authorities in some developing countries decide to give protection to an emerging industry by fixing a quota on imports that compete with the product of industry, conditions are created for the rise of a domestic monopoly. A tariff would not necessarily lead to growth of a monopoly.

Quantitative trade restrictions are discriminatory in their nature. They have a tendency to benefit only some particular groups in the society. Who will actually benefit in some country will depend on how the trade restrictions have been structured.

Exchange Controls. Exchange controls disregard market forces and replace them by the decisions of the government. In an exchange control regime, imports and other transactions involving payments liabilities are determined not only by the international price comparisons, but also by considerations of the country's need.

A system of exchange control may be comprehensive and rigorous or partial and mild. If the system is comprehensive, the government domination over the foreign exchange market is complete. All foreign receipts irrespective of the source are to be surrendered to the exchange control authorities. Capital movements, particularly its exports, are banned and interest and amortization payments are subjected to stringent controls. If the nature of balance of payments problem is not chronic, other methods of adjustment are used in conjunction with milder exchange controls. Sometimes a system of partial controls is evolved in order to disallow certain unnecessary imports or to check flight of capital. But the experience of most countries is that mild forms of exchange controls are short-lived. They are either abandoned once the balance of payments problem is solved or if people learn to take advantage of the loopholes in the milder system of exchange control, they are further strengthened.

Western economies generally fail to appreciate why most of the developing countries resort to exchange controls on a permanent basis. In their opinion a country faced with a deficit in its balance of payments can either pursue a deflationary policy or have recourse to devaluation. But the practical experience of a number of developing countries suggests that these methods of balance of payments adjustment either fail or their costs prove to be quite burdensome for the economy.

If a free economy prefers an exchange control regime to other methods of adjustments, it clearly admits that the market methods suffer from certain limitations, at least in particular circumstances. Let us first consider a deficit in the balance of payments of a country having a fixed exchange rate system. Such a country has no option but to contract the supply of money and face its consequences. Obviously, withdrawal of some money from circulation will result in a fall in both income and employment levels. With its price and income effects, the contractionary policy may improve the country's balance of payments position, but in doing so it will inflict such injuries on the economy that it may take a long time to recover. This is probably the reason why developing countries have always refused to follow this policy. To developing countries exchange controls are far more preferable to deflation, as they do not adversely affect their development efforts by forcing a decline in income and employment level.

Compared with deflation, devaluation or exchange depreciation is a better corrective measures. It generally does not hurt the domestic economy in the form of a decline in income and employment levels. Nevertheless, devaluation also has its own limitations. Devaluation would not help in restoring equilibrium in the balance of payments unless the *Marshall-Lerner condition*¹⁸ is satisfied. Moreover, devaluation often results in inflation, which developing countries would not risk particularly when internal factors are already exerting pressure in

that direction. Under the circumstances, exchange controls are the only answer to the balance of payments difficulties as they manage to restrict the demand for foreign exchange to the available supply.

Limitations of Physical Controls

Although physical controls are being adopted in almost all developing countries on a regular basis they are not always the best available tools of economic management. Different physical controls have their own limitations and to some of these we have referred to earlier in this chapter. Now in a more general manner we propose to identify some of the important limitations of the physical controls.

First, physical controls require an efficient and committed administrative machinery which normally does not exist in most countries. If the scarce administrative talent of the country is drawn for managing the physical controls, the possibility of setback to administration in other sectors cannot be ruled out. It is this reason why in most of the countries physical controls are administered by a civil service, which neither understands the purpose of the system, nor is free from corruption.

Secondly, physical controls have cumulative tendency. The experience of physical controls in India and many other developing countries clearly suggests that adoption of one set of controls inevitably leads to application of other sets of controls. Myrdal very appropriately states, "The scarcity of foreign exchange and the resort to import and exchange controls make the licensing of new undertakings or additions to old ones a matter of urgent necessity. There is thus a self-perpetuating and expansionary tendency in every system of negative discretionary controls, especially when the economy is suffering from a shortage of domestic supplies and foreign exchange."¹⁹

Thirdly, physical controls benefit particular groups of people and it is natural that these people develop vested interests in continuation of these controls. In developing countries, it is because of this reason that physical controls, once adopted, have a tendency to survive even though the need for them is over.

Finally, physical controls often tend to give additional monopoly power by preventing the birth of new firms or the growth of small firms. According to a U.N. study, "The small business units and the newcomers in enterprise are particularly hindered and discouraged by the multiplicity of controls."²⁰

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ECONOMIC FLUCTUATIONS

Meaning of a Business Cycle

- Characteristics of Business Cycles

Phases of Business Cycles

- Prosperity or Expansion • Recession • Depression or Contraction • Recovery

Is Business Cycle Avoidable ?

The records of business activity world over indicate that the course of business is not smooth. Fluctuation rather than stability is the rule in every business record, whether of a single activity like production of engineering goods, or bank finance or railway tonnage or of business in general as shown in CSO's series of National Income or Gross Domestic Product.

These fluctuations of business are of many kinds. Some are abrupt and discontinuous as caused by war. Some are continuous in the same direction when steady economic growth takes place. Other changes are fluctuations of a rhythmic nature which get manifested in the form of expansion and contraction of business activity. These are commonly called "trade cycles" or "business cycles". Business cycles are not limited to specific fields, they tend to spread over the entire field of business activity. In this chapter we shall attempt to explain the following :

- Meaning and characteristics of business cycles.
- Various phases of business cycles.
- Forecasting business cycles.

■■■■ MEANING OF A BUSINESS CYCLE ■■■■

A business cycle can be defined as wavelike fluctuations of business activity characterised by recurring phases of expansion and contraction in periods varying from three to four years. This relatively simple definition of a business cycle suggests that business activity never takes place in a steady manner. While the business makes progress overtime, there are also fluctuations in it. This implies that the period of business expansion comes to an end sooner or later. After the turning point the business activity passes through the phase of contraction which also terminates in a few years and once again the business activity finds itself on the expansion path.

The National Bureau of Economic Research in the United States has conducted several studies in the field of business cycles. These studies have approvingly adopted W.C. Mitchell's more explicit definition of a business cycle. According to Mitchell, "*Business cycles are a type of fluctuations found in the aggregate economic activity of nations that organise their work mainly in business enterprises. A cycle consists of expansions occurring at about the same time in many economic activities followed by similarly general recessions, contractions and revivals which merge with the expansion phase of the next cycle. This sequence of change is recurrent but not periodic.*"¹

From Mitchell's definition we learn that business cycles are fluctuations in economic activity as a whole. Hence, they are to be distinguished from the fluctuations which are limited to specific fields. Generally because of sectoral linkage, fluctuations in particular fields do not remain confined to those sectors only where they originate. It is commonly observed that, a recession in consumer goods manufacturing sector causes recession in the capital goods sector as well. Not only this, a decline in industrial activity leads to a slump in overall economic activity. Therefore, the point of distinction between the fluctuations taking place in individual sectors and the fluctuations in the aggregate economic activity should not be overstressed.

In his definition, Mitchell has also referred to various phases of business cycles, which keep on occurring in a sequence at fairly regular intervals. We shall explain these phases later in this chapter.

J.M. Keynes who did pioneer work in macroeconomics has explained the concept of a business cycle in the following words, "By a *cyclical* movement we mean that as the system progresses in, e.g., the upward direction, the forces propelling it upwards at first gather force and have a cumulative effect on one another but gradually lose their strength until at a certain point they tend to be replaced by forces in the opposite direction; which in turn gather force for a time and accentuate one another, until they too having reached their maximum development, wane and give place to their opposite."²

While stating the concept of business cycle in these words, Keynes has considered it necessary to stress that there is some "degree of regularity in the time sequence and duration of the upward and downward movement." Further, "the substitution of a downward for an upward tendency often takes place suddenly and violently, whereas there is, as a rule, no such sharp turning point when an upward is substituted for a downward tendency."³

Characteristics of Business Cycles

We have considered above some representative definitions of a business cycle. From these the following characteristics of a typical business cycle emerge:

1. Recurring fluctuations. Business cycles are characterised by fluctuations which occur periodically in a free rhythm. This implies that the recurrence of expansion and contraction has no fixed or invariable period.

2. Period of business cycle is longer than a year. A typical business cycle completes itself in a period of 3 to 4 years. In some cases, durations of business cycles are shorter or longer than those of a normal business cycle. In any case the period of a business cycle is not shorter than one year. A business cycle in its character is distinctly different from seasonal fluctuations in economic activity which take place within the period of a calendar year and are due to causes connected directly or indirectly with the physical season.

3. Presence of the alternating forces of expansion and contraction. A business cycle is characterised by alternating forces leading an economy to prosperity and depression. These forces are in-built in the system. The force of expansion when born gathers momentum over time taking the economy to a high level of activity. This force is, however, first weakened and then completely replaced by a counter force which leads to contraction and the process ends up with depression.

4. Phenomenon of the crisis. According to Keynes, an important characteristic of the business cycle is the phenomenon of crisis. This implies that the peak and the trough are asymmetrical. Normally the prosperity phase of business cycle comes to an end abruptly, whereas recovery after the depression is gradual and slow.

■■■■ PHASES OF BUSINESS CYCLES ■■■■

From the records of business cycles it is obvious that no one cycle is the same as another. In other words, the details of cycles differ. However, all the cycles belong to the same family and thus have common characteristics. According to Burns and Mitchell, *every business cycle has the critical mark-off points of peak and trough. From trough to peak there is the expansion phase and from peak to trough the contraction phase.* Apart from these two relatively longer phases there are two other phases characterised by the turning points. The upper turning point located at the peak marks the beginning of recession, while the lower turning point located at the trough is the venue of revival. Both recession and revival phases are relatively short in duration. Thus, according to Burns and Mitchell, the four distinct and closely related phases of business cycles are as follows:⁴

1. Revival
2. Expansion
3. Recession
4. Contraction

Joseph Schumpeter does not agree with Burns and Mitchell on the phases of a business cycle. In his opinion, peaks and troughs of a cycle cannot be regarded as the critical mark-off points. His analysis of different phases of business cycles is altogether different from that of Burns and Mitchell. According to Schumpeter, the critical mark-off points are "neighbourhoods of equilibrium" which are located at or near the points of inflection. In Figure 8.1, we have shown Schumpeter's four phase business cycle. Points A, B and C in this figure are points of inflection and the neighbourhoods of equilibrium are located in their close proximity. In Schumpeter's model, the upper half of the business cycle from A to B is divided into two parts: (a) prosperity and (b) recession. The lower half of the business cycle from B to C similarly consists of two phases: (c) depression and (d) recovery.

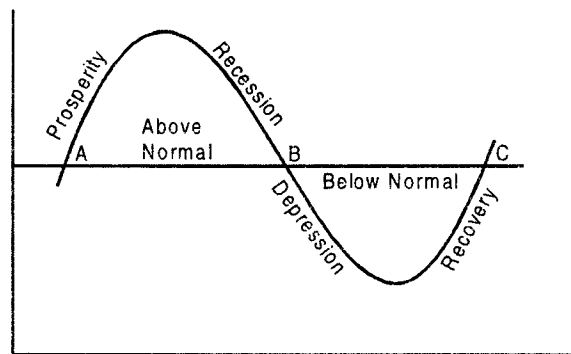


FIG. 7.1. Phases of a Business Cycle

We may now describe these phases and also explain how the economy moves from one phase to another.

Prosperity or Expansion

Certain economists prefer to call the prosperity phase the upswing or expansion because they think that purely quantitative terms are to be preferred to over-coloured terms like prosperity and depression. However, without going into the merits of different terms, we shall use prosperity phase, upswing and expansion phase interchangeably. It may be noted in Figure 7.1 that the prosperity or the expansion phase exists in the upper half of the cycle.

Expansion begins. *The prosperity phase or expansion begins from an equilibrium position under the stimulus of forces which create expectations of rising profits which in turn induce entrepreneurs to increase the scope of their activities.* They employ more people in their industries and order more raw materials. The demand for raw materials leads to larger employment in other industries, as does the demand for consumption goods when workers spend their additional earnings received from the entrepreneurs. If the position from which the expansion phase began was one of less than full employment of resources, the increased demand for both consumption goods and raw materials, would be satisfied by rapid increase in their supply. In this case, the prices may register only a modest increase.

In the prosperity phase, since the wage disbursements increase rapidly, the demand for consumption goods also grows rapidly. The supply of these goods, however, in the later stages increases with a lag and this leads to a rise in prices. Thus the prosperity phase is accompanied by a rise in prices which gathers momentum towards the later stages.

This delay in price rise is mainly due to the fact that there is some unutilised plant capacity available in the early stages of expansion and production can be increased without proportionate increase in costs. But in the later stages unutilised plant capacity is not there and thus plants have to be expanded. Further, some other bottlenecks may appear. Also, with growing employment, workers may succeed in forcing employers to pay higher wages. Under these conditions both production costs and prices rise.

A marked feature of prosperity is expansion in bank deposits and the supply of currency. This increase in money supply leads to price rise. In the absence of increase in the volume of money the velocity of circulation may rise but the evidence seems to indicate that its increase is only proportionate to the increase of output.

The rise of the general price level is more marked during the prosperity phase when a large proportion of the productive activity is in the form of setting up of new factories and steel plants, increased production of heavy engineering goods, construction of commercial and housing complexes and work on power projects. The payrolls of these operations add substantially to the volume of spending while supply of consumption goods fails to increase correspondingly. This results in a substantial rise in the general price level.

Distortions of price relations. *Prices do not rise uniformly during the prosperity phase. Generally wholesale prices rise more than retail prices.* Of the wholesale prices, prices of raw materials and semifinished goods usually rise faster than the wholesale prices of consumption goods. These changes in different prices "disturb to some extent the symmetry of the price system, distort price relations, change price spreads between one level and another, and bring about at the same time some more or less considerable changes in the distribution of the national income."⁵

Changes occur not only in the relative prices of goods but also in the various elements of cost structure. Some elements of cost rise rapidly while others increase slowly. Raw material prices usually increase rather quickly. On the other hand, wages, salaries, long period interest rates, rentals and taxes have a tendency to lag behind. Wages and salaries usually do not rise until full employment is reached. These distortions of the cost structure in every prosperity phase increase the margin of profit.

Expansion reaching its height. *The rising profit and the prevailing optimism about its continuance boost up the stock prices of stock exchange securities.* Entrepreneurs, observing that their profits are growing rapidly, make further investment. This cumulative expansion in periods of prosperity is sustained primarily by the slow rise of costs. The expansion process marked by increasing investment activity usually results in higher output level, prices and profits.

Growth of investment in the prosperity phase depends greatly on the expansion in the money supply, especially the bank credit. The records of the past cycles show that this actually happens. The rising share prices and with them growing spirit of confidence in the prospects of business induce the commercial banks to expand credit facilities. These conditions also speed up the velocity of circulation. The increasing investment activity during the periods of prosperity results in the growth of fixed capital such as plant, machinery and equipment. It also makes substantial increases in wage disbursements which, in turn, add to the demand for consumption goods and strengthens the general price level. The wave of optimistic sentiment which sweeps the business in periods of prosperity gets exhibited in the form of the real estate and stock market booms.

An important aspect of this optimistic sentiment is the tendency to add to inventories among wholesalers and retailers alike. In the prosperity phase, manufacturers also stock up their products with the improved prospects of larger demand. The main reason behind this behaviour of traders and manufacturers is the expectation of further rise in prices. When inventories pile up, the activity of producers increases at a pace much faster than the pace at which consumption increases. The economy is thus brought to a relatively high pitch of production. This process, however, cannot continue indefinitely. The rate of activity eventually begins to be slowed down and by gradual change or abrupt transition, the phase of prosperity ends and turns into the phase of recession. The turn of the cycle has thus been reached.

The end of expansion. During the prosperity phase, expansion itself gradually brings into play a series of forces which ultimately lead to the beginning of recession. The most important of these factors is the gradual rise of costs relative to prices. In the early stages, the rising gap between the costs and prices induces entrepreneurs to expand their activities. However, in course of time when gradual increase in costs relative to prices narrows down the profit margin, the expansion process is progressively weakened. The increase in costs during the later phase of the expansion is due to growing pressure of the demand for materials, labour and finance which no longer can be met from reserves. As the scarcity is felt in different factor markets, the prices of the various factors of production rise. Another reason for the rise in costs in the later phase of prosperity is utilisation of sub-standard equipment, inferior workmen and less efficient management for further expansion of output.

The problem of rising unit costs can be tackled if a corresponding increase in produce prices is possible. However, in practice, this possibility meets two formidable obstacles. One of these is the resistance of consumers; the other is the limit imposed by the diminishing elasticity of bank's consumer credit.

Recession

The phase of recession, which is a turning period, is relatively shorter. In this period while the forces of expansion are weakened, the forces that make for contraction get strengthened. *The recession is normally characterised by liquidation in the stock market, strains in the banking system and some liquidation of bank*

loans, some fall in prices, a sharp reduction in demand for capital equipment and abandoning of relatively new projects.

During recession production of consumer goods does not decline immediately. Even when the incomes of the people fall, they persist for some time with their consumption standard which they had achieved in good times. Hence, the demand for consumption goods falls with a lag. In contrast, the fall in the production of capital goods is dramatic. Since entrepreneurs abandon their investment programmes, the demand for equipment, machinery and plant falls substantially and it is natural for the capital goods manufacturing sector to respond to this situation quickly.

However, the signs of recession are not immediately noticed in the industrial sector. *The most dramatic and easily noticeable signal of recession's advent is the weakening of the stock market.* The stock market is the sensitive pulse of the industrial and financial sentiment. Its weakening is caused by the realisation that profits can no longer be maintained. The speculators in order to avoid larger capital losses in future start selling securities. The beginning, however, is made usually by the insiders who are anxious to get out early.

The fall in security prices does not merely suggest that prices and profits are going to fall in future, but it also makes its contribution in that direction. Borrowers on stock market security finding that their collateral is shrinking often find it necessary to repay some of their loans. For this purpose they may liquidate their holdings of commodities which may cause a fall in their prices. The weaker market in securities invariably postpones new issues which implies that corporate enterprises shelve their investment programmes at least for some time. Hence, the orders for plant, machinery, equipment or buildings are reduced. Under these circumstances, banks follow a cautious approach and are generally reluctant to expand the volume of credit.

Keynes has explained the turning point from expansion to recession by a collapse in the marginal efficiency of capital. In his opinion, the change from an upward to downward tendency is sudden and in this respect differs from the turning point from contraction to expansion which is more gradual. The recession resulting from the collapse of the marginal efficiency of capital is likely to proceed fast because of the multiplier effect. When the collapse of marginal efficiency of capital reduces investment activity, the multiplier works in reverse. The employment situation worsens with the decline in investment activity.

Depression or Contraction

Recession ultimately merges into depression which is the phase of relatively low economic activity. When an economy moves from recession to depression, there is a notable fall in production of goods and services and in employment. This decline in production is general and is visible throughout the economy but it is by no means uniform. Usually agricultural activity considered to be necessary for subsistence is not much affected in terms of both output and employment. Retail business is also little affected. In contrast, the output reduction is substantial in manufacturing, mining and construction. In the industrial sector, the worst affected industries are those which produce machines, tools, plants, equipment and steel. In these industries, employment falls rapidly.

During depression there is a substantial reduction in the incomes of the people and thus the demand for consumer goods also declines. Nonetheless it is far less than the fall in the demand for machines and equipment. It has been observed that during depression when incomes of most of the households drastically fall, they make substantial reduction in their expenditure on durable goods. This explains why the output and employment in industries producing these goods fall rapidly. Most of the households even when their incomes fall during the depression find it difficult to reduce the consumption of non-durable goods. Therefore, production and employment are little affected in the sectors producing these goods.

During depression the general price level falls despite the reduction in output of goods and services. In the earlier stages when the producers and wholesalers realise that the demand is falling, they liquidate inventories piled up during the prosperity phase. This causes an increase in the supply of goods which in turn leads to a fall in prices. As the contraction proceeds the purchasing power of the people steadily falls and this causes further decline in prices. The depression phase is thus marked by an overall decline in economic activity. Its main indicators are a notable fall in production, increased unemployment and a rapid fall in the general price level.

Steadily declining prices of commodities continuously erode the profits of producers and traders alike. In the later stages of depression some firms incur losses and in an atmosphere of pessimism have little hopes for the revival of economic activity. These are the conditions in which the most adversely affected firms decide to close down. Those of the firms which survive see no reason why they should make investment. As the

marginal efficiency of capital totally collapses and its revival is not in sight, no one is willing to venture fresh investment. In this period, there is great reduction in the volume of money. Deteriorating business prospects and abandoning of the investment activity results in substantial reduction in bank credit. Neither business firms nor banks seem to be willing to continue the normal scale of borrowing. Hence, the volume of bank money steadily falls. Since the volume of production as well as exchange transactions suffer a substantial reduction, the velocity of circulation also falls.

The rate of change in prices is not the same in respect of all goods and services. Prices of certain goods fall little while prices of others suffer a virtual collapse. These unequal changes in prices cause distortions in the price structure, worsen the income distribution, and often prolong the period of depression.

Moreover, distortions also appear in cost-price relations because costs do not fall proportionately to prices. Also, all costs do not fall at a uniform rate. Some costs are rigid or fall quite slowly, whereas other costs fall steeply. Usually wages and salaries are sticky during the depression. Trade union pressures and labour laws often prevent substantial reductions in wage rates. Rents, interest rates, insurance premia and taxes are slow to move downward. These cost rigidities while prices continue to fall during the depression wipe out the profit margin in many cases. Businessmen find it very much disheartening. In this environment of pessimism, they invariably exaggerate potential losses and attempt to reduce the volume of their business operations.

James Arthur Astey has succinctly described the phase of depression in the following words: "The weakening of expectations from which the recession started brings about price fall, output reduction, and further fall in prices with fall in profits; and so under the discouragement of falling profits, which now replace what had been at first only a fear thereof, comes another wave of reduction of output with further unemployment, further reduction of purchasing, further fall in bank credit and velocity of circulation, and more deflation of prices. It is this cumulation of forces that makes the contraction so dangerous and in great depressions so severe."⁶

Recovery

The recovery starts when forces that work to restore the normal price relations and cost-price relations start operating effectively. Generally the beginning of recovery process is not as dramatic as the beginning of recessionary process. The recovery is gradual. It starts when the prices stop falling. From the records of various depressions it is clear that when inventories and accumulated stores are exhausted with the slowing down of production, supplies reach scarcity levels and further downward movement of prices is arrested. This is the stage where producers see no risk in undertaking production. This stage reaches faster in those fields where production can be controlled easily. During depressions demand for durable goods is reduced drastically and, in response to this, production is correspondingly cut down. But the demand for even these goods cannot be postponed indefinitely. Therefore, once the stocks of these goods are exhausted, the pressure for increasing their production is created. To begin with, firms use idle capacity to increase production. This naturally generates both employment and income which creates additional demand for consumer goods and services. At this stage marginal efficiency of capital starts recovering. The firms begin making investment to replace depreciated equipment. With business prospects improving, some firms opt for larger investment.

Alongwith the restoration of the normal price relations, there is correction of distortions in cost-price relations. The lagging costs which had eroded profit margins during the depression start falling. Since financial institutions do not find attractive outlets for their funds, interest rates fall in the later phase of depression. Long-time interest rates fixed by contract are brought down in some cases by agreement. Rents, insurance rates and taxes are also adjusted downward. Wages are reduced under the hard reality of unemployment. Since the relatively inefficient workers lose jobs, less efficient plants are left idle, and less efficient managerial executives are dropped, the general level of efficiency rises during the later phase of depression, which in turn lowers down the average cost of production. Under the influence of these changes in cost structure, losses are replaced by profits. Obviously together with upward movement of prices, rational adjustments in cost-price relations induce investment activity. In course of time, the recovery process gathers momentum due to multiplier coming into operation.

Another sign of the beginning of the recovery, apart from the correction of distortions in cost-price relations, is revival of stock exchange activities manifested in the rising prices of securities. The stock exchange activity has a tendency to influence the decisions of the entrepreneurs. The upward movement of the prices of the securities is taken to be a good indicator of the recovery of profits. Usually this increase of stock market prices provides inducement to construction and other capital projects. With the expectations of growing profits

entrepreneurs undertake construction of factory buildings and shopping complexes. The rising security prices encourage companies to venture new issues to mobilise resources for long-term projects. This is the time when innovating activities receive a boost. New products and new techniques are introduced. However, the experience of many recoveries in the past is that capital goods industries lead other industries out of the depression. If this expansion proceeds on a big scale, the wages and salaries paid out increase effective demand which serves as starter for other projects. Thus the cumulative process builds up and the phase of recovery tends to move on into the phase of prosperity. The cycle at this stage is ready to repeat itself.

■■■■ IS BUSINESS CYCLE AVOIDABLE ? ■■■■

Since the publication of Keynes' *The General Theory of Employment, Interest and Money*, the decision-makers world over have claimed that it is no longer impossible to avoid depressions and hyperinflations. And, in fact, a large number of countries have successfully avoided prolonged depressions like those of the 1870s, 1890s and 1930s. However, no one knows the institutions and policy measures whereby recessions can be avoided. Both the Keynesian fiscal policy measures and the monetarism have failed to provide answers to various tricky developments in the economy which eventually result in waves of prosperity and recession.

Arthur Okun, one of the most creative American policy maker (he was chairman of the Council of Economic Advisers to President Johnson in 1968) had remarked in 1970 that no government could proclaim that recessions are completely avoidable. How correct Okun was in making these observations about the occurrence of recessions is proved by the events of 1974-75, 1982, 1987 and 2001 in the US. These were the years of marked business slow down in that country (see Box 7.1). However, developments in macroeconomics over the past few decades now allow governments to adopt fiscal and monetary measures which often prevent recessions from snowballing into severe depression. Samuelson and Nordhaus maintain, "The wild business cycle that ravaged mature capitalism during its early years has been tamed."

BOX 7.1. Are Recessions Avoidable?

Recessions are now generally considered to be fundamentally preventable, like airplane crashes and unlike hurricanes. But we have not banished air crashes from the land and it is not clear that we have the wisdom or the ability to eliminate recessions. The danger has not disappeared. The forces that produce recurrent recessions are still in the wings, merely waiting for their cue.

Source : Arthur M. Okun, *The Political Economy of Prosperity* (New York: Norton, 1970), pp. 33ff.

In October 1987, stock markets in the United States and throughout the world crashed. The crash was so steep and so widespread that it has been dubbed a stock market "melt-down" — conjuring up images of Three Mile Island and Chernobyl. This severe and widespread stock market crash has caused some commentators to draw parallels between 1987 and 1929 — the eve of the greatest

depression in history. Are there similar forces at work in the United States and world economies today that might bring about a Great Depression of the 1990s?

Although not in the same league as the Great Depression, we have experienced two severe recessions in recent history. The worst of these, and the most severe recession since the Great Depression occurred in 1982, a year in which real GNP fell by 2.5 per cent and unemployment increased by almost 11 per cent. The other recession occurred eight years earlier, in 1974 and 1975. On that occasion real GNP fell by 1.8 per cent over two years, and unemployment rose from 4.9 per cent to 8.5 per cent.

Source : Michael Parkin, *Macroeconomics* (Massachusetts: Addison-Wesley Publishing Company, 1990), pp. 379-80.

■■■■ NOTES ■■■■

1. W.C. Mitchell, *Business Cycle: The Problem and Its Setting* (New York: National Bureau of Economic Research, 1957), p. 468
2. J.M. Keynes. *The General Theory of Employment, Interest and Money* (London: MacMillan, 1936), pp. 313-4.
3. *Ibid.*, p. 314.
4. Arthur F. Burns and Wesley C. Mitchell, *Measuring Business Cycles* (New York: National Bureau of Economic Research, 1946).
5. James Arthur Astey, *Business Cycles—Their Nature, Cause and Control* (Bombay: Asia Publishing House, 1960). p. 88.
6. *Ibid.* p. 97.
7. Paul A. Samuelson and William D. Nordhaus, *Economics* (New York : McGraw-Hill Book Co., 1992), p. 572.

ECONOMIC GROWTH, DEVELOPMENT AND BUSINESS

Growth and Development— Concepts

Factors in Economic Development

- Economic Factors • Non-Economic Factors in Economic Development • Natural Resources

Growth Models — The Post Keynesian Phase

The Harrod-Domar Model — Steady States and Stability

The Neo-Classical Model

- Relaxing the Assumption of Fixed Coefficients of Production • Changes in Saving Propensity • The Cambridge Models
- Adjustment via Changes in the Rate of Population Growth

The Role of Technical Progress

Economic growth and development are of crucial importance from the point of view of business firms. In this chapter, we propose to discuss the following issues:

- The concepts of economic growth and economic development and the difference between them.
- Economic and non-economic factors in economic development.
- Growth models in the post Keynesian phase.

■■■■ GROWTH AND DEVELOPMENT—CONCEPTS ■■■■

The term 'economic growth' refers to increases over time in a country's real output of goods and services — or more appropriately product per capita. Output is generally measured by gross or net national product, though other measures could also be employed.

The term 'economic development', in contrast, is more comprehensive. *Economic development implies progressive changes in the socio-economic structure of a country.* Viewed in this way, economic development involves a steady decline in agriculture's share in GDP and a corresponding increase in the share of industries, trade, banking, construction and services. This transformation in economic structure is invariably accompanied by a shift in the occupational structure of the labour force and an improvement in its skill and productivity.

Most people are now convinced that industrialisation and technological progress have overriding influence on this economic transformation. Hence there is a clear "policy message that to base a development policy on agricultural activities alone would be misguided, however attractive such aphorisms as 'back to the land' and 'small is beautiful' may sound to those disillusioned with the recent industrialisation experience of the developing countries."¹ R. Sutcliffe's very pertinent observations in this regard are presented in the extract from his book provided in Box 8.1.

BOX 8.1. Growth, Human Welfare and Sentimentalism

It is understandable that vague memories of the working class in 19th century Britain, the contemporary horrors of American machine-age society, and the Stalinist attack on the Russian Peasantry, should arouse feelings which are hostile to industrialisation. Yet to oppose machines altogether, like Gandhi, or to argue that a long run rise in the standard of living is possible without industrialisation, are no more than forms of sentimentalism, especially when the condition of

most of the population of the non-industrialised world is now both terrible and worsening. It is not sentimentalism to demand that the process of industrialisation should be made as humane and as painless as possible and the long-term aims of equality at a higher standard of living should be constantly borne in mind as the process goes on.

Source: R. Sutcliffe, Industry and Underdevelopment (Reading Mass: Addison-Wesley, 1971).

Spelling out the distinction between economic growth and economic development. Charles P. Kindleberger rightly asserts that *whereas economic growth merely refers to a rise in output, economic development implies changes in technological and institutional organisation of production as well as in distributive pattern of income*. Compared to the objective of development, economic growth is easy to realise. By mobilising larger resources and raising their productivity, output level can be raised. The process of development is far more extensive. Apart from a rise in output, it involves changes in the composition of output as well as a shift in the allocation of productive resources so as to ensure social justice.

From the point of view of business firms, both economic growth and economic development are relevant. Economic growth besides augmenting the supply of capital raises effective demand which, in turn, induces business activity. Economic development helps in human resource development and thus raises the productivity level. Further, it reduces social tensions and thereby creates congenial environment for business.

In some of the underdeveloped countries the process of economic growth has been accompanied by economic development. This, however, is not necessary. It is quite probable that a country produces more of the same type of goods and services, to keep up with a growing population, while basic structure of the economy remains intact. In a well-known book on Liberia, Robert Clower had observed that in spite of the fact that the various concessions to foreign firms induced exports in a big way and resulted in a considerable increase in GNP there were virtually no complementary developments in other sectors of the economy. The institutional set-up of the country essentially remained unaltered in this phase of growth. Further, the benefits of this growth went almost exclusively to a privileged few, while the vast majority of the country's people remained completely unaffected. Clower thus calls it "*growth without development*"² Hans Singer asserts, "for developing countries it is not difficult to demonstrate from numerical models, given their high rates of population increase, increasingly capital intensive technology, the technological monopoly of the industrialised countries and their limited resources that widespread 'trickle down', let alone the creation of social welfare states is most unlikely in the normal context of purely economic growth."³ *Development without growth is inconceivable*. A substantial rise in a country's GNP is required before it can hope to expand its industries, financial institutions, trade, public utilities, and government administration. Nowhere in the world has the occupational distribution of population changed in the absence of growth. *While considering from the welfare viewpoint of the people the inevitable conclusion is that economic growth alone is not enough for underdeveloped countries; it must be accompanied by development*.

Most of the underdeveloped countries of today have a colonial past and their growth pattern is quite similar in many respects. The essence of their growth pattern is dualism. Dualism refers to coexistence of developed and underdeveloped sectors in a country's economy side-by-side. In such an economy one sector or sub-sector experiences perceptible growth while the rest of the economy does not. Income generated by this growth in the past was appropriated by a small segment of the population. Dualistic growth in a great number of countries has completely bypassed those areas and people who contributed nothing to the export economy. In the absence of any connection with the growing sectors of the economy these self-sufficient subsistence economies had suffered a long period of stagnation.⁴

*Former World Bank President Robert McNamara had estimated that about 40 per cent of the developing world's population did not benefit at all from the economic growth during the 1950s and 1960s.*⁵ This experience was rather frustrating to multitudes of population. It also led to the adoption of an alternative conception of economic development. A distinctive feature of the new viewpoint generally referred to as the 'basic needs' approach is "that policies must be implemented to ensure a rising and properly distributed supply of goods, both private and public, if basic needs are to be met."⁶

■■■■ FACTORS IN ECONOMIC DEVELOPMENT ■■■■

Economic development is a complex process. It is influenced by both economic and non-economic factors. Among *the economic factors* the most prominent ones are the following:

- Capital stock and the rate of capital accumulation
- Marketable surplus of agriculture
- Conditions in foreign trade
- Economic system.

Non-economic factors playing an important role in determining the pace and direction of development are as follows:

- Human resources
- Technical know-how and general education
- Political freedom
- Social organisation
- Corruption
- Will to develop

Last, but not the least, is the role of *natural resources* in development. They often decide the limits of development.

Economic Factors

In a country's economic development the role of economic factors is decisive. The stock of capital and the rate of capital accumulation in most cases settle the question whether at a given point of time a country will grow or not. There are a few other economic factors which also have some bearing on development but their importance is hardly comparable to that of capital formation. The surplus of foodgrains output available to support urban population, foreign trade conditions and the nature of economic system are some such factors whose role in economic development has to be analysed.

Capital formation. The strategic role of capital in raising the level of production has traditionally been acknowledged in economics. With the development of growth economics in the post World War II period its role in economic progress has been increasingly emphasised. In fact, the *Harrod-Domar model of growth has treated capital as the crucial factor in economic growth*. It is now universally admitted that a country which wants to accelerate the pace of growth, has no choice but to save a high ratio of its income, with the objective of raising the level of investment. Great reliance on foreign aid is highly risky and thus has to be avoided. Economists rightly assert that *lack of capital is the principal obstacle to growth and no development plan will succeed unless adequate supply of capital is forthcoming*. Whatever be the economic system, a country cannot hope to achieve economic progress unless a certain minimum rate of capital accumulation is realised. However, if some country wishes to make spectacular strides, it will have to raise its rate of capital formation still higher. Japan had precisely done this in the late years of the seventh decade of the twentieth century. It had stepped up its saving rate to 37 per cent of the Gross Domestic Product. Even as late as 2003, it has recorded a saving rate as high as 27 per cent of its GDP. Through a major part of the 1980s and early 1990s, saving rates in countries such as China, South Korea, Thailand, Malaysia, Singapore and Hong Kong were 30 per cent or more. In China, saving rate was 43 per cent of its GDP and Singapore recorded a saving rate as high as 47 per cent of its GDP in 2003. The high rate of capital formation in all these countries provides an explanation of their high rates of growth in the 1980s and early 1990s. China's still very high rate of growth can be explained in terms of high rates of capital formation. In contrast, the rate of capital formation in India in the mid-1980s had fluctuated around 19 per cent of the GDP and only recently rose to around 25 per cent.

Ragnar Nurske has elaborately discussed the problem of capital formation in underdeveloped countries. On the demand side he has argued that there is a problem of small size of the market which fails to provide inducement to big scale investment activity. On the supply side, low level of per capita income and the demonstration effect in respect of consumption do not permit much improvement in the level of saving. Hence, the task of stepping up the rate of capital formation in the less developed countries is a really difficult one.

Marketable surplus of agriculture. Increase in agricultural production accompanied by a rise in productivity is important from the point of view of the development of a country. But what is more important is that the marketable surplus of agriculture increases. *The term 'marketable' surplus refers to the excess of output in the agricultural sector over and above what is required for the rural population to subsist. The*