CHAPTER 2

Risk and Risk Management

"The revolutionary idea that defines the boundary between modern times and the past is the mastery of risk: the notion that the future is more than a whim of the gods and that men and women are not passive before nature."

- Peter L. Bernstein. Against The Gods: The Remarkable Story of Risk

That we live in a world of risk is demonstrated by numerous newspaper reports of unsettling, shocking, and violent events such as road accidents, fire, flood, earthquake, hurricane, rape, arson, burglary, and assassination. As foreign investment increasingly flows into the country because of globalization, any change in one part of the world can trigger off shockwaves in India. At almost any party that we attend today, the conversation invariably turns to one topic – the sheer uncertainty that is ruling our lives. Businessmen have horror stories to narrate about how their business plans and strategies based on painstaking research had to be junked overnight because conditions change all of a sudden. Corporate treasury types tell us how nothing can be called a stable investment today. And young achievers tell us that they are never sure whether the wonderful company they are working in will not vanish overnight, as so many firms where their friends worked have. The classic instance is the most recent Krushi Bank scam. The Krushi Corporative Bank Ltd., Hyderabad, created a sensation by its ugly disclosures and the disappearance of its chairman and the board of directors.¹
The 1990s have seen a successive wave of international financial crises -- the 1992 collapse of western Europe's fixed parities, the 1994 collapse of the Mexico peso, the 1997 East Asian crisis, followed by Russia in 1998, and Brazil in 1999, culminating in the global meltdown in 2000. The birth of 21st century witnessed one of the most audacious attacks ever, against the United States as terrorists hijacked two airliners and crashed them into World Trade Center (WTC) in a coordinated series of blows that brought down the twin 110-storied towers on September 11th 2001. In Washington D.C. the Pentagon, the nerve center of the U.S. military also burst into flames when an aircraft struck in mid morning. As W.T.C. went up in flames the sorrow was not entirely American. It was truly international. The nearly 7000 who died belonged to 62 countries. Among them were over 300 Indians, the largest group of victims after Americans and Britans. This was immediately followed by the most dastardly attack on the State legislature in Kashmir (October 1, 2001), taking a toll of about fifty innocent human lives. The latest threat to human lives is the use of a biological weapon, anthrax, that has alarmed the whole world, particular U.S.A. and India. To drive home the gravity of the situation, it has to be mentioned that the Supreme Court in U.S.A. closed down for anthrax testing on October 27th 2001. Health officials recommended antibiotics for thousands and thousands of people as a precaution against the deadly disease of anthrax.

These cataclysmic events and several others like them have certainly grabbed the headlines and the news bulletins, but they are only the tip of the risk-iceberg. Anyway, they do indicate that we are constantly surrounded by forces, largely beyond our control, that threaten our physical and financial well-being. As a result, some of us will experience loss of life, destruction of homes and personal property. Some others will be
financially ruined because of double-digit inflation, over liability, and adverse court judgment. From this it is apparent that certain risks which can result in catastrophic economic insecurity for individuals and families are present in the society.

Some poets and philosophers may say that life without any risk and the uncertainty it creates would not be entirely pleasant. They maintain that we take pleasure in anticipating gains that may never be realized, and even more pleasure in realizing unexpected gains. Such creative thinkers further feel that life is more interesting and human race more alert and imaginative because of risk and uncertainty. As Nietzsche, a German philosopher, observes, “a heart full of courage and cheerfulness needs a little danger from time to time, or the world gets unbearable.”6 Risk brings sweetness to life along with bitterness. That is why, someone once said that the risk is ‘the sugar and salt of life’. Nevertheless, we have to admit that we do not enjoy being concerned about losses even if they never occur, and to suffer unexpected losses is certainly painful. Whether we like it or not, life is insecure and the human race is, more often than not, frustrated, worried and afraid because of insecurity or risk.

This chapter is divided into three parts. Part I describes the nature of risk and the changing scope of risk management. Part II deals with business risk management, describing how a business can identify and measure its loss exposures. Part III addresses itself to the significant aspects of personal risk management, identifying the pure risks faced by an individual or family and selecting the appropriate techniques for treating such risks.
(A) Nature of risk

The word ‘risk’ is derived from the Italian term, ‘risicare,’ which means ‘to dare’. In this sense, risk is a choice rather than a fate. It is something not to be avoided, but to be faced boldly. And the actions we 'dare' to take, depending on how free we are to make choices, are what the story of risk is all about. In his fascinating and thought-provoking book, Against the gods: The Remarkable Story of Risk, Peter L. Bernstein underlines the extent to which risk and uncertainty are at the core of modern society, in contrast to historical experiences in previous decades. The book shows how "until now civilizations have avoided or dismissed risk and uncertainty, initially with the help of the gods, then with the help of deterministic science," and how in the future, a better and more civilized world may arise capable of better managing the challenges and changes resulting from risk management. Thus, it is a powerful contribution to the quest for a new civilization in which human beings will ultimately accept the basic uncertainty of life more completely.

There is no single definition of risk. For, no universally accepted definition of risk exists. Different writers have given the concept different meanings. Economists, behavioural scientists, statisticians, risk theorists and actuaries, each have their own concept of risk as a chance or probability of loss occurring, All the same, a majority of insurance authors have traditionally defined risk in terms of uncertainty. Risk has been described as a chance of loss, possibility of an adverse deviation from a desired outcome, the variation in the possible outcomes that exists in a given situation, and as possibility
that a sentient entity can incur a loss. In short, risk is the relative variation of actual outcomes from the expected outcomes.

Risk is generally defined as "a state of knowledge in which each alternative leads to a specific outcome, each outcome occurring with a probability that is known to the decision maker". Many writers have defined risk in their own characteristic way. For instance, Williams and Heins describe risk as "objective doubt concerning the outcome in a given situation". Greene defines risk as "uncertainty as to the occurrence of an economic loss". Uncertainty is a person's conscious awareness of the risk in a given situation. And, a person's reaction to risk is the way in which he behaves or responds in an uncertain situation. So, risk can clearly be defined as uncertainty concerning the occurrence of a particular loss. For example, the risk of being killed in an automobile accident is present because uncertainty is very much present. In short, risk is almost the same thing as uncertainty. Uncertainty is the doubt that arises from our inability to predict future outcomes. Clearly, uncertainty arises from risk.

Though risk has been equated with uncertainty, it is necessary to distinguish between risk and uncertainty. Uncertainty is "subjective doubt concerning the outcomes during a given period. In other words, uncertainty is the doubt that exists whether or not one knows all the possible outcomes and the probability of their occurrence". It may be noted that when an individual's estimate of risk is perfect then risk and uncertainty are the same. Nonetheless, it may be noted that risk is objective and is a measurable uncertainty whereas uncertainty is subjective and is immeasurable. However, attempts have been made to measure uncertainty as a variance concept measurable by a probability statement of relative frequencies and even by more unequal measures such as "potential surprise".
Similarly, a distinction can be made between objective risk and subjective risk. Objective risk is the relative variation of actual loss from expected loss. It declines as the number of exposures increases. It varies inversely with the square root of the number of cases under observation. Since objective risk can be measured statistically, it is an extremely useful concept for an insurance company as well as to a corporate risk manager. On the other hand, subjective risk is uncertainty based on a person’s mental condition or state of mind and its impact varies depending on the individual. If an individual experiences great mental uncertainty concerning the occurrence of a loss, it will affect his conduct. High subjective risk often results in conservative and prudent conduct whereas low subjective risk results in less conservative conduct.

The concept of risk is closely related to chance of loss so much so that they are often confused with each other. Chance of loss may be defined as the probability that an event will occur. Like risk, the term probability has both objective and subjective aspects. Objective probability refers to "the long-run relative frequency of an event based on the assumptions of an infinite number of observations and of no change in underlying conditions". Subjective probability, on the other hand, is the individual’s personal estimate of the chance of loss. Therefore, subjective probability need not coincide with objective probability.

Also, the concept of risk should not be confused with the terms, peril and hazard. If peril is the cause of loss, hazard increases the chance of loss. There are three major types of hazards -- physical, moral and morale. Physical hazard is a physical condition that increases the chance of loss. Moral hazard is dishonesty in an individual that increases the chance of loss. Morale hazard is carelessness of, or indifference to, a loss
because of the existence of insurance. Moral hazard is more serious than physical and morale hazards since it involves unethical or immoral behaviour on the part of the insured who seek their financial gain at the expense of the insurers and other policyholders.

Above all, risk is closely linked with the dominant factor of time. Risk and time are opposite sides of the same coin for, if there were no tomorrow there would be no risk. As Peter L. Bernstein puts it, "time transforms risk and the nature of risk is shaped by the time horizon: The future is the playing field".\textsuperscript{16} Time matters most when decisions are irreversible. Nevertheless, many irreversible decisions must be made on the basis of incomplete information. Otherwise, one cannot act to treat a risk. To think twice before acting may be good, but too much hesitation in the face of uncertain outcomes is bad. This is exquisitely exemplified by Shakespeare when he says in \textit{Hamlet} how "the native hue of resolution is sicklied o'er with the pale cast of thought --- and enterprises of great pith and moment --- lose the name of action."\textsuperscript{17}

\textbf{(1) Categories of Risk}

Risk is all-pervasive inasmuch as most human activities involve some kind of risk or uncertainty or other. The potential losses in a situation involving risk are determined by their economic, social, political, physical, legal or psychological effects. It must, however, be borne in mind that the same loss can have economic and social effects or involve some other combination of effects. Anyway, risk can be classified into three major categories -- (i) pure and speculative risks (ii) static and dynamic risks, and (iii) fundamental and particular risks.
(i) Pure and Speculative Risks

A pure risk exists when there is a chance of loss but no chance of gain. A speculative risk exists when there is a chance of gain as well as a chance of loss. Examples of pure risk include premature death, occupational and non-occupational disability, catastrophic medical expenses and damage to property from fire, flood or earthquake. People who experience such losses usually do not profit from loss. Examples of speculative risks include betting on a horse race, participating in a football pool, investing in a real estate and producing a new product by a business firm. People who experience such losses may or may not profit from the loss.

To distinguish between pure and speculative risks, the former are considered insurable and the latter generally uninsurable. Secondly, the law of large numbers can be applied more easily to pure risks than to speculative risks. Thirdly, society stands to gain more from speculative risks than from pure risks though a loss occurs. For example, a firm that develops a new technological process for producing computers inexpensively may force a competitor into bankruptcy. Despite the bankruptcy of the competitor, society benefits since the computers are produced more efficiently at a lower cost to customers. But, society loses when most pure risks actually occur. For example, if an earthquake devastates an area, society does not benefit, but only loses.

(ii) Static and Dynamic Risks

Static risks are risks connected with losses caused by the irregular action of nature or by mistakes and misdeeds of human beings. Like pure risks they are normally present
even if the economy is unchanging. In contrast dynamic risks are those associated with a changing economy such as technological change and innovation. Static and dynamic risks differ from each other in several respects. Most static risks are pure risks, but dynamic risks are always speculative risks where both profit and loss are possible. Dynamic risks usually affect more individuals and have a wider impact on society than static risks. Dynamic risks are generally beneficial to society whereas static risks are always harmful.

(iii) Fundamental and Particular Risks

Fundamental risks are risks that affect the entire economy or large numbers of persons within the economy. But particular risks are those that affect only the individual, and not the entire community. Examples of fundamental risks include double-digit inflation, cyclical unemployment and war, which affect a large numbers of individuals. Examples of particular risks include theft of stereo set, camera or car, which affect only individuals concerned and not the entire community.

(2) Types of Pure Risk

While discussing the nature of risk it is essential to note that certain types of pure risks pose a substantial threat to the financial security of both individuals and business firms. Three major types of pure risks-- (i) personal risks, (ii) property risks, and (iii) liability risks -- are associated with great financial and economic insecurity.

(i) Personal Risks

Personal risks are those that directly affect individual involving the possibility of the complete loss of income and the depletion of financial assets. There are four kinds of
personal risks—risk of premature death, risk of old age, risk of poor health, and risk of unemployment. The risk of premature death of a family head results in great financial and economic insecurity leading to the loss of his/her human life value -- the present value of the family's share of the deceased breadwinner's future earnings. The risk of old age refers to the possibility of insufficient income during retirement. Unless the retired person has accumulated sufficient financial assets they will be confronted with a serious problem of economic insecurity. As regards the risk of poor health, an unexpected illness or accident can often result in catastrophic medical expenses. Unless the person has adequate health insurance or other sources of income to meet the medical expenses, he/she will be financially insecure. The risk of unemployment is another major threat to a person's financial security, especially in a developing country like India, unless there is adequate replacement income or past savings on which he/she can draw.

(ii) Property Risks

Property risks pertain to the damage or destruction of real estate and personal property because of fire, lightning, cyclones, and numerous other causes. Two major types of loss -- direct loss and indirect loss are associated with the theft of property. A direct loss is a financial loss that results from a physical damage to, or theft of, the property. An indirect loss is a financial loss that results indirectly from the occurrence of direct physical damage or theft loss.
(iii) Liability Risks

Liability risks are those that most persons face under the system of law. A court of law may order one to pay substantial damages to the person whom he has injured or whose property he has damaged. Liability risks are of great importance for several reasons. First, there is no maximum upper limit with respect to the amount of the loss. Second, though one can afford to lose one's present financial assets, one can never afford to lose one's future income or assets. Lastly, legal defense can be enormous if one is sued and has no liability insurance.

Thus, risks have been classified in many ways. But, the contemporary view of most academics and risk managers is that attempts to classify risks in this way are not only arbitrary but also counterproductive. Such classifications can create the false impression that different classes of risk should be managed in different ways, which, in turn, raise barriers to innovation and understanding. As Harold D. Skipper, Jr., C.V. Starr Chair of International Insurance, Georgia State University, U.S.A., who is an acknowledged authority on risk management, rightly observes, "All such classifications are arbitrary in that no absolute distinction can be made among different types of risk". For example, a distinction has been made historically between pure and speculative risks as has already been pointed out. A speculative risk is supposed to exist when the range of possible outcomes extends from a gain to a loss. And, a pure risk is said to be one where the range of outcomes involves either no loss or a loss. Such a risk dichotomy has never been completely accurate according to the present day risk managers and academicians. Moreover, with the continuing broadening of the scope of risk management it is believed that little is gained from the use of traditional classifications.
It should also be noted that the presence of risk in human activities entails a burden on society resulting in certain undesirable social and economic effects. In case the home or business firm of a family is damaged unexpectedly from fire or other perils, it causes a heavy burden on the family head, especially in the absence of insurance. So, individuals and business firms have to increase the size of their emergency fund in order to pay for unexpected losses. Similarly, the presence of risk may deprive the society of certain needed goods and services. For example, because of the risk of a catastrophic lawsuit professional liability insurance premiums have soared for physicians and surgeons. These costs are naturally passed on to the patients who must ultimately pay for the high risk associated with the practice of medicine. The burden of risk on society also includes the mental unrest and fear suffered by some of its members. Numerous examples can illustrate the worry and fear caused by risk. Parents may be fearful if their son or daughter goes to a pond or well to learn swimming since the risk of getting drowned is present.

(B) Risk Management

The origin of risk management may be traced back to the very dawn of time. Prehistoric humans banded together in tribes to conserve their resources, share their responsibilities, and provide some kind of protection against the uncertainties of life. However, risk management, as it is practised today is essentially a post-World War II phenomenon. It does not extend much farther back than the mid-1950s. Most modern risk management positions evolved out of insurance-buying function. The evolutionary process that moved insurance buying to risk management has registered a gradual growth
and development. Traditionally risk management was confined to pure loss exposures, including property risks, liability risks, and individual risks. However, the 1990s witnessed an integrated and a holistic view of risk management expanding it to consider all risks faced by a business organization or a family. Even at the beginning of the 21st century, risk management practices continue to evolve.

As has been pointed out, risk is a burden not only on the individual, but also on society at large. As life has become more complicated, more inter-related, and more and more uncertain, new loss exposures have been created and the severity of many old loss exposures increased. On top of that, the rapidly changing and increasingly complex, competitive environment has created an array of risks – global competition, shifts in consumption patterns, e-business, political and social risks, environmental consciousness, and growing liability consciousness – to be managed. And, the success or failure of an organization or an individual will largely depend on the ability to assume such risks and not their avoidance. This calls for “a paradigm shift in the way risks are managed and financed.”

Hence the need to examine some techniques for meeting the problem of risk by treating each loss exposure. The idea of risk management emerges only when people come to realize that they are, to some degree, free agents to take the leap. Proper risk management enables individuals and organizations to accept risks boldly and handle their loss exposures in the most economic and effective way. As Peter L. Bernstein points out, "the essence of risk management lies in maximizing the areas where we have some control over the outcome while minimizing the areas where we have absolutely no control over the outcome and the linkage between effect and cause is hidden from us."
Thus, risk management guides us over a vast range of decision-making, from allocating wealth to safeguarding public health, and from planting sugarcane to marketing sugar. Individuals and organizations of all sorts have, therefore, recognized the increasing importance of sound risk management. As they are free from concern about the accidental losses, they can pursue their regular activities more intensely and intelligently, thereby transforming their attitudes toward risk management into economic growth and technological progress.

The mastery of risk is a uniquely modern concept in that the appetite to take risk boldly by defying fate, the capacity to manage risk, and the moral courage to make forward-looking choices are key elements of the energy that drives the contemporary economic system forward. However, as Peter L. Bernstein points out, "the modern conception of risk is rooted in the Hindu-Arabic numbering system that reached the West seven to eight hundred years ago." which later on transformed mathematics, and measurement in astronomy, navigation and commerce. But, the serious study of risk began during the Renaissance when people freed themselves from the constraints of the past and, what was more, subjected long held beliefs to open challenge. It was a time of navigation and discovery of new worlds, adopting in their own way various forms of risk management. For instance, merchants learnt to employ the risk strategy of diversification to spread their risks, instead of putting all their eggs in one basket. This is evidenced in Shakespeare's popular play, *The Merchant of Venice*, when Antonio says:

My ventures are not in one bottom trusted,  
Nor to one place; nor is my whole estate  
Upon the fortune of this present year:  
Therefore, my merchandise makes me not sad.
And, throughout history, the act of risk-taking floated free, breaking down the barriers that stood on the way of measuring and controlling risk. As Keynes rightly observes, "if human nature felt no temptation to take a chance ... there might not be much investment merely as a result of cold calculation."  

In recent years, an increasing number of organizations have turned to risk management for handling pure risks. Risk management attempts to identify the pure risks faced by a firm or organization and, what is more, uses a wide variety of methods, including insurance, for treating these loss exposures. In other words, risk management is the identification, measurement, and treatment of property, liability, and personnel pure-risk exposures. Thus, in its broadest sense, risk management embraces all human efforts taken to minimize the impact of uncertain events in life. Since risk management is both an art and a science risk managers should rely heavily on non-quantitative techniques that make use of deduction and intuitive judgments. However, risk management as a function of business management is relatively new, and its precise boundaries are still the subject of much debate.

Risk management, like risk, is a difficult concept to define. Most definitions of risk management have tended to focus on the negative consequences of risk assumption—something that necessarily signifies danger, a loss potential to be avoided, if possible. But, a positive approach to risk management reveals that it is impossible to avoid risks since all choices and actions contain some risk or other. Therefore, the challenge before us is "to carefully select the risks we assume, quantify them and ensure that the rewards attendant on the assumption or greater than the loss potential". But, in actual practice such quantification of the loss potential is extremely difficult because of the presence of a
plethora of variables – the dynamic nature of the market place, the rapid technological changes, and the difficulty in obtaining vital and reliable information in support of risk assumption decisions – which are beyond the control of organizations and individuals. Hence the definition of risk and the processes to manage it must recognize the 'imperfectness of the art', the 'flexibility', and the 'continuity' that must accompany such definitions and processes. From this viewpoint, risk management is an ongoing, proactive management process, which seems to identify the key critical functions of an organization, monitors the events that can have a bearing on their operations, evaluate such events for their business impact, and develop plans and procedures to manage such risks and ensure business continuity.

Risk management may, however, be defined as "a systematic process for the identification and evaluation of pure loss exposures faced by an organization or individual, and for the selection and identification of the most appropriate techniques for treating such exposures". It involves the application of general management concepts to a specialized area. It seeks to identify and analyze systematically the various loss exposures faced by a firm or an individual as well as the best methods of treating the loss exposures consistent with the goals and the objectives of the organization or the individual concerned. So, risk management requires the drawing up of plans, the organizing of material and individuals, and the controlling of all the activities and efforts of a firm.

It should, however, be noted that risk management is not the same as insurance management. Insurance management is only one component of the whole gamut of risk management. Also, risk management is a much broader concept and differs from
insurance management in several respects. Risk management places greater emphasis on the identification and analysis of pure loss exposures than insurance management. Risk management provides for periodic evaluation of all the techniques of avoidance, loss control, transfer and retention for meeting losses whereas insurance management offers just insurance. Moreover, risk management decisions have a greater impact on the firm concerned than insurance management decisions. A successful risk management programme requires the co-operation of a large number of individuals and departments throughout the firm while insurance management affects a far smaller number of persons.

The Changing Scope Of Risk Management

Traditionally, risk management was limited in scope to pure loss exposures, including property risks, liability risks, and personnel risks. The traditional separation of pure and speculative risks meant that different business departments addressed these risks. Pure risks were handled by the risk manager through the techniques of risk retention, risk transfer, and loss control. Speculative risks were handled by the finance division through contractual provisions and capital market instruments.

However, an interesting trend emerged in the 1990s, as many businesses began to expand the scope of risk management to include speculative financial risks as well. Some business organizations began taking a more holistic view of the pure and the speculative risks faced by them, with a view to achieving cost savings and better risk treatment solutions by combining coverage for both types of risk. For instance, in 1947 the Honeywell company in U.S.A. entered into an "integrated risk programme" with American International Group (AIG), by combining coverage for pure and speculative
risks in the same contract that provided traditional property and liability insurance as well as coverage for currency exchange rate risk.

Recently a few businesses organizations have gone a step further, expanding their risk management programmes so as to consider all risks -- pure risks, speculative risks, strategic risks, and operational risks -- faced by them through 'enterprise risk management' system. By packing all of these risks in a single programme, the corporation offsets one risk against another, and in the process reduces its over all risk.

Objectives of Risk Management

Risk management has several important objectives that, according to Darwin Close, are a function of corporate goals, the corporate environment and attributes peculiar to a particular organization.27 These objectives can be classified into two categories: pre-loss objectives and post-loss objectives. The possible pre-loss objectives are (a) economy, (b) reduction of anxiety, and (c) meeting externally imposed obligations. The firm should prepare for potential losses in the most economical way involving a financial analysis of safety programme expenses, insurance premiums, and the cause associated with different techniques of handling losses. The firm should also minimize the anxiety and fear associated with all loss exposures. Then, it must meet certain obligations like government regulations of safety devices to protect workers.

The post-loss objectives pertain to (a) survival of the firm, (b) continuity of operations, (c) stability of earnings, (d) continued growth and (e) social responsibility. Survival of the firm refers to the capability of the firm, in the event of a severe loss, to resume at least partial operation within some reasonable time. The ability to continue the
operation after a loss is very important especially for firms like banks, bakeries and dairy farms that may lose most of their customers. In the same way, after a loss occurs, the firm can maintain its earnings per share if it continues to operate. The firm can grow even after a loss by developing new products and markets or by acquisitions and mergers. Since the firm has a social responsibility to the community after a loss occurs, it has to minimize the impact that a loss has on the employees, suppliers, customers, creditors and the community in general.

II

The goals and objectives stated above are realized through (a) Business Risk Management and (b) Personal Risk Management that constitute two principal streams of insurance risk management. Life insurance is concerned with the economic value of a human life that is derived from its earning capacity and the financial dependence of other lives on that earning capacity. Since economic value arises out of either a business relationship or a family bond, the functions of life insurance boil down to business and family purposes.

Business Risk Management

The business risk management process includes five steps: (1) identification of potential losses, (2) evaluation of potential losses, (3) selection of appropriate techniques for treating loss exposures, (4) administration of the programme, and (5) monitoring of results.
(1) Identification of potential losses

The first step involves a painstaking identification of all potential losses to the firm -- (a) property losses, (b) business income losses, (c) liability losses (d) death or disability of key persons (e) losses resulting from job-related injuries (f) losses from fraud and criminal acts and (g) employment benefits loss exposures. The risk manager has several sources of information-- physical inspection of company plans and operations, risk analysis questionnaires, flow charts that depict production and delivery processes, financial statements to identify the major assets to be protected and departmental claims data and historical claims data to identify major loss exposures.

(2) Evaluation of potential losses:

The next step is to evaluate and measure the impact of losses on the firm or the individual. This involves an estimation of the potential frequency and severity of the loss for each type of loss exposure. The measurement of loss exposures includes a determination of a probability that the losses will occur, the impact that the losses would have upon the financial affairs of the firm and the ability to predict the losses. The measurement process is important because it indicates the exposures that are most serious and consequently most in need of urgent attention apart from yielding the necessary information.
(3) Selection of Appropriate Techniques

After the frequency and severity of losses are estimated and measured, the risk manager has to select the most appropriate technique or combination of techniques for treating each loss exposure. These techniques include primarily (i) avoidance of risk, (ii) retention, (iii) non-insurance transfers, (iv) loss control, and (v) commercial insurance.

(i) Avoidance

One way to control a particular pure risk is to avoid the property, person or activity with which the loss exposure is associated by refusing to assume it even momentarily or abandoning an exposure assumed earlier. To illustrate refusal of assumption, a business which does not want to be concerned about potential property losses to a building or to a fleet of cars, can avoid these risks by never acquiring any interest in a building or fleet of cars. Avoidance through abandonment is much less common. For example, a chemical firm, which has started to conduct its experiments before it discovered the potential damages, involved, its decision not to continue its work would constitute abandonment.

The major advantage of avoidance is that the chance of loss is reduced to zero if the loss exposure is not acquired. Besides, the possibility of loss is either eliminated or reduced because the activity that could produce a loss has been abandoned. However, the major disadvantage of avoidance is that it may not be possible to avoid all losses and it is neither practical nor feasible to avoid all loss exposures.

(ii) Retention

The most common method of handling is retention by the firm itself. The retention may be passive or active, and unplanned or planned. The retention is passive or
unplanned when the risk manager is not aware that the loss exposure exists and consequently does not attempt to handle it. Thus, the firm has elected to retain the risk associated with the loss exposure concerned. For example, a firm is often aware of the financial risk associated with the death of a key technician, but it fails to take any action designed to handle this risk. The retention is active or planned when the risk manager considers other methods of handling risks and consciously decides not to transfer the potential losses. Whether active or planned retention is rational or irrational depends upon the circumstances surrounding the decision to retain the risk.

Retention may be used when no other method of treating the loss exposure is available. For example, a firm with a plant located in a river valley may find that no other method of handling the flood risk is feasible. Retention can also be used when the worst possible loss is not serious, and when losses are highly predictable. If retention is used, some method for paying losses must be selected out of the firm's current net income. The necessary funds can be borrowed or, a captive insurer can be formed. The advantages of retention are that the firm may be able to save money on insurance premiums and cash flow may be increased. However, the disadvantages are the possibility of greater volatility in losses in the short run and of possible higher taxes.

(iii) Non-Insurance Transfers

The technique of non-insurance transfers is used to transfer a pure risk and its potential financial consequences to another party. It may be accomplished in three ways. First, the property or activity responsible for the risk may be transferred to some other person or group of persons. For example, a firm that sells one of its buildings transfers the risks associated with the ownership of the building to the new owner. Second, the risk
may be transferred instead of transferring the property or activity responsible for the risk. For example, a tenant can shift to his/her landlord any responsibility for the damage to the landlord’s premises caused by his/her negligence. Similarly, a manufacturer may be able to force a retailer to assume responsibility any damage to the products that occur after the products leave the manufacturer’s premises. These two risk control transfers can shift only property or personal risks. The third way is risk-financing transfer, which, in addition to the transfer of property and the risk, shifts the liability risks to the transferee. For example, under a lease, a landlord may make a tenant pay for fire losses to rented premises even if the tenant is not negligent. Thus, some non-insurance techniques that are commonly used in risk management programmes are contracts, leases, and hold-harmless agreements. The major advantages of non-insurance transfers are that they may cost less than insurance and the potential loss may be shifted to someone who is in a better position to exercise loss control. There are, at the same time, several disadvantages. The transfer of potential loss may fail because the contract language is ambiguous. The firm will be held responsible for the loss if by any chance the party whom the potential loss is transferred is unable to pay the loss.

(iv) Loss Control

Loss control is an extremely important technique for treating loss exposures in a risk management programme since it is designed to reduce both loss frequency and loss severity. Loss-control measures attack risk by lowering the chance that a loss will occur, or by reducing its severity if it does occur. As C. Arthur Williams, Jr. and Richard M. Heins point out, “loss control has the unique ability to prevent or reduce losses for both
the individual firm and society while permitting the firm to commence or continue the activity creating the risk". Unlike the technique of avoidance of loss exposure, loss control deals with an exposure that the firm does not wish to abandon. The purpose of loss control activities is to change the characteristics of the exposure so that it is more acceptable to the firm.

(v) Commercial Insurance

A final technique for handling risk is by commercial insurance. This is the most practical method for handling a major risk for any business firm. Insurance is the transfer of the financial responsibility for the risk at the point of occurrence and conventionally involves the insurer in a commitment to pay the insured. The insured is thus exchanging the uncertain cost of retain loses for the certain cost of the premium. First, risk transfer is used since a pure risk is transferred to the insurer. Second, the pooling technique is used to spread the losses of the few over the entire group so that average loss is substituted for actual loss. Lastly, risk may be reduced by 'law of large numbers' by which an insurer can predict future loss experience with some accuracy. The technique of commercial insurance in a risk management programme is used by involving a selection of insurance coverage, selection of insurer, negotiation of contract terms with the insurer, dissemination of information concerning the insurance coverage, and periodic review of insurance programme. The advantages of insurance include indemnification after a loss occurs, reduction in uncertainty, availability of valuable risk management services and the income-tax deductibility of the premiums. Thus, insurance can be advantageously used for the treatment of loss exposures that have a low probability of loss, but the
severity of a potential loss is high. However, insurance does not always fully compensate the insured for losses suffered. This may be due to limitation of the liability accepted by the insurer, poor management of insurance by the insured leading to gaps in cover, or uninsurable losses.

In selecting the appropriate techniques for treating loss exposures, the risk manager must examine and establish the costs and other consequences of using each technique, or combination of techniques. He must also consider the present financial position of the firm, its overall policy with reference to risk management, and its specific objectives.

(4) Administration of the risk Management Programme

After deciding from among the alternative techniques of risk management discussed above, the risk manager must implement the decisions made successfully in order to have an effective administration of the risk management programme. This involves preparation of a risk management policy statement, close co-operation with other individuals and departments, and periodic review of the insurance programme.

The risk management policy statement outlines the objectives of the firm as well as company policy regarding treatment of loss exposures. The statement also educates top-level executives about risk management process and provides the necessary standards for judging the risk manager's performance.

The risk management programme cannot be a success without the active cooperation of the other departments within the firm, which are important in identifying
pure loss exposures and methods for treating these exposures. The internal departments can cooperate in the risk management process in a number of ways — accounting, finance, marketing, production, and personnel.

To make it function effectively, the risk management programme must be periodically reviewed and evaluated to determine whether the risk management objectives are being attained. Loss records should also be scrutinized to detect any changes in frequency and severity. The firm's overall risk management policies must be reviewed from time to time so as to evaluate how they are being carried out.

(v) Monitoring of Results

The results of the decisions made and implemented in the first four steps mentioned above must be monitored to evaluate the wisdom of those decisions and also to determine whether changing conditions suggest different solutions. And new developments that affect the original decisions on handling a loss exposure must be monitored. Also, the activities relating to risk management costs, safety programmes, and loss prevention have to be carefully monitored with a view to finding out whether the firm concerned is receiving total co-operation of the other departments in carrying out the risk management functions.

Like a typical business firm, each individual must needs to manage his/her family risks, and his/her own risks effectively in order to lead a successful and happy life.
Personal risk management is relatively an easy job since personal loss exposures are much less complex and less extensive than business loss exposures. All the same, personal risk management has not received the critical attention it deserves.

**Personal Risk Management**

Personal risk management refers to identification of pure risks by an individual or family, and to the selection of the most appropriate techniques for managing such loss exposures. The principles of business risk management are also applicable to personal risk management which involves three important steps. The first step is to identify all potential losses that can cause serious financial problems. The second step is to estimate the frequency and severity of potential losses. The third step is to select the appropriate techniques for handling each potential loss.

Personal risk management deals with family property and liability risk management, on the one hand, and personnel risk management, on the other. In other words, it is concerned mainly with the nature and importance of (1) family property and liability risks, and (2) family personnel risks, and how they could be handled by non-insurance and insurance tools.

**(1) Family Property and Liability Risk Management**

First of all, a family, like a business firm, must recognize and measure its exposures to potential loss pertaining to property and liability. The potential property losses include direct losses and net income losses. The potential liability losses are those associated with
torts or breach of contract. A family’s real property such as the permanent residence and a farm house, and its personal property such as household goods, clothing and the automobile are often exposed to direct loss. The maximum possible loss is the cost of replacing the damaged property. Replacement cost is becoming a popular measure of losses to real property as well as to personal property. However, the most important net income losses involve damage to real property, because most items of personal property can be replaced much more quickly than the assets of real property. The most common net income loss is additional living expenses such as extra costs for housing, food, transportation and laundry incurred by the family during the period when they cannot live in their original house or apartment. The magnitude of liability losses is in the form of court judgments, defense and court costs, and indirect expenditures of money, time and energy. The property and liability risks that may be faced by any family could be handled by the judicious use of both (i) non-insurance and (ii) insurance tools

(i) Use of Non-insurance Tools

The non-insurance tools include two risk control techniques – (a) risk avoidance and (b) loss control, and two risk-financing methods – (c) transfer and (d) retention, which can prove very useful in dealing with these risks.

(a) Risk Avoidance

Like a corporate body, a family may be wise to forgo certain activities or the ownership of certain property if the risks involved are greater than the advantages accrued. For example, the ownership of a car by an adventurous young man may not be worth the risks involved. A young family may postpone the idea of moving to a more
luxurious quarters situated at a distant place, far from the madding crowd, for reasons of security. However, it may be noted that avoidance is a negative approach and much less useful than other tools of risk management.

(b) Loss Control

Unlike the technique of avoidance of loss exposure, loss control deals with an exposure that the family does not wish to abandon. Loss-control measures handle risk by lowering its chance of occurring or by reducing its severity when it occurs. It has the unique ability to prevent or reduce losses for both the individual and society. However, efforts to reduce the chance of loss or the severity of losses should always be made when economically feasible. Safe driving habits, good housekeeping and improving firefighting facilities in the community go a long way in reducing the chance of risk as well as the severity of losses. It should, however, be borne in mind that insurance premiums do not vary with the experience of the individual family as they do in the case of large firms. Anyway, if every family becomes safety-conscious the loss exposure rate could eventually be reduced.

(c) Transfer

Like a business firm, a family may transfer the property or activity responsible for the risk to some other person or group of persons. For example, it can either sell away the family car or transfer driving responsibilities to someone else outside the family. (29). A family can as well transfer the risk without transferring the property or activity responsible for the risk. For example, the landlord may be made responsible for any damage to the property by certain specified perils by the tenant family, and it may be
agreed that the rent is to cease if the property becomes untenantable or till the damage to the property is rectified by the landlord himself/herself. However, transfer devices of this sort, other than insurance, are not generally available for families.

(d) Retention

When potential property losses cannot be avoided, controlled or transferred at any price they have to be retained. Many a risk management authority feels that active or planned retention is an extremely useful way to handle many potential property losses instead of transferring them to some other agency.\(^{30}\) Retention is considered to be a very useful tool, particularly when potential losses in are so small that the family can handle them with relative ease out of current income or withdrawals from savings accounts. For example, the family can easily retain small automobile physical damage losses. A small potential loss like this will not cause the family much worry. If, on the other hand it is transferred to an insurer the expenses incurred in adjusting these losses will be relatively high. Retention is also useful not only when the loss is small but also when the risk is small. The family can predict fairly well the most probable losses of small household goods like pens, books, tears in clothing and other domestic tools and repair for these losses in its budgeting.

Retention however, is much less applicable to liability losses like defense and court costs for the simple reason that they tend to be large and infrequent. The only thing that the family can do is to be prepared to bear some liability risk itself since insurers pay limits on their maximum responsibility. Liability losses however, can be deducted from
the taxable income of the family in countries like USA, but only when they are incurred in connection with business or professional pursuits.

(ii) Use of Insurance Tools

Though non-insurable tools discussed above are extremely important for handling property and liability losses, most families are likely to turn to insurance for some protection. The most attractive insurance contracts for families are (a) homeowner's contracts and (b) the personal auto policy, or some independent version of these two contracts, though some families are likely to turn to personal catastrophe liability insurance, and fidelity and surety bonds.

(a) Homeowners Insurance Programme

Homeowners insurance, which has been recently introduced in India, is frequently referred to as a package policy. It consists of package policies combining most of the property and liability insurance that a family needs into one contract. As a package policy, homeowners insurance programme combines two or more separate coverages into one policy. Also called a multiple line policy, homeowners insurance has several advantages to the insured. First, purchasing and renewing one contract is certainly more convenient and more efficient than arranging several contracts. Second, the coverage provided is at least as broad as that of separate contracts. Third, the total premium is lower than the sum of the premiums for equivalent separate coverage. The premium reduction is due to reduced administrative expenses, stricter underwriting, and higher minimum amounts. Finally, there are fewer gaps and overlaps than among separate coverage.
The basic homeowners forms now used in the present ISO homeowner's insurance programme are HO-2 (broad form), HO-3 (special form), HO-4 (contents broad form), and HO-6 (unit-owners form and HO-8 (modified coverage form). The homeowners forms are carefully underwritten and eligibility requirements are fairly strict.

**Homeowners 2 (broad form)** is a named-perils policy which insures the dwelling, other structures and personal property against loss from certain listed perils – fire or lightning, windstorm or hail, explosion, riot, aircraft, vehicle damage, vandalism, theft, volcanic eruption and sudden and accidental discharges.

**Homeowner 3 (special form)** insures the dwelling and other structures against risk of direct loss to property. Losses to the dwelling and the other structures are paid on the basis of full replacement cost with no deduction for depreciation.

**Homeowner 4** is specially designed for tenants who rent apartments, houses, or rooms. It covers the tenant's personal property against loss or damage and it also provides personal liability insurance.

**Homeowners 6 (unit-owners form)** are designed for the owners of condominium units and cooperative apartments. The condominium association carries insurance on the building and other property that is owned in common by the owners of the different units. It covers the personal property of the insured for the same named perils listed in Homeowners 2.

**Homeowners 8 (modified coverage form)** is designed for older homes in urban neighbourhoods where the replacement cost of a house may substantially exceed its market value. It pays for the losses to the dwelling and other structures based on the...
amount required to repair or replace the property using common construction materials and methods.

(b) **Personal Auto Policy (PAP)**

Most automobile insurance contracts are schedule contracts which permit the insured to purchase both property and liability insurance under one policy. The contract can be divided into two separate contracts — one providing insurance against physical damage to automobiles, and the other protecting against potential liability arising out of the ownership, maintenance, or use of an automobile. Two standard automobile insurance contracts are used by business risk managers. The first is the **Business Auto Policy (BAP)** designed for corporations and partnerships insuring any type of automobile, and sole proprietors insuring any automobile other than a private passenger automobile. The second is the **Personal Auto Policy (PAP)** designed primarily for family use, but sole proprietors can also use it to insure private passenger automobiles used in their business. The personal auto policy covers (a) property insurance, (b) liability insurance, (c) medical payment insurance and (d) uninsured motorists coverage.

The **property insurance** covers the owned vehicles but also private passenger autos, small trucks, trailers, and farm wagons. The persons covered are the named insured and his or her spouse. If the named insured dies, his or her legal representative is covered. Under the **liability insurance**, the peril covered is an accident. The persons covered other than the named insured, spouse and any family member differ depending upon the automobile involved. The **medical payment insurance** is a form of health insurance. The named insured or any resident relative need not be in an insured automobile to collect
benefits. They are also covered even if they are struck by any other automobile while walking crossing a road. Under the uninsured motorists coverage a vehicle is considered to be 'uninsured', if it is insured for less than the limit of the insured motorists insurance. The named insured or any resident relative need not be in a covered automobile to collect the benefits allowed.

(2) Family Personnel Risk Management

In addition to managing its property and liability risks, a family must take important decisions regarding personnel risks associated with (i) death, (ii) accidental injury, (iii) sickness, (iv) unemployment, and (v) old age, which result in a potential loss of earning power and unexpected expenses. The nature, severity, and frequency of losses faced by the families as a result of these five personnel perils has to be properly recognised and measured.

(i) Death

The major loss faced by most families as a result of death is a loss of earning power. This loss to the family may be estimated by

(a) forecasting the income after taxes that the individual would have received each year until his/her retirement, but will not receive if he/she dies,

(b) subtracting from each year's expected income the portion that would have been used to maintain the individual had he or she lived, and

(c) discounting each of these differences to its present value.
Some may wonder as to why subtraction from the expected income of the individual is to be calculated. It is necessary because "if money can be invested at a certain rate of interest, each rupee available at the present time is worth more than a rupee at some future date".33 The minor loss that a family suffers when the breadwinner dies is the additional expenses -- funeral expenses, probate costs and the fees of executors and administrators and the federal estate tax.

(ii) Accidental Injury

Accidental injury is injury arising out of external, violent, visible means. It may cause two types of losses -- loss of earning power through disability and extra expenses. If the person is totally and permanently disabled to the extent that he or she cannot work, the loss of earning power is computed as it is in the case of premature death but with a difference. The disabled persons maintenance costs is not deducted except for any expenses involved in going to work or engaging in other activities that may be discontinued. The loss of earning power caused by such permanent and total disability is, therefore, greater than the loss caused by death. Unexpected extra expenses caused by an injury or an impairment include hospital bills, surgical fees, charges for care in hospital or at the patients home, dental bills, charges for nursing services, costs of artificial limbs and other medical expenses.

(iii) Sickness

Although India has achieved a lot in terms of health improvement over the last 50 years, it is way behind many fast developing countries such as China, Vietnam, and Sri Lanka in health indicators.34 Small wonder, if incidences of sickness in many families galore. Like accidental injuries, poor health causes decrease in earning power and extra
expenses. During the period of hospitalization individuals may not get full average salary/remuneration for their work because of the long leave they have to take. The recent rapid rise in the cost of medical services will cause additional expenses to the family for the treatment and recovery of the patient.

(iv) Unemployment

Involuntary unemployment caused by economic factors is yet another threat to a persons earning power. Unemployment may be of different types — aggregate unemployment affecting the entire economy, structural unemployment affecting particular firms, industries or regions, and personal unemployment affecting workers individually. Aggregate unemployment is caused by cyclical factors acting upon most industries. Structural unemployment may result from seasonal fluctuations, technological changes, strikes, and the like. Personal unemployment may occur because of difficulties in locating a job or in obtaining or holding a job for a variety of reasons.

(v) Old Age

Old age is much less often recognised as a source of financial problems. As age advances a person’s earning power is considerably reduced, but expenses continue. The person may prepare for his retirement for his/her retirement period by saving or investing during his/her earning career. But, saving is neither painless nor automatic and, what is more, the amounts needed in old age may be very great. Also, the money needed during old age is indefinite inasmuch as it depends upon the length of the retirement period. On top of that unlike the probabilities associated with other four perils discussed above which have been declining over time, the probabilities associated with superannuation have been increasing.
The analysis of the above personnel risks clubbed with the selection and implementation of tools required for meeting the principal potential loss of earning power of a particular family is generally called 'programming'. If unexpected or additional expenses are also combined with the loss of earning power, the process is called 'estate planning'. Programming and estate planning are in turn a part of "total financial planning" that includes such activities as general tax management and the family's standard of living.

Almost all families utilize (i) non-insurance and (ii) insurance measures in dealing with personnel risks.

(i) Use of non-insurance tools

The non-insurance tools, as in the case of business firms, are (a) loss control, and (b) retention

(a) Loss Control

The methods of loss control pertain to various health and safety practices as well as education and training, which are designed to keep each member of the family in good health, and productive in an economic sense. An entirely different type of loss control is one, which uses a will, gifts, and trusts with a view to reducing the impact of estate taxes upon death. A will is "a legal declaration of an individual's wishes as to the disposition of his or her property to be made on death." It is the principal means by which most estate plans are implemented. A will gives an opportunity to declare beneficiaries and also to name an executor, a person to administer estate settlement process. A gift is "the transfer of property ownership for less than adequate price." For a gift to be complete, the donor
must give up ownership and control, and the gift must be delivered and accepted by the donee. A gift is not considered complete for tax reduction purposes if it is delivered and then borrowed back for an infinite period of time. A trust is "a legal arrangement whereby one party transfers property to some one else who holds a legal title and manages the trust property for the benefit of others". Trusts are effective estate planning tools. Income, estate, and gift tax savings also can be effected through the use of trusts. Trusts can eliminate the need for guardianship of property. What is more, they can provide financial support for a disabled child and other family members. One can provide a life income for family members with the principal of the trust distributed to charity. Also, assets can be protected from creditors through the use of a trust. However, these advantages of a trust have to be balanced against the legal charges, trustee fees, and other costs associated with establishing a trust.

(b) Retention

Retention is a frequently used noninsurance tool in dealing with personnel risks. The use of retention is rational in three situations of personnel loss exposures according to Arthur C. Williams. The first situation in which retention may be rational is when a family has no choice but to take to insurance as the only satisfactory method by which it can transfer personnel losses to an outsider. But, at the same time, it is to be recognised that complete insurance protection is almost always impossible to obtain because of underwriting restrictions, the cost involved or both. Recognition of this fact, together with some advance financial preparation should make it easier to bear the losses when they do occur thereby retaining them. The second situation in which retention may be rational is when most families are advised to retain such potential losses as small medical
expenses and short-term income losses. A third situation in which retention may be rational applies only to preparation for retirement. In spite of the advantages of using low-cost, non-term life insurance and annuities as investments, families should also use other types of investments such as saving accounts, money market funds, municipal bonds, and credit union shares or deposits to prepare for their retirement.

(ii) Use of Insurance Tools

To handle their personnel risk problems effectively families are found making more extensive use of insurance than the business firms for several reasons. First, many employee benefit plans that create retained risks for the employer constitute insurance protection for the employee. For example, supplemental unemployment benefits are insurance benefits for the employee even though they are self-insured by the employer. Second, a family is less able to retain risks than a business firm because of its more limited exposure and less flexible financial position. The average family has three layers of insurance protection — (a) social insurance, (b) an employee benefit plan, and (c) individual insurance.

(a) Social insurance

Like all insurance, social insurance pools the risks that are associated with covered perils—death, poor health, unemployment, and superannuation. Social insurance includes "all insurance required by law for substantial numbers of the general population, administered or closely supervised by the government and supported by earmarked contributions, with a benefit structure that usually redistributes income to achieve some social objective, not private equity." Social security programmes have been designed to
aid people in their quest for economic security. Social insurance programmes emphasize personnel risks because all members of society may incur severe economic losses occasioned by death, poor health, unemployment, and old age. Though the definition of social insurance does not rule out some financial support from general government funds, most of the financing comes from contributions made by others specifically for this purpose. Social insurance is part of a social security system, which includes all government measures designed to protect its citizens against premature death, ill health, unemployment, old age, poverty and substandard wages. It also includes loss-control measures, transfers, public assistance and income supplements. The benefits and contribution rates of social insurance are prescribed by law, but are subject to change. Social adequacy is stressed. Although numerous private insurers may be involved, social insurance programme is administered by a single government employer.

(b) Employee Benefit Plan

The scheme of employee benefit plan includes all compensation other than direct wages – pensions, death benefits, medical expense reimbursements, unemployment benefits, bonuses, and purchase discounts. It is restricted to plans covering employees of a single employer. It always provides insurance protection from the viewpoint of the employee. About two-thirds of employee benefits costs is associated with benefits that are related to personnel loss exposures and thus to risk management.

Employee benefit plans providing death benefits usually take the form of group life insurance -- term insurance or nonterm insurance. Term insurance obligates the insurer to pay a specified amount if the employee dies during the specified term.
Non-term insurance usually provides lifetime protection. It combines an increasing savings component with decrease in term insurance. The group life insurance scheme also includes 'survivor income benefit insurance' which is a boon to the spouse of the employee in the event of his/her premature death as well as 'self-insured death benefits insurance', which provides some death benefit if a worker dies prior to retirement. Most group life insurance contracts also cover group health insurance, which provides disability income protection and medical expense protection for the employees.

(c) Individual Insurance

Life insurance is classified according to the way it is underwritten by commercial insurers, fraternal insurers, and mutual savings banks. Statistics reveal that in the most dominant role is played by commercial insurance (40). Commercial insurance falls into two major classes — individual insurance and group insurance. Individual insurance differs from group insurance in that the contract covers a person or a family as opposed to a group of persons, each contract covering a person or family is separately purchased, underwritten and administered. Individual insurance is sub-classified as ordinary insurance and industrial insurance. Ordinary insurance is the most important branch of individual insurance. The premiums are quoted on an annual basis but may be paid on a semi-annual, quarterly, or monthly basis. Only the first premium is collected by the insurance agent. The remainder of the payments is made directly to the insurer. Industrial insurance policies are similar to ordinary insurance polices, the principal differences being the absence of loan values, the prohibition of assignments, the requirement that the proceeds be paid in a lump sum, and the automatic inclusion of accidental death and dismemberment provisions. The most common method of premium payment is monthly.
The premium is customarily collected at the organization concerned under salary saving scheme, or at home of the insured by a 'debit agent'. Under individual insurance the debtor is the policyholder and pays the premiums. The insurance is on the life of the debtor, and if he/she dies, the insurer pays the unpaid balance of the debt to the creditor, thereby cancelling the debt. Under some individual polices, the insurance protection does not decrease over time, and the balance is paid to some other designated beneficiary.

However, it may finally be noted that the science of modern risk management sometimes creates new risks even as it brings old risks under control. For, as Peter L. Bernstein puts it, "our faith in risk management encourages us to take risks we would not otherwise take." (41) It looks as though that we are functioning in a system in which the more the risk management the greater is the loss exposure. No doubt, risk management, as it obtains today, is highly beneficial, but we must not exploit or overuse it by adding to the amount of risk in the system. Research reveals that the provision of seatbelts in cars encourages drivers to drive more aggressively. Consequently, "the number of accidents rises even though the seriousness of injury in any one accident declines."42 In the same fashion, introduction of portfolio insurance in America has encouraged a higher level of equity exposure than had prevailed before. Similarly, conservative institutional investors tend to use a much broader diversification of funds than expected, to justify higher exposure to risk in untested areas, knowing full well that diversification is not a guarantee against loss. These startling but revealing instances only reiterate that the need for life insurance protection has become far greater today than ever before.
Naturally, it is the concern of the next chapter to show how life insurance, including health insurance, is the sole technique of protection of an individual’s life value against the total or permanent loss of his/her current earning power.
Notes and References

1. The Economic Times, August, 2001
2. Deccan Chronicle, September 11, 2001
3. India Today, October 1, 2001
4. The Economic Times, 6 October 2001, Vol.41, No. 216, 4
13. Frank H. Knight, Risk, Uncertainty and Profit (Boston: Houghton Co., 1921)
14. It may be noted that the development of the "potential surprise" notion has generated a good deal of rebuttal and re-examination of probability theory. For instance, Jurg Nieham's essay, "Reflections on Shackle, Probability and our Uncertainty about Uncertainty", reflects the primary objections of many scholars to the Shackle analysis of uncertainty- probabilities.
15. George E. Rejda, Principles of Risk Management and Insurance,6

17. Shakespeare, *Hamlet*, I, 1


19. Ibid.


22. Ibid., 3

23. Shakespeare, *The Merchant of Venice*, I, i, 43-46


29. If the risk involved in the former situation is shifted to someone else, the family may not escape completely the risk involved in the latter situation.


31. The homeowner's insurance programme came into existence in USA in the early 1950s. Since then it has been revised several times in 1976, 1982, 1983, and 1984. The 1984 homeowners policy was again updated in 1991, which both broadened and narrowed certain coverages with no change in the premium. The present discussion is based on the 1991 new edition of the homeowners forms drafted by the Insurance services office.

32. In India, Insurance of motor vehicles was made compulsory by Motor Vehicles Act 1939. This act was subjected to amendments and the last amendment was by M.V. Act amendment 1988. According to this act it is compulsory for the vehicle owners to cover the legal liability for loss or damage to the third party as a result of an accident caused by a vehicle.


36. Ibid., 377

37. Ibid., 379.


40. It is estimated that commercial insurance in force is about 97 per cent, fraternal insurance in force is about 2 per cent, and mutual savings bank insurance in force is less than 1 per cent in the US.
