CHAPTER ONE
RISK AND RELATED TERMS

INTRODUCTION

Life is about risk. Individuals face some type of risk in everything they do and every decision they make. In most cases, we try to minimize the impact of risk by having insurance or other types of protection from loss. Or, we may look for ways to avoid risk by taking steps to prevent it. Finding a way to manage our risk will help protect our financial assets today and in the future.

Suppose you are riding in your friend's car. As she approaches the intersection, the light turns yellow, signalling that the light will soon change to red. Instead of slowing down to stop, your friend speeds up to "get through the light before it turns red." Your friend's behaviour is an example of taking a risk. As a result of her actions, you have also been exposed to risk. Therefore risk is defined as the likelihood of loss or profit, either from an investment or from some threat to your well-being. Running a red light puts you and your friend at risk of having an accident that would cause injury to you, your friend, anyone else in the car, and anyone who happens to be in other vehicles involved in the accident. Interestingly, our ability to tolerate risk varies from person to person.

What seems like "high risk" to one person may seem to be perfectly acceptable behaviour to someone else. Because of differences in perception, it is sometimes difficult to accurately label activities or behaviours as always this or that. Most people would agree that running a red light is a high-risk activity. High risk means that you are really pushing the limits on what is safe. Putting yourself and others in any situation where it is

probable that someone will be harmed is high risk. While high-risk behaviours may seem exciting and challenging or provide a rush of adrenaline, they also tend to be dangerous. Making a habit of high-risk behaviour will eventually catch up with you and may wreck your financial goals.

1.1 DEFINITION OF RISK

In the present day context, individuals have a strong desire for financial security and protection against those events that threaten their financial security. Financial security can be threatened by numerous factors such as;

- If the family head is killed in an accident
- Destruction of property by fire, floods, earth quakes and other natural factors.
- Infected by serious diseases such as AIDS, Cancer, Heart disease, etc

Thus, it is apparent that certain factors can threaten the financial security of individuals and their families.

There is no one universal and comprehensive definition of risk that exists so far. It is defined in different forms by several authors with some differences in the wordings used. The essence, however, is very similar. Some of the definitions are:

- Risk is a condition in which there is a possibility of an adverse deviation from a desired outcome that is expected or hoped for.
- Risk is the objectified uncertainty as to the occurrence of an undesired event.
- Risk is the possibility of an unfavourable deviation from expectations; it is the possibility that something we do not want to happen will happen or something that we want to happen will fail to do so.

- Risk is the variation in the outcomes that could occur over a specified period in a given situation.
- Risk is the dispersion of actual from expected results.
- Risk is defined as uncertainty concerning the occurrence of a loss. The greater the uncertainty, is the greater the risk. Risk can also be defined as the chance of loss or an unfavourable outcome associated with an action.

From the above mentioned and other definitions of risk, we can infer that risk is undesired outcome or it is the possibility of loss. The important point is there should be more than one outcome for the risk to happen, i.e. there will be no risk if there is only one outcome. This is because it is certain that only one outcome will take place. The absence of risk in this case implies that the future is perfectly predictable. Variations in the possible outcome, then, lead to the existence of risk; and the greater the variability, the greater the risk will be.

For example, the risk of being killed in an auto accident for a truck driver is present because uncertainty is present. Thus, risk is uncertainty regarding loss. This means that the loss may or may not happen. If a loss is certain to occur, it may be planned in advance and treated as a definite, known expense. However, if there is uncertainty about the occurrence of a loss, then the risk becomes an important problem.

1.2 . RISK Vs UNCERTAINTY

The dictionary meaning of risk is “the possibility of meeting danger or suffering harm or loss.” Uncertainty means does not know what will happen in the future. The dictionary meaning of uncertainty is “the state of being uncertain”. Here, uncertain means “feeling doubt about”. Thus, uncertainty of meeting with a loss or damage is known as risk.

Although risk is defined as uncertainty, employees in the insurance industry often use the term risk to identify the property or life being insured. Risk is

objective phenomenon that can be measured mathematically or statistically independent of the individual's belief i.e. risk is the state of the world. Whereas uncertainty is subjective that can't be measured objectively. Uncertainty is measured by the degree of belief i.e. it is a state of mind.

1.3 RISK & PROBABILITY

It is necessary to distinguish carefully between risk and probability. Probability refers to the long run chance of occurrence, or relative frequency of some event. Probabilities are generally assigned to events that are expected to happen in the future.

There may be a number of possible events that will take place under given set of conditions and these events may occur in equal or different chance of occurrence. For a clear differentiation between them, let see the following example.

Suppose the occurrence of a particular event is to be considered. One extreme is that this event is certain to occur. Thus the probability that this event will take place is 1(one).In this case there is no risk. In the other extreme the event will not take place at all. Hence the probability of occurrence is zero. In this case also there is no risk. In between these two extremes there could be several occurrences of the events with the corresponding probabilities of occurrence. This puts us in a situation of uncertainty because it is difficult to exactly tell which of the many possible events will take place. So that under this situation there is risk. Chance of loss is closely related to the concept of risk. "Chance of loss" is defined as the probability that an event will occur. Probability has both objective and subjective aspects.

Objective Probability

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 the underlying conditions.

Subjective Probability

Subjective probability is the individual's personal estimate of the chance of loss. It need not coincide with objective probability. For example, people who buy a lottery ticket on their birthday may believe that it is their lucky day and over-estimate the small chance of winning. However, some may think that their wedding anniversary day as a lucky day. Thus, a wide variety of factors can influence subjective probability such as age, sex, intelligence, education, etc.

In subjective probability, a person's estimate of loss may differ from objective probability because there may be ambiguity in the way in which the probability is perceived.

1.4 RISK, PERIL & HAZARD

Risk is the long term chance of occurrence, or relative frequency of loss. Risk is meaningful only when applied to the chance of loss occurring among a large number of possible of events Expressed as the ratio of the number of losses that are likely to occur compared to the larger number of possible losses in a given group.

Peril is defined as the cause of loss. If a house burns because of fire, the peril (the cause of loss) is the fire. Likewise, some common perils that cause damage or loss to the property include lightening, windstorm, tornadoes, earthquakes, theft and burglary.

Hazard is a present condition, event, object, or circumstance that could lead to or contribute to an unplanned or undesired event such as an accident. It is a source of danger. A hazard is a condition that creates or increases the chance of loss. There are three types of hazards;

- Physical hazard
- Moral hazard
- Morale hazard

Physical Hazard:

A physical hazard is a physical condition that increases the chance of loss. Examples of physical hazards are icy roads that increase the occurrence/chance of an auto accident/collision. The icy street is the hazard and the collision is the peril. Defective lock on a door increases the chance of theft. The defective lock is a hazard and theft is a peril.

Moral Hazard:

Moral hazard is dishonesty or character defects in an individual's mental attitude that increases the frequency or severity of loss. Moral hazard is Associated with intentional actions designed either to cause a loss or to increase its severity. Also moral hazard describes the change in attitude that can occur when insurance is available to pay for loss For example, the dishonest persons may fake an accident to collect the insurance or they intentionally burn unsold merchandise that is insured, the tendency for individuals to consume more health care if the costs are covered by insurance.

Moral hazard is present in all forms of insurance and it is difficult to control. Dishonest individuals often rationalize their actions on the ground that "the insurer has plenty of money". However, this view is incorrect because the insurer can pay claims only by collecting premiums from other insured. Because of moral hazard, premiums are higher for everyone.

Morale Hazard:

Morale hazard is slightly different from the moral hazard. Moral hazard refers to dishonesty by an insured that increases the frequency or severity of loss. Morale hazard is carelessness or indifference to a loss because of the existence of insurance. Morale hazard is the mental attitude of a careless or accident-prone person. Examples of morale hazard include leaving a door unlocked that allows a burglar to enter, rash driving without proper signalling. Careless acts like these increase the chances of loss.

1.5. CLASSIFICATION OF RISK

Risks may be classified in many ways; however, there are certain distinctions that are particularly important for our purposes. The major categories of risk are:

1. Subjective Risks Vs Objectives
2. Financial Vs non -financial Risks
3. Pure Vs Speculative Risks
4. Static Vs dynamic Risks
5. Fundamental Vs Particular Risks

1. Subjective risk vs. Objective Risk:

Subjective Risk:

Subjective risk is defined as uncertainty based on a person's mental condition or state of mind. For example, a person who has drunk more in the bar may attempt to drive home on his own and he may uncertain whether he or she will arrive home safely without being arrested by the police for drunken driving. This mental uncertainty is called subjective risk.

Subjective risk refers to the mental state of an individual who experiences doubt or worry as to the outcome of a given event. It is essentially the psychological uncertainty that arises from an individual's mental attitude or state of mind.

The impact of subjective risk varies depending on the individual. Two persons in the same situation may have a different perception of risk, and their behaviour may be altered accordingly. If an individual experiences great mental uncertainty (high subjective risk) concerning the occurrence of a loss, that person's behaviour may be affected. Thus, high subjective risk often results in conservative and prudent behaviour, while low subjective risk results in less conservative behaviour. A motor cyclist who has met with an accident in a particular road will be more careful and he will drive slowly

while riding through that road. However, another motor cyclist who has not met with an accident may have a rash driving on the dame road. Thus, the risk of meeting with an accident is perceived in different manner by the two motor cyclists. The first motor cyclist has high subjective risk and thus prudent, but the second motorcyclist has less subjective risk and thus less conservative.

Objective Risk

Objective risk is defined as the relative variation of actual loss from the expected loss. For example, assume that a property insurer has 1000 houses insured over a long period of time, and on average, 1% (or) 100 houses burn each year. However, we cannot expect 100 houses to burn each year exactly. In some years, 90 houses may burn, while other years 110 houses may burn. Thus, there is a variation of 10 houses (square root of 100) from the expected number of 100, or a variation of 10%. This relative variation of an actual loss from expected loss is known as objective risk.

Objective risk differs from subjective risk in the sense that it is more precisely observable and therefore measurable. It is the probable variation of actual from expected experience. If a loss has already occurred the probable variation of actual from expected losses is zero. Therefore the degree of risk is zero. If it is impossible for loss to occur the probable variation is also zero. In measuring the degree of risk, results are meaningful only in terms of a group large enough to analyse statistically.

Objective risk declines as the number of observations increases. It varies inversely with the square root of the number of cases under observation. In our previous example, 10,000 houses were insured and the objective risk was 10/100 or 10%. Now, assume that 1,000,000 houses are insured.. The expected number of houses that will burn is now 10,000, but the variation of actual loss from the expected loss is only 100 (square root of 10,000).

Objective risk is now 100/10000, or 1%. Thus, the objective risk declined to one-tenth of its former level, i.e., from 10% to 1%. Objective risk can be statistically measured by some measure of dispersion, such as standard deviation or co-efficient of variation. As objective risk can be measured, it is an extremely useful concept for an insurer.

2. Financial Vs Non- Financial Risks

Financial risks:-is one where the outcome can be measured in monetary terms. It is the risks that outcomes will cause financial losses.

Example:-Material damage to the property

- ✓ Theft of property
- ✓ Loss of Business profit following fire

Non-Financial Risk:-is a risk that doesn't have a financial implication or their outcome is not directly measurable financially but by other, like psychological or mental effect the risk may create.

Example:- Moral failure because of bulling boss

: - Risk of selecting a marriage partner

3. Pure Risk Vs speculative risk

Pure Risk

Pure risk is defined as a situation in which there are only the possibilities of loss or no loss. The only possible outcomes are adverse (loss) and neutral (no loss). Pure risk exists when there is uncertainty as to whether loss will occur. No possibility of gain is presented-only the potential for loss. Examples of pure risks include premature death, job-related accidents, etc.

Types of Pure Risk:

The following are the important types of pure risks;

i. Personal risks
ii. Property risks

iii. Liability risks

i) **Personal Risks**:

Personal risks are risks that directly affect an individual. Examples of personal risks are possibility of the complete loss or reduction of earned income, extra expenses, etc. There are four major personal risks..

a) Risk of premature death
b) Risk of insufficient income during retirement
c) Risk of poor health
d) Risk of unemployment

a) Risk of premature death is defined as the death of a household head with unfulfilled financial obligations. The obligations may be dependents to support, a mortgage to be paid off or children to educate. If the surviving family members receive an insufficient amount of replacement income from other sources, they may be financially insecure.

   Premature death can cause financial problems only if the deceased has dependents to support or dies with unsatisfied financial obligations. Thus, the death of a child age 10 is not "premature" in the economic sense.

b) Risk of insufficient income during the retirement is another major risk associated with old age. The majority of workers retire before age 65. When they retire, they lose their earned income. Unless they have sufficient financial assets, or have access to other sources of retirement, they will be exposed to financial insecurity during retirement.

c) Risk of poor health is another important personal risk. The risk of poor health includes both the payment of medical bills and the loss of earned income. The costs of major surgery have increased substantially in recent years. For example, an open heart surgery can cost more than 50,000 Birr, a kidney transplant can cost more than 30,000 Birr. Unless these persons have adequate health insurance, private savings, and financial assets, or other sources of income to meet these expenditures, they will be financially insecure.

d) Risk of unemployment is another major threat to financial security. Unemployment can result from business cycle downswings, technological & structural changes in the economy, etc. Unemployment can cause financial insecurity in three ways;

- First, the worker loses his or her earned income
- Second, because of economic conditions, the worker may be able to work only part time
- Finally, if the duration of the unemployment is extended a long period, past savings may be exhausted

ii) Property Risks:

Persons owning property are exposed to the risk of having their property damaged or lost from numerous causes. Personal property can be damaged because of fire, lightning, windstorms and numerous other causes.

There are two major types of loss in the damage of property;

a) Direct loss
b) Indirect loss

A. A ***direct loss*** is defined as a financial loss that results directly from the physical damage, destruction, or theft of the property. For example, if a factory is damaged by a fire, the physical damage to that is known as direct loss.

B. An ***indirect loss*** is a financial loss that results indirectly from the occurrence of a direct physical damage or theft loss. It is also known as consequential loss. Thus, in addition to the physical damage loss, the factory would lose profits for many months which it is being rebuilt. Here, the loss of profits during that rebuilt period is known as indirect loss (or) consequential loss. Extra expenses are another type of indirect loss. For example, if we own a newspaper or dairy, we must continue to operate even if a loss occurs.

iii) Liability Risks:

Liability risks are another type of pure risk that most persons face. One can be made legally liable, if he or she do something that result in bodily injury or property damage to someone else. The court of law may order that person to pay substantial damages to the person who is injured.

Motorists are being held legally liable for the negligent operation of their vehicles. Producers are also being sued because of defective products that harm or injure customers.

Speculative Risk:

Speculative risk is defined as a situation in which either profit or loss is possible. For example, if Mr.X purchases 100 shares of a company, he would gain if the price of that share increases but would lose if the price declines. Thus, here there are possibilities of both profit and loss.

Speculative risk can be differentiated from the **pure risk** in three ways;

1) Private insurers generally insure only pure risks. Speculative risks are not considered insurable and other techniques must used to cope with risk. However, there are certain exceptions. One exception is that some insurers will insure institutional portfolio investments and municipal bonds against loss.
2) The law of large numbers can be applied more easily to pure risks than to speculative risks. The law of large numbers is important because it enables insurers to predict loss in advance. But, it cannot be applied to speculative risks in order to predict future loss experience. An exception is the speculative risk of gambling, where casino operators can apply the law of large numbers in a most efficient manner.
3) Society may benefit from a speculative risk even though a loss occurs, but it is harmed if a pure risk is present and loss occurs. For example, a firm may develop new technology for producing cheaply. As a result, some competitors may fail. Despite the failures, society benefits since the computers are produced at a lower cost. However, society does not

benefit when a loss from the pure risk occurs, such as floods, earthquakes, etc.

4. Static Risks Vs Dynamic risk

Dynamic risks are those resulting from changes in the economy such as changes in the price level, consumer tests, income and output and technology may cause financial loss to members of the economy.

Static risk-it involves those losses that would occur even if there were no changes in the economy. These losses arise from causes other than the changes in the economy such as the perils of nature.

5. Fundamental Vs particular risk

A fundamental risk is a risk that affects the entire economy or large number of persons or groups within the economy. Examples include high inflation, cyclical unemployment & war. The risk of a natural disaster is another important fundamental risk. Tornadoes, earthquakes, floods and forest fires can result in property damage as well as the loss of numerous lives.

A particular risk is a risk that affects only individuals and not the entire community. Examples are car thefts, bank robberies, etc. Here, only individuals experiencing such losses are affected, not the entire economy. The distinction between a fundamental and particular risk is important since government assistance may be necessary to insure a fundamental risk. Social insurance and government insurance programs, as well as government guarantees and subsidies, may be necessary to insure certain fundamental risks. For example, the risk of unemployment generally is not insurable by private insurers but can be insured publicly by State Unemployment Compensation Programs.

Burden of risk on society

Loss of property and money are the primary reason that individuals attempt to avoid or alleviate its impact and hence these is the primary Burdon on society. In addition to this risk entails three major burdens on society.

1. ***The size of an emergency fund will be increas*ed**. It is prudent to set aside funds for an emergency. However, in the absence of insurance individuals and business firms would have to increase the size of their emergency fund in order to pay for unexpected losses.
2. ***Worry and fear are present-*** the uncertainty connected with risk usually produces a feeling of frustration and mental unrest. This is particularly true in the case of pure risk.
3. ***Loss of certain goods and services***-a third Burdon of risk is that society is deprived of certain goods and services, example, because of the risk of liability; some corporations have discontinued manufacturing certain goods.