RISK MANAGEMENT & INSURANCE

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Chapter

PREFACE

Risk management is the most crucial factor for success of any business. Unless a business predicts and make itself ready for potential risk, the catastrophic loss that might be resulted from would shorten its life span and drive it out of the business. Hence, thorough knowledge of risk management and transferring of this risk to other parties- called insurance- is vital for a business manager.

The principal objective of this module is to help students acquainted with the concepts of risk management in the profit maximization endeavor of a business.

This module comprises eight chapters which are presumed important to achieve the expected learning objectives. Risk and Related Topics, the Risk Management Process, Risk Measurement and Probability Distribution, Tools of Risk Management, Insurance, Legal Principles of Insurance Contracts, Life and Health Insurance, Property and Liability Insurance, Reinsurance and Insurance in Ethiopia are the basic areas covered in the module.

At the end of the course students are expected to know the concepts of risk and its

difference with some synonym words like peril, hazard, uncertainty and probability. They are also expected to select and administer the appropriate risk management tool as per the nature of the risk and could handle risk and insurance related affairs of a certain business in a well trained manner.

In addition to risk, students are expected to have due knowledge of insurance, nature of insurance contracts, characteristics of insurable risks, and how to deal with the different types of insurances; life, property, liability and health. Besides they are believed to be well aware of reinsurance and the historical development and the prevailing status of insurance in Ethiopia.

CHAPTER ONE

RISK AND RELATED TOPICS

LEARNING OBJECTIVES

At the end of this chapter, learners should be able to:

- Explain the meaning of risk
- Distinguish among risk, uncertainty and probability
- Distinguish among the terms risk, peril and hazard
- Describe and explain the different classes of hazard
- Differentiate pure and speculative risk
- Differentiate between fundamental and particular risk
- Describe and explain the different classes of pure risks

INTRUDUCTION

Dear students, this chapter is all about the basic concept of risk and risk related topics. It discusses the fundamental concepts embodied in the term risk, the meaning and nature of risk, its difference with uncertainty and probability, and the different meanings carried by the terms peril, hazard and risk. The chapter concludes with a discussion of the different classes of risk.

1.1. MEANING OF RISK

There is no single definition of risk. Economists, behavioral scientists, risk theorists, statisticians and actuaries each have their own concept of risk. Writers have produced a number of definitions which are usually accompanies by lengthy arguments to support the particular view they put forward. Consider the following definitions:

Risk is the possibility of an unfortunate occurrence.
Risk is a combination of hazards.
Risk is unpredictability – the tendency that actual results may differ from predicted results.
Risk is uncertainty of loss.
Risk is possibility of loss.

Although the insurance theorists have not agreed on a universal definition, there are common elements in all the definitions: indeterminacy and loss.

The notion of an indeterminate outcome is implicit in all definitions of risk: the outcome must be in question. When risk is said to exist, there must always be at least two possible outcomes. If we know for certain that a loss will occur, there is no risk.

At least one of the possible outcomes is undesirable. May be a loss or profit less than the expected.

Risk is a condition in which there is a possibility of an unfavorable deviation from a desired outcome that is expected or hoped for. Risk is uncertainty concerning the occurrence of loss.

The individual hopes that adversity will not occur, and it is the possibility that this hope will not be met that constitutes risk.

Risk is potential variation in outcomes. If a loss is certain to occur, the outcome is one and known in advance, therefore, there is no risk. It is when many outcomes are possible and when there is uncertainty about the occurrence of a loss that the notion of risk is to exist. The degree of risk is inversely related to the ability to predict which outcome will actually occur. The greater the variation, the greater the risk.

1.2. RISK VERSUS UNCERTAINTY

The term uncertainty is often used in connection with the term risk. So, it is apparent to deal with the relationship of these words.

Certainty is lack of doubt. In Webster‟s New Collegiate Dictionary, one meaning of the term "certainty" is "a state of being free from doubt," a definition will suit to the study of risk management. The antonym of certainty is "uncertainty" which is "doubt about our ability to predict the future outcome of current actions." Clearly, the term "uncertainty describes a state of mind. Uncertainty arises when an individual perceives that outcomes cannot be known with certainty."

Uncertainty refers to a feelings characterized by doubt, based on the lack of knowledge about what will or will not happen in the future. Uncertainty is doubt about our ability to predict the future. It is doubt a person has concerning his/her ability to predict which of the possible outcomes to occur. Uncertainty arises when an individual perceives risk. Uncertainty is a subjective concept, so it cannot be measured directly - cannot be measured by any acceptable yardstick. Since it is a state of mind, uncertainty varies across individuals.

Levels of Uncertainty:

Level of Uncertainty	Characteristics	Examples
None (Certainty)	Outcomes can be predicted with precision	Physical laws, natural sciences
Level 1 (Objective Uncertainty)	Outcomes are identified and probabilities are known.	Games of chance, Cards, Dies.
Level 2 (Subjective Uncertainty)	Outcomes are identified but probabilities are unknown.	Fire, automobile accident, many investments.
Level 3	Outcomes are not fully identifies and probabilities are unknown.	Space exploration, genetic research.

The level of uncertainty arising from a given type of risk can depend on the entity facing the risk; for example, an insurer or a governmental entity may regard the risk of earthquake as being at level 2, while the individual may regard the earthquake as being at level 3. This difference in perspective may be a consequence of an ability to estimate the likelihood of outcomes.

On the other hand, risk refers to a condition or combination of circumstances in which there is a possibility of loss. It is what a person believes to be the state of the world and the confidence he/she has in this belief. Unlike uncertainty, risk can be measured.

1.3. RISK VERSUS PROBABILITY

Probability (chance of loss) is closely related to the concept of risk. But it should be distinguished from risk. Probability is the long run chance of occurrence, or relative frequency of some event. It is the probability that an event will occur. Insurers are particularly interested

in the probability or chance of loss - the probability that an even that causes a loss will occur to one of a group of insured objects.

Risk (especially objective risk) is relative variation of actual loss from expected loss. Objective risk can be measured meaningfully only in terms of a group large enough to analyze statistically. The chance of loss may be identical for two different groups but objective risk may be quite different. For example, assume that a property insurer has 10,000 homes insured in Addis Ababa and 10,000 homes insured Hawassa and that the chance of loss in each city is 1%. Thus, on average, 100 homes should burn annually in each city. However, if the annual variation in losses ranges from 75 to 125 in Hawassa, but only from 90 to 110 in Addis Ababa, objective risk is greater in Hawassa even though the chance of loss in both cities is the same.

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. Objective probabilities can be determined in two ways.

First, they can be determined by deductive reasoning. These probabilities are called a *priori probabilities*. For example, the probability of getting a head from the toss of a fair coin is half as there are two sides, and only one side is a head. Similarly, the probability of rolling a 6 dotted side in a die is 1/6, as there is only one side has six dots.

Second, objective probabilities can be determined by inductive reasoning, rather than by deduction. For example, the probability that a 25 years old person will die before age 30 cannot be logically deduced. However, by a careful analysis of past mortality experience, life insurers can estimate the probability of death on sell a five year term life insurance policy issued at age 25.

Subjective Probability

Subject probability is the individual‟s personal estimate of chance of loss. Subjective probability need not coincide with objective probability. For example, people who buy a lottery ticket on their birthday may believe it is their lucky day and overestimate the small chance of winning. A wide variety of factors can influence subjective probability, including a person‟s age, gender intelligence, education, the use of alcohol and etc.

1.4. RISK, PERIL AND HAZARD

The terms peril and hazard should not be confused with the concept of risk discussed earlier.

Peril

Peril is defined as the cause of loss that occurred. If a house burns because of a fire, the peril, or cause of loss, is the fire. If a car is damaged in a collision with another car, collision is the peril, or cause of loss. Common perils that cause property damage included fire, lightning, windstorm, hail, tornadoes, earth quakes, theft and robbery.

Hazard

A hazard is a condition that creates or increases the chance of loss from a given peril. It is a condition that boosts up the probability of loss from a peril. For example, one of the perils that can cause loss to a house is fire. The fire can be caused while we go out of home leaving the cylinder switched on in the kitchen. Using the cylinder properly will not cause a loss, rather poor handling does. It is possible for something to be both a peril and a hazard. For instance, sickness is a peril causing economic loss, but it is also a hazard that increases the chance of loss from the peril of early death.

There are four major types of hazards:

Physical hazard
Mortal hazard
Morale hazard
Legal hazard

Physical hazard

A physical hazard is a physical condition that increases the chance of loss. It is a condition stemming from the physical characteristics of an object that increases the probability and severity of loss from given perils. Examples of physical hazards include ice covered roads that increase the chance of a car accident, defective wiring in a building that increases the extent of fire, and a defective lock on door that increases the chance of theft.

Such hazards may or may not be with in human control. Some hazards for fire can be controlled by placing restrictions on buildings or taking care while operating. In contrary, some are not controllable – little can be done to prevent or reduce their impact. Example, ocean storms.

Moral hazards

Moral hazard is deceitfulness or character defects in an individual that increase the frequency or severity of loss. Examples of moral hazard include forged or calculated car accident, submitting a fraudulent claim, intentionally burning unsold insured merchandise and etc.

Moral hazard may exist where there is corrupt intention to claim excessive amount of insurance for properties that are no longer profitable. Moral hazard may happen in all forms of insurance, and it is difficult to control.

Morale hazard

Some insurance authors draw a subtle distinction between moral hazard and morale hazard. Moral hazard refers to dishonest by an insured that increases the frequency or severity of loss. Morale hazard is carelessness or indifference to a loss because of existence of insurance. Some insured persons are careless or indifferent to a loss because they have insurance. Examples of morale hazard include leaving car keys in an unlocked car, which increase the chance of theft; leaving a door unlocked that allows a robber to enter; and changing tracks suddenly on a congested interstate highway without signaling. Careless acts like these increase the chance of loss.

Morale hazard is also reflected in the attitude of persons who are not insured. This includes the tendency of physician to provide expensive examinations or tests when costs are to be covered by insurance. Insurers try to control or reduce both moral and morale hazard by carefully selecting their insureds and/or by providing contractual provisions that oblige the insurer to pay some percentage of the loss.

Legal hazard

Legal hazard refers to characteristics of the legal system or regulatory environment that increase the frequency or severity of losses. Examples include adverse jury decisions or large damage awards in liability lawsuits, orders that require insurers to include coverage for certain benefits in health insurance plans, such as coverage for alcoholism; and regulatory action by state insurance departments that restrict the ability of insurers to withdraw from the state because of poor underwriting results.

QUICK CHECK

What are the common terminologies reflected in all definitions of risk?

What is uncertainty? How it differs from risk?

How can we differentiate hazard from peril?

Differentiate objective and subjective probability.

1.5. CLASSES OF RISK

Risk can be classified into several distinct categories. The major categories are as follows:

Objective and Subjective risks

Pure and Speculative risks

Fundamental and Particular risks

Financial and Non Financial risks

Static and Dynamic risks

1.5.1. Objective Risk and Subjective Risk

Objective Risk

Objective risk, also called statistical risk, is defined as the relative variation of actual loss from expected loss. It is applicable to groups of objects exposed to loss. For example, assume that a property insurer has 10,000 houses insured over a long period and, on average, 1 %, or 100 houses, burn each year. However, it would be rare for exactly 100 houses to burn each year. In some years, as few as 90 houses may burn; in other years, as many as 110 houses, may burn. Thus, there is a variation of 10 houses from the expected number of 100, or a variation of 10%. This relative variation of actual loss from expected loss is known as Objective Risk.

Objective risk declines as the number of exposures increases. Objective risk varies inversely with the square root of the number of cases under observation. Objective risk can be statistically calculated by some measure of dispersion, such as the standard deviation or the coefficient of variation. Because objective risk can be measured, it is an extremely useful concept for an insurer or a corporate risk manager. As the number of exposures increases, an insurer can predict its future loss experience more accurately because it can rely on the law of large number. The law of large numbers states that the number of exposure units increases, the more closely the actual loss experience will approach the expected loss experience. For example: as the number of houses under observation increases, the greater is the degree of accuracy in predicting the proportion of houses that will burn.

Subjective Risk

Subjective risk is defined as uncertainty based on a person‟s mental condition or state of mind. It is a psychological uncertainty that stems from the individual‟s mental attitude or state of mind. For example, a customer who was drinking heavily in a bar may foolishly attempt to drive home. The driver may be uncertain whether he will arrive home safely without being arrested by the police for drunk driving. This mental uncertainty is called subjective risk.

Impact of subjective risk varies depending on the individual. Two persons in the same situation can have a different perception of risk, and their behavior may be altered accordingly. If an individual experiences great mental uncertainty concerning the occurrence of a loss, that person"s behavior may be affected. High subjective risk often results in conservative and prudent behavior, while low subjective risk may result in less conservative behavior. For example a driver previously arrested for drunk driving is aware that he has taken too much alcohol. The driver may then compensate for the mental uncertainty by getting someone else to drive the car home or by taking a taxi. Another driver in the same situation may perceive the risk of being arrested as slight. This second driver may drive in a more careless and reckless manner; a low subjective risk results in less conservative driving behavior.

Subjective risk can be measured by means of different psychological tests, but no widely accepted or uniform tests of proven reliability have been developed. Thus though there are different degrees of risk taking willingness in persons, it is difficult to measure these attitudes scientifically and to predict risk taking behavior.

Subjective risk may affect a decision when the decision maker is interpreting objective risk. A risk manager may determine some given level of risk as high, while another may interpret small. A customer rejected by one bank may be accepted by the other. These different interpretations come from the subjective attitudes of the decision makers towards risk.

1.5.2. Pure and Speculative Risks

Pure Risk

Pure risk is defined as a situation in which there are only the possibilities of loss or not loss. The only possible outcomes are adverse (loss) and neutral (no loss). A pure risk occurs when there is a chance of loss but no chance of gain. For example a shop owner will suffer financial loss if the shop is burnt in fire, but no gain if there is no fire. Examples of pure risk include premature death, industrial accidents, terrible medical expenses, and damage to property from fire, lightning, flood, or earthquake.

Types of pure risk

The major types of pure risk that can create great financial insecurity include

Personal Risks.

Property Risks.

Liability Risks.

Personal Risks

Personal risks are risks that directly affect an individual. They involve the possibility of the complete loss or reduction of earned income, extra expenses, and the depletion of financial assets. There are four major personal risks.

Risk of premature death.

Risk of insufficient income during retirement.

Risk of poor health.

Risk of unemployment.

Risk of premature death

Premature death is defined as the death of a household head with unfulfilled financial obligations. These obligations can include 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 or have insufficient financial assets to replace the lost income, they may be financially insecure.

Risk of insufficient income during the retirement

The major risk associated with old age is insufficient income during retirement. The vast majority of workers in the world are before age 65. When they retire, they lose their earned income. Unless they have sufficient financial assets on which to draw, or have access to other sources of retirement income, such as social security or a private pension, they will be exposed to financial insecurity during retirement.

Risk of Poor Health

Poor health is another important personal risk. The risk of poor health includes both the payment of terrible medical bills and the loss of earned income.

Risk of Unemployment

The risk of unemployment is another major threat to financial security. Unemployment can result from business cycle downswings, technological and structure changes in the economy, seasonal factors, and imperfections in the labor market.

Property Risks

Persons owning property are exposed to property risks – the risk of having property damaged or lost from numerous causes. Real estate and personal property can be damaged or destroy because of fire, lightning, tornadoes, windstorms, and numerous other causes. There are two major types of loss associated with the destruction or theft of property: direct loss and indirect loss or consequential loss.

Direct loss: A direct loss is defined as financial loss that results, from the physical damage, destruction, or theft of the property. For example, assume a hotel that is damaged by a fire, the physical damage to the hotel is known as a direct loss.

Indirect loss: An indirect loss is a financial loss that results indirectly from the occurrence of a direct physical damage or theft loss. Thus, in addition to the physical damage loss, the hotel would lose profits for several months while the hotel is being rebuilt. The loss of profits would be consequential loss. Other examples of a consequential loss would be the loss of rents, the loss of the use of building, and the loss of a local market.

Liability Risk

Liability risks are another important type of pure risk that most persons face. One can be held legally liable if he/she does something that result in bodily injury or property damage to

someone else. A court of law may order him/her to pay substantial damages to the person he/she has injured.

Speculative Risk

Speculative risk is defined as a situation in which either profit or loss is possible. For example, if you purchase 100 shares of common stock, you would profit if the price of stock increases but would loss if the price declines. Other examples, of speculative risk include betting on horse race, card games, investing in real estate, and going into business for oneself. In these situations, both profit and loss are possible. Distinguish between pure and speculative risks:

First, private insurers generally insure only pure risk. With certain exceptions, speculative risk generally is not considered insurable, and other techniques for managing with speculative risk must be used.

Second, 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 future loss experience. In contrast, it is generally more difficult to apply the law of large numbers to speculative risks to predict future loss experience. An exception is the speculative risk of gambling where nightclub operators can apply the law of large numbers in a most efficient manner.

Finally, society may benefit from a speculative risk even though a loss occurs, but it is harmed if a pure risk is present and a loss occurs. Example, a firm may develop new technology for producing low price computers. As a result some competitors may be forced to bankruptcy. Despite the bankruptcy, society benefits because the computers are produced at a low cost. However, society normally does not benefit when as loss from a pure risk occurs, such as flood, or earth quake.

1.5.3. Fundamental and Particular Risks

Fundamental Risk

A fundamental risk is a risk that affects the entire economy or large numbers of persons or groups within the economy. Fundamental risks involve losses that are impersonal in origin and consequence. They are group risks for the most part by economic, social and political phenomena, although they may also result from physical occurrences. They affect large segments or even all of the population. Examples include rapid inflation, cyclical unemployment, and war because large numbers of individuals are affected.

The risk of a natural disaster is another important risk. Hurricanes, tornadoes, earthquakes, floods, and forest and grass fires can result in billions of dollars of property damage and numerous deaths. More recently, the risk of a terrorist attack is rapidly emerging as fundamental risk.

Particular Risk

A particular risk is a risk that affects only individuals and not the entire community. Particular risk involves losses that arise out of individual events and are felt by individuals rather than by the entire group. Examples include car thefts, gold thefts, bank robberies, and dwelling fires. Only individuals experiencing such losses are affected, not the entire economy.

1.5.4. Financial and Non Financial Risk

In its broadest context, the term risk includes all situations in which there is an exposure to adversity. In some cases this adversity involves financial loss, while in the others it does not. There is some element of risk in every aspect of human endeavor, and many of these risks have no financial consequences.

1.5.5. Static and Dynamic Risks

Static Risk

Static risks involve those losses that would occur even if there were no changes in the economy. If we could hold consumer tastes, output and income, and the level of technology constant, some individuals would still suffer financial loss. These losses arise from causes other than the change in the economy. These risks are not source of gain to society. Examples include uncertainty due to random events such as fire, windstorm, or death, etc. static losses do involve either the destruction of the asset or a change in its possession as a result of dishonesty or human failure. These types of losses tend to occur with a degree of regularity overtime and are generally predictable – which make static risks more suitable for treatment by insurances.

Dynamic Risks

Dynamic risks are those resulting from changes in the economy. Change in the price level, consumer tastes, income and outputs and technology may cause financial losses to members of the society. Dynamic risks normally benefit the society over a long run, since they are the results of adjustments to misallocation of resources. Although they may affect a large number of individuals, dynamic risks are generally considered less predictable than static risks, as they do not occur with any precise degree of regularity.

QUICK CHECK

Differentiate static and dynamic risks

What is direct loss?

Differentiate pure risk and speculative risk

Differentiate objective and subjective risks

CHAPTER SUMMARY

Writers have produced a number of definitions which are usually accompanies by lengthy arguments to support the particular view they put forward. Consider the following definitions:

Risk is the possibility of an unfortunate occurrence.
Risk is a combination of hazards.
Risk is unpredictability – the tendency that actual results may differ from predicted results.
Risk is uncertainty of loss.
Risk is possibility of loss.

Although the insurance theorists have not agreed on a universal definition, there are common elements in all the definitions: indeterminacy and loss. The notion of an indeterminate outcome is implicit in all definitions of risk: the outcome must be in question. When risk is said to exist, there must always be at least two possible outcomes. If we know for certain that a loss will occur, there is no risk. At least one of the possible outcomes is undesirable. May be a loss or profit less than the expected.

Risk is a condition in which there is a possibility of an unfavorable deviation from a desired outcome that is expected or hoped for.

Risk is uncertainty concerning the occurrence of loss. The individual hopes that adversity will not occur, and it is the possibility that this hope will not be met that constitutes risk.

Uncertainty is "doubt about our ability to predict the future outcome of current actions." Clearly, the term "uncertainty describes a state of mind.

Uncertainty arises when an individual perceives that outcomes cannot be known with certainty." It refers to a feelings characterized by doubt, based on the lack of knowledge about what will or will not happen in the future.

Probability is the long run chance of occurrence, or relative frequency of some event. It is the probability that an event will occur. Risk (especially objective risk) is relative variation of actual loss from expected loss.

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 the underlying conditions. It can be determined by deductive reasoning (*priori probabilities)* or by inductive reasoning. Subject probability is the individual‟s personal estimate of chance of loss.

Peril is different from hazard in that it is defined as the cause of loss that occurred. Whereas a hazard is a condition that creates or increases the chance of loss from a given peril. It is a condition that boosts up the probability of loss from a peril.

There are four major types of hazards:

A physical hazard is a physical condition that increases the chance of loss. It is a condition stemming from the physical characteristics of an object that increases the probability and severity of loss from given perils.

Moral hazard is deceitfulness or character defects in an individual that increase the frequency or severity of loss. Moral hazard may exist where there is corrupt intention to claim excessive amount of insurance for properties that are no longer profitable. Moral hazard may happen in all forms of insurance, and it is difficult to control.

Morale hazard is carelessness or indifference to a loss because of existence of insurance.

Legal hazard refers to characteristics of the legal system or regulatory environment that increase the frequency or severity of losses.

Risk can be classified into several distinct categories. The major categories are as follows:

Objective risk, also called statistical risk, is defined as the relative variation of actual loss from expected loss. Objective risk declines as the number of exposures increases.

Subjective risk is defined as uncertainty based on a person‟s mental condition or state of mind. It is a psychological uncertainty that stems from the individual‟s mental attitude or state of mind. Subjective risk can be measured by means of different psychological tests, but no widely accepted or uniform tests of proven reliability have been developed.

Pure risk is defined as a situation in which there are only the possibilities of loss or not loss. The only possible outcomes are adverse (loss) and neutral (no loss). A pure risk occurs when there is a chance of loss but no chance of gain.

The major types of pure risk that can create great financial insecurity include

Personal risks are risks that directly affect an individual.

Property risks are the risk of having property damaged or lost from numerous causes

Liability risks are the risk one can be held legally liable if he/she does something that result in bodily injury or property damage to someone else.

Speculative risk is defined as a situation in which either profit or loss is possible.

A fundamental risk is a risk that affects the entire economy or large numbers of persons or groups within the economy. Fundamental risks involve losses that are impersonal in origin and consequence.

A particular risk is a risk that affects only individuals and not the entire community. Particular risk involves losses that arise out of individual events and are felt by individuals rather than by the entire group.

Financial risks are risks with financial loss

Non financial risks are risks that have no financial consequences.

Static risks involve those losses that would occur even if there were no changes in the economy. If we could hold consumer tastes, output and income, and the level of technology constant, some individuals would still suffer financial loss.

Dynamic risks are those resulting from changes in the economy. Change in the price level, consumer tastes, income and outputs and technology may cause financial losses to members of the society.

REVIEW QUESTIONS

PART I- TRUE OR FALSE

Instruction: Dear learners, please write true if the statement is correct and write false if the statement is wrong

Subject probability is the individual‟s personal estimate of chance of loss.

Objective risk declines as the number of exposures decreases

Priori probabilities are objective probabilities determined by deduction

Risk refers to a feelings characterized by doubt, based on the lack of knowledge about what will or will not happen in the future

Subjective risk is a psychological uncertainty that stems from the individual‟s mental attitude or state of mind

hazard is a condition that creates or increases the chance of loss

Risk is a condition in which there is a possibility of an unfavorable deviation from a desired outcome that is expected or hoped for

Physical hazard refers to characteristics of the legal system or regulatory environment that increase the frequency or severity of losses

PART II- FILL INTHE BLANK SPACES

Instruction: Dear Learners, please fill in the blank spaces with appropriate words or phrases

is defined as a situation in which there are only the possibilities of loss or not loss

2. _____ are risks that directly affect an individual

_ is defined as the death of a household head with unfulfilled financial obligations

4. is defined as financial loss that results, from the physical damage, destruction, or theft of the property

involve those losses that would occur even if there were no changes in the economy

6. _____ are those resulting from changes in the economy

7. _____ is deceitfulness or character defects in an individual that increase the frequency or severity of loss

_ is carelessness or indifference to a loss because of existence of insurance

is defined as a situation in which there are only the possibilities of loss or not loss

_ is defined as the relative variation of actual loss from expected loss.

PART III- MULTIPLE CHOICE QUESTIONS

Instruction: Dear learners, please chooses the correct answer and encircles the letter of your choice.

A feeling characterized by doubt, based on the lack of knowledge about what will or will not happen in the future is called

Risk

Certainty

Uncertainty

Probability

None

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 is called

Objective probability

Subjective probability

Objective risk

Subjective risk

None

A situation in which there is a chance of loss but no chance of gain is called

Speculative risk

Pure risk

Dynamic risk

Financial risk

None

Risks that directly affect an individual and involve the possibility of complete loss or reduction of earned income, extra expenses, and the depletion of financial assets.

Static risks

Direct risk

Personal risks

Subjective risks

None

Risk that affects the entire economy or large numbers of persons or groups within the economy

Fundamental risk

Direct risk

Personal risks

Subjective risks

None

CHAPTER TWO

THE RISK MANAGEMENT PROCESS

LEARNING OBJECTIVES

At the end of this chapter, learners should be able to:

Explain the concept of risk management and distinguish it from insurance management

Explain the basic objectives of risk management

Describe the steps in risk management process

Explain the different techniques of risk identification

Explain the concept of probability

Explain the different types of probability distribution

Explain tools of risk management

INTRUDUCTION

Dear students, so far we have tried to see the underlined concepts and related definitions of risk. In this chapter we are about to deal with the risk management concept along with the different management tools. Here, we will cover the concept of risk management, its objectives, the risk management process, the different classes of probability and techniques to be used in managing risk related affairs of a business. The chapter concludes with a discussion of tools of risk management**.**

2.1. MEANING OF RISK MANAGEMENT

Risk management is a systematic process that identifies loss exposures faced by an organization and selects the most appropriate techniques for treating such exposures. It is a scientific approach to deal with risks by anticipating possible accidental losses and designing and implementing procedures that minimize the occurrence of loss or the financial impact of the losses that occur. In the past, risk managers generally considered only pure loss exposures faced by the firm. However, newer forms of risk management are emerging that consider certain speculative risks as well. This chapter discusses only the treatment of pure risks or pure loss exposures.

2.2. OBJECTIVES OF RISK MANAGEMENT

Objectives of risk management deals with deciding precisely what the organization expects its risk management program to do. Objectives serve as a prime source of guidance for those charged with responsibility for the program, and also means of evaluating performance. Risk management has many important objectives which can be classified as either

Pre loss Objectives

Post loss Objectives

Pre loss Objectives

A firm may have several risk management objectives prior to the occurrence of the loss. These important objectives before a loss occurs include economy, reduction of anxiety, and meeting legal obligations.

Economy: The economy objective means that the firm should prepare for potential losses in the most economical way. This preparation involves an analysis of the cost of safety programs, insurance premiums paid, and the costs associated with different techniques for handling losses.

Reduction of Anxiety: Certain loss exposures can cause greater worry and fear for the risk manager and key executives. For example, the threat of a terrible court case from a defective product can cause greater anxiety than a small loss from a minor fire. The risk manager, however, wants to minimize the anxiety and fear associated with all loss exposures.

Meeting legal obligations: The final objective is to meet any legal obligations. For example, government regulations may require a firm to install safety devices to protect workers from harm, to dispose of harmful waste material properly and to label consumer products appropriately. The risk manager must see that these legal obligations are met.

Post loss Objectives

Likewise, a firm may have many risk management objectives subsequent to the occurrence of the loss. Important objectives after a loss occurs include survival, continued operation, stability of earnings, continued growth, and social responsibility.

Survival: The most important post loss objective is survival of the firm. Survival means that after a loss occurs, the firm can resume at least partial operations within some reasonable time period.

Continued Operation: The second post loss objective is to continue operating. For some, firms, the ability to operate after a loss is extremely important. For example, a public utility firm most

continues to provide service. Banks, post offices, dairies, and other competitive firms must continue to operate after a loss. Otherwise, business will be lost to competitors.

Stability: The third post loss objective is stability of earnings. Earnings per share can be maintained if the firm continues to operate. However, a firm may incur substantial additional expenses to achieve this goal (such as operating at another location), and perfect stability of earnings may not be attained.

Continued Growth: The fourth post loss objective is continued growth of the firm. A company can grow by developing new products and markets or by acquiring or merging with other companies. The risk manager must therefore consider the effect that a loss will have on the firm"s ability to grow.

Social Responsibility: Finally, the objective of social responsibility is to minimize the effects that a loss will have on other persons and on society. A sever loss can adversely affect employees, suppliers, creditors and the community in general.

QUICK CHECK

Compare risk management with insurance management

Compare the pre and post loss objectives of risk management.

2.3. STEPS IN THE RISK MANAGEMENT PROCESS

The whole process of risk management involves the following four steps:

Step 1: Identifying potential losses (Risk Identification)

Step 2: Evaluate Potential losses (Risk Measurement)

Step 3: Select the appropriate techniques for treating loss exposure, and

Step 4: Implement and administer the program.

2.3.1. RISK IDENTIFICATION

The first step in the risk management process is to identify all major and minor loss exposures. This step involves a thorough analysis of all potential losses. In other words it is a phase where a firm systematically and continually identifies property, liability, and personal exposures as soon as or before they emerge. Unless the sources of possible losses are recognized, it is impossible to consciously choose appropriate, efficient methods for dealing with those losses should they occur.

A loss exposure is a potential loss that may be associated with a specific type of risk. Loss exposures (so called sources of risks) typically classified as follows:

Property Loss Exposures

Buildings, Plants, Other Structures
Furniture, Equipments, Supplies
Electronic data processing equipments; Computer Software
Inventory
Accounts receivables, Valuable papers and records
Company planes, boats, mobile equipments.

Business Income Loss Exposures

Loss of income from a covered loss
Continuing exposures after a loss
Extra expenses
Contingent Business income losses.

Human Resources Exposures

Death of key employees/disability of key employees
Retirement or unemployment
Job-related injuries or disease experienced by workers

Crime Loss Exposures

Holdups, robberies

Employees theft and dishonesty

Fraud and Embezzlement

Interest and computer crime exposures.

Employee Benefit Loss Exposures

Failure to comply with government regulation

Failure to pay promised benefits

Group life and health and retirement plan exposures.

Foreign Loss Exposures

Acts of terrorism

Plants, business property, inventory

Foreign currency risks

Kidnapping of key persons

Political risks

Liability Risks

Defective Products

Sexual harassment of employees, discrimination against employees, wrongful termination

Misuse of internet and e-mail transactions

Techniques for Identifying Risks

A risk manager has several techniques that he or she can use to identify the preceding loss exposures. But no single method or procedure of risk identification method is free of weakness. The strategy of a management must employ method or a combination of methods that best fit(s) the situation on hand. The choice is a function of the following factors

The nature of the business

The size of the business

The availability of skill man power.

Below some of the risk identification methods are described:

Loss Exposure Checklists

A risk identification tool that can be used both by business and by individuals is a loss exposure checklist, which specifies numerous common potential sources of loss from destruction of assets and from legal liability. Loss exposure checklists are available from various sources, such as insurers, agencies etc. the checklists contain possible source of loss to the business firm from the destruction of physical and intangible assets. Sources of loss are categorized according to their being predictable or unpredictable, controllable or uncontrollable, direct or indirect, etc. For each item of checklist, the user asks the question, "is this a potential source of the loss to me or my firm?" In this way, the systematic use of loss exposure checklists reduces the likelihood of overlooking important sources of risks.

Some loss exposure checklists are designed for specific industries, such as manufacturers, retail stores, educational institutions, or religious organizations. Such lists tend to be quite lengthy, as they attempt to cover all the exposures that various entities are likely to face.

In contrary, some type of checklists focus on a specific category of exposures. The questions included in the checklists usually address specific exposures in considerable detail. Thus, these checklists can be helpful net only in risk identification but also in compiling information necessary for an in depth evaluation of risks that are identified.

The Financial Statement Method

The financial statement method was proposed by A.H. Criddle (1962). Although it was intended for private originations, the concepts of this financial statements approach can be generalized in public sector organizations as well. By analyzing the balance sheet, operating

statements and supporting documents, the risk manager can identify property, liability and human exposures (losses) of the organizations.

By combining these statements with financial forecast and budgets, the risk manager can discover future exposures. Financial statements reveal this information because every organizational transaction ultimately involves either money or property.

The Flow Chart Method

An organization‟s exposure to risk also can be identified by studying flow chart of organization‟s activities and operations. Flow charts are schematic representations of a sequential process. Flow charts depicting the operations of a firm can guide a risk manager to associate risks with those operations. Flow charts are studies alongside the checklists of possible exposures to determine which items apply.

Contract Analysis

Many of an organization‟s exposures to risk arise from contractual relationships with other persons and organizations. An examination of these contracts may reveal areas of exposures that are not evident from the organization‟s operations and activities. In some cases, contracts may shift responsibility to other parties.

Interactions with other Departments

Frequent interactions with other departments provide another source of information on exposures of risk. These interactions may include oral or written reports from other departments on their own initiative or in response to regular reporting system that keep the risk manager informed of the different developments. The importance of such a communications network should not be underestimated. These departments are consistently creating or becoming aware of exposures that might otherwise escape the risk manger‟s attention. Indeed, the risk manager‟s success in risk identification is heavily dependent on the co-operation of other departments.

Interactions with Outside Suppliers and Professional Organizations

In addition to communicating with other departments the risk manager normally interacts with outsiders who provide services to the organizations. These outsiders may be, for example, accountants, lawyers, risk management consultants, actuaries, or loss control specialists. The objective would be to determine or assess whether the outsiders have identified exposures that otherwise would be missed. Possibly, the outsiders themselves may create new exposures.

Statistical Records of Losses

When available, statistical records of losses can be used to identify sources of risk. These records may be available from risk management information systems developed by consultants or in some cases, the risk manager. These systems allow losses to be analyzed according to cause, location amount and other issues to interest.

Statistical records allow the risk manager to asses‟ trends in the organization‟s loss experience and to compare the organization‟s loss experience with the experience of others. In additions, these records enable the risk manager to analyze issues such as the cause, time and location of the accidents, identify of the insured individual and the supervisions, and any hazards or other special factors affecting the nature of the accident.

On Site Inspection

On site inspections are must for a risk manager. By observing the firm‟s facilities and the operations conducted thereon the risk manager can learn much about the exposures faced by firm.

2.3.2. RISK MEASUREMENT (RISK EVALUATION)

The second step in the risk management process is to evaluate and measure the impact of potential losses on the firm. The exposures are to be measured in order to determine their relative importance and to obtain information that will help the risk manager to decide up on

the most desirable combination of risk management tools. This step involves in estimation of the potential frequency and severity of loss.

Loss frequency refers to the probable number of losses that may occur during the same given period of time. Loss severity refers to the probable magnitude of the losses that may occur.

Once the risk manager estimates the frequency and severity of loss for each type of loss exposure, the various loss exposures can be ranked according to their relative importance. For example, a loss exposure with the potential for bankrupting the firm is much more important in a risk management program than an exposure with a small loss potential.

In addition, the relative frequency and severity of each loss exposure must be estimated in order the risk manager to select the most appropriate technique or combination of techniques for handling each exposure. For example, if certain losses occur regularly and are fairly predictable, they can be budgeted out of a firm income and treated as normal operating expenses. If the certain type of exposure fluctuates widely, however, an entirely different approach is required.

Although the risk manager must consider both loss frequency and loss severity, more attention should be given to severity as a single catastrophic loss could wipe out the firm. Therefore, the risk manager must also consider all losses that can result from a single event. Both the maximum possible loss and maximum probable loss must be estimated. This is suggested by Richard Prouty and is called *prouty* measures of severity. The maximum possible loss is the worst loss that could possibly happen to the firm during its lifetime.

In determining loss severity the risk manager must be careful to include all the type of losses that might occur as a result of a given event as well as their ultimate financial impact upon the firm. In estimating loss severity, it is important to recognize the timing of any losses as well as their total birr amount.

Loss frequency and loss severity data do more than identify the important losses. They are also extremely useful in determining the best way or ways to handle an exposure to loss. For

example, the average loss frequency times the average loss severity equals the average total birr losses expected in a year. These average losses are to be compared with the premium the firm would have to pay an insurer for complete or partial protection.

The actual estimation of the frequency and severity of loses may be done in various ways. Some risk mangers consider these concepts informally in evaluation of identified risks. They may broadly classify the frequency of various losses into categories such as "Slight", "Moderate", and "Certain" and many have similarly broad estimates for loss severity. Even this type of informal evaluation is better than none at all. But as risk management becomes increasingly sophisticated, most large firms, attempts to be more precise in evaluation of risk. It is now common to use probability distributions and statistical techniques in estimating both loss frequency and severity.

2.3.3. SELECT THE APPROPRIATE TECHNIQUES FOR TREATING LOSS EXPOSURE

After identifying and evaluating exposures to risk, systematic consideration can be given to alternative methods for managing each exposure. The third step in the risk management process is to select the most appropriate technique/tool or combination of techniques/tools for treating each loss exposure. The different tools of risk management will be discussed later in this material.

QUICK CHECK

What tasks are to be done at risk identification phase?

What factors influence management"s choice of strategy?

Differentiate loss frequency and loss severity

2.4. RISK MEASUREMENT AND PROBABILITY DISTRIBUTION

2.4.1. MEANING OF PROBABILITY

Probability theory is the body of knowledge concerned with measuring the likelihood that something will happen and making predictions on the basis of this likelihood. The likelihood of

an event is assigned a numerical value between 0 and 1. Zero is assigned for impossible and one for definitely possible events. In general $0 \leq P(A) \leq 1$; where P designates the probability of an event and P(A) for probability of an event A to occur in a single observation.

Determining the Probability of an Event

There are two common methods to obtain an estimate of the probability of an event.

Prior probabilities: these probabilities are determined before an experiment. A number of equally likely outcomes must exist, some of which represent the particular outcome whose probability is being determined. For example the probability of obtaining a head when a coin is tossed is ½ because there are two equally likely outcomes; a tail or a head, and one of these outcomes is a head. The probability of drawing the king from a full playing card is 4/52 or 1/13 as there are 52 cards and of which 4 are kings. But the probability of drawing a king of hearts is 1/52; a king of hearts or a king of shovels is 1/26.

Posterior or Empirical probabilities: these probabilities are computed after a study of past experience. When we do not know the underlying probability of an event and can not deduce it from the nature of the event, we can estimate it on the basis of past experience. For example. Assume that we are told that the probability of a student will fail in English course is 0.01. This indicates that someone has gone through the records and discovered that in the past 1 man of every 100 men failed the English course. It can also imply that unless some corrective actions are taken, we can expect the same proportion of students to fail each year in the future.

In situations where it is not possible to use either prior or empirical methods, subjective probability estimates may be used.

Law of Large Numbers

The law of large numbers is a basic principle of mathematics which states that as the number of the exposure units increases (for our case, persons or objects exposed to risk), the more certain it becomes that actual loss experience will equal probable loss experience. It states that the

greater the numbers of exposures, the more closely will the actual results approach the probable results that are expected from an infinite number of exposures. Therefore, the degree of objective risk diminishes as the number of exposure units increases.

For example suppose that a given insurance company expected 1% of its insurers to experience a loss in a certain given year. The law of large numbers states that the greater the number of the exposures under its policy, the more likely is the 1% loss figure to be realized. By applying the law of large numbers, the insurance company can predict accurately the birr amount of losses it will experience in a given period. The relative accuracy of the company‟s prediction increases as the number of exposures in the insurance policy increases. If the loss amounts are predicted in advance, the company could take its own arrangements for safe operation.

For precise illustration, assume that Avon and Saxon companies own 100 and 900 cars respectively. These cars are used by the salesperson of each firm and are driven in the same geographical location, assume Addis Ababa. The probability of loss in a given year due to collusion is 20% for both. Hence, the expected losses of Avon company is 20 (100*20%) and 180 (900*20%) for Saxon. Assume further that statisticians revealed that the likely range in the number of losses in one year is 8 and 24 for Avon and Saxon respectively. As shown below the degree of risk for Saxon is 1/3 of the Avon‟s.

Objective risk $_{Avon}$ = Range/Expected = 8/20 = 40%

Objective risk $_{Saxon}$ = Range/Expected = 24/180 = 13.3%

One thing we should have to bear in mind is that the law of large numbers only allows accurate predictions of group results, but not particular exposures of individuals in the group.

The two most important application of the law of large numbers in relation to objective risk are as follows:

As the number of exposure units increase, the degree of risk decreases

Given constant number of exposure units, as the probability of loss increases, the degree of risk decreases.

2.4.2. RULES OF PROBABILITY Mutually

Exclusive and Nonexclusive Events

Two or more events are mutually exclusive if they can not occur simultaneously. This is to mean that the occurrence of one event precludes the occurrence of the other. For example, consider the two possible outcomes of tossing coin, a head or a tail. These two events are mutually exclusive as they can not occur together.

Two or more events are nonexclusive if it is possible (but not necessarily) for them to occur simultaneously. Example, assume that a certain freshman class is categorized based on sex; Male and Female. This is mutually exclusive as no one can be both female and male. But the probability of electing a class representative with age of less than 30 is nonexclusive as it takes both the male and female students in to consideration.

Addition rules of probability

Addition rules of Mutually Exclusive Events

Two events are mutually exclusive if the occurrence of one event prevents the occurrence of the other. When two events are mutually exclusive, the probability that one or the other of the two events will occur is the sum of their separate probabilities. If one has identified all possible outcomes and they are mutually exclusive, the sum of their probabilities must equal to 1. The probabilities must sum to 1 because one of the outcomes is certain to occur. The probability that a building either will burn or not burn is 1. If the probability of burn is 0.20, the probability of not burn is 0.80.

The rule of addition for mutually exclusive events is:

$$P (A \text{ or } B) = P (A \cup B) = P (A) + P (B)$$

The probability of drawing either ace (A) or king (B) from a complete playing card is:

$P(A \cup K)=P(A)+P(K)$

$4/52 + 4/52$

$8/52$

$2/13$

The probability of getting either 1 or 2 when we roll a die is:

P (1 or 2) = P (1) + P (2)

1/6 + 1/6

2/6

1/3

Illustration: assume that Mr Abebe plans to go for the weekend to Langano, Sodere, Wondogenet or Bishoftu Resort. The probability of going to either of them is 0.20, 0.25, 0.30, and 0.25. The probability of going either Langano or Sodere is:

P (Langano or Sodere) = P (Langano) + P (Sodere)

0.20 + 0.25

0.45

Addition rules for Not Mutually Exclusive Events

If two events are not mutually exclusive, it is possible for both events to occur together. The probability of not mutually exclusive events is the joint occurrence of the two events subtracted from the sum.

$$P (A \text{ or } B) = P (A \cup B) = P (A) + P (B) - P (A \text{ and } B)$$

The probability of drawing ace (A) and spade (S) from a complete playing card is:

P (A U S) = P (A) + P (S) - P (A and S)

4/52 + 13/52 – 1/52

16/52

4/13

Independent events, dependent events and conditional probability

Two events are independent when the occurrence or non occurrence of one even has no effect on the probability of occurrence of the other event. The outcomes of tossing a coin twice in succession are considered to be independent as the first toss has no effect on the second.

Two events are dependent when the occurrence or non occurrence of one even has effect on the probability of occurrence of the other event. When two events are dependent, the notion of conditional probability will be employed to designate the probability of occurrence of the related events. The expression P (B/A) is not a fraction rather indicates the probability of event B occurring given that A has occurred.

Multiplication Rule for Independent Events

The rule of multiplication are concerned with determining the probability of the joint occurrence of A and B. this is the intersection of A and B; P (A n B). If two events are independent, the probability that both will occur is the product of their separate probabilities.

$$P (A \text{ and } B) = P (A \cap B) = P (A) * P (B)$$

The probability of the two outcomes being heads in tossing a coin twice is:

$$1/2 * 1/2$$

$$1/4$$

Multiplication Rule for Dependent Events

Two events are dependent (conditional) if the occurrence or non occurrence of one even has effect on the probability of occurrence of the other event. The probability of occurrence of one even depends on whether or not the other happens. The probability that both of the dependent events will occur is:

$$P (A \text{ and } B) = P (A \cap B) = P (A) * P (B/A)$$

Assume that a set that contains 8 good (G) and 2 defective (D) of 10 spare parts. Given the spare parts are selected randomly without replacement, the probability that the two parts selected are both good is

$$P (G1 \text{ and } G2) = P (G1)* P (G1/G2)$$

$$8/10 * 7/9$$

$$56/90$$

$$28/45$$

28/45 represents the probability of event A and the conditional probability of event B given that event A occurred.

2.4.3. PROBABILITY DISTRIBUTIONS

The probability distribution of a random variable is a listing of the values that the random variable can take on together with the corresponding probabilities. A probability distribution shows the expected outcomes of an experiment and the probability of each of these outcomes. In other words, Probability distribution shows the likelihood of occurrence of each possible outcome. It is a listing of all the outcomes of an experiment and the probability associated with each outcome.

Risk management process could be based on data describing the entire probability distribution of total birr losses in a given period; such as a year. See the following example for the probability distribution of car accident repair costs in a fleet of three cars.

Birr loss amounts are collapsed in to seven possible outcomes: $0 (no loss), loss amount of $1,000, $2,000; $4,000; $10,000; $20,000 and $40,000. The probability of each loss amount is 0.606; 0.273; 0.100; 0.015; 0.003; 0.002; and 0.001 respectively.

Loss amount	Probability of each event
$0	0.606
$1,000	0.273
$2,000	0.100
$4,000	0.015
$10,000	0.003
$20,000	0.002
$40,000	0.001
	1.000

In light of the above figures we can estimate the probability of occurrence of losses; sever and/or average, and the risk of variation in the possible outcomes

For example, the probability that the business will suffer no loss is 0.606. The probability of suffering any loss is 0.394 (1- 0.606) or we can sum up probabilities of each outcome; 0.273 + 0.100 + 0.015 + 0.003 + 0.002 + 0.001.

The potential severity of total birr loss can be measured by stating the loss will exceed various values. For example, the probability that the birr losses will equal or exceed birr 10,000 from the given data is 0.006 (0.003 + 0.002 + 0.001).

We can also estimate average annual loss amount the business would face in the long run. The expected value is the average payment that would be expected if the exposure to possible damage were repeated a large number of times. The expected value is the sum of the multiply of the each outcome by the associated probability. Given the above data, the expected value is ($0* 0.606) + ($1,000*0.273) + ($2,000*0.100) + ($4,000*0.015) + ($10,000*0.003) + ($20,000*0.002) + ($40,000*0.001) = $643.

Note that two probability distributions may have the same expected loss but may differ greatly with respect to risk or the variation in the possible results. The greater the variation in the possible results the greater the risk and vise versa. i.e if the risk is small, the annual losses are fairly predictable and the business may be well advised to treat these losses as an operating expense.

2.4.4. PROBABILITY DISTRIBUTIONS AND MEASURES OF RISK

Depending on the nature of the random variables from which the probabilities are generated, probability distribution is divided in to two: Discrete probability distribution and Continuous probability distribution. A probability distribution generated by the use of discrete random variables leads to the formulation of *Discrete Probability Distributions*. The variable in a discrete probability distribution can take only certain values, usually integers. It is most often the result of counting or enumeration.

A probability distribution generated by the use of continuous random variables leads to the formulation of *Continuous Probability Distribution*. The variable in a continuous probability distribution can take any value within a given range. A continuous probability distribution is usually the result of measurement.

Some of important probability distributions, which are commonly used, are: Binomial probability distribution, Poisson probability distribution and Normal probability distribution. The first two are discrete probability distribution and the last one is a continuous probability distribution. These are some of the well-established probability distributions, which have a wide variety of application to problems often encountered.

Binomial Distribution

It is one of the most popular discrete distributions. The origin of binomial distribution lies in Bernoulli"s trials. A Bernoulli"s trial is an experiment having only two possible outcomes, that is, success or failure. In other words, the results of the trial are always dichotomous. For example, if we toss a coin, it will show either head or tail on the upper face.

Since Bernoulli"s trial has been considered, certain conditions for the application of binomial distributions are obvious. For clarity,

The probability of a success (or failure) remains same in each trial,

Trials must be independent,

Number of trials must be finite,

The probabilities of success and failure is one,

The probability of success vis-à-vis failure is not very low. A dichotomous variable X, which has the probability function,

$$P_{\chi}(\chi) = \begin{cases} \binom{n}{x} p^x q^{n-x} & \text{for } x = 0, 1, 2, \ldots\ldots\ldots n \\ = 0 & \text{otherwise} \end{cases} \quad (1.1)$$

is said to have binomial distribution.

In the binomial function (1.1), n = number of trials;

p = probability of a success;

q = probability of failure and

$p_\chi(\chi)$ = probability of getting exactly x success in n trials.

The distribution given by (1.1) is called binomial distribution since it is the $(x + 1)_{th}$ term in the binomial expansion of $(p+q)_n$.

Binomial distribution has two parameters, n and p (or q). The mean of the binomial distribution is **np** and variance is **npq**. p + q = 1.

The binomial distribution tends to normal distribution as n increases. The normal approximation is correct enough if the mean **np** is greater than 15 for p = ½

Example 2.1

Consider a simple trial of tossing a perfectly round and balanced coins six times. Then the probability of getting

E_1: exactly three heads,

E_2: at least three heads and

E_3: not more than two heads can be calculated by binomial distribution as follows:

Solution: For the given example, n = 6, p = q = ½

$$P(E_1) = \binom{6}{3}\left(\frac{1}{2}\right)^3\left(\frac{1}{2}\right)^{6-3} = \frac{6!}{3!(6-3)!}\cdot\frac{1}{2^6} = \frac{5}{16}$$

$$P(E_2) = \sum_{x=3}^{6} P_x(x)$$

$$= \binom{6}{3}\left(\frac{1}{2}\right)^3\left(\frac{1}{2}\right)^{6-3} \quad \binom{6}{4}\left(\frac{1}{2}\right)^4\left(\frac{1}{2}\right)^{6-4} \quad \binom{6}{5}\left(\frac{1}{2}\right)^5\left(\frac{1}{2}\right)^{6-5} \quad \binom{6}{6}\frac{1}{2^6}$$

$$= \frac{1}{2^6}\left\{\binom{6}{3} + \binom{6}{4} + \binom{6}{5} + \binom{6}{6}\right\}$$

$$= \frac{1}{64}\left\{\frac{6\times 5\times 4}{3\times 2\times 1} + \frac{6\times 5}{2\times 1} + 6 + 1\right\} = \frac{21}{32}$$

$$P(E_3) = \sum_{x=0}^{2} P_x(x)$$

$$= \binom{6}{0}\left(\frac{1}{2}\right)^0\left(\frac{1}{2}\right)^{6-0} + \binom{6}{1}\left(\frac{1}{2}\right)\left(\frac{1}{2}\right)^{6-1} + \binom{6}{2}\left(\frac{1}{2}\right)^2\left(\frac{1}{2}\right)^{6-2}$$

$$= \frac{1}{2^6}\left[\binom{6}{0} + \binom{6}{1} + \binom{6}{2}\right] = \frac{11}{32}$$

Example 2.2

Let the probability of an item, to be defective, produced by a factory be 0.10. A sample of 10 items has been inspected. Then the probability of an event E that the sample has two defective items is,

$$P(E) = \binom{10}{2}(.1)^2(.9)^{10-2} = \frac{10 \cdot 9}{2 \times 1}\cdot\frac{1}{10^2}\left(\frac{9}{10}\right)^8 = \frac{1}{2}\left(\frac{9}{10}\right)^8$$

Given the probability of x successes in binomial distributions, one can find the probability of x + 1 successes using the formula,

$$P(X = x+1) = P(X = x) \cdot \frac{(n-x)}{x+1}\cdot\frac{p}{q} \quad (1.2)$$

Relation (1.2) helps in calculating the term by terms probabilities.

Poisson Distribution

Before we know the distribution, it becomes necessary to understand what is a Poisson random variable. A variable, which can take only one discrete value in an interval of time, howsoever small, is known as Poisson variables. Some of the well-known examples of Poisson variable are:

Number of mistakes in a typed page; Number of cars parked at a place in an hour, say between 10:00 A.M and 11:00A.M; Number of suicides in a certain period in a city or town etc.

If we consider a Poisson‟s process for a unit length of interval (time, length, space etc), the number of occurrences are random variables which follow Poisson distribution. It has been named after its inventor, Simeon D. Poisson, a French probabilist of nineteenth century. It is

one of the most important discrete distributions. Poisson distribution is a classical approximation to binomial distribution, in which case n, the number of trials, is comparatively large and p, the probability of an occurrence, is small.

Let X be the number of occurrences in a Poisson process and μ be the actual average number of occurrences of an event in a unit length of interval, the probability function for Poisson distribution is,

$$P_x(x) = \frac{e^{-\mu}\mu^x}{\chi!} \text{ for } x = 0, 1, 2, \ldots\ldots.(1.3)$$

= 0 otherwise

If we consider the length of interval as d of unit length, the average number of occurrences in d length of interval is μ d. Thus, the probability function in this situation is

$$P_x(x) = \frac{e^{-\mu d}(\mu d)^x}{\chi!} \text{ for } x = 0, 1, 2, \ldots\ldots(1.4)$$

= 0 otherwise

The Poisson distribution as given by (1.3) has mean μ and its variance is also μ. It is the only distribution so far, of which the mean and variance are equal. Poisson distribution possesses only one parameter (μ).

Note:

It has been said that for Poisson viriate the number of trials n is large and the probability of the so-called success is small. Now the question arises what value of n is to be considered as large and what value of p as small. There is no hard-and-fast rule for this, but as a tradition if n ≥ 20, it may be taken as large and p = 0.05 may be taken as small. Otherwise, the discrete variable with only two possibilities is generally taken to follow binomial distribution.

2) The value of $e^{-\mu}$ should either be seen from a table or may be calculated with the help of logarithm.

Example 2.3

The number of mistakes counted in one hundred typed pages of a typist revealed that she made 2.8 mistakes on an average per page. The probability that in a page typed by her,

There is no mistake

There are two or less mistakes, can be calculated as under,

Solution: Given that $\mu = 2.8$

The probability, $p(x = 0) = \frac{e^{-2.8}(2.8)^0}{0!} = 0.061$

The probability, $p(x \le 2) = \sum_{x=0}^{2} \frac{e^{-2.8}(2.8)^x}{\chi!}$

$$= e^{-2.8}\left\{\frac{(2.8)^0}{0!} + \frac{(2.8)^1}{1!} + \frac{(2.8)^2}{2!}\right\}$$

$P(x \le 2) = 0.471$

For Poisson vitiate x, the relationship between the probabilities, P(X = x) and P(X = x+1) is given by

$$P(X = x) = \frac{e^{-\mu}.\mu^{x}}{\chi!} \quad \text{and}$$

$$P(X = x + 1) = \frac{e^{-\mu}.\mu^{(x+1)}}{(x+1)!} = \frac{e^{-\mu}.\mu^{x}}{\chi!}.\frac{\mu}{\chi+1}$$

Thus $P(X = x + 1) = P(X = x) . \frac{\mu}{(\chi+1)}$ .....(1.5)

Example 2.4

If a Poisson random variable X is such that P(X = 1) = P(X = 2), then the probability of P(X = 3) can be found as: Using (1.5) above, μ

2

Since P(X = 1) = P(X = 2)

$\frac{\mu}{2} = 1 \Rightarrow \mu = 2$

Hence $P(X = 3) = \frac{e^{-2} .2^3}{3!}$

$\underline{\underline{P(X = 3) = 0.180}}$

Check Your Progress –1

In a Poisson distribution $\mu = 0.4$

What is the probability that X = 0?

What is the probability that X>0?

Normal Distribution

Of all theoretical distributions for continuous variables, the most popular and commonly used distribution is the so-called normal or Gaussian distribution. A random variable X is said to follow normal distribution, if and only if, its probability density function (which is the probability distribution of a continuous random variable X) is given by:

$$f_x(x) = \frac{1}{\delta\sqrt{2\pi}} e^{-\frac{1}{2\delta}(x-\mu)^2} \quad \ldots\ldots \quad (1.6)$$

Where x is the real value of X; i.e.$-\infty < x < \infty$

The variable x is said to be distributed normally with mean μ and variance δ^2. i.e. $X \sim N(\mu, \delta^2)$ read as X follows a normal distribution with mean μ and standard deviation δ. The density function given by (1.6) has two parameters, namely μ and δ. Here μ can take any value in the range $-\infty$ to ∞, where δ is any positive real value, i.e. $\delta > 0$.

Since probability can never be negative,

$f_x(x) \geq 0$ for all x.

In case, $\mu = 0$, $\delta = 1$, the density function for X is $fx(x) = \frac{1}{\sqrt{2\pi}} e^{-\frac{1}{2}x^2}$ where $-\infty < x < \infty$, …..(1.7)

Notationally, X~N(0, 1)

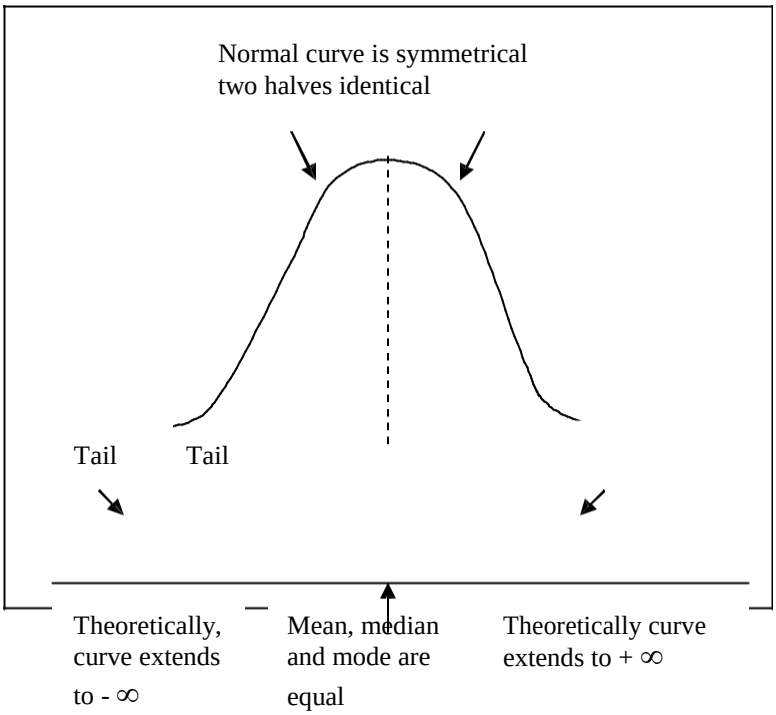
In this situation the variable X is called the standardized normal variate and the distribution given by (1.7) is called the standardized normal distribution.

The normal probability distribution and its accompanying normal curve have the following characteristics:

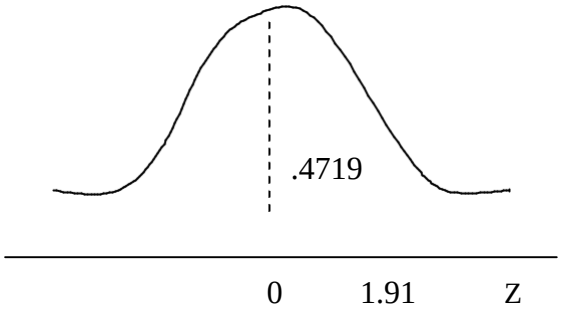
The normal curve is bell-shaped and has a single peak at the exact center of the distribution. The mean, median and mode of the distribution are equal and located at the peak. Thus, half the area under the curve is above this center point, and the other half is below it.

The normal probability distribution is symmetrical about its mean. If we cut the normal curve vertically at this central value, the two halves will be mirror images. The normal curve falls off smoothly in either direction from the central value. It is asymptotic, meaning that the curve gets closer and closer to the x-axis but never actually touches (crosses) it. That is, the "tails" of the curve extend indefinitely in both directions. In real-world problems, however, this is somewhat unrealistic. The life of a bulb, for example, could not be 100 years.

These characteristics are summarized in the chart below.



There is no just one normal probability distribution, but rather a "family" of them. For a random variable X which follows normal curve with mean μ and standard deviation δ , i.e $X \sim N(\mu, \delta^2)$, the location and shape of the normal curve depends on μ andδ where andδ can take any value with in their range. Hence, no master table for the area under the curve can be prepared. This problem is very well overcome by consideration of a variable Z where $Z = \frac{X_i - \mu}{\delta}$. The variable Z is always distributed with mean zero and variance unity, i.e. $Z \sim N(0, 1)$. The variable Z is known as standard normal variate. It is called standard as whatever be the parameters of the normal distribution of X, the transformed variable Z has always the normal distribution whose parameters are 0 and 1. Hence, only one table for area or ordinates of the normal curve is sufficient. The area as a matter of fact gives the probability for an event that Z takes certain values. These probabilities (areas) can always be found with the help of table. We hope that in your previous courses, you are familiarized to this table and able to read from this table. Just to remind you using one example, suppose the Z value is computed to be 1.91. To read the area under the normal curve between the mean and X, go down the column of the table headed by letter Z to 1.9 and then move horizontally to the right and read the probability under column headed 0.01. It is 0.4719. This means that 47.19 percent of the area under the curve is between the mean and the X value 1.91 standard deviations above the mean. This is also interpreted as the probability that an observation is between 0 and 1.91 standard deviations above the mean.



QUICK CHECK

Discuss the law of large numbers

Differentiate continuous and discreet probability distribution

Compare and contrast binomial, Poisson and normal distribution

2.5. TOOLS OF RISK MANAGEMENT

The major techniques to handling risks are shown below under two categories

Risk control techniques

Risk Avoidance

Loss Control

Diversification (separation)

Combination

Risk financing techniques

Risk Retention

Self insurance

Non insurance risk Transfer

Insurance

2.5.1. Risk Control Techniques

RISK AVOIDANCE

One way to control a particular risk is to avoid the property, person or activity giving rise to possible by either refusing to assume it even temporarily (called proactive avoidance) or by abandoning an exposure to a loss assumed earlier (abandonment). Avoidance stands to mean that a certain loss exposure is never acquired, or an existing loss exposure is abandoned. Risk avoidance is conscious decision not to expose oneself or one‟s firm to a particular risk of loss. In this way, risk avoidance can be said to decrease one‟s chance of loss to zero. Example: If one

doesn‟t want to face car collusion, he/she may decide not to have car at all. Similarly, a pharmaceutical firm that markets a drug with dangerous side effects can withdraw the drug from the market.

The major advantage of risk avoidance is that the chance of loss is reduced to zero if the loss exposure is never acquired. In addition, if an existing loss exposure is abandoned, the chance of loss is reduced or eliminated because the activity or product that could produce a loss has been abandoned.

Avoidance, however, has also some disadvantages. First, the firm may not be able to avoid all losses. Example, a company may not be able to avoid the premature death of a key executive. Second, it may not be feasible or practical to avoid the exposure. Or even avoiding one risk may create another risk. For example, a paint factory can avoid losses arising from the production of paint. Without paint production, however, the firm will not be in business.

LOSS CONTROL

When particular losses/ risks cannot be avoided, actions may be taken to reduce the losses associated with them. This method of dealing with risk is known as "Loss Control". Loss control activities are designed to reduce both the frequency and severity of losses. Loss control measures do counteract risks by lowering the chance the loss will occur or by reducing its severity if the loss is to occur. This method deals with an exposure that the firm doesn‟t want to abandon.

Loss control is different from risk avoidance, because loss exposures that give rise to particular risks are still used in operations, but the firm will conduct its operations in the safest possible manner. Rather than abandoning specific activities, loss control involves making conscious decisions regarding the manner in which those activities will be conducted. Common goals are either to reduce the probability of losses or to decrease the cost of losses that do occur.

Types of Loss Control

Loss control can be classified based on two factors called focus and timing.

Based on Focus, Loss Control can be classified as

Loss Prevention

Loss Reduction

Some loss control measures are designed primarily to reduce loss frequency. This form of loss control is referred to as "frequency reduction" (Loss Prevention). For example, measures that reduce truck accidents include driver examinations, zero tolerance for alcohol or drug abuse and strict enforcement of safety rules. Measures that reduce lawsuits from defective products include installation of safety features on hazardous products, placement of warning labels on dangerous products, and institution of quality control checks.

In contrast to frequency reduction, consider an auto manufacturer having airbags installed in the company fleet off automobiles. This form is engaging in "severity reduction" (Loss Reduction). It refers to measure that reduce the severity of a loss. The air bags will not prevent accidents from occurring, but they will reduce the probable injuries that employees will suffer if an accident does happen.

Based on Timing, Loss Control can be classified as

Pre-Loss Activities

Concurrent Activities

Post – Loss Activities.

Pre-Loss Activities are measures to be taken to reduce the frequency or magnitude of the risk prior to its occurrence. These activities deal with risk prevention or reduction mechanisms.

Concurrent Activities denotes for activities that take place concurrently with losses. The activities of building sprinkler systems illustrate this concept of concurrent loss control.

Post – Loss Activities are measures to be taken after the loss is occurred. Similar to concurrent loss control, Post-Loss activities always have a severity-reduction focus. For example, one is trying to salvage damaged property rather than discard it. Thus, the partial restoration of an automobile and subsequent sale of the car to an automobile wholesaler can reduce the overall severity of a loss due to an automobile accident.

Benefits of Loss Control

Many of the benefits association with loss control are either readily quantifiable or can be reasonably estimated. These may include the reduction or elimination of expense associated with the following:

Repair or replacement of damaged property
Income losses due to destruction of property
Extra costs to maintain operations following a loss
Adverse liability of judgments
Medical costs to threat injuries
Income losses due to deaths or disabilities.

Another quantifiable benefit of loss control is a reduction in the cost of other risk management techniques used in conjunction with the loss control.

SEPARATION AND DUPLICATION

Separation involves the reduction of maximum probable loss associated with some kinds of risks. This method deals with separation of the firm‟s exposures to loss instead of concentrating them at one location where they might all be involved in the same loss. Example, a firm may disperse its inventory in to different warehouses than keeping it in one store. If fire destroys one of the warehouses, the firm will save some of its inventories placed in the other warehouses. Through such separation, the firm is reducing the likely severity of overall firm losses by reducing the size of the exposure in any one location.

Duplication is a very similar technique, in which spare parts or supplies are maintained to replace immediately damaged equipment and or inventories. This type of loss control also helps to reduce the severity of losses that would occur.

COMBINATION

This method makes loss experiences more predictable by increasing the number of exposure units. Unlike separation which spreads a specified number of exposure units, combination increases the number of exposure units under the control of the firm.

2.5.2. Risk Financing Techniques

RISK RETENTION

Retention means that the firm‟s retains part or all of the losses that can result from a given loss. Retention can be Active (Planned) or Passive (Unplanned). Active risk retention means that the firm is aware of the loss exposure and plans to retain part or all of it, such as automobile crash losses to a fleet of company cars. Passive risk retention, however, is the failure to identify a loss exposure, failure to act or forgetting to act. For example, a risk manager may fail to identify all company assets that could be damaged in an earthquake.

Retention can be effectively used in a risk management program under the following conditions:

No other method of treatment is available
The worst possible loss is not serious
Losses are highly predictable.

Funding Losses

If retention is used, the risk manager must have some method for paying losses. The following methods are typically used:

1. Current Net Income

The firm can pay losses out of its current net income and treat losses as exposure for that year. A large number of losses could exceed current income, however, and other assets may then have to be liquidated to pay losses.

2. Unfunded Reserve

An unfunded reserve is a bookkeeping account that is charged with actual or expected losses from a given exposure.

3. Funded Reserve

A funded reserve is the setting aside of liquid funds to pay losses. Funded reserves are net widely used by private employers, because the funds may yield a much higher rate of return by being used in the business. Also, contributions to funded reserves are net income tax deductible losses, however, are tax deductible when paid.

4. Credit Line

A credit line can be established with a bank, and borrowed funds may be used to pay losses as they occur. Interest must be paid on the loan, however, and loan repayments can aggregate any cash flow problems a firm may here.

Advantages of Retention

Save Money: the firm can save money in the long run if its actual loses are less than the loss component in the insurance‟s premium.

Lower Expenses: the services provided by the insurer may be provided by the firm at a lower cost. Some expenses may be reduced, including loss adjustment expenses, general administrative expenses, commissions and brokerage fees, loss control expenses, taxes and fees and the insurer‟s profit.

Encourage Loss Prevention: because the exposure is retained, there may be a greater incentive for loss prevention.

Increase Cash Flow: cash flow may be increased because the firm can use the funds that normally would be paid to the insurer at the beginning of the policy period.

Disadvantages of Retention

Possible higher losses: the losses retained by the firm may be greater than the loss allowance in the insurance premium that is saved by net purchasing the insurance.

Possible higher expenses: expenses may actually be higher outside experts such as safety engineers may have to be hired. Insurers may be able to provide loss control and claim services less expensively.

Possible higher taxes: income taxes may also be higher.

NON INSURANCE RISK TRANSFER

Risk transfer involves in payments by one party (the transferor) to another (the transferee or risk bearer) when the transferee agrees to assume a risk that the transferor desires to escape. Sometimes the degree of risk is reduced through the transfer process, because the transferee may be in a better position to use the law of large numbers to predict losses. In other cases the degree of risk remains the same and is merely shifted from transferor to the transferee for a price.

Non insurance transfers are methods other than insurance by which a pure risk and its potential financial consequences are transferred to another party. The most common forms of non insurance risk transfers are hedging, hold-harmless agreements and incorporation.

Hedging

Hedging involves the transfer of speculative risk. It is a business transaction in which the risk of price fluctuations is transferred to a third party known as a speculator. This is the process of balancing a chance of loss against the chance of gain.

Hold-Harmless Agreements

Provisions inserted into many different kinds of contracts can transfer responsibility for some types of losses to a party different than the one that would otherwise bear it. These are contracts entered into prior to a loss, in which one party agrees to assume a second party‟s responsibility should loss occur. Such provisions are called hold-harmless agreements or sometimes indemnity agreements. The following are three different forms of hold-harmless agreements.

Limited Form

The limited form merely clarifies that all parties are responsible for liabilities arising from their own activities/actions. For example, YZ general trading engages in agreement with DEF Company for electrical wiring of its office building. The limited form hold-harmless agreement between YZ and DEF hold YZ general trading responsible for any liabilities losses arising from faulty wiring.

Intermediate Form

A second type of hold-harmless agreement is the intermediate form, in which the transferee agrees to pay for any losses in which both the transferee and transferor are jointly liable.

Broad Form

The broad form is the third type of hold-harmless agreements. It requires the transferee to be responsible for all losses arising out of particular situations regardless of fault.

(d) Incorporation

Another way for a business to transfer risk is to incorporate. In this way, the most that an incorporated firm can ever loss is the total amount of its assets. Personal assets of the owners cannot be attached to help pay for business losses, as can be the case with sole proprietorships and partnerships. Through this act of incorporation, a firm transfers to its creditors the risk that it might net has sufficient assets to pay for losses and other debts.

INSURANCE

The most widely used form of risk transfer is insurance. Insurance represents a contractual transfer of risk. Insurance is appropriate for loss exposures that have a low probability of loss but the severity of loss is high. If insurance is used to treat certain loss exposures, five key areas must be emphasized. They are:

Selection of insurance coverage

The need for insurance can be divided in to several categories depending on importance. One useful approach is to classify the need for insurance in to three categories: essential, desirable, and available

Essential insurance includes those coverages required by law or by contract, such as the works compensation insurance. It also includes coverages that will protect the firm against a catastrophic loss or a loss that threatens the firm‟s survival; commercial general liability insurance would fall in to that category.

Desirable insurance is protection against losses that may cause the firm financial difficulty, but not bankruptcy. It includes those that protect against loss exposures that would force the firm to borrow or restore to credit.

Available insurance is coverage for slight losses that would merely inconvenience the firm. Optional insurance coverages include those that protect against losses that could be met out of existing assets or current income.

Selection of an insurer

In selecting the insurer a risk manager should pay due attention to several factors such as the financial strength of the firm, service provided by the insurer, and cost and terms of protection.

Negotiation of terms

The risk manager and the insurer must agree on the documents and the terms should be clear to both parties.

Dissemination of information concerning insurance coverage

The firm‟s managers and employees must be informed about the insurance coverage, the various records to be kept, the services of the insurer etc.

Periodic review of insurance program

The entire process of obtaining insurance must be evaluated periodically. This involves an analysis of agent and broker relationship, coverages needed, cost of insurance, pace of claim payment and etc.

QUICK CHECK

What is the difference between risk avoidance and risk retention?

Differentiate loss prevention and loss reduction

What are the conditions for retention to be effectively used in the risk management program?

Describe the non insurance risk transfer methods of risk management

2.6. RISK MANAGEMENT MATRIX

Which method should be used for a particular exposure depends on the frequency and severity of the loss. The following matrix may help in determining which risk management tool is to be used, considering the nature of the loss:

Type of Loss	Loss Frequency	Loss Severity	Appropriate Risk Management Technique
1	Low	Low	Retention
2	High	Low	Loss Prevention
3	Low	High	Insurance
4	High	High	Avoidance

CHAPTER SUMMARY

Risk management is a scientific approach to deal with risks by anticipating possible accidental losses and designing and implementing procedures that minimize the occurrence of loss or the financial impact of the losses that occur.

Risk management has many important objectives which can be classified as either

Pre loss Objectives: Economy, Meeting legal obligations, and Reduction of Anxiety

Post loss Objectives: Survival, Continued Operation, Stability, Continued Growth and Social Responsibility

The whole process of risk management involves the following four steps:

Step1: Identifying potential losses (Risk Identification): it is a phase where a firm systematically and continually identifies property, liability, and personal exposures as soon as or before they emerge.

Some of the risk identification methods are: loss exposure checklists method, the financial statement method, the flow chart method, contract analysis method, interactions with other departments method, interactions with outside suppliers and professional organizations, statistical records of losses and on site inspection method.

Step 2: Evaluate Potential losses (Risk Measurement): The exposures are to be measured in order to determine their relative importance and to obtain information that will help the risk manager to decide up on the most desirable combination of risk management tools. This step involves in estimation of the potential frequency and severity of loss.

Loss frequency refers to the probable number of losses that may occur during the same given period of time. Loss severity refers to the probable magnitude of the losses that may occur.

Step 3:Select the appropriate techniques for treating loss exposure, and

Step 4:Implement and administer the program.

Probability theory is the body of knowledge concerned with measuring the likelihood that something will happen and making predictions on the basis of this likelihood. The likelihood of an event is assigned a numerical value between 0 and 1. Zero is assigned for impossible and one for definitely possible events.

There are two common methods to obtain an estimate of the probability of an event: Prior probabilities and Posterior or Empirical probabilities

The law of large numbers is a basic principle of mathematics which states that as the number of the exposure units increases (for our case, persons or objects exposed to risk), the more certain it becomes that actual loss experience will equal probable loss experience. The degree of objective risk diminishes as the number of exposure units increases.

The probability distribution of a random variable is a listing of the values that the random variable can take on together with the corresponding probabilities.

A probability distribution shows the expected outcomes of an experiment and the probability of each of these outcomes.

Note that two probability distributions may have the same expected loss but may differ greatly with respect to risk or the variation in the possible results. The greater the variation in the possible results the greater the risk and vise versa.

Depending on the nature of the random variables from which the probabilities are generated, probability distribution is divided in to two: Discrete probability distribution and Continuous probability distribution.

Some of important probability distributions, which are commonly used, are: Binomial probability distribution, Poisson probability distribution and Normal probability distribution. The first two are discrete probability distribution and the last one is a continuous probability distribution. These are some of the well-established probability distributions, which have a wide variety of application to problems often encountered.

The major techniques to handling risks are shown under two categories

Risk control techniques: Risk Avoidance, Loss Control, Diversification (separation) and Combination

Risk financing techniques: Risk Retention, Self insurance, Non insurance risk Transfer and Insurance

REVIEW QUESTIONS

PART I- MULTIPLE CHOICE QUESTIONS

Instruction: Dear learners, please chooses the correct answer and encircles the letter of your choice.

One of the following is not among the important pre loss objectives

Economy

Reduction of anxiety

Continued growth

Meeting legal obligations

None

Probabilities determined before an experiment

Prouty probabilities

Prior probabilities

Posterior probabilities

Empirical probabilities

None

One of the following is not among the risk control techniques

Risk Avoidance

Diversification

Combination

Risk Retention

None

One of the following is not the advantages of retention

Lower Expenses

Encourage Loss Prevention

Increase Cash Flow

All

None

One of the following is true about Hedging

It involves the transfer of speculative risk.

It is a business transaction in which the risk of price fluctuations is transferred to a third party known as a speculator.

It is protection against losses that may cause the firm financial difficulty, but not bankruptcy.

All

None

PART II- FILL INTHE BLANK SPACES

Instruction: Dear Learners, please fill in the blank spaces with appropriate words or phrases

_____ are schematic representations of a sequential process

2. _____ represents a contractual transfer of risk

_____ refers to the probable number of losses that may occur during the same given period of time.

4. _____ stands to mean that a certain loss exposure is never acquired, or an existing loss exposure is abandoned
5. _____ probabilities are computed after a study of past experience.
6. _____ refers to the probable magnitude of the losses that may occur.
7. _____ denote for activities that take place concurrently with losses. The activities of building sprinkler systems illustrate this concept of concurrent loss control.
8. Loss control measures designed primarily to reduce loss frequency is called _____
9. _____states that the greater the numbers of exposures, the more closely will the actual results approach the probable results that are expected from an infinite number of exposures
10. _____is a systematic process that identifies loss exposures faced by an organization and selects the most appropriate techniques for treating such exposures

PART III- TRUE OR FALSE

Instruction: Dear learners, please write true if the statement is correct and write false if the statement is wrong

Insurance is appropriate for loss exposures that have a low probability of loss but the severity of loss is high.

Desirable insurance is protection against losses that may cause the firm financial difficulty, but not bankruptcy.

The normal probability distribution is symmetrical about its mean.

The variable in a continuous probability distribution can take only certain values, usually integers.

The law of large numbers states that the degree of objective risk diminishes as the number of exposure units increases

Although the risk manager must consider both loss frequency and loss severity, more attention should be given to frequency

Flow charts depicting the operations of a firm can guide a risk manager to associate risks with those operations.

CHAPTER THREE

INSURANCE

LEARNING OBJECTIVES

At the end of this chapter, learners should be able to:

Define insurance and explain the basic characteristics of insurance

Identify and explain the costs and benefits of insurance

Identify the characteristics of insurable risks

Show how insurance differs from gambling and speculation

Explain what is meant by adverse selection and why it is a problem for insurers

List the requirement of an insurable contract

INTRUDUCTION

Dear students, in the last two chapters we have been dealing with risk and risk. In this chapter we are now going to see the other core part of the course-insurance; an instrument to take care of risk. This chapter is meant to express the definition, underline concepts and the basic characteristics of insurance, requirements of an insurable risk, comparison of insurance and gambling, and benefits and cost of insurance to the society. The chapter concludes with a discussion of functions and organization of insurers**.**

3.1. DEFINITION OF INSURANCE

Insurance is complex and difficult to define. There is no single definition of insurance. Insurance can be defined from the viewpoint of several disciplines, including law, economics, history, actuarial science, risk theory, and sociology.

The commission of Insurance Terminology of the American Risk and Insurance Association has defined insurance as follows: "Insurance is the pooling of accidental losses by transfer of such risks to insurers, who agree to indemnify insureds for such losses, to provide other financial benefits on their occurrence, or to render services connected with the risk". In its simplest aspect insurance has two fundamental characteristics:

Transferring or shifting risk from one individual to a group
Sharing losses on some equitable basis by all members of the group

To simplify the definition and nature of insurance assume there are 100 persons in Arba Minch town who own car acquired at birr 150,000 each. If the car of one individual collude and become completely out of use, he/she will lose birr 150,000. But if all these 100 car owners form group and agree to share the cost whenever there is loss, each of the 100 individuals will contribute birr 1,500 and indemnify the sufferer. Hence, the risk is now shared among the group, rather than fully assumed by the individual. In effect, this mechanism results in the substitution of an average loss of $1,500 for the actual loss of $150,000.

From the individual point of view, insurance can be defined as an economic device where by the individual substitutes a small certain cost (called premium) for a larger uncertain financial loss that would exist if it were not for the insurance. It is a protection against financial loss provided by an insurer. The primary function of insurance is creation of security. It does not reduce or prevent the incident of the occurrence of the loss; rather it reduces the probability of the financial loss connected with the event.

Likewise from the societal point of view insurance is an economic device for reducing and eliminating risk through the process of combining a sufficient number of homogeneous exposures in to a group to make the losses predictable for the group as a whole. It is advice by means of which the risks of two or more persons or firms are combined through the actual or promised contributions to a fund out of which applicants are paid.

From the view point of the insurer, insurance is a transfer, a combination and a retention device that it involves some pooling of risks: the insurer combines the risks of many insureds. And through this combination the insurer approves its ability to predict its expected losses.

3.2. BASIC CHARACTERISTICS OF INSURANCE

An insurance plan or arrangement typically includes the following characteristics:

Pooling of Losses
Payment of Accidental Losses
Risk Transfer
Indemnification

Pooling of Losses

Pooling or sharing of losses is the corner stone of insurance. Pooling is the spreading of losses incurred by the few over the entire group, so that in the process, average loss is substituted for actual losses. In addition, pooling involves the grouping of a large number of exposure units so that the law of large numbers can operate to prove a substantially accurate prediction of future

losses. Ideally, there should be large exposure units that are subject to the same perils. Thus, pooling implies

the sharing of losses by the entire group, and
prediction of future losses with some accuracy based on the law of large numbers.

In addition, by pooling or combining the loss experience of a large number of exposure units, an insurer may be able to predict future losses with greater accuracy. From the viewpoint of the insurer, if future losses can be predicted, objective risk is reduced. Thus, another characteristic often found in many lines of insurance is risk reduction based on the law of large numbers.

Payment of Accidental Losses

A second characteristic of private insurance is the payment of accidental losses. An accidental loss is one that the unanticipated and unexpected and occurs as a result of chance. In other words, the loss must be accidental. The law of large numbers is based on the assumption that losses are accidental and occur randomly. For example, a person may slip on an icy sidewalk and break a leg. The loss would be accidental. Insurance policies do not cover intentional losses.

Risk Transfer

Risk transfer is another essential element of insurance. With the exception of self-insurance, a true insurance plan always involves risk transfer. Risk transfer means that a pure risk is transferred from the insured to the insurer, who typically is in a stronger financial position to pay the loss than the insured. From the viewpoint of the individual, pure risks that are typically transferred to insurers include the risk of premature death, poor health, disability, destruction and theft of property, and liability lawsuits.

Indemnification

Indemnification means that the insured is restored to his or her approximate financial position prior to the occurrence of the loss. Thus, if your home burns in a fire, a homeowner‟s policy

will indemnify you or restore you to your previous position. If you are sued because of the negligent operation of an automobile, your auto liability insurance policy will pay those sums that you are legally obligated to pay. Similarly, if you become seriously disabled, a disability income insurance policy will restore at least part of the lost wages.

3.3. REQUIREMENTS OF AN INSURABLE RISK

Insurers normally insure only pure risks. However, not all pure risks are insurable. Certain requirements usually must be fulfilled before a pure risk can be privately insured. From the viewpoint of the insurer, there are ideally six requirements of an insurable risk.

Requirements

Large Number of Exposure Units
Accidental and Unintentional Loss
Determinable and Measurable Loss
No Catastrophic Loss
Calculable Chance of Loss
Economically Feasible Premium

Large Number of Exposure Units

The first requirement of an insurable risk is a large number of exposure units. Ideally, there should be a large group of roughly similar, but not necessarily identical, exposure units that are subject to the same peril or group of perils. For example, a large number of frame dwellings in a city can be grouped together for purposes of providing property insurance on the dwellings.

The purpose of this first requirement is to enable the insurer to predict loss based on the law of large numbers. Loss data can be compiled over time, and losses for the group as a whole can be predicted with some accuracy. The loss costs can then be spread to all insureds in the underwriting class.

Accidental and Unintentional Loss

A second requirement is that the loss should be accidental and unintentional; ideally, the loss should be accidental and outside the insured‟s control. Thus, if an individual deliberately causes a loss, he or she should not be indemnified for the loss.

Determinable and Measurable Loss

A third requirement is that the loss should be both determinable and measurable. This means the loss should be definite as to cause, time, place and amount. Life insurance in most cases meets this requirement easily. The cause and time of death can be readily determined in most cases, and if the person is insured, the face amount of the life insurance policy is the amount paid.

Some losses, however, are difficult to determine and measure. For example, under a disability-income policy, the insurer promises to pay monthly benefit to the disable person if the definition of disability stated in the policy is satisfied. Some dishonest claimants may deliberately fake sickness or injury to collect from the insurer. Even if the claim is legitimate, the insurer must still determine whether the insured satisfies the definition of disability stated in the policy.

The basic purpose of this requirement is to enable an insurer to determine if the loss is covered under the policy, and if it is covered, how much should be paid.

No Catastrophic Loss

The fourth requirement is that ideally the loss should not be catastrophic. This means that large proportion of exposure units should not incur losses at the same time. As it is stated earlier, pooling is the essence of insurance. If most or all of the exposure units in a certain class simultaneously incur a loss, then the pooling technique breaks down and becomes unworkable. Premiums must be increased to prohibitive levels, and the insurance technique is no longer a feasible arrangement by which loses of the few are spread over the entire group.

Insurers ideally wish to avoid all catastrophic losses. In reality, however, this is impossible, because catastrophic losses periodically result from floods, hurricanes, tornadoes, earthquakes, forest fires, and other natural disasters. Catastrophic losses can also result from acts of terrorism.

Several approaches are available for meeting the problems of catastrophic loss. First, reinsurance can be used by which insurance companies are indemnified by reinsures for catastrophic losses. Reinsurance is the shifting of part or all of the insurance originally written by one insurer to another.

Second, insurers can avoid the concentration of risk by dispersing their coverage over a large geographical area. The concentration of loss exposures in a geographic area exposed to frequent floods, earthquakes, hurricanes, or the natural disasters can result in periodic catastrophic losses. If the loss exposures are geographically disperses, the possibility of a catastrophic loss is reduced.

Finally, new financial instruments are now available for dealing with catastrophic losses. These instruments include catastrophe bonds, which are designed to pay for a catastrophic loss.

Calculable Chance of Loss

A fifth requirement is that the chance of loss should be calculable. The insurer must be able to calculate both the average frequency and the average severity of future losses with some accuracy. This requirement is necessary so that a proper premium can be charged that is sufficient to pay all claims and expenses and yield a profit during the policy period. Certain losses, however, are difficult to insure because the chance of loss cannot be accurately estimated, and the potential for a catastrophic loss is present. For example, floods, wars and cyclical unemployment occur on an irregular basis, and prediction of the average frequency and the severity of losses are difficult. Thus, without government assistance, these losses are difficult for private carriers to insure.

Economically Feasible Premium

A final requirement is that the premium should be economically feasible. The insured must be able to pay the premium. In addition, for the insurance to be an attractive purchase, the premiums paid must be substantially less than the face value, or amount, of the policy. To have an economically feasible premium, the chance of loss must be relatively low. One view is that if the chance of loss exceeds 40%, the cost of the policy will exceed the amount that the insurer must pay under the contract. For example, an insurer could issue a $1,000 life insurance policy on a man age 99, but the pure premium would be about $980, and an additional amount for expenses would have to be added. The total premium would exceed the face amount of the insurance.

Based on these requirements, personal risks, property risks and liability risks can be privately insured, because the requirements of an insurable risk generally can be met. By contrast, most market risks, financial risks, production risks and political risks are usually uninsurable by private insurers. These risks are uninsurable for several reasons.

First the risks are speculative and are so difficult to insure privately. Second the potential of each to produce a catastrophic loss is great such as the risk of war. Finally, calculation of the proper premium for such risks may be difficult because the probability of loss cannot be accurately determined.

3.4. INSURANCE AND GAMBLING COMPARED (SPECULATION)

Insurance is often erroneously confused with gambling. There are two important differences between them. First, gambling creates a new speculative risk, while insurance is a technique for handling an already existing pure risk. This, if you put $500 on a horse race, a new speculative risk is created, but if you pay $500 to an insurer for fire insurance, the risk of fire is already present and is transferred to the insurer by a contract. No new risk is created by this transaction.

The second difference between insurance and gambling is that gambling is socially unproductive, because the winner‟s gain comes at the expense of the loser. In contrast, insurance is always socially productive, because neither the insurer nor the insured is placed in a position where the gain of the winner comes at the expense of the loser. The insurer and the insured both have a common interest in the prevention of a loss. Both parties win if the loss does not incur. Moreover, consistent gambling transactions generally never restore the loser to the former financial position. In contrast, insurable contract restore the insured financially in whole or in part if a loss occurs.

QUICK CHECK

Describe the two fundamental characteristics of insurance

Describe the characteristics of an insurable risk

What make insurance different from speculation

3.5. BENEFITS OF INSURANCE TO THE SOCIETY

The major social and economic benefits of insurance include the following:

Indemnification: Indemnification permits individuals, and families to be restores to their former financial position after a loss occurs. As a result, they can maintain their financial security. Because insureds are restored either in part or in whole after a loss occurs, they are less likely to apply for public assistance or welfare benefits, or to seek financial assistance from relative and friends.

Less Worry and Fear: A second benefit of insurance is that worry and fear are reduced. This is true both before and after a loss. For example, if family heads have adequate amounts of life insurance, they are less likely to worry about the financial security of their dependents in the event of premature death; persons insured for long-term disability to not have to worry about the loss of earnings if a serious illness or accident occurs; and property owners who are insured enjoy greater peace of mind because they know they are covered if a loss occurs.

Source of Investment Funds: The insurance industry is an important source of funds for capital investment and accumulation. Premiums are collected in advance of the loss, and funds not needed to pay immediate losses and expenses can be loaned to business firms. These funds typically are invested in shopping centers, hospitals, factories, housing developments, and new machinery and equipment. The investments increase society‟s stock of capital goods, and promote economic growth and full employment. Insurers also invest in social investments, such as housing, nursing homes and economic development projects. In addition, because the total supply of loanable funds is increased by the advance payment of insurance premiums, the cost of capital to business firms that borrow is lower than it would be in the absence of insurance.

Loss Prevention: Insurance companies are actively involved in numerous loss prevention programs and also employ a wide variety of loss prevention personnel, including safety engineers and specialists in fire prevention, occupational safety and health, and products liability. For example, Highway safety and reduction of automobile deaths, Fire prevention, Reduction of work related disabilities, Prevention of auto thefts, Prevention and detection of arson losses and etc.

Enhancement of Credit: A final benefit is that insurance enhances a person‟s credit. Insurance makes a borrower a better credit risk because it guarantees the value of the borrower‟s collateral or give greater assurance that the loan will be repaid. For example when a house is purchased, the lending institution normally requires property insurance on the house before the mortgage loan is granted.

3.6. COSTS OF INSURANCE TO SOCIETY

Although the insurance industry provides enormous social and economic benefits to society, the social costs of insurance must also be recognized. The major social costs of insurance include the following:

Cost of Doing Business: One important cost is the cost of doing business. Insurers consume scarce economic resources – land, labor, capital and business enterprise - in providing insurance to society. In financial terms, an expense loading must be added to the pure premium to cover the expense incurred by insurance companies in their daily operations. An expense loading is the amount needed to pay all expense, including commissions, general administrative expenses, state premium taxes, acquisition expense, and an allowance for contingencies and profit.

Fraudulent Claims: A second cost of insurance comes from the submission of fraudulent claims. Examples of fraudulent claims include the following: Auto accidents, are faked or staged to collect benefits, Dishonest claimants fake slip and fall accidents, Phony burglaries, thefts, or acts of vandalism are reported to insurers, False health insurance claims are submitted to collect benefits, Dishonest policy owners take out life insurance policies on insured who are later reported as having dies.

The payments of such fraudulent claims results in higher premiums to all insureds. The existence of insurance also prompts some insureds to deliberately cause a loss so as to profit from insurance. These social costs fall directly on society.

Inflated Claims: Another cost of insurance relates to the submission of inflated or "padded" claims. Although the loss is not intentionally caused by the insured, the dollar amount of the claim may exceed the actual financial loss. Examples of inflated claims include the following – Attorneys for plaintiffs sue for high-liability judgments that exceed the true economic loss of the victim, Insured inflated the amount of damage in auto mobile collision claims so that the insurance payments will cover the collision deductible, disabled persons often maligner to collect disability income benefits for a longer duration and etc.

Inflated claims must be recognized as an important social cost of insurance. Premiums must be increased to pay the additional losses. As a result, disposable income and the consumption of other goods and services are reduced.

3.7. FUNCTIONS AND ORGANIZATION OF INSURERS

As part of the study of the insurance mechanism and the way in which it works, it will be helpful to examine some the unique facets of insurance company operations. In general, insurers operate in much the same manner as other firms; however, the nature of the insurance transaction requires certain specialized functions which require a suitable organization structure. In this section, we will examine some of specialized activities of insurance companies and the general forms of organization structure.

3.7.1. FUNCTIONS OF INSURERS

Although there are definite operational differences between life insurance companies, and property and liability insurers, the major activities of all insurers may be classified as follows:

Production (Selling)
Underwriting (Selection of Risks)
Rate Making
Managing Claims
Investment

These functions are normally the responsibility of definite departments or divisions within the firms. In addition to these functions there are various other activities common to most business firms such as accounting, personnel management, market research and so on.

PRODUCTION

One of the most vital functions of an insurance firm is securing a sufficient number of applicants for insurance to enable the company to operate. This function, usually called production in an insurance company, corresponds to the sales function in an industrial firm. The term is a proper one for insurance because the act of selling is production in its true sense. Insurance in an intangible item and does not exist until a policy is sold. The production department of any insurer supervises the relationships with agents in the field. In firms such as

direct writers, where a high degree of control over field activities is maintained, the production department recruits, trains and supervises the agents or salespersons.

UNDERWRITING

Underwriting is the process of selecting risks offered to the insurer. It is an essential element in the operation of any insurance program, for unless the company selects from among its applicants, the inevitable result will be adverse to the company. Hence, the main responsibility of the underwriter is to guard against adverse selection. Underwriting is performed by home office personnel whose scrutinize applications for coverage and make decisions as to whether they will be accepted, and by agents who produce the applications initially in the field.

It is important to understand that underwriting does not have as its goal the selection of risks that will not have losses, but merely to avoid a disproportionate number of bad risks, thereby equalizing the actual losses with the expected ones. While attempting to avoid adverse selection through rejection of undesirable risks, the underwriter must secure an adequate volume of exposures in each class. In addition, he must guard against congestion or concentration of exposures that might result in a catastrophe.

Process of Underwriting

The underwriter must obtain as much information about the subject of the insurance as possible within the limitations imposed by time and the cost obtaining additional data. The desk underwriter must rule on the exposure submitted by the agents, accepting some and rejecting others that do not meet the company"s underwriting requirements or policies. When a risk is rejected, it is because the under writer feels that the hazards connected with it are excessive in relation to the rate.

There are four sources from which the underwriter obtains information regarding the hazards inherent in an exposure:

The Application: The basic source of underwriting information is the application, which varies from each line if insurance and for each type of coverage. The broader and more liberal the contract, usually the more detailed the information required in the application. The questions on the application are designed to give the underwriter the information needed to decide if he would accept the exposure, reject it, or seek additional information.

Information from Agent or Broker: In many cases underwriter places much weight on the recommendations of the agent or broker. This varies, of course, with the experience the underwriter has had with the particular agent in question. In certain cases the underwriter will agree to accept an exposure that does not meet the underwriting requirements of the company. Such exposures are referred to as "accommodation risk," because they are accepted to accommodate a value client or agent.

Investigations: In some cases the underwriter will request a report from an inspection organization that specializes in the investigation of personal matters. This inspection report may deal with a wide range of personal characteristics of the applicant, including financial status, occupation, character, and the extent to which he uses alcoholic beverages (or to which neighbors say he used them). All the information is pertinent in the decision to accept or reject the application.

Physical Examinations or Inspections: In life insurance, the primary focus is on the health of the applicant. The medical director of the company lays down principles to guide the agents and desk writer in the selection of risks, and one the most critical pieces of intelligence is the report of the physician. Physicians selected by the insurance company or recognized medical centers supply the insurer with medical reports after a physical examination; this report is a very important source of underwriting information. In the field of property and liability insurance, the equivalent of the physical examination in life insurance is the inspection of the premises. Although such inspections are not always conducted, the practice is increasing. In some instances this inspection is performed by the agent, who sends a report to the company with photographs of the property. In other cases a company representative conducts the inspection.

RATE MAKING

An insurance rate is the price per unit of insurance. Like any other price, it is a function of the cost of production. However, in insurance unlike other industries the cost of production is now known when the contract is sold, and will not be known until sometime in the future, when the policy has expired. One of the fundamental differences between insurance pricing and the pricing function in other industries is that the price for insurance must be based on the prediction. The process of predicting future losses and future expenses, and allocating these costs among the various classes of insureds is called rate making.

A second important difference between the pricing of insurance and pricing another industry arises from the fact that insurance rates area subject to government regulation. Because insurance is considered to be vested in the public interest all nations have enacted law imposing statutory restraints on insurance rates. These laws require that insurance rates must be not be excessive, must be adequate, and may not be unfairly discriminatory.

Other characteristics considered desirable are that rates would be relatively stable over time, so that the public is not subjected to wide variations in cost from year to year. At the same time, rates should be sufficiently responsive to changing conditions to avoid inadequacies in the event of deteriorating loss experience.

Makeup of the Premiums

A rate is the price charged for each unit of protection or exposure and should be distinguished from a "Premium", which is determined by multiplying the rate by the number of units of protection purchased. The unit of protection to which a rate applies differs for the various lines of insurance. In life insurance, for example, rates are computed for each 1,000 birr in protection; in fire insurance the rate applies to each 100 birr coverages.

The insurance rate is the amount charged per unit of exposure. The premium is the product of the insurance rate and the number of units of exposure. Thus, in life insurance, if the rate is 25 birr per 1,000 birr of face amount of insurance, the premium for a 10,000 birr policy is 250 birr.

The premium is designed to cover two major costs: (I) The expected loss and (II) The cost of doing business. These are known as the pure premium and the loading, respectively. The pure premium is determined by dividing the total expected loss by the number of exposures. In automobile insurance, for example, if an insurer expects to pay 100,000 birr of collision loss claims in a given territory, and there are 1,000 autos in the sued group, the pure premium for collision will be 100 birr per car, computed as follows:

$$\text{Pure Premium} = \frac{\text{Expected Loss}}{\text{Exposure Units}} = \frac{100{,}000 \text{ Birr}}{1{,}000} = 100 \text{ Birr}$$

The loading is made up of such items as agents‟ commissions, general company expenses, taxes and fees, and allowances for profit. The sum of the pure premium and loading is termed as the gross premium. Usually the loading is expressed as a percentage of the expected gross premium. In property – liability insurance, a typical loading might be $33\frac{1}{3}\%$. The general formula for the gross premium, the amount charged the consumer, is

$$\text{Gross Premium} = \frac{\text{Pure Premium}}{1 - \text{Loading Percentage}}$$

In above example, if the pure premium was birr 100 per car, the gross premium would be calculated as

Gross Premium = 100 Birr / 1- 0.3333 = 150 Birr.

Rate – Making Methods

The two basic approaches to rate making; class and individual rating, are discussed below.

Manual Or Class Rating: The manual or class rating method sets rates that apply uniformly to each exposure unit falling within some predetermined class or group. Everyone falling within a given class is charged the same rate.

Individual Rating: Under individual rating, each insured is charged a unique premium based largely upon the judgment of the person setting the rate. This rating is supplemented by whatever statistical data are available and by knowledge of the premiums charged similar insureds. It takes into account all known factors affecting the exposure, including competition from other insurers. If the characteristics of the units to be insured vary so widely it is desirable to calculate rates for each unit depending on its loss producing characteristics.

MANAGING CLAIMS / LOSS ADJUSTMENT

The basic purpose of insurance is to provide indemnity to the members of the group who suffer losses. This is accomplished on the loss settlement process, but it is sometimes more complicated than just passing out money. The payment of losses that have occurred is the function of the claims department. Life insurance companies refer to those employees who settle losses as "claims representatives," or "benefit representatives". Employees of the claims department in the field of property and liability insurance are called "Adjusters".

INVESTMENT FUNCTION

When an insurance policy is written, the premium is generally paid in advance for periods varying from six months to five or more years. This advance payment of premiums gives rise to funds held for policyholders by the insurer, funds that must be invested in some manner. When these are added to the funds of the companies themselves, the assets would add up to huge amounts. These funds should not remain idle, and it is the responsibility of finance department or a finance committee of the company to see that they are properly invested.

Not all the money collected by the insurer is to be invested. A certain proportion of it should be kept aside to meet future claims. However, the need for liquidity may vary from one state to another.

3.7.2. ORGANIZATION OF INSURERS

The type of organization used by a given insurer and the types of departments created depend upon the particular problems it faces. The most common basis is a centralized management

with departments organized on a functional basis. However, other basis, such as territorial, are commonly used, often concurrently with the functional type. Thus, the form the organization adopted depends on the scope of the line of business and the activities performed by the insurance organization.

Based on the line of business, there are two basic forms of organization of insurers; single line or product organization and all-line organization. Single line insurance organizations are those who deal only with the type business, say fire insurance or life insurance only. All-line organization refers to that type of arrangement by which an insurer my write literally all lines of insurance under one administrative frame work of a single organization, example, the Ethiopian Insurance Corporation (EIC).

QUICK CHECK

Differentiate underwriting and rate making

What are the functions of an insurer?

What is the benefit(s) of insurance to the society?

CHAPTER SUMMARY

The commission of Insurance Terminology of the American Risk and Insurance Association has defined insurance as follows: "Insurance is the pooling of accidental losses by transfer of such risks to insurers, who agree to indemnify insureds for such losses, to provide other financial benefits on their occurrence, or to render services connected with the risk". In its simplest aspect insurance has two fundamental characteristics:

Transferring or shifting risk from one individual to a group
Sharing losses on some equitable basis by all members of the group

From the individual point of view, insurance can be defined as an economic device where by the individual substitutes a small certain cost (called premium) for a larger uncertain financial loss that would exist if it were not for the insurance. It is a protection against financial loss provided by an insurer.

The primary function of insurance is creation of security. It does not reduce or prevent the incident of the occurrence of the loss; rather it reduces the probability of the financial loss connected with the event.

From the societal point of view insurance is an economic device for reducing and eliminating risk through the process of combining a sufficient number of homogeneous exposures in to a group to make the losses predictable for the group as a whole. It is advice by means of which the risks of two or more persons or firms are combined through the actual or promised contributions to a fund out of which applicants are paid.

From the view point of the insurer, insurance is a transfer, a combination and a retention device that it involves some pooling of risks: the insurer combines the risks of many insureds. And through this combination the insurer approves its ability to predict its expected losses.

An insurance plan or arrangement typically includes the following characteristics: Pooling of Losses, Payment of Accidental Losses, Risk Transfer, and Indemnification

Insurers normally insure only pure risks. However, not all pure risks are insurable. Certain requirements usually must be fulfilled before a pure risk can be privately insured. From the viewpoint of the insurer, there are ideally six requirements of an insurable risk. They are: Large Number of Exposure Units, Accidental and Unintentional Loss, Determinable and Measurable Loss, No Catastrophic Loss, Calculable Chance of Loss and Economically Feasible Premium.

There are two important differences between insurance and gambling. First, gambling creates a new speculative risk, while insurance is a technique for handling an already existing pure risk.

The second difference between insurance and gambling is that gambling is socially unproductive, because the winner"s gain comes at the expense of the loser. In contrast, insurance is always socially productive, because neither the insurer nor the insured is placed in a position where the gain of the winner comes at the expense of the loser.

The major social and economic benefits of insurance include the following: Indemnification, Less Worry and Fear, Source of Investment Funds, Loss prevention, Enhancement of Credit.

The major social costs of insurance include the following: Cost of Doing Business, Fraudulent Claims and Inflated Claims.

Although there are definite operational differences between life insurance companies, and property and liability insurers, the major activities of all insurers may be classified as follows: Production (Selling), Underwriting (Selection of Risks), Rate Making, Managing Claims and Investment

Based on the line of business, there are two basic forms of organization of insurers; single line or product organization and all-line organization.

Single line insurance organizations are those who deal only with the type business, say fire insurance or life insurance only.

All-line organization refers to that type of arrangement by which an insurer my write literally all lines of insurance under one administrative frame work of a single organization, example, the Ethiopian Insurance Corporation (EIC).

REVIEW QUESTIONS

PART I- FILL INTHE BLANK SPACES

Instruction: Dear Learners, please fill in the blank spaces with appropriate words or phrases

_____is the spreading of losses incurred by the few over the entire group, so that in the process, average loss is substituted for actual losses

_____means that a pure risk is transferred from the insured to the insurer, who typically is in a stronger financial position to pay the loss than the insured.

_____means that the insured is restored to his or her approximate financial position prior to the occurrence of the loss.

_____is the process of selecting risks offered to the insurer

_____method sets rates that apply uniformly to each exposure unit falling within some predetermined class or group

_____are those who deal only with the type business, say fire insurance or life insurance only

PART II- TRUE OR FALSE

Instruction: Dear learners, please write true if the statement is correct and write false if the statement is wrong

One of the fundamental differences between insurance pricing and the pricing function in other industries is that the price for insurance must be based on the prediction.

Under group rating, each insured is charged a unique premium based largely upon the judgment of the person setting the rate

An important difference between the pricing of insurance and pricing another industry arises from the fact that insurance rates area subject to government regulation

All-line organization refers to that type of arrangement by which an insurer my write literally all lines of insurance under one administrative frame work of a single organization

Insurance is the pooling of accidental losses by transfer of such risks to insurers, who agree to indemnify insureds for such losses, to provide other financial benefits on their occurrence, or to render services connected with the risk

PART III- MULTIPLE CHOICE QUESTIONS

Instruction: Dear learners, please chooses the correct answer and encircles the letter of your choice.

One of the following id not among the major social and economic benefits of insurance

Indemnification:

Less Worry and Fear

Source of Investment Funds

Loss Prevention

All

None

One of the following is among the major activities of all insurers

Production

Selection of Risks

Rate Making

Managing Claims

All

None

Underwriters can obtain information regarding the hazards inherent in an exposure from

The Application

Information from Agent or Broker

Investigations

Physical Examinations or Inspections

All

None

One of the following is not true

Gambling creates a new speculative risk, while insurance is a technique for handling an already existing pure risk.

Gambling is socially unproductive, because the winner‟s gain comes at the expense of the loser.

The process of predicting future losses and future expenses, and allocating these costs among the various classes of insureds is called underwriting.

All

None

All are the major social costs of insurance, except

Cost of Doing Business

Loss Prevention

Fraudulent Claims

Inflated Claims

All

None

CHAPTER FOUR

LEGAL PRINCIPLES OF INSURANCE CONTRACTS

LEARNING OBJECTIVES:

At the end of this chapter, learners should be able to:

Explain the fundamental legal principles that are reflected insurance contracts, including the

Principle of indemnity

Principle of insurable interest

Principle of subrogation

Principle of utmost good faith

Principle of contribution

Discuss how the legal concepts of representations, concealment, and warranty support the principle of utmost good faith

Describe the basic requirements for the formation of a valid insurance contracts

Know and understand events covered under insurance contracts

INTRODUCTION

"The education of those engaged in the important functions of the insurance business calls for an understanding of the essentials of insurance law."EdwinW.Patterson, Essentials of Insurance Law

Jason, age 32, has a serious drinking problem. He recently moved to another state and applied for auto insurance in that state. In the application, he stated that he didn‟t use alcohol, had never been fined for a moving vehicle violation, and had no offenses other than traffic tickets. In fact, Jason had three convictions for drunk driving and had been involved in several auto accidents. The policy was issued. Shortly thereafter, Jason had another accident in which the other driver was killed. The deceased driver‟s family sued Jason for a wrong full death. After investigating the claim, Jason‟s insurer discovered his earlier drunk driving convictions. The insurer denied liability because Jason had made several material misrepresentations. Jason‟s introduction to insurance law was costly and painful.

As Jason discovered, insurance law can have substantial consequences for you after a loss occurs. When you buy insurance, you expected to be paid for a covered loss. Insurance laws and contractual provisions determine whether you can collect and how much will be paid. Insurance contracts are complex legal documents that reflect both general rules of law and insurance law. Thus, you should have clear understanding of the basic legal principles that underlie insurance contracts.

Dear students, this chapter discusses the fundamental legal principles on which insurance contracts are based, legal requirements for a valid insurance contract, and legal characteristics of insurance contracts that distinguish them from other types of contracts. The chapter concludes with a discussion of the law of agency and its application to insurance agents**.**

4.1. UNDERSTANDINGINSURANCE CONTRACT

If you have insurance of any kind, or are planning on getting it, there are some things about the contract you should understand

All insurance contracts are governed by the concept of „offer and acceptance". This requires you to fill the proposal form and send it to the insurance company. Sometimes you are also required to attach a check for the premium amount, with the proposal form.

You're filling the proposal form and sending it to the insurance company is the „offer" and when the insurance company accepts your proposal it is the „acceptance" part of the concept. The amount you pay as premium is considered as the „consideration" part of the contract. The concept of „legal capacity" also applies to insurance contracts. It requires both the parties to be legally capable of entering a contract. Your insurance contract is based on „legal purpose", which
means that the contact is not meant for encouraging illegal activities. The other legal principles that govern the contracts are discussed in detail here below:

1. PRINCIPLE OF INDEMNITY

The principle of indemnity is one of the most important legal principles in insurance. The principle of indemnity states that the insurer agrees to pay no more than the actual amount of the loss; stated differently, the insured should not profit from a loss. Most property and liability insurance contracts are contracts of indemnity. If a covered loss occurs, the insurer should not pay more than the actual amount of the loss. Nevertheless, a contract of indemnity does not mean that all covered losses are always paid in full. Because of deductibles, dollar limits on the amount paid, and other contractual provisions, the amount paid may be less than the actual loss.

This principle requires the insurer to pay an amount, not more than the actual loss suffered, in case of loss. The amount paid as claim by the insurance company should not be more than the sum assured in the insurance contract. The aim is to provide a claim amount that will help the claimant to regain the lost financial position. In some indemnity contracts, the amount payable by the insurance company is subject to the amount of actual loss. Some indemnity contracts also have a provision for the claim to be paid only if the actual loss exceeds a certain amount. For example, in an auto insurance contract of 3000 dollars, you would be eligible for the claim

amount only if your actual loss exceeds 3000 dollars. In case, the actual loss amount is below 3000 dollars, you would be liable to bear all the costs.

The principle of indemnity has two fundamental purposes. **The first purpose is to prevent the insured from profiting from a loss**. For example, if Kristin‟s home is insured for $100,000, and a partial loss of $20,000 occurs, the principles of indemnity would be violated if $100,000 were paid to her. She would be profiting from insurance.

The second purpose is to reduce moral hazard. If dishonest insured could profit from a loss, they might deliberately cause losses with the intention of collecting the insurance. If the loss payment does not exceed the **actual amount of the loss**, the temptation to be dishonest is reduced.

Actual Cash Value (Actual Amount of the Loss):

The concept of actual cash value underlies the principles of indemnity. In property insurance, the basic method of indemnifying the insured is based on the actual cash value of the damaged property at the time of loss. **The courts have used three major methods to determine actual cash value:**

Replacement cost less depreciation
Fair Market Value
Broad Evidence Rule

Replacement Cost less Depreciation

Under this rule, actual cash value is defined as replacement cost less depreciation**.** This rule has been used traditionally to determine the actual cash value of property in property insurance. It takes into consideration both inflation and depreciation of property values over time. Replacement cost is the current cost of restoring the damaged property with new materials of like kind and quality. Depreciation is a deduction for physical wear and tear, age and economic obsolescence.

Actual Cash Value = Replacement Cost – Depreciation

For example, Sharon has a favorite couch that burns in a fire. Assume she bought the couch five years ago, the couch is 50 years depreciated, and a similar couch today would cost $ 1000. Under the actual cash value rule , Shannon will collect $ 500 for the loss because the replacement cost is $1000, and depreciation is $500 , or 50% . If she were paid the full replacement value of $1000, the principle of indemnity would be violated. She would be receiving the value of a new couch instead of one those five years old. In short, the $ 500 payment represents indemnification for loss of a five year old couch.

This calculation can be summarized as follows:

Replacement cost= $1000

Depreciation= $500(couch is 50 percent depreciated)

Actual Cash Value= Replacement Cost- Depreciation

$1000-$500= $500

Fair Market Value

Some courts have ruled that fair market value should be used to determine actual cash value of loss. **Fair Market Value is the price a willing buyer would pays a willing seller in a free market.**

The fair market value of a building may be below its actual cash value based on replacement cost less depreciation. This difference is due to several reasons, including a poor location, deteriorating neighborhood, or economic obsolescence of the building. For example, in major cities, large homes in older residential areas often have a market value well below replacement cost less depreciation**. If a loss occurs, the fair market value may reflect more accurately the value of the loss**. In one case, a building valued at $110,000 based on the actual cash value rule had a market value of only $85,000 when a loss occurred. The court ruled that the actual cash value of the property should be based on the fair market value of $85,000 rather than on $110,000.

Broad Evidence Rule

Many states now use the broad evidence rule to determine the actual cash value of a loss**.** The broad evidence rule means that the determination of actual cash value should include all relevant factors an expert would use to determine is value of the property**.** Relevant factors include replacement cash less depreciation, fair market value, and present value of expected income from the property, comparison sales of similar property, opinions of appraisers, and numerous other factors. Although the actual cash value rule is used in property insurance, different methods are employed in other types of insurance. In liability insurance, the insurer pays up to the policy limit the amount of damages that the insured is legally obligated to pay because of bodily injury or property damage to another. In life insurance, the amount paid when the insured dies is the face value of the policy. In business income insurance, the amount paid is usually based on the loss of profits plus continuing expenses when the business is shut down because of a loss from a covered peril.

Exceptions to the Principle of Indemnity

There are several important exceptions to the principle of indemnity. They include the following;

Valued Policy
Valued Policy Laws
Replacement Cost Insurance
Life Insurance

Valued Policy

A valued Policy is a policy that pays the face amount of insurance if a total loss occurs. Valued policies typically are used to insure antiques, fine arts, rare paintings, and family heirlooms. Because of the difficulty of determining the actual value of the property at the time of loss, the insured and insurer both agree on the value of the property when the policy is first issued. For example, you may have a valuable antique clock that was owned by your great-grandmother.

Assume that the clock is worth $13,000 today and is insured for that amount. If the clock is totally destroyed in fire, you would be paid $13,000-not the actual cash value. Because the amount paid may exceed the actual cash value, the principle of indemnity is violated.

Valued Policy Laws

Valued policy laws are another exception to principle of indemnity**.** A valued policy law is a law that exists in some states that required payment of the face amount of insurance to the insured if a total loss to real property occurs from a peril specified in the law. The specified perils to which a valued policy law applies vary amount the states. Laws of some states covered only fire, other states cover fire, lighting, windstorm, and cyclone; and some states include all insured perils. In addition, the laws generally apply only a real property, and the loss must be total. For example a building insured for $200,000 may have an actual cash value of $175,000. If a total loss from a fire occurs, the face amount of $200,000 would be paid. Because insured would be paid more than the actual cash value, the principle indemnity would be violated.

The original purpose of a valued policy law was to protect the insured from an argument with the insurer if an agent had deliberately over insured property so as to receive a higher commission. After a total loss, the insurer might offer less than the face amount for which the policy owner had paid premiums on the grounds that the building was over insured. However, the importance of a valued policy law has declined over time because inflation in property values has made over insurance less of a problem. Underinsurance is now the greater problem, because it results in both inadequate premiums for the insurer and inadequate protection for the insured.

Despite their reduced importance, valued policy laws can lead to over insurance and an increase in moral hazard. Most buildings are not physically inspected before they are insured. If an insurer fails to inspect a building for valuation purposes, over insurance and possible moral hazard may result. The insured may not be concerned about loss prevention, or may even deliberately cause a loss to collect the insurance proceeds. Although valued policy laws provide a defense for the insurer when fraud is suspected, the burden of proof is on the insurer and is

too difficult. For example, in an older case, a house advertised for sale at $1800 was insured for $10,000 under a fire insurance policy. About six months later, the house was totally destroyed by a fire. The insurer denied liability on the grounds of misrepresentation and fraud. An appeals court ordered the face amount of insurance to be paid, holding that nothing prevented the company from inspecting the property to determine its value. The insured‟s statement concerning the value of the house was an expression of opinion, not a representation of fact.

Replacement Cost Insurance

Replacement cost insurance is the third exception to the principle of indemnity**.** Replacement cost insurance means there is not deduction for depreciation in determining the amount paid for a loss. For example, assume that the roof on your home is 5 years old and has a useful life of 10 years. The roof is damaged by a tornado, and the current cost of replacement is $10,000. Under the actual cash value rule, you would receive only $5000 ($10,000-$5000 = $5000). Under a replacement cost policy, you would receive the full $10,000. Because you receive the value of a brand new rood instead of one that is 5 years old the principle of indemnity is technically violated.

Replacement cost insurance is based on the recognition that payment of the actual cash value can still result in a substantial loss to the insured, because few persons budget for depreciation. In our example, you would have had to pay $5000 to restore the damaged roof, since it was one-half depreciated. To deal with this problem, replacement cost insurance can be purchased to insure homes, buildings, and business and personal property.

Life Insurance

Life insurance is another exception to the principle of indemnity. A life insurance contract is not a contract of indemnity but is a valued policy that pays a stated some to the beneficiary upon the insured‟s death. The indemnity principle is difficult to apply to life insurance for the obvious reason that the actual cash value rule (replacement cost less depreciation) is meaningless in determining the value of human life.

QUICK CHECK

Define principle of indemnity

What are the purposes of principle of indemnity

List and explain the different ways of determining actual cash value of a loss

State exceptions to principle of indemnity

2. PRINCIPLE OF INSURABLE INTEREST

The principle of insurable interest is another important legal principle**.** The principle of insurable interest states that the insured must be in a position to loss financially if a loss occurs. For example, you have an insurable interest in your car because you may loss financially if the car is damaged or stolen. You have an insurable interest in your personal property, such as a television set or computer, because you may loss financially if the property is damaged or destroyed. In this insurance cover, the insurance contract covers only those properties or events specified at the time of investment. For example, if you live in your uncle"s house and apply for a homeowners" insurance, the insurance company will reject the claim, since you are not the owner of the property and do not suffer any personal financial loss in case the house gets damaged.

Insurance contract must be supported by an insurable interest for the following reasons.

To prevent gambling

To reduce moral hazard

To measure the amount of the insured's loss in property insurance.

First, an insurable interest is necessary to prevent gambling. If an insurable interest is not required, the contract would be a gambling contract and would be against the public interest. For example, you could insure the property of another and hope for a loss to occur. You could similarly insure the life of another person and hope for an early death. These contracts clearly would be gambling contracts and would be against the public interest.

Second, an insurable interest reduces moral hazard. If an insurable interest were not required, a dishonest person could purchase a property insurance contract on some one else‟s property and then deliberately cause a loss to receive the proceeds .But if the insured stands to lose financially, nothing is gained by causing the loss. Thus, moral hazard is reduced. In life insurance, an insurable interest requirement reduces the incentive to murder the insured for the purpose of collecting the proceeds.

Finally, in property insurance, an insurable interest measures the amount of the insured's loss. Most property contracts are contracts of indemnity, and one measure of recovery is the insurable interest of the insured .If the loss payment cannot exceed the amount of one‟s insurable interest; the principle of indemnity is supported.

Several situations that satisfy the insurable interest requirement are discussed in this section. However, it is helpful at this point to distinguish between an insurable interest in property and liability insurance and in the life insurance.

Property Insurance: Ownership of property can support an insurable interest because owners of property will loss financially if their property is damaged or destroyed.

A husband has an insurable interest in his wife‟s property as he is legally entitled to share her enjoyment of it, and a wife similarly has an insurable interest in her husband‟s property as their relationship is reciprocal.

Administrators, Executors, Trustees and Agents entrusted with the estate and affairs of others. They have a right to insure the property for which they are responsible.

Liability Insurance: Potential legal liability can also support an insurable interest. For example, a dry-cleaning firm has an insurable interest in the property of customers. The firm may be legally liable for damaged to the customer‟s goods caused by the firm negligence.

Secured creditors have an insurable interest as well. A commercial bank or savings and loan institution that lends money to buy a house has an insurance interest in the property. The property serves as security for the mortgage.

Life Insurance: An individual has an insurable interest in his own life, and there is not limit to sum for which a man may insure his own life. In practice, the sum insured is restricted by the insured‟ ability to pay premium.

QUICK CHECK

Define principle of insurable interest

Insurance contract must be supported by insurable interest. Do you agree? Why? or why not?

Distinguish between an insurable interest in property and liability insurance and in the life insurance

3. PRINCIPLE OF SUBROGATION

The principle of subrogation strongly supports the principle of indemnity. Subrogation means substitution of the insurer in place of the insured for the purpose of claiming indemnity from a third person for a loss covered by insurance. The insurer is therefore entitled to recover from a negligent third party any loss payments made to the insured, for Example, assume that a negligent motorist fails to stop at a red light and smashes into X‟s car, causing damage in the amount of $5,000. If she has collision insurance on her car, her company will pay the physical damage loss to the car and then attempt to collect from the negligent motorist who cause the accident. Alternatively X could attempt to collect directly from the negligent motorist for the damage to her car. Subrogation does not apply if a loss payment is not made. However, to the extent that a loss payment is made, the insured gives to the insurer legal rights to collect damages from the negligent third party.

Principle of subrogation enables the insured to claim the amount from the third party responsible for the loss. It allows the insurer to pursue legal methods to recover the amount of loss, which the company has paid the insured via the insurance claim. For example, if you get

injured in a road accident, due to reckless driving of a third party, the insurance company will compensate your loss and will also sue the third party to recover the money paid as claim.

Purposes of Subrogation

Subrogation has three basic purposes.

First, Subrogation prevents the insured from collecting twice for the same loss.
Second, Subrogation is used to hold the guilty person responsible for the loss.
Finally, Subrogation helps to hold down insurance rates.

The general rule of Subrogation

By exercising its subrogation rights, the insurer is entitled only to the amount it has paid under the policy.

The insured cannot impair the insurer‟s subrogation rights.

The insurer can waive its subrogation rights in the contract.

Subrogation does not apply to life insurance and to most individual health insurance contracts.

The insurer cannot subrogate against its own insured

QUICK CHECK

How do you define principle of subrogation?

What are the basic purposes of subrogation?

List the general rules of subrogation

PRINCIPLE OF UTMOST GOOD FAITH

An insurance contract is based on the principle of utmost good faith – that is, a higher degree of honest is imposed on both parties to an insurance contract than is imposed on parties to other contracts. This means that both the parties are expected to disclose any information, important to the contract. For example, when applying for life insurance, it is your duty to

disclose any permanent ailments that you might have. Likewise, your insurer also is expected to be clear on the illnesses that are not covered under the contract.

The principle has its historical roots in ocean marine insurance. An ocean marine underwriter had to place great faith in statements made by the applicant for insurance concerning the cargo to be shipped. The property to be insured may not have been visually inspected, and the contract may have been formed in a location for removed from the cargo and ship. Thus**,** the principle of utmost good faith imposed a high degree of honesty on the applicant for insurance.

The principle of utmost good faith is supported by three important legal doctrines:

Representations
Concealment
Warranty

Representations: Representations are statements made by the applicant for insurance. For example if you apply life insurance you may be asked questions concerning your age, weight, height, occupation, state of health, family history, and other relevant questions. Your answers to these questions are called representations. The legal significance of a representation is that the insurance contract is viodable at the insurer‟s option if the representation is (1) material, (2) false, and (3) relied on by the insurer.

Material means that if the insurer knew the true facts, the policy would not have been issued, or it would have been issued on different terms.

False means that the statement is not true or is misleading

Reliance means that the insurer relies on the misrepresentation in issuing the policy at a specified premium.

For example, Scott applies for life insurance and states in the application that he has not visited a doctor within the last five years. However, six months earlier, he had surgery for lung cancer. In this case, he has made a statement that is false material, and relied on by the insurer.

Therefore, the policy is voidable at the insurer‟s option. If Scott dies shortly after the policy is issued, say three months the company could contest the death claim on the basis of a material misrepresentation.

If an applicant for insurance states an opinion or belief that later turns out to be wrong, the insurer must prove that the applicant spoke fraudulently and intended to deceive the company before it can deny payment of a claim. For example, assume that you are asked if you have high blood pressure when you apply for health insurance, and you answer "no" to the question. If the insurer later discovers you have high blood pressure, to deny payment of a claim, it must prove that you intended to deceive the company. Thus, a statement of opinion or belief must also be fraudulent before the insurer can refuse to pay a claim

Finally, an innocent misrepresentation of a material fact, if relied on by the insurer, also makes the contract voidable. An innocent misrepresentation is one that is unintentional. A majority of court opinions have ruled that an innocent misrepresentation of a material fact makes the contract voidable.

Concealment: The doctrine of concealment also supports the principle of utmost good faith. Concealment is intentional failure of the applicant for insurance to reveal a material fact to the insurer. Concealments the same thing as nondisclosure; that is, the applicant for insurance deliberately withholds material information from the insurer. The legal effect of a material concealment is the same as a misrepresentation the contract is voidable at the insurer‟s option.

To deny a claim based on concealment, a non-marine insurer must prove two things. (1) The concealed fact was known as by the insured to be material, and (2) the insured intended to defraud the insurer. For example, Joseph Dobell‟s applied for life insurance policy on his life. Five months after the policy was issued, he was murdered. The death certificate named the deceased as Joseph Deluca, his true name. The insurer denied payment on the grounds that Joseph had concealed a material fact by not revealing his true identity and that he had an extensive criminal record. In finding for the insurer, the court held that intentional concealment of his true identity was material and breached the obligation of good faith.

The doctoring of concealment is applied in a harsher manner in ocean marine insurance. An ocean marine insurer is not required to prove that the concealment is intentional. Applicants are required to reveal all material facts that pertain to the property to be insured. The applicant"s of lack of awareness of the materiality of the fact is no consequence. Thus, an ocean marine insurer can successfully deny payment of a claim if it can show that the concealed fact is material.

Warranty: The doctrine of warranty also reflects the principle of utmost good faith. A warranty is a statement of fact or a promise made by the insured, which is part of the insurance contract and must be true if the insurer is to be liable under the contract. For example, in exchange for a reduce premium the owner of a liquor store many warrant that an approved burglary and robbery alarm system will be used for all operations at all times. The clause describing the warranty becomes part of the contract.

In its strict form based on the common law, a warranty is hard legal doctrine. Any breach of the warranty, even if, minor or not material allows the insurer to deny payment of a claim. However the courts to and legislation have softened and modified the harsh common law doctrine of warranty. Some modification of the doctrine of warranty is summarized as follows:

Statements made by the application of insurance are considered to be representations and not warranties. Thus, the insurer can not deny liability for a loss if a misrepresentation is not material.

Most courts will interpret a breach of warranty liberally in those cases where a minor breach affects the risk only temporarily or insignificantly.

"Increase in hazard "statutes have been passed that state that the company cannot deny a claim unless the breach of warranty increase s the hazards.

Statutes have been passed that allow the insured to recover unless the breach of warranty actually contributed to the loss.

QUICK CHECK

Define principle of insurable interest

Insurance contract must be supported by insurable interest. Do you agree? Why? or why not?

Distinguish between an insurable interest in property and liability insurance and in the life insurance

5. PRINCIPLE OF CONTRIBUTION

Contribution is the right of an insurer who has paid under a policy, to call upon other insurers equally or otherwise liable for the same loss to contribute to the payment. Where there is over insurance because a loss is covered by policies affected with two or more insurers, the principle of indemnity still applies. In these circumstances, the insured will only be entitled to recover the full amount of his loss and if one insurer has paid out in full, he will be entitled to nothing more.

Like subrogation, contribution supports to principle of indemnity and applies only to contracts of indemnity. There is, therefore, no contribution in personal accident and life policies under which insurers contract to pay specific sums on the happening of certain events. Such policies are not contracts of indemnity, except to the extent that they may be important benefit by way of indemnity, example, payment of medial expenses incurred, in which respect contribution would apply.

It is important to understand the different between contribution and subrogation. Subrogation is concerned with rights of recovery against third parties or elsewhere in respect of payment of an indemnity, and need not involved any other insurance, although it frequently does. Contribution necessarily involves more than one insurance each covering the interest of the same insured.

Bases of contribution

Contribution according to independent liability method

Each insurer will assume if other insurers do not exist and estimate the amount of their liability.

2. Contribution according to sums insured method

Contribution= sums insured in each insurer X Loss

Total sums insured in all insures

Illustration; Assume that Malgarin Trading has purchased fire policies from 3 insurers and suffered from risk of fire accident that resulted in property loss of birr 40,000. The total sums insured from is given below

Nyala Insurance Co.	Birr 50,000
Ethiopia Insurance Co.	60,000
Africa Insurance Co.	40,000
Total sums insured	**Birr 150,000**

Required; determine the contribution of each insurer based on

Contribution according to independent liability method

Contribution according to sums insured method

Solution

A.

Nyala‟s share = 40,000 Br X 40,000 Br = 13,333.33 birr
120,000Br

Ethiopia‟s share = 40,000 Br X 40,000 Br = 13,333 .33birr
120,000Br

Africa‟s share = 40,000 Br X 40,000 Br = 13,333.33 birr
120,000Br

Total contribution (loss) 40,000 birr

B.

Nyala‟s share = 50,000 Br X 40,000 Br = 13,333.33 birr

150,000Br

Ethiopia‟s share = 60,000 Br X 40,000 Br = 16,000 birr

150,000Br

Africa‟s share = 40,000 Br X 40,000 Br = 10,666.67 birr

150,000Br

Total contribution (Loss) 40,000 birr

✍ **QUICK CHECK**

1. Define principle of insurable interest
2. Insurance contract must be supported by insurable interest. Do you agree? Why? or why not?
3. Distinguish between an insurable interest in property and liability insurance and in the life insurance

4.2. ESSENTIAL REQUIREMENTS OF AN INSURANCE CONTRACT

A contract is an agreement embodying a set of promises that are enforceable at law, or for breach of which the law provides a remedy. These promises must have been made under certain conditions before they can be enforced by law. In general, there are four such conditions, or requirements, that maybe stated as follows:

The agreement must be for a legal purpose; it must be not against public policy or be otherwise illegal. For example, a contract of insurance that covers a risk promoting a business or venture prohibited by a law is void. Similarly a gambling contract will not be enforced by law.

The parties must have legal capacity to contract. This requirement excludes persons who have been deemed incapable of contracting, such as those who have been judicially declared insane; and persons who are legally incompetent such as infants, drunken persons etc.

There must be evidence of agreement of the parties to the promises. In general this is shown by an offer by one party and acceptance of that offer by the other.

The promises must be supported by some consideration, which may take the form of money or by some action by the parties that would not have been required had it not been for agreement.

4.3. EVENTS COVERED UNDER INSURANCE CONTRACTS

Most insurance contracts contain certain exclusions, such as for loss due to war, loss to property of an extremely fragile character, and loss due to the deliberate action of the named insured. Most property insurance contracts require the insured to notify the insurer of loss as soon as practicable, and usually require that the insured prove the loss.

Named Peril Versus All Risk: The name peril agreement, as the name suggests, lists the peril that are proposed to be covered. Perils, not named are, of course, not covered. The other type, all risk, states that it is the insurer‟s intention to cover all risk of accidental loss to be described property except those perils specifically excluded.

Excluded Losses:- Most insurance contracts contain provisions excluding certain types of losses even though the policy may cover the period that causes these losses. For example, the fire policy covers direct loss by fire, but excludes indirect loss by fire. Thus, the policy will not cover loss of fixed charges or a profit resulting from the fact the fire has caused an interruption in business. Separate insurance is necessary for this protection.

Excluded Property: A contract of insurance may be written to cover certain perils and losses resulting from that period but it will be limited to certain types of property. For example the fire policy excludes fire losses to money, deeds bills, bullion, and manuscripts. Unless it is

written to cover the contents, the fire policy on building includes only integral parts of the building and excludes all contents.

Defining the Insured: All policies of insurance name at least one person who is to receive the benefit of the coverage provided. The person is referred to as the named insured. In life insurance he is often called the policyholder.

Third party Coverage: Many insurance contracts may provide coverage on individuals who are not direct parties to the contract. Such persons are known as third parties.
In life insurance the beneficiary is a third party and has right to received the death proceeds of the policy. The beneficiary can be changed at anytime by the insured, unless this right has been formally given up i.e., the insured has named the beneficiary irrevocably. The beneficiary"s rights are thus contingent upon the death of the insured.

Excluded Location:The policy may restrict its coverage to certain geographical locations. Relatively few property insurance contracts give complete worldwide protection. For example automobile insurance may be limited to cover the auto while it is in Ethiopia. If the car is, say in Kenya coverage is suspended.

Insurance contracts may be discharged by the lapse of time, failure to pay premiums, failure to renew the contract or cancellation of the contract.

4.4. DISTINCT LEGAL CHARACTERISTICS OF INSURANCE CONTRACTS

Insurance contracts have distinct legal characteristics that make them different from others legal contracts. Several distinctive legal characteristics have already been discussed. As we noted earlier, most property and liability insurance contracts are contracts of indemnity; all insurance contracts must be supported by an insurable interest: and insurance contracts are based on utmost good faith. Other distinct legal characteristics are as follow:

Aleatory contract

Unilateral contract

Conditional contract

Personal contract

Contract of adhesion

Aleatory Contract

An insurance contract is aleatory rather than commutative. An aleatory contract is a contract where the value exchanged may not be equal but depend on an uncertain event. Depending on chance, one party may received a value out of proportion to the value that is given. For example, assume that lorry pays a premium of $500 for $100,000 of home owners insurance on her home. If the home were totally destroyed by fire shortly thereafter, she would collect an amount that greater exceeds the premium paid. On the other hand, a homeowner may faithfully pay premiums for many years and never have a loss.

In contrast, other commercial contracts are commutative. A commutative contracts is one in which the values exchanged by both parties are theoretically equal. For example, the purchaser of real estate normally pays a price that is viewed to be equal or the value of the property.

Although the essence of an aleatory contract is chance, or the occurrence of some fortuitous event, an insurance contract is not gambling contract. Gambling creates a new speculative risk that did not exist before the transaction. Insurance, however, is a technique for handling an already existing pure risk. Thus although both gambling and insurance are aleatory in nature; an insurance contract is not a gambling contract because no new risk is created.

Unilateral contract

An insurance contract is a unilateral contract. A unilateral contract means that only one party makes a legally enforceable promise. In this case, only the insurer makes a legally enforceable promise to pay a claim or provide other services to the insured.

After the first premium is paid, and the `insurance is in force, the insured cannot be legally forced to pay the premiums or not comply with the policy provisions. Although the insured must continue to pay the premiums to receive payment for a loss, he or she cannot be legally forced to do so. However, if the premiums are paid, the insurer must accept them and must continue to provide the protection promised under the contract.

In contracts, most commercial contracts are bilateral in nature. Each party makes a legally enforceable promise to the other party. If one party fails to perform, the other party can insist on performance or can sue for damages because of the breach of contract.

Conditional Contract

An insurance contract is a conditional contract. That is, the insurer‟s obligation to pay a claim dependency on whether the insured or the beneficiary complied with all policy conditions. Conditions are provisions inserted in the policy that qualify or place limitations on the insurer‟s promise to perform.

Personal contract

In property insurance, insurance is a personal contract, which means the contract is between the insured and the insurer. Strictly speaking, property insurance does not insure property, but insures the owner of property against loss. The owner of the insured property is indemnified if the property is damaged or destroyed. Because the contract is personal, the applicant for insurance must be to the insurer and must meet certain underwriting standards regarding character, morals and credit.

Contract of Adhesion

A Contract of Adhesion means the insured must accept the entire contract, with all of its terms and conditions. The insurer drafts and prints the policy, and the insured generally must accept the entire document and cannot insist that certain provisions be added or deleted or the contract rewritten to suit the insured.

QUICK CHECK

Define principle of insurable interest

Insurance contract must be supported by insurable interest. Do you agree? Why? or why not?

Distinguish between an insurable interest in property and liability insurance and in the life insurance

CHAPTER SUMMARY

The principle of indemnity states that the insurer agrees to pay no more than the actual amount of the loss; stated differently, the insured should not profit from a loss

The principle of indemnity has two fundamental purposes. The first purpose is to prevent the insured from profiting from a loss. The second purpose is to reduce moral hazard.

The courts have used three major methods to determine actual cash value:

Replacement cost less depreciation
Fair Market Value
Broad Evidence Rule

There are several important exceptions to the principle of indemnity. They include the following;

Valued Policy
Valued Policy Laws
Replacement Cost Insurance
Life Insurance

The principle of insurable interest states that the insured must be in a position to loss financially if a loss occurs.

Insurance contract must be supported by an insurable interest for the following reasons.

- To prevent gambling
- To reduce moral hazard
- To measure the amount of the insured‟s loss in property insurance.

Principle of subrogation enables the insured to claim the amount from the third party responsible for the loss.

Subrogation has three basic purposes.

First, Subrogation prevents the insured from collecting twice for the same loss.

Second, Subrogation is used to hold the guilty person responsible for the loss.

Finally, Subrogation helps to hold down insurance rates.

The principle of utmost good faith is supported by three important legal doctrines:

Representations

Concealment

Warranty

There are four conditions, or requirements of insurance contracts; the agreement must be for a legal purpose, the parties must have legal capacity to contract, there must be evidence of agreement of the parties to the promises, and the promises must be supported by some consideration

Contribution is the right of an insurer who has paid under a policy, to call upon other insurers equally or otherwise liable for the same loss to contribute to the payment

Other distinct legal characteristics of insurance are as follow.

Aleatory contract

Unilateral contract

conditional contract

personal contract

contract of adhesion

REVIEW QUESTIONS

PART I- MULTIPLE CHOICE QUESTIONS

Instruction: Dear learners, please chooses the correct answer and encircles the letter of your choice.

The method used to determine the actual amount of a loss based on all relevant factors an expert uses to determine the value of a property is _____

Broad evidence rule

Fair market value rule

Replacement cost less depreciation rule

None of the above

The fundamental purposes of the principles of indemnity do not serve in one of the following cases.

To prevent the insured from profiting from a loss

To reduce moral hazard

To help the insured gain the face value of the policy for any amount of loss

None of the above

Which of the following are not exceptions to principles of indemnity?

Valued policy

Valued policy laws

Replacement cost less depreciation

Life insurance

None

Insurance contract must be supported by an insurable interest for the following reasons except

To prevent gambling

To reduce moral hazard

To reduce morale hazard

To measure the amount of the insured‟s loss in property insurance

None

Which of the following is incorrect about general rule of subrogation

The insurer is entitled only to the amount it has paid under the policy.

The insured can impair the insurer‟s subrogation rights.

The insurer can waive its subrogation rights in the contract.

Subrogation does not apply to life insurance and to most individual health insurance contracts

The insurer cannot subrogate against its own insured

None

Of the following one is not essential requirements of an insurance contract

The agreement must be for a legal purpose

The parties must have legal capacity to contract

There must be evidence of agreement of the parties to the promises

The promises must be supported by some consideration

None

Which of the following statements is wrong with regards to the principle of insurable interest?

A husband has an insurable interest on his own wife

Ownership of a property can support the principle of insurable interest

Garages do have insurable interest for the properties of their customers they entrusted with

All

None

PART II- TRUE OR FALSE

Instruction: Dear learners, please write true if the statement is correct and write false if the statement is wrong

The principle of indemnity states that the insurer agrees to pay more than the actual amount of the loss.

All insurance contracts are governed by the concept of „offer and acceptance".

A valued Policy is a policy that pays the face amount of insurance if a total loss occurs.

The principle of insurable interest states that the insured must be in a position to loss financially if a loss occurs

A life insurance contract is a contract of indemnity but is a valued policy that pays a stated some to the beneficiary upon the insured"s death.

The insurer can subrogate against its own insured

concealment is a statement of fact or a promise made by the insured, which is part of the insurance contract and must be true if the insurer is to be liable under the contract

Most property and liability insurance contracts are contracts of indemnity; all insurance contracts must be supported by an insurable interest and insurance contracts are based on utmost good faith.

An aleatory contract means that only one party makes a legally enforceable promise.

Unlike subrogation, contribution supports to principle of indemnity and applies only to contracts of indemnity

PART III- FILL INTHE BLANK SPACES

Instruction: Dear Learners, please fill in the blank spaces with appropriate words or phrases

1. is the current cost of restoring the damaged property with new materials of like kind and quality.
2. is a law that exists in some states that required payment of the face amount of insurance to the insured if a total loss to real property occurs from a peril specified in the law

3. means substitution of the insurer in place of the insured for the purpose of claiming indemnity from a third person for a loss covered by insurance.
4. The legal significance of a representation is that the insurance contract is viodable at the insurer"s option if the representation is_____, _____, and _____ is intentional failure of the applicant for insurance to reveal a material fact to the insurer
6. Statements made by the application of insurance are considered to be _____ and not _____.
7. _____is the right of an insurer who has paid under a policy, to call upon other insurers equally or otherwise liable for the same loss to contribute to the payment
8. _____ is a contract where the value exchanged may not be equal but depend on an uncertain event.
9. A Contract of _____ means the insured must accept the entire contract, with all of its terms and conditions
10. The _____ means that the determination of actual cash value should include all relevant factors an expert would use to determine is value of the property.

CHAPTER FIVE

LIFE AND HEALTH INSURANCE

LEARNING OBJECTIVES:

At the end of this chapter, learners should be able to:

Explain the meaning of life insurance and economic value of human life

Discuss the characteristics of life insurance

Know the two basic types of life insurance; namely term insurance and whole life insurance

Understand the classifications, uses and limitations of term insurance

Identify and describe the two basic categories of whole life insurance

Describe the different classifications of annuities and the three elements of life insurance rate making

Define health insurance

Explain two types of insurance in the generic term health insurance

INTRODUCTION

Dear students this chapter is designed to deal with the two types of insurances called life and health. Insurance can be classified as either private or government. Private insurance, in turn, can be divided into life and health insurance and property and liability insurance. Government insurance can be divided into social insurance programs and all other government insurance plans. Thus, the major types of insurance, both private and public, can be classified as follows:

Private Insurance

- Life and Health Insurance
- Property and Liability Insurance

Government Insurance

- Social Insurance
- Other Government Insurance

5.1. LIFE INSURANCE

"The human life value, expressed in dollars, should be carefully appraised for life and health insurance purposes." S.S. Huebner, the Economics of Life Insurance

A human life has economic value to all whom depend on the earning capacity of that life, particularly to two control economic groups- the family and the employer. To the family, the economic value of a human life a probably most easily measured by the value of the earning capacity of each of its members. To the employer, the economic value of human life is measured by the contributions of an employee to the success of the business firm. If one argues that in a free competitive society a worker is paid according to the worth and is not exploited, the worker"s contribution again is best measure by earning capacity. It develops the earning capacity probably the only feasible method of giving measurable economic value to human life.

There are four main perils that can destroy wholly or partially, the economic value of a human life. These include "premature death, loss of health old age and unemployment".

For many people, the risk management tool that is most appropriate for dealing with the exposure of premature death is "Life Insurance". Every persons faces two basic contingencies concerning life; he may die too soon, or he may live too long, to suit himself, it means that he may outlive his financial usefulness or his ability to provide for his needs. The first category is physical death. The second is economic death. A man, who is forced to retire at 58 from his job, unless he has substitute income, is financially dead. Economic death may also occur at easily ages if the person becomes too disabled or ill to work. Life insurance is designed to provide protection against these two distinct risks premature death and superannuation. Thus, life insurance may be defined as a special and economic devise by which a group of people may co-operate to ameliorate (make better) the loss resulting from the premature death or living too long the members of the group.

5.1.1. CHARACTERISTICS OF LIFE INSURANCE

A. The event insured against is an eventual certainty. No one lives forever or maintains his economic value. Yet we do not violate the requirements of an insurable risk in the case of life insurance for it is not the possibility of death itself that we get insured against, but rather untimely death. The uncertainty surrounding the risk in life insurance is not whether the individual is going to die, but when.

B. **Life insurance is not a contract of indemnity**. The principle of indemnity applies on a modified form in the case of life insurance. In most lines of insurance, an attempt is made to put of individual back in exactly the same financial position after a loss as before the loss. For obvious reasons, this is not possible in life insurance the simple fact of the matter is that we cannot place a value on a human life.

C. **Insurance as a legal principle**, every contract of insurance must be supported by an insurable interest, but in life insurance the requirement of insurable interest is applied somewhat

differently than in property and liability insurance. When the individual taking out the policy is also the insured, there is not legal problem concerning insurable interest. The important question of insurable interest arises when the person taking out the insurance is someone other than the person whose life is concerned. In such cases, the law required than an insurable interest exists at the time the contract is taken out. There are many relationships, as stated earlier, than provide the basis for an insurable interest.

D. **Life contract are long-term contracts.** Nearly all life policies are intended to continue until the insured‟s death or at least for several years. Other forms of insurance policies may be renewed many times, but are usually twelve-month contracts, which may be terminated by either party.

E. **Finally, the question of over insurance is immaterial in life insurance contracts.**

QUICK CHECK

Describe the economic value of human life to two control economic groups

What are main perils that can destroy wholly or partially, the economic value of a human life?

Which risk management tool is most appropriate for dealing with the exposure of premature death?

Explain the peculiar characteristics of life insurance

5.1.2. TYPES OF LIFE INSURANCE CONTRACTS

From a generic viewpoint, life insurance policies can be classified as either **Term insurance or cash-value life insurance**. Term insurance provides temporary protection, while cash-value life insurance has a savings component and builds cash values. Numerous variation and combinations, of these two types of life insurance are available today.

5.1.2.1. TERM INSURANCE

Term insurance provided protection only for a definite period (term) of time. **A term insurance policy is contract between the insured and the insurer where by the insurer promises to pay face amount of the policy to a third party (the beneficiary) should the insured die within a given period of time**. If the insured does not die during the period for which the policy was taken, the insurance company is not required to pay anything. Protection ends when the term of years expires. In other words, term life insurance look like automobile insurance, fire insurance, and the like, this is always term insurance. Term insurance is sometimes called temporary insurance. Common types of term life insurance are 1 year term, 5 year term, 10 years term, 20 years term, and term to age 60 to 65.

Types of Term Insurance:

A wide variety of term insurance products are sold today. They include the following:

Yearly renewable term
5-,10-,15- or 20 year term
Term to Age 65
Decreasing term
Reentry term

Yearly renewable term: Yearly renewable term insurance is issued for a one-year period, and the policy owner can renew for successive one year periods to some stated age without evidence of insurability. Premiums increase with age at each renewal date. Most yearly renewable term policies also allow the policy owner to convert to a cash-value policy.

5-, 10-, 15- or 20 year term: Term insurance can also be issued to 5, 10, 15, or 20 years, or for longer periods. The premiums paid during the term period are level, but they increase when the policy is renewed.

Term to Age 65: A term to age 65 policy provides protection to age 65, at which time the policy expires. The policy can be converted to a permanent plan of insurance, but the decision to covert must be exercised before age 65. For example, the insurer may require conversion to a permanent policy before age 60. Because premiums are level, the policy develops a small reserve that is used up by the end of the period.

Decreasing term insurance: Decreasing term insurance is form of term insurance where the face amount gradually declines each year. Although the face amount declines over time, the premium is level (same) throughout the period. In some policies, the premiums are structure so that the policy is fully paid for a few years before the coverage expires. For example, a 20 year decreasing term policy may require premium payments for 17 years. This method avoids paying a relatively large premium for only a small amount of insurance near the end of the term period. Finally, decreasing term insurance can be written as a separate policy, or it can be added as a rider to an existing contract.

Reentry term insurance: Reentry term also called revertible term is another important term insurance product. Under a reentry term policy, renewal premiums are based on selected mortality (death) rates if the insured can periodically demonstrate acceptable evidence of insurability.

Uses of Term Insurance

If the amount of income that can be spent on life insurance is limited, term insurance can be effectively used.

Term insurance is appropriate if the need for protection is temporary.

Term insurance can be used to guarantee future insurability.

Limitation of Term Insurance

Term insurance premiums increase with age and eventually reach prohibitive levels.

Term insurance is inappropriate if you wish to save money for a specific need.

QUICK CHECK 1.

Define term insurance

2. List and explain the different types of term insurance

3. Summarize the uses and limitations of term insurance

5.1.2.2. WHOLE LIFE INSURANCE

In contrast to term insurance, which provides short term protection, **whole life insurance is a cash-value policy that provides lifetime protection**. From a historical or traditional perspective; the following two types of whole life insurance:

Ordinary Life Insurance

Limited – Payment Life Insurance

Ordinary Life Insurance: Ordinary life insurance also called straight life and continuous premium whole life provides lifetime protection to age 100, and the death claim is a certainty. If the insured is still alive age 100, the face amount of insurance is paid to the policy owner at that time.

In addition, premiums do not increase from year to year but remain level through out the premium paying period. Under an ordinary life policy, the policy owner is overcharged for the insurance protection during the early years and undercharged during the later years when premiums are inadequate to pay death claims. Ordinary life insurance also has an investment or saving element called a cash surrender value. The cash values are due to the overpayment of insurance premiums during the early years.

Limited Payment Life Insurance: A limited payment policy is another type of traditional whole life insurance. The insurance is permanent, and the insured has lifetime protection. The premiums are level, but they are paid only for a certain period. For example Girma, age 35 may purchase a 20 year limited payment policy in the amount of 25,000 Birr. After 20 years, the policy is completely paid, up, and no additional premiums are required even though the

coverage remains in force. A paid up policy should not be confused with one that matures. A policy matures when the face amount is paid as a death claim or as an endowment. A policy is paid up when no additional premium payments are required. The most common limited-payment policies are for 10, 20, 25 or 30 years. A policy can paid up at age 65 or 70 is another form of limited payment insurance. An extreme form of limited payment life insurance is **single premium whole life insurance**, which provides lifetime protection with a single premium. Because the premiums under a limited payment policy are higher than those paid under an ordinary life policy, the cash values are also higher.

Endowment insurance

Endowment insurance is another traditional form of life insurance. An endowment policy pays the same amount of insurance if the insured dies within a specified period; if the insured survives to the end of the endowment period, the face amount is paid to the policy owner at that time. For example, if Stephanie, age 35, purchased a 20-year endowment policy and dies any time within the 20-year period, the face amount would be paid to her beneficiary. If she survives to the end of the period, the face amount paid to her.

5.1.2.3. VARIATIONS OF WHOLE LIFE INSURANCE

Some important variations of whole life insurance include the following:

Variable Life Insurance: Variable life insurance is fixed premium policy in which the death benefit and cash surrender value vary according to the investment experience of a separate account maintained by the insurer. The entire reserve is held in a separate account and is invested in equities or other investments. The cash surrender values are not guaranteed.

Universal Life Insurance: Universal life insurance is another variation of whole life insurance. Theoretically, universal life can be viewed as a flexible premium policy that provides life time protection under a contract that separates the protection and saving components. Universal life insurance has the following features:

Unbundling of protection, savings, and expense components

Two forms of universal life insurance

Pays a level death benefit during the early policy years.

Provides for an increasing death benefit.

Considerable flexibility.

Cash withdrawals permitted.

Favorable income tax treatment.

Variable Universal Life Insurance: This is similar to universal life insurance with two major exceptions. First, the cash values can be invested in a wide variety of investments. Second, there is no minimum guaranteed interest rate, and the investment risk falls entirely on the policy owners.

Current Assumption Whole Life Insurance: Current assumption whole life insurance is a nonparticipating whole life policy in which the cash value is based on the insurer"s current mortality, investment, and expense experience. An accumulation account is credited with a current interest rate that changes over time.

Common Features

Although current assumption whole life products vary among insurers they share some common features summarized as follows:

An accumulation account is used to reflect the cash value under the policy. The accumulation account is credited with the premiums paid less expensive and mortality charges plus interest based on current rates.

If the policy is surrendered a surrender charge is deducted from the accumulation account. A surrendered charge that declines over time, such as 10 to 20 years, is deducted from the accumulation account to determine the net cash surrendered value.

A guaranteed interest rate and current interest rate are used to determine cash value. The minimum cash values are based on the guaranteed interest rate such as 4 or 4.5 percent. However, the accumulation account is credited with a higher interest rate based on current market conditions and company experiences.

A fixed death benefit and maximum premium level at the time of issue are stated in the policy. (how ever under the low-premium version discussed next both are subjected to change)

An Indeterminate Premium Whole Life Policy: This is a policy that permits the insurer to adjust premiums based on anticipated future experience. The initial premiums are guaranteed for a certain time period and can then be increased up to some maximum limit. The maximum premium that can be charged is stated in the policy. The actual premium paid when the policy is issued is considerably lower and may be guaranteed for some initial period, such as three to five years. The intent is to have the actual premium paid reflect current market conditions. After the initial guaranteed period expires, the insurer can increase premium up to the maximum limit if future anticipated experience with respect to mortality, investments and expenses is expected to worsen. However the premium may not change if future experience is expected to be similarly to past experience. Conversely, if future experience is expected to improve, then the insurer can further reduce the premium if it desires to do so.

Modified Life Policy: Modified life policies are whole life policy in which premiums are lower for the first three to five years and are higher thereafter. There are several variations of the modified life policy. Less than one version, the premium increases only once at the end of three or five years, and dividend is paid that can be used to offset most or all of the premium increase. Under another version the premiums gradually increase each year for five years and remain level thereafter. Finally terms insurance can be used for the first three to five years which automatically converts into an ordinary life policy at a slightly higher premium than for a regular ordinary life policy issued at the same age.

The major advantage of a modified life policy is that insured can purchase permanent insurance immediately even though they cannot afford the higher premiums for a regular whole life policy. Modified life insurance is particularly attractive to persons who expect that their incomes will increase in the future and those higher premiums will not be financially burdensome.

Preferred Risks

Many life insurers sell policies at lower rates to individuals known as **preferred risks.** These people are individuals whose mortality experiences are expected to be lower than average. The policy is carefully underwritten and is sold only to individuals whose health history, weight, occupation, and habits indicate more favorable mortality than the average.

The insurer may also require the purchase of a minimum amount of insurance such as $100,000. If an individual qualifies for a preferred rate, substantial savings are possible. A discount for non smoker‟s a current example of a preferred risks policy. Most insurers offer substantially lower rates to non smokers in recognition of the more favorable mortality that can be expected of this group.

Second –To-Die Life Insurance

Second –to-die life insurance (also called survivorship life) is a form of life insurance that insures two or more lives and pays the death benefit upon the death of the second or last insured. The insurance usually is whole life, but it can be term. Because the death proceeds are paid only upon the death of the second or last insured, the premiums are substantially lower than if to individual policies were issued. Second-to-die life insurance is widely used art the present time in estate planning. As a result of an unlimited marital deduction, the deceased‟s, enter estate can be left to a surviving spouse free of any federal estate tax. However, when the surviving spouse dies, a sizable federal estate tax may be payable. A second-to-die policy would provide the cash to pay the state taxes.

Juvenile Insurance

Juvenile insurance refers to life insurance purchased by a parent or adult on the lives of children younger than a certain age, such as age 14or 15. Insurers generally require the child to be at least one month old before he or she can be insured. Some insurers, however, will insure a child as young as one day old.

The major disadvantage in insuring children is that the family head may be inadequately insured. Scarce premium dollars that could be used to increase the life insurance on the family head are instead diverted to the children.

Arguments for life insurance on children are not convincing. One argument is that insurance on children is less expensive because it is purchased at a younger age. This argument is deceptive. Although insurance premiums on children are lower, they are paid over a much longer time period. Premiums at the older ages are higher, but they are paid for shorter periods of time. Moreover, when present values are taken into account, the child‟s policy can be more expensive. One study indicated that the present value of the premiums for a $20,000 life paid – up-at-age-65 policy issued by one insurer on a child at age 15 is $5584 at a 4 percent discount rate. However, the present value of the premiums for the same type of policy issued by the same insurer at age 35 is only $3905 In short; a juvenile insurance policy may be no bargain when it comes to cost.

Another argument is that life insurance should be purchased to guarantee the future insurability of the children. This argument has slightly greater validity, but only if the husband and wife are adequately insured. Unfortunately, guaranteed insurability option cannot be purchased separately but must be added to the permanent life insurance policy. Even if future insurability cannot be guaranteed, the odds are that the children will still be able to purchase insurance in the future. More than 90 percent of all new policies sold are issued at standard rates.

Savings Bank Life Insurance

Savings bank life insurance (SBLI) is a type of life insurance that was sold originally by mutual saving banks in three states-Massachusetts, New York, and Connecticut. More recently; however, SBLI is also sold directly to consumers over the phone or through Internet web sites in those states and in additional a states as well. To be eligible, the applicant must either reside or work in the state where the insurance is sold. The objective is to avoid the substantial acquisition expenses incurred by commercial insurers when life insurance is initially sold.

A number of SBLI products are available, including term and whole life insurance, insurance for child and seniors, and tax-deferred –annuities. Maximum limits on the amount of life insurance on an individual‟s life have been raised. Applicants can now purchase a substantial amount of life insurance in those states where SBLI is sold.

In late 2001, individual term insurance could be purchased in amounts ranging from $100,000 to $1million. Whole life insurance is also available up to a maximum of $1million. The objective of SBLI is to provide low-cost insurance to consumers by holding down operating costs and the payment of high sales commissions.

Industrial Life Insurance

Industrial life insurance; (sometimes called debit insurance) is a class of life insurance that is issued in small amounts, and the premiums, are payable weekly or monthly. In the past, the premiums were collected at the insured‟s home by an agent of the company.
More than nine out of ten such policies were cash-value policies.

In recent years, industrial life insurance has also been called **home service life insurance,** reflecting the fact that individual policies are serviced by agents who call at the policy owner‟s home to collect the premiums. The amount of life insurance policy generally ranges from $5000 to $25,000. Home service life insurance is relatively unimportant and accounts for less than 1 percent of all life insurance in force.

Group Life Insurance

Group life insurance is as type of insurance that provides life insurance on a group of people in a single master contract. Physical examinations are not required, and certificates of insurance are issued as evidence of insurance. Group life insurance is important in terms of total life insurance in force. Most group life contracts provide terms insurance coverage. In 2000, group life insurance accounted for 40 percent of all life insurance in force in the United States.

QUICK CHECK

Differentiate between term and whole life insurance

Explain ordinary life, limited payment life and endowment insurance

Discuss the important variations of whole life insurance

5.1.3. ANNUITIES

An annuity maybe defined as a periodic payment to commence at a stated date and to continue for a fixed period or for the duration of a life. The person whose life governs the duration of payments is called the annuitant. Annuity is insurance against living too long-against outliving ability to provide an income for oneself.

Annuities can be classified according to several characteristics. First, annuities can be classified as immediate or deferred, depending upon whether the benefits are payable immediately after the purchase of the contact. The rent of annuity can begin as soon as the annuity is purchased, in which case the transaction is called an immediate annuity. Alternately, the rent can begin at some future time in which case the annuity is called a deferred annuity. Often the rent begins at retirement.

Second, annuities may be paid for by a single premium or by annual premiums. An annuity can be wholly paid up in lump sum payment or it can be purchased in installments over a period of years. If the annuity is paid up at once, it is called a single-premium annuity. If it is paid for in installments, it is known as an annual premium annuity.

Third, annuities may cover one life or joint lives. If two or more lives are covered, the payments may stop at the death of the first annuitant or at the death of the last annuitant. An annuity may be issued one more than one life. For example, the agreement might be to pay a given rent during the lifetime individuals, as long as either shall live.

This is a very common arrangement, is known as a joint and last survivorship annuity, because the rent is payable until the last survivor dies. The rent may be constant during the entire period or may be arranged to be reduced by, say one third upon the death of the first annuitant. Thus, a husband and wife both ages 65 may elect to receive the proceeds of the pension of a pension plan on a joint and last survivor basis, with an income guaranteed as long as either shall live.

5.1.4. LIFE INSURANCE PREMIUMS

There are three primary elements in life insurance rate making:

Mortality Charge.

Interest Charge.

Loading Charge.

Mortality: The morality table is simply a convenient method of expressing the probabilities of living or dying at any given age. It is a tabular expression of the chance of losing the economic value of human life. Since the insurance company assumes the risk of the individual, and since this risk is based on life contingencies, it is important that the company know within reasonable limits how many people will dies at each age. One the basis of past experience actuaries are able to predict the number of deaths among a given number of people at some given age.

Interest: Since the insurance company collects the premium in advance and does not pay claims until the future date, it has the use of the insured‟s money for some time, and it must be prepared to pay interest on it. The life insurance companies collect vast sums of money, and since their obligations will not mature until some time in the future, they invest this money and earn interest on it.

Loading Charge: When a life insurance policy is sold, the insurer incurs relatively high first-year acquisition expenses because of commissions, sales, and administrative expenses. Thus, the premium charges must include a loading for expenses.

Net Single Premium (NSP): The net single premium is the amount the insurer must collect in advance to meet all the claims arising during the policy period.

Net Level Premium (NLP): It would be impractical at attempt to collect a net single premium from each member of an insured group. Few people would have the necessary funds for an advance payment of all future obligations. Therefore, actuaries must calculate an annual premium.

Gross Premium: Gross premium is the pure premium plus loading for the necessary expenses of the insurer. The net level premium for life insurance represents the pure premium that is unadjusted for the expenses of doing business. The pure premium is actually the contribution that each insured makes the aggregate insurance fund each year for the payment of both death and living benefits.

Illustration;

Calculate the NSP and NLP for a 4 year term policy for birr 10,000 to be insured at the beginning of the year with an interest rate of 8 %. The number of policy holders at age 26 is 964,591. The expected number of persons dying at age 26, 27, 28 and 29 are 1669, 1647, 1634 and 1641 respectively.

Solution

Age	26	27	28	29
No. living	964,591	962,922	961,275	959,641
No. dying	1669	1647	1634	1641

Age	FV of the Policy		Mortality Rate		Discount Factor	NSP
26	Birr 10,000	X	1669/964,591	X	0.9259	= 0.0016
27	10,000	X	1647/964,591	X	0.8573	= 0.0015
28	10,000	X	1634/964,591	X	0.7938	= 0.0013
29	10,000	X	1641/964,591	X	0.735	= 0.0013
						NSP= 0.0057

It will be observed that each person must pay in advance the sum of birr 0.0057 for 4 years of protection.

Age	Payment each year		Survival rate	Discount Factor		present value of life annuity due (PVAD)
26	Br.1	**X**	964,591/964,591	**X** 1.0000	**X**	1.0000
27	1		962,922/964,591	0.9259		0.9243
28	1		961,275/964,591	0.8573		0. 8544
29	1		959641/ 964,591	0.7938		0.7897
						PVAD= 3.5684

NLP=NSP/PVAD

0.0057/3.5684

0.001597

QUICK CHECK

1. Define annuities
2. Discuss the different classes of annuities according to several characteristics
3. Explain the three primary elements in life insurance rate making
4. Calculate the NSP and NLP for a 3 year term policy for a face amount of birr 1000 to be insured at the beginning of the year with an interest rate of 10%. The number of policy holders at the beginning of age 26 is 10,000. The expected number of persons dying (out of 1000 people) at the end of age 21,22 and 23 are respectively 1.6, 1.5 and 1.4.

5.2. HEALTH INSURANCE

Health insurance may be defined broadly as the type of insurance that provides indemnification for expenditure and loss of income resulting from loss of health. Health insurance is insurance against loss by sickness or bodily injury. The loss may be the loss of wages caused by sickness or accident, or it may be expenses for doctor bills, hospital bills medicine etc.

5.2.1. TYPES OF HEALTH INSURANCE

There are two types of insurance in the generic term health insurance:

Disability Income Insurance and
Medical Expense Insurance

5.2.1.1. DISABILITY INCOME INSURANCE

Disability income insurance is form of health the insurance that provides periodic payment when the insured is unable to work as a result of illness or injury. It may pay benefits only in the event of sickness or only in the event of accidental bodily injury or it may cover both contingencies in one contract. Benefit eligibility presumes a loss of income, but in practice this is usually defined as the inability to pursue an occupation. The fact that the insured"s employer may continue his or her wages does not reduce the insurance benefit.

The disability must be one that prevents the insured from carrying on the usual occupation. Most policies continue payment of the benefits for only a specified maximum number of years, but lifetime benefits are available on some contracts. However, under all loss of income policies, the benefits are terminated as soon as the disability ends.

Certain types of accidents are excluded, for example, losses caused by war, suicide and intentionally inflicted injuries, and injuries while in military service during wartime.

5.2.1.2. MEDICAL EXPENSE INSURANCE

Medical expense insurance provides for the payment of the cost of medical care that results from sickness and injury. Its benefits help meet the expenses of physicians, hospital nursing the related services, as well as medications and supplies. Benefits may be in the form of reimbursement of actual expenses, up to a limit, cash payments or the direct provision of services. The medical expense may be paid directly to the provider of the services or the insured.

Medical expense insurance is divided into four major classes:

1. **Hospitalization Expense Contract**
   Surgical Expense Contract
   Regular medical Expense Contract
   Major medical Expense Contract

Hospitalization Expense Contract: The hospitalization contract is intended to indemnify the insured for necessary hospitalization expense, including room and board in the hospital, laboratory fees, nursing care, use of operating room, and certain medicines and supplies.

Hospitalization expense is usually written for a flat daily amount for a specified number of days such 30, 120, or 365. The contract provides that costs up to the maximum benefit per day (say 50 birr, 60 birr, 70 birr etc.,) will be paid for the number of day specified, while the insured or an eligible dependent is in the hospital.

The agreement may set birr allowance for the different items or may be on a service basis. Typical contracts offered by insurance companies, for example may state that he insured will be indemnified up to X birr per day for necessary hospitalization.

Exclusions under hospitalization contracts:

Like all insurance policies, hospitalization contracts offered by insures are subject to exclusions. The following exclusions are typical of hospitalization contracts:

Expenses resulting from war or any act of war.
Expenses resulting from self-inflicted injuries.
Expenses payable under worker‟s compensation or any occupational disease law.
Expenses incurred while on active duty with the armed forces.
Expenses incurred for purely cosmetic purposes.
Expenses incurred by individuals on an outpatient basis.
Services received in any government hospital not making a charge for such services.

Surgical Contracts:

The surgical contract provides service allowances for different surgical procedures performed by duly licensed physicians. In general, a schedule of operations is set forth together with the maximum allowance for each operation. It reimburses the policyholder according to a schedule that lists the amounts the policy will pay for a variety of operations.

Regular Medical Contract:

The regular medical expense insurance pays part or all of physicians‟ ordinary bills, such as his called at the patient‟s home or at a hospital or a patient‟s visit to his office. It is contract of health insurance that covers physicians‟ services other than surgical procedures. Normally, regular medical insurance is written in conjunction with other types of health insurance and is not written as a separate contract.

Major Medical Contract:

The major medical expense insurance provides protection against the very large cost of serious or long illness or injury. The major medical policy is not appropriate for the large medical

expenses that would be financially unaffordable for the individual. The contract is issued subject to substantial deductible of different sorts and with a high maximum limit. Since this kind of policy is designed to cover only serious illness or accidents, a deduction is used to eliminate small claims. A major medical policy might have 5,000 birr maximum limit for any one accident or illness, have a 200 birr deductible for any one illness, and contain an agreement to indemnify the insured for a specified percentage of bills, such as 80% over and above the amount of the birr deductible. This means the insurance company pays 80% of the loss in excess of the deductible, and the insured pays the 20%. In the absence of the coinsurance clause, there would be no incentive for the insured or the doctor to keep expenses within reasonable limits.

QUICK CHECK 1.

Define health insurance

2. Discuss disability income insurance and medical expense insurance

3. Explain the four major classes of medical expense contracts

CHAPTER SUMMARY

Term insurance provides temporary protection and is typically renewable and convertible with out evidence of insurability. Term insurance is appropriate when income is limited, or when there are temporary needs. Because term insurance usually has no cash value, it cannot be used for retirement or saving purposes.

There are several types of traditional forms of whole life insurance. *Ordinary life insurance* is a form of whole life insurance that provides lifetime protection to age 100. The premiums are level and are payable forklift. The policy develops an investment or saving element called a cash surrender value, which results from the over payment permiums during the early years. An ordinary life policy is appropriate when lifetime protection is desired or additional savings are desired.

Limited –payment policy another traditional form of whole life insurance. The insured also has lifetime protection, but the premiums are paid only for a limited period such as 10, 20, or 30 years or until age 65.

Endowment insurance pays the face amount of insurance if the insured dies within a specified period. If the insured survive till the end of the endowment period the face amount of insurances paid to the policy owner at the time.

Variable life insurance is a fixed –premium policy in which the death benefit and cash surrender value vary according to the investments. The cash surrender values are not guaranteed.

Universal life insurance is another variation of whalo life insurance. Conceptually universally life can be viewed as a flexible –premium policy that provides life time protection under a contract that separates the protection and saving components. Universal life insurance has the following features.

Unbundling of protection, savings, and expense components

Two forms of universal life insurance considerable flexibility

Cash withdrawals permitted favorable income –tax treatment.

Variable universal life insurance is similar to universal life insurance with two major exceptions. First, the cash values can be invested in a wide variety of investments. Second, there is no minimum guaranteed interest‟s rate, and the investment risk falls entry on the policy owner.

Currently assumption whole life insurance is a non participating whole life policy in which the cash values are based on the insurer‟s currently mortality, investment and expense experience. An accumulation account is credited with a current interferes rate that changes overtime.

An indeterminate –premium whole life policy is a non participating policy that premiums the insurance to adjust premiums based on anticipated future experience. The initial premium is guaranteed for a certain time period and can be then increased up to some maximum limit.

A modified life policy is whole life policy in which premium is lower for the first three to five years and is higher thereafter.

Many insurers sell policies with lower rates to preferred risks. The policies are carefully underwritten and sold only to individuals whose health history, weight, occupation, and habits indicate more favorable mortality than average. Minimum amounts of insurances must be purchased.

Second-to -die life insurance (survivorship life) insures two or more lives and pays the death benefit upon the death of the second or last insured.

Juvenile insurance refers to life insurance purchased by a parent or other adult on the lives of children younger than a certain age, such as age15or16.

Savings bank life insurance is sold in mutual savings banks of three states –Massachusetts, New York and Connecticut –and in surrounding states as well. It is also sold directly to consumers over the phone or internet.

Industrial Life Insurance is a type of insurance in which the policies are sold in small amounts, and the premiums earlier were paid to an agent at the policy owner‟s home.

Group life insurance provides life insurance on people in a group under a single master contract.

REVIEW QUESTIONS

PART I- MULTIPLE CHOICE QUESTIONS

Instructions, dear learners, please choose the correct answer and encircle the letter of your choice

One of the following is not a characteristics of life insurance

The event insured against is an eventual certainty.

Life insurance is a contract of indemnity

Life contract are long-term contracts

None

Which of the following is not true about term insurance?

If the amount of income that can be spent on life insurance is limited, term insurance can be effectively used.

Term insurance is appropriate if the need for protection is temporary

Term insurance can be used to guarantee future insurability

Term insurance is appropriate if you wish to save money for a specific need

None

Which of the following is not features of Universal life insurance

Unbundling of protection, savings, and expense components

Considerable flexibility.

Cash withdrawals permitted

unfavorable income tax treatment

None

One of the following is not common features of current assumption whole life insurance

An accumulation account is used to reflect the cash value under the policy

If the policy is surrendered a surrender charge is deducted from the accumulation account

A guaranteed interest rate and current interest rate are used to determine cash value.

A fixed death benefit and maximum premium level at the time of issue are stated in the policy

None

Which of the following is exclusions from hospitalization contracts

Expenses resulting from war or any act of war

Expenses incurred by individuals on an outpatient basis.

Expenses incurred while on active duty with the armed forces.

Expenses resulting from self-inflicted injuries

All

None

PART II- TRUE OR FALSE

Instruction: dear learners, please write true if the statement is correct and write false if the statement is wrong

1. Variable life insurance is fixed premium policy in which the death benefit and cash surrender value vary according to the investment experience of a separate account maintained by the insurer

An endowment policy pays the same amount of insurance if the insured dies within a specified period

Under a reentry term policy, renewal premiums are based on selected mortality (death) rates if the insured can periodically demonstrate acceptable evidence of insurability.

Decreasing term insurance is form of term insurance where the face amount gradually increases each year.

The rent of annuity can begin as soon as the annuity is purchased, in which case the transaction is called deferred annuity.

The net single premium for life insurance represents the pure premium that is unadjusted for the expenses of doing business.

medical expense insurance is form of health the insurance that provides periodic payment when the insured is unable to work as a result of illness or injury

PART III- FILL IN THE BLANK SPACES

Instruction, Dear Learners, please fill in the blank spaces with appropriate words or phrases

1.A human life has economic value to all whom depend on the earning capacity of that life, particularly to two control economic groups called _____ and _____

2.There are four main perils that can destroy wholly or partially, the economic value of a human life. These include _____–,_____,–_____,and _____–

3.From a generic viewpoint, life insurance policies can be classified as either _____or_____ –

4._____ policy is contract between the insured and the insurer where by the insurer promises to pay face amount of the policy to a third party (the beneficiary) should the insured die within a given period of time.

5._____ is form of term insurance where the face amount gradually declines each year

6._____ is a nonparticipating whole life policy in which the cash value is based on the insurer‟s current mortality, investment, and expense experience

7._____ _ refers to life insurance purchased by a parent or adult on the lives of children younger than a certain age, such as age 14or 15.

8.In recent years, industrial life insurance has also been called _____**_,** reflecting the fact that individual policies are serviced by agents who call at the policy owner‟s home to collect the premiums

9._____ is the amount an insurer must collect in advance to meet all the claims arising during the policy period.

Health insurance is insurance against loss by __ _____

PART IV- WORKOUT QUESTIONS

Instruction, Dear Learners, please work out the following questions by showing the necessary steps

Given the following information, compute NSP and NLP

A 3 year term policy for birr 5000 to be insured at the beginning of the year

The number of policy holders at age 30 is 958,000

Interest rate is 10 %

Age	Number Living	Number dying
30	958,000	1657
31	956,343	1703
32	954,640	1747

CHAPTER SIX

PROPERTY AND LIABILITY INSURANCE

LEARNING OBJECTIVES

After studying this chapter you should be able to:

Identify the major types of property insurance

Explain the details of fire policy such as policy format and types of fire policies.

Describe the concept of ocean marine and inland marine insurance.

Define fidelity guarantee insurance and theft insurance

Describe the basic types of liability insurance like automobile insurance, aviation insurance, employer‟s liability insurance and public liability insurance

INTRODUCTION

Tony, age 38, is the owner and manager of Tony‟s, pizza, which is located near the campus of a large western university. The restaurant is known for its big –quality pizza and is a popular hangout for college students. Recently, a baking oven overheated and caused a server fire, which resulted in extensive property damage. The restaurant was expected to be closed for at least four months. When Tony called bus agent to report the fire, the agents stated that the property damage to the building was fully covered except for a small deductible. Tony was also relived to hear that the insurance on the business would be also cover most of profit lost during the four-month shutdown period.

Like Tony‟s pizza, business firms own valuable commercial real estate, Business personal property, such as office furniture, computers supplies and machinery: and inventories of finished products. This property can be damaged or destroyed by a direct physical damage loss. In addition firms may have in their possession the property of customers, which can be damage and destroyed if a loss occurs. Moreover, like Tony‟s pizza firms may experiences a substantial loss of business income or incur sizable extra expensive in the event of a loss.

Dear students, this chapter discusses commercial property insurance, with special emphasis on the fire policy. The chapter also discusses ocean marine and inland marine insurance, which covers transportation and other commercial risks. It concludes with an examination of the business owner‟s policy, which is designed for owners of small –to medium –sized business firms.

Property and liability insurance consists of those forms of insurance that are designed to provide protection against losses resulting from damage to or loss of property and losses resulting from a legal liability.

6.1. PROPERTY INSRUANCE

Property may be exposed to a wide range of perils – fire, theft, perils of the sea and damage by persons (whether accidental or carelessness).

6.1.1. FIRE INSURANCE

Fire insurance is designed to indemnify the insured for loss of, or damage to, buildings and personal property by fire, lighting windstorm, hail, explosion and a vast array of other perils. Coverage may be provide for both the direct loss (that is actual loss represented by the destruction of the asset), and indirect loss (defined as the loss of income and or extra expenses caused by the loss of use of the asset protected). Originally, only fire was an insured peril, but the number of perils insured against has gradually been expended.

Business may therefore, purchase fire insurance contracts covering their building and its contents, to both the peril of fire and lightning. The standard fire policy promises in its insuring clause to indemnify the insured for "direct loss by fire, lightning and by removal from premises endangered by the perils insured against."

Insurers, however, may offer protection against a very great number of perils other than fire and lightning by extending the contract in relation to the interest of the insured through additional premium payment. For additional premium the standard fire policy may be extended to cover any of the following perils: windstorm, explosion, damage by aircraft, damage by vehicle, flood, earthquake, fire and shock, bursting of pipes and water damage etc.

Not all fires are covered under the fire insurance contract, but the exclusions are few:

Fires caused by war.
Fires intentionally set by public authorities, and
Fires set intentionally by the insured.

Policy Format: Most of the first page of the standard fire policy is a declarations section in which is printed such information as the insured‟s name and address, the policy inception and expiration dates, the description and location of the property covered, the peril insured against, the amount of insurance applicable to each peril, and the code numbers of the forms and endorsements that are attached. The standard fire policy plus the descriptive form may be modified by one of more that forms or endorsements. These other forms may add, for example, business interruption insurance or extra expense insurance. Endorsements may increase or decrease the coverage. For example, they may add additional peril or exclude some parts of a covered building, such as the foundations.

The first page also contains a brief insuring agreement that states the insurer‟s basic promise. The second page describes such matters, as perils not included, uninsurable and excepted, property, cancellation, and requirements in case a loss occurs.

Types of Fire Policies

There are different types of fire policies; some of the important polices include the following:

Valued Policy: This is a policy where the value of the property to be insured against fire and allied perils is determined at the time the policy is issued. Under valued policy also referred to as "ordinary fire insurance policy." The insurer pays to total value of damaged property irrespective of the market value of the property at the time of destruction or loss.

Valuable (Automatic Reporting) Policy: Under this policy the indemnity to be paid by the insurer is to be determined at the time of loss or after the loss has taken place. This policy is often used for properties whether their value cannot be accurately determined at the inception of the contract, example a building in process.

Floating Policy: Under this policy the insurer covers the interest of the insured on assets in different locations.

Comprehensive Policy: This form of fire insurance policy give full protection, not only against the risk of fire but all related perils such as riot; theft; damage by vehicles, animals or articles from the air, including aircraft and the like.

Specific Policies: Under these policies the insured would get protection to a given type of property in a given location for a specified value of property.

QUICK CHECK

Discuss the different perils in which property is exposed.

Define fire insurance and the exclusions under fire insurance contract

List and explain the different types of fire policies

6.1.2. MARINE INSURANCE

Marine insurance is designed to protect against financial loss resulting from damage to, or destruction of owned property, due to the peril primarily connected with transportation. It is a contract of transport insurance whereby the insurer undertakes to indemnify the insured in the manner and to the extent thereby agreed, against losses and damages involved in being transported. In consideration of the payment of a certain sum called the "premium" the insurer (underwriter), agrees to indemnify the insured (the client) against loss or damage cause by certain specified peril termed "maritime perils".

The marine cargo policies of Ethiopian Insurance Corporation are internationally accepted, worded and standardized insurance policies. Accordingly the coverage it affords is to indemnify the insuring public as per the terms, conditions, warranties, and exceptions of the policy in respect of loss of or damage to the cargo insured mainly resulting from maritime perils: (heavy weather, stranding, collision, etc.,) or inland-transit accident (such as collision, overturning of the carrying conveyance, explosions, fire, theft, non-delivery of the goods etc.,)

Marine insurance is divided in to two classes:

Ocean Marine and

Inland Marine.

6.1.2.1. OCEAN MARINE INSURANCE

Contracts concerned primarily with water transportation are considered to be ocean marine insurance. For a considerable time ocean marine insurance was the only kind of modern insurance.

Insurance has been developed and has attained a high degree of refinement in modern-day commerce. As world trade grew and values at risk became larger, the needs for coverage become more apparent. Larger ships and more refined instruments of navigation made long voyages possible, and with this development insurance protection was looked upon a almost a necessity.

Types of Coverage

The four chief interests to be insured in an ocean voyage are:

The vessel, or the hull

The cargo

The shipping revenue or freight received by the ship owners.

Legal liability for proved negligence.

If a peril of the sea causes the sinking of a ship in deep water, one or more of these losses can result. However, each of these potential losses can be covered under various insurance policies.

Hull Policies: Policies covering the vessel itself or hull insurance are written in several different ways. The policy may cover the ship only during a given period of time, usually not to exceed one year. The insurance is commonly subject to geographical limits. If the ship is laid up on port for an extended period of time, the contract may be written at a reduced premium

under the condition that the ships remain in port. The contract may cover a builder‟s risk while the vessel is constructed.

Cargo Policies: Contract insuring cargo against various types of loss may be written to cover only during a specified voyage, as in the case of hull contract, or on an open basis. Under the open contact, there is no termination date, but either party may cancel upon giving 30 days written notice to the other, otherwise the insurance is continuous. All shipments, both incoming and outgoing, are automatically covered. The shipper reports to the insurer at regular intervals as to the values shipped or received during the previous period.

Cargo policies written on a voyage basis cover that single voyage, but open policies usually cover all shipments made on and after a certain date. If an open policy is cancelled, the coverage continues on shipments made prior to the cancellation date.

Freight Coverage: The money paid for the transportation of the goods, known as freight, is an insurable interest because in the event that freight charges are not paid, some one has lost income with which to reimburse expenses incurred in preparation for a voyage. The earning of freight by the hull owner is dependent on the delivery of cargo unless this is altered by contractual agreements between the parties. If a ship sinks, the freight is lost and the vessel owner loses the expenses incurred plus the expected profit on the venture. The carrier‟s right to earn freight may be defeated by the occurrence of losses due to perils ordinarily insured against in an ocean marine insurance policy. The hull may be damaged so that is uneconomical to complete the voyage, or the cargo may be destroyed, in which case, of course, it cannot be delivered. Also the owner of cargo has an interest in freight arising from the obligation to pay transportation charges. Freight insurance is normally made a part of the regular hull or cargo coverage instead of being written as a separate contract.

Legal Liability for Proved Negligence: in ocean marine insurance policies the hull owner is protected against third party liability claims that arise from collisions. Collisions loss to the hull itself is included in the peril clause as one of the perils of the sea. The liability insurance is intended to give protection in case the ship owner is held liable for negligent operation of the

vessel which is the proximate cause of damage to certain property of others. The vessel owner or agent of that owner who fails to exercise the proper degree of care in the operation of the ship may be legally liable for damage to the other ship and for loss of freight revenues.

Loss Settlement: If the cargo is totally destroyed, the insurer must pay the face value of the policy. If the cargo is only partially damaged the insured and the insurer must agree on the percentage of damage. If they cannot agree, the damaged cargo is to be sold for the account of the owner and the amount received compared, with what would have been received had the cargo been in sound condition. In either case, the liability of the insurer is determined by applying the percentage of damage to the amount of insurance.

Illustration;

Assume that a cargo insured for birr 4000 could have been sold for birr 6000 in sound condition but it worth only birr 4500 in damaged condition. Since the damage is 25 %, the insurer must pay 25% of birr 4000 or birr 1000 computed as follows;

Value at sound condition	Birr 6,000
Value at damaged condition	Birr 4,500
Loss	Birr 1,500

Loss settlement= 1500/6000 X 4000 = **Birr 1000**

6.1.2.2. INLAND MARINE INSURANCE

Inland marine cargo insurance covers shipments primarily be land or by air. Although the trucker, railroad, or airline maybe common carrier with the extension liability (called liability exposures), the shipper may still be interested in cargo insurance because:

It is usually more convenient to collect from an insurer than a carrier.

A common carrier is not responsible for perils such as an act of war, exercise of public authority, or inherent defects in the cargo.

No one cargo insurance contract exists. Instead, different insurers may issue different contracts, and a given insurer will tailor the contract to the insured‟s needs. A convenient way to classify the contracts is according to the type of transportation covered. One or more of the following modes of transportation maybe covered – railroad, motor truck, or air. Shipments by mail are covered under separate first – class mail, parcel port, or registered mail insurance.

6.1.3. FIDELITY GUARANTEE INSURANCE

Fidelity guarantee insurance indemnifies an employer for any loss suffered at the hands of dishonest employees. It provides guarantee against loss through the dishonesty or incapacity of individuals who are trusted with money or other property and who violate this trust.

Cashiers and other who handle money, and other persons employed in positions of trust, are frequently required by the employers to provide security as protection against their personal dishonest usually in the form of fidelity guarantee policy. The policy indemnifies the employer against losses from the dishonesty of his employees. The employer himself often takes out the policy. He may insure a number of employees either individually or in a group basis under a variety of policies.

Unlike other policies, fidelity guarantee policies specify a time limit to discover the loss and report it to the insurer after the resignation, dismissal retirement, or death of the employee in question. Hence, while the insurer undertakes to make the insured‟s financial losses lighter, it is also a requirement that the insured should

Inform the insurer of such fraudulent act immediately upon discovery.
Either obtain admission of fraud or take appropriate legal action to establish fraud, and
Cooperate with the insurer to bring the defaulter before the court of law.

In addition, before accepting the risk the insurer considers employers type of establishment, methods of selecting employees, working conditions, emoluments and benefits in relation to the responsibility assigned, supervision and control measures effectiveness.

6.1.4. THEFT INSURANCE

Although theft is generally one of the perils covered under an all risks policy, the contract usually excludes or limits the amount of protection on certain types of property, such as money, that is highly susceptible to theft losses.

Theft insurance protects a business against losses by burglary, robbery, or some other form of theft by persons other than employees. Fidelity guarantee insurance or dishonesty insurance covers losses caused by dishonest acts of employees.

Burglary is the act of unauthorized entry, with criminal intentions into any building or residence. It is the unlawful taking of property from within premises closed for business, entry to which has been obtained by force. There must be visible marks of the forcible entry. Thus, if a customer hides in a store until after closing hours, or enters by an unlocked door, steals some goods, and leaves without having to force a door or a window, the definition of burglary is not met under a burglary policy.

Robbery, on the other hand, is defined to mean the unlawful taking of property from another person by force, by threat of force, or by violence. Personal contract is the key to understanding the basic characteristic of the robbery peril. However, if a burglar enters a premise and steals what wallet of sleeping night guard, this crime is not one of robbery because there was no violence or threat thereof. The person robbed must be cognizant of this fact. On the other hand if thief knocks out or kills the guard and then robs the guard or the owner, the crime would be classed as robbery. Robbery thus means the forcible taking of property from a messenger or a custodian.

According to EIC, burglary policy does not cover losses or theft committed by:

Members of the insured‟s household,

The insured himself or his assignee.

Theft connected with war or any kind of population uprising, or

Theft of valuables including documents and works of art unless agreed pre-hand. In addition, failure to disclose materials facts at the time of writing the policy will also make any theft claims null and void.

QUICK CHECK

Define marine insurance

Briefly explain the two classes of marine insurance

How do you define fidelity guarantee insurance?

Differentiate between robbery and burglary

6.2. LIABILITY INSURANCE

Liability insurance is contract that protects the insured against legal responsibility of losses to the person or property of others.

6.2.1. AUTOMOBILE INSURANCE

Most automobile insurance contracts are scheduled contracts that permit the insured to purchase both property and liability insurance under one policy. The contract can be divided, however, into two separate contracts; one providing insurance against physical damage to automobiles and the other protecting against potential liability arising out of the ownership or use of an automobile.

The objective of automobile insurance is to indemnify the insured against accident loss or damage to high auto and / or his liability at law for bodily injury or material damage cause by the use of motor vehicle, subject to the terms and conditions and to the cover granted.

There are two main types of insurance covers in motor commercial and motor private insurance, viz. Comprehensive cover and Third party cover.

Comprehensive Cover: A comprehensive cover provides protection against a wide range of contingencies. It includes indemnity in respect of the insured‟s legal liability for death or bodily injury or damage cause to the property of third parties arising out of the insured‟s vehicle. The policy also indemnifies the insured in respect of all damages to the vehicle caused by an accidental, external physical means as a result of collision, overturning, fire self-ignition, lightning, explosion, and burglary.

The policy excludes, among other things, the following:

Consequential loss sustained by the insured.
Wear and tear depreciation of motor vehicle,
Mechanical or electrical breakdown of failure of any part of a motor vehicle,
Death of or injury to members of insured family or his employees,
Damage to property of the insured or held by him in trust or in custody.

Third Party Cover: There are two parties involved in an insurance contract, the insurer and the insured. Accordingly, any other person who may become linked in some way with the insurance is regarded as third party. A third party only policy covers the insured‟s legal liability (i.e. property damage, death, and injury) towards other people in the event of an accident arising out of the use of a motor vehicle.

A third party policy may be extended to include at an additional premium the policy holder‟s vehicle against the risks of fire and theft as follows:

Third party, fire and theft.
Third party and fire.
Third party and theft.

The basic cover guaranteed by the Ethiopian Insurance Corporation‟s policies can be extended to cover additional risks at an additional premium.

Classification of Risks:

There are various categories of automobile risks and a distinction is made in accordance with the type of the vehicles. The main classifications are as follows:

Private Vehicles: A motor vehicle used solely for private (social, domestic, pleasure, professional purpose or business calls of the insured) purposes are classified as "private vehicles" and are insured under the "private motor vehicles policy". The term "private purposes" does not include use for hiring, racing, and carriage of goods in connection with any trade or business.

Commercial Vehicles: A wide range of vehicles which carry goods and passengers are classified under this heading and different rates of premium are supplied depending on their use and type.

6.2.2 AVIATION INSURANCE

Aviation insurance is a comparatively recent phenomenon that has been developing with the development of passenger plans, particularly "Jumbo Jets". The overall increase in the number of different passenger planes and the increase in their value called for aviation insurance. Aviation insurance is an insurance that provides protection against losses or damages to the different types of passengers, cargo planes, and associated losses.

Like automobile insurance, aviation insurance includes both property insurance, on the planes and liability insurance.

Types of Policies

The most common types of policies under aviation insurance are:

Aircraft Comprehensive Policy.

Freight Liability Policy which includes airmail liability policy.

Aircraft Comprehensive Policy: This policy covers against three types of potential losses:

A. Accidental damage to the aircraft, where protection is provided for damage to the aircraft by accidents except those that are specifically excluded on the policy.

B. Third party legal liability, where the insurer assumes the responsibility to indemnify the insured for death of or bodily injuries to third parties (excluding passengers) and ground damage.

C. Legal liabilities of the insured in respect of death of, or bodily injuries to passengers, passenger‟s baggage and personal effects, which are registered, are also covered by the insurance.

Freight Liability: In addition to passengers and crew an aircraft carries cargo and mail. The airline operating the aircraft is liable if the cargo or mail is lost or damage. The freight liability policy provision requires the insurers to indemnify the insured against all sums which the insured may become legally liable to pay to owner of cargo as a result of loss or damage or mishandling of the cargo. The limit to the amount of indemnity is generally stated in the freight liability policy.

6.2.3. WORKER'S COMPENSATION/EMPLOYERS' LIABILITY INSURANCE

Worker‟s compensation insurance covers loss of income, medical, and rehabilitation expenses that result from work related-accidents and occupations disease. Insured workmen always retain the right to claim damages. Employers‟ liability claims become much more common aided by Trade Unions.

If an employee is killed or injured at work as a result of an accident arising from defective premises or equipment that a court may award damages against the employer. Any employer is liable for an employee who suffers accidental bodily injury or disease while working for him. The employee is thus entitling to compensation for injuries that may be temporary or

permanent. This compensation being unforeseen expenditure, the employer finds it difficult to compensate such losses especially when it involves a high amount. An employer may therefore, take out an insurance policy insuring himself against such claims by his employees.

The insurance which provide protection for injury to employees while at work, and as a result make the employer liable for the loss, is called worker‟s compensation insurance.

In addition to buying insurance, the insured (employer) can lower the loss claims by:

Providing a safe place of work to his employees.

Proper plant tolls, machinery and working implements, and

Hiring competent and sober fellow employees.

6.2.4. PUBLIC LIABILITY INSURANCE

Public liability insurance was developed with employee‟s liability insurance. Once, public opinion had accepted the morality of being able to insure one‟s liability, and the availability of such insurance became known, the business grew rapidly.

The policy provides compensation for legal liability for death, injury, or disease to people other than employees (which should be covered by employer‟s liability policy). Public liability insurance provides what is popularly termed “third party cover”. It indemnifies the insured in respect of his legal liability for accidents to members of the public, or for damage to their property, occurring in circumstances set out in the policy.

Under public liability insurance, policies are available to cover liabilities attaching to:

A. Pedal Cyclists.

B. Private individuals. The so called “personal liability” policy is available to protect private persons from claims arising due to injury caused by such things as polished floor, a loose roof tile or by pet animal. A pedestrian, for example, can incur heavy liabilities by causing a serious road accident.

C. Product Liability: Liability arising out of defects of goods produced or sold.

D. Professional men such as doctors, dentists, solicitors, and bankers may take out policies to protect themselves from claims arising out of negligence or mistake committed in the exercise of their professional duties.

It should be noted that this form of cover might include or be included with other risks. For example, a householder‟s policy covering losses or damage to the building and/or contents can be extended to cover the personal liability of the owner and his family towards the public. Whereas liability arising from the use of motor vehicles is always exclude, and must be covered by a separate motor policy.

QUICK CHECK

Discuss the concept of Comprehensive cover and Third party cover under automobile insurance.

What do you mean by workers compensation insurance?

Define public liability insurance and discuss the policies available to cover the liabilities

CHAPTER SUMMARY

Property may be exposed to a wide range of perils – fire, theft, perils of the sea and damage by persons (whether accidental or carelessness)

Fire insurance is designed to indemnify the insured for loss of, or damage to, buildings and personal property by fire, lighting windstorm, hail, explosion and a vast array of other perils

Not all fires are covered under the fire insurance contract, but the exclusions are few:

Fires caused by war

Fires intentionally set by public authorities, and

Fires set intentionally by the insured

There are different types of fire policies; some of the important polices include; **Valued Policy, Valuable (Automatic Reporting) Policy, Floating Policy, Comprehensive Policy and Specific Policies**

Marine insurance is designed to protect against financial loss resulting from damage to, or destruction of owned property, due to the peril primarily connected with transportation

Marine insurance is divided into two classes:

Ocean Marine and

Inland Marine

Contracts concerned primarily with water transportation are considered to be ocean marine insurance

The four chief interests to be insured in an ocean voyage are:

The vessel or the hull

The cargo

The shipping revenue or freight received by the ship owners.

Legal liability for proved negligence

Inland marine cargo insurance covers shipments primarily by land or by air.

Fidelity guarantee insurance indemnifies an employer for any loss suffered at the hands of dishonest employees

Theft insurance protects a business against losses by burglary, robbery, or some other form of theft by persons other than employees

Burglary is the act of unauthorized entry, with criminal intentions into any building or residence

Robbery, on the other hand, is defined to mean the unlawful taking of property from another person by force, by threat of force, or by violence

Liability insurance is contract that protects the insured against legal responsibility of losses to the person or property of others.

There are two main types of insurance covers in motor commercial and motor private insurance, viz. Comprehensive cover and Third party cover.

Aviation insurance in an insurance that provides protection against losses or damages to the different types of passengers, cargo planes, and associated losses.

The most common types of policies under aviation insurance are:

Aircraft Comprehensive Policy

Freight Liability Policy which includes airmail liability policy

- ✓ Worker‟s compensation insurance covers loss of income, medical, and rehabilitation expenses that result from work related-accidents and occupations disease

Public liability insurance provides compensation for legal liability for death, injury, or disease to people other than employees (which should be covered by employer‟s liability policy).

REVIEW QUESTIONS

PART I- MULTIPLE CHOICE QUESTIONS

Instructions, dear learners, please choose the correct answer and encircle the letter of your choice

Which of the following is/are excluded from fire insurance contract?

Fires caused by war

Fires intentionally set by public authorities

Fires set intentionally by the insured

All

None

Under ---------- the insurer covers the interest of the insured on assets in different locations.

Valued Policy

Valuable (Automatic Reporting) Policy

Floating Policy

Comprehensive Policy

None

The chief interests to be insured in an ocean voyage are:

The vessel, or the hull

The cargo

The shipping revenue or freight received by the ship owners

Legal liability for proved negligence

All

According to EIC burglary policy is does not cover losses or theft committed by:

Members of the insured‟s household

The insured himself or his assignee

Theft connected with war or any kind of population uprising.

Theft of valuables including documents and works of art unless agreed pre hand.

All

All but D

Automobile insurance policy excludes, among other things, the following except:

Consequential loss sustained by the insured

Wear and tear depreciation of motor vehicle.

Death of or injury to members of insured family or his employees.

Damage to property of the insured or held by him in trust or in custody

None

Under public liability insurance, policies are available to cover liabilities attaching to:

Pedal Cyclists

Private individuals.

Product Liability

Professional men such as doctors, dentists, solicitors, and bankers

All

PART II- TRUE OR FALSE

Instruction, dear learners, please write true if the statement is correct and write false if the statement is wrong

Fire insurance is designed to indemnify the insured for loss of, or damage to, buildings and personal property by fire, lighting, windstorm, hail, explosion and a vast array of other perils

All fires are covered under the fire insurance contract

The marine cargo policies of Ethiopian Insurance Corporation are internationally accepted, worded and standardized insurance policies.

Cargo policies written on a voyage basis cover that single voyage, but open policies usually cover all shipments made on and after a certain date.

In ocean marine insurance policies the hull owner is not protected against third party liability claims that arise from collisions.

Burglary is the unlawful taking of property from another person by force, by threat of force, or by violence.

PART III- FILL IN THE BLANK SPACES

Instruction, Dear Learners, please fill in the blank spaces with appropriate words or phrases

1. is designed to protect against financial loss resulting from damage to, or destruction of owned property, due to the peril primarily connected with transportation.

2. Contracts concerned primarily with water transportation are considered to be _____

3._____ insurance covers shipments primarily by land or by air

4._____ indemnifies an employer for any loss suffered at the hands of dishonest employees

5._____ is the unlawful taking of property from within premises closed for business, entry to which has been obtained by force

Most automobile insurance contracts are scheduled contracts that permit the insured to purchase both _____ and _____ insurance under one policy

7._____ is an insurance that provides protection against losses or damages to the different types of passengers, cargo planes, and associated losses.

8._____ covers loss of income, medical, and rehabilitation expenses that result from work related-accidents and occupations disease

Public liability insurance provides what is popularly termed _____

CHAPTER SEVEN

REINSURANCE

LEARNING OBJECTIVES

At the end of this chapter, learners should be able to:

Explain the meaning of reinsurance

Understand reasons for reinsurance

Know the two basic methods of reinsurance

Identify and describe the most important types of reinsurance treaties

INTRODUCTION

Reinsurance is another important insurance operation. This section discusses the meaning of reinsurance, the reasons for reinsurance, and the different types of reinsurance contracts.

There are many risks in all classes of business which are too great for one insurer to bear solely on his account. Reinsurance is a method created to divide the task of handling risk among several insurers. Naturally, the insuring public wishes to effect cover with one insurer and the insurer who in these circumstances all or part of the risk with other direct insurers or with companies which transact reinsurance business only.

7.1. MEANING OF REINSURANCE

Reinsurance may be defined as the shifting by a primary insurer, called the ceding company, of a part of the risk it assumes to another company, called the re insurer. That portion of risk kept by the ceding company is known as the line, or retention, and varies with the financial position of the insurer and the nature of the exposure. When a re insurer passes on risks to another re insurer, the process is known as retrocession**.**

It is not good business to refuse to write insurance in excess of the retention amount. Imaging the displeasure of the applicant, particularly of the producer, when the application is rejected or accepted in part. For theses and other reasons insurers commonly insure that portion of their liability under their contract in excess of their retention with one or more insurers. This process is called reinsurance, the originating insurer is the "primary insurer", or "direct insurer", and the accepting insurer is the "re insurer".

7.2. REASONS FOR REINSURANCE

Reinsurance is used for several reasons. The most important reasons include the following:

Increase underwriting capacity.

Stabilize profits.

Reduce the unearned premium reserve.

Provide protection against a catastrophic loss.

Increase underwriting capacity: Reinsurance can be used to increase the insurance company‟s underwriting capacity to write new business. The company may be asked to assume liability for losses in excess of its retention limit. Without reinsurance, the agent would have to place large amounts of insurance with several companies or not accept the risk. This is awkward and may create ill will on behalf of the policy owner. Reinsurance permits the primary company to issue a single policy in excess of its retention limit for the full amount of insurance.

Stabilize Profits

Reinsurance can be used to stabilize profits. An insurer may wish to avoid large fluctuations in annual financial results. Loss experience can fluctuate widely because of social and economic conditions, natural disasters, and chance. Reinsurance can be used to level out the effects of poor loss experience. For example, reinsurance may be used to cover a large exposure. If a large, unexpected loss occurs, the re insurer would pay the portion of the loss in excess of some specified limit. Another arrangement would be to have to re insurer reimburse the ceding insurer for loses that exceed a specified loss ratio during a given year. For example an insurer may wish to stabilize its loss ratio 70%. The re insurer then agrees to reimburse the ceding insurer for part or all the losses in excess of 70% up to some maximum limit.

Reduce the unearned premium reserve

Reinsurance can be used to reduce the unearned premium reserve. For some insurers, especially newer and smaller ones, the ability to write large amounts of new insurance may be restricted by the unearned premium reserve requirement. The unearned premium reserve is a liability item on the insurer‟s balance sheet that represents the unearned portion of gross premiums on all outstanding policies at the time of valuation. If effect, the unearned premium reserve reflects the fact that premium are paid in advance, but the period of protection has not yet expired. As time goes on, part of the premium is considered earned, while the remainder is unearned. It is only after the period of protection has expired that the premium is fully earned.

Provide Protection Against a Catastrophic Loss:

Reinsurance also provides financial protection against a catastrophic loss. Insurers experience catastrophic losses because of natural disasters, industrial explosions, commercial airline disasters, and similar events. Reinsurance can provide considerable protection to the ceding company that experiences a catastrophic loss. The reinsures pays part of loss that exceeds the ceding company‟s retention up to some specified maximum limit.

Other Reasons for Reinsurance:

An insurer can use reinsurance to retire from the business or from a given line of insurance or territory. Reinsurance permits the insurer‟s liabilities for existing insurance to be transferred to another carrier; thus, the policy owner‟s coverage remains undisturbed.

QUICK CHECK

What do you understand about reinsurance?

Explain the possible reasons for reinsurance

7.3. METHODS OF REINSURANCE

There are two main methods in which risks can be shared:

Facultative Reinsurance

Automatic Treaty.

Facultative Reinsurance

Facultative reinsurance is reinsurance on an optional basis. There is no advance agreement between the ceding company and the reinsurer regarding the sharing of risks and premiums. Under this arrangement a primary insurer, in considering the acceptance of a certain risk, shops around for reinsurance on it, attempting to negotiate coverage specifically only this particular contract. Each risk, which it offered, is described and this is shown to the prospective reinsurers who are offered, is described and this is shown to the prospective re-insurers who are

free to accept or decline as they see fit. A life insurers, for example may receive an application for birr 1 million of life insurance on a single life. Not wishing to reject this business, but still unwilling to accept the entire risk, the primary insurer communicates full details on this application to another insurer with whom it has done business in a past. The other insurer may agree to assume 40% of any loss for a corresponding percentage of the premium. The primary insurer then puts the contract in force.

The reinsurance agreement does not affect the insured in any way. The insured is generally not aware of the reinsurance process and the primary insurer remains fully liable to the insured in event of loss.

As stated earlier the insurer retains the right to decide whether and how much of his risk to submit for reinsurance. The reinsurer also retains the right to accept or reject any business offered by the insurer.

Automatic Treaty:

Under an automatic reinsurance treaty the ceding insurer agrees to pass on to the re-insurer all business included within the scope of treaty, the re insurer agrees to accept this business, and the terms e.g., the premium rates and the method of sharing the insurance and the losses of the agreement are set. The ceding company is required to cede some certain amounts of business, and the re insurer is required to accept him. The ceding company known in advance that it will be able to obtain reinsurance for all exposures that meet the conditions specified in the treaty. The amount that the ceding company keeps for its own account is known as its retention, and the amount ceded to other is known as cession.

7.4. FORMS OF REINSURANCE TREATIES

The most important types of reinsurance treaties include:

Quota-share reinsurance.
Surplus-share reinsurance.
Excess of loss reinsurance.

Quota-share reinsurance: Quota share reinsurance method the direct office arranges with reinsures to cede a fixed proportion of all its business of a certain class and the re insurer accepts that proportion in return for a corresponding proportion of the premiums. Under quota share split, the insurance and losses are shared according to some pre-agreed percentage. For example, if a 100,000 birr policy is written and the agreed split is 50-50, the reinsurer assumes on half of the liability; the insurer and the re-insurer each pays one-half on any loss.

The method is not greatly favored because it means paying away proportion of the premium income where the direct office might safely retain the whole of risk. It is, however, a useful method for small offices or those starting up a new class of business where in the early days one or two heavy losses could swallow up all the income. The method is sometimes also used between parent and subsidiary companies.

Surplus Share Reinsurance: Under surplus share reinsurance the ceding company decides what its net retention will be for each class of business. The direct office cedes to the reinsurer only those amounts, which it does not which to should for its own account the surplus or its retention. The re-insurer does not participate unless the policy amount exceeds this net retention. This retention is known also as a "line" and reinsures have a maximum capacity of so many lines, or so many times the direct office‟s retention.

For example, if the agreement calls for cession of up to "ten lines" and the direct office retain 25,000 birr, then ten times this amount can be ceded to the reinsurer, i.e., 250,000 birr: in this way sums insured up to 275,000 birr can be accepted by the direct insurer knowing that he automatically has the reinsurance he requires. It is of course not necessary (or possible) to fill the whole capacity of the reinsurance treaty on each individual acceptance: sometimes the acceptance will be entirely within the direct insurer‟s retention and the treaty will not be interested at all, and on other occasional the treaty underwriters will only be ceded a limited amount which they divide equally between them.

Using the earlier example of a ten line reinsurance treaty the position of the treaty (reinsures) in different circumstances would be as follows:

Original Sum Insured	Direct Insurer's Retention	ceded to Treaty	Proportion to Treaty (reinsurance)
25,000	25,000	NIL	NIL
50,000	25,000	25,000	50%
100,000	25,000	75,000	75%
275,000	25,000	250,000	90.9%
300,000	25,000	250,000*	83.3%

The balance of 25,000 birr would have to be reinsured facultative of under a second reinsurance treaty.

Excess of Loss Reinsurance

In this form of reinsurance the direct insurer decides the maximum loss arising from any event or series of events he is prepared to bear, and then arranges with reinsurers for them to pay the excess of that amount up to an upper limit. The reinsurer agrees to be liable for all loses exceeding a certain amount on a given class of business during a specific period.

For example, the primary insurer may be prepared to pay up to 50,000 birr any one loss, and he secures reinsurance for the excess of 50,000 birr up to a further 200,000 the way in which various losses are divided is shown below:

Loss	Direct Insurer	Excess Treaty (Re-insurer)
10,000 birr	10,000 birr	NIL
50,000	50,000	NIL
70,000	50,000	20,000
100,000	50,000	50,000
250,000	50,000	200,000
300,000	100,000*	200,000

i.e., its original retention of birr 50,000 birr plus a further birr 50,000 excess of the treaty"s (reinsures) liability.

Such a contract is simple to administer because the reinsures are liable only after the ceding company has actually suffered the agreed amounts of loss. Since the probability of large losses is small, premiums for this reinsurance are likewise small.

QUICK CHECK

Discuss the two methods in which risks can be shared.

Differentiate among quota share reinsurance, surplus share reinsurance and excess share reinsurance.

CHAPTER SUMMARY

Reinsurance may be defined as the shifting by a primary insurer, called the ceding company, of a part of the risk it assumes to another company, called the reinsurer

The most important reasons for reinsurance include the following:

Increase underwriting capacity

Stabilize profits.

Reduce the unearned premium reserve.

Provide protection against a catastrophic loss.

There are two main methods in which risks can be shared:

- Facultative Reinsurance
- Automatic Treaty.

The most important types of reinsurance treaties include:

Quota-share reinsurance.

Surplus-share reinsurance.

Excess of loss reinsurance.

REVIEW QUESTIONS

PART I- TRUE OR FALSE

Instruction: Dear learners, please write true if the statement is correct and write false if the statement is wrong

Reinsurance can be used to increase the insurance company‟s underwriting capacity to write new business

Reinsurance permits the insurer‟s liabilities for existing insurance to be transferred to another carrier; thus, the policy owner‟s coverage remains undisturbed.

Under automatic reinsurance treaty, there is no advance agreement between the ceding company and the reinsurer regarding the sharing of risks and premiums.

Reinsurance provides financial protection against a catastrophic loss.

PART II- FILL IN THE BLANK SPACES

Instruction: Dear Learners, please fill in the blank spaces with appropriate words or phrases

1. Reinsurance may be defined as the shifting by a primary insurer, called the ceding company, of a part of the risk it assumes to another company, called the _____
2. Under an _____ the ceding insurer agrees to pass on to the reinsurer all business included within the scope of treaty, the re insurer agrees to accept this business, and the terms
3. Under _____ the ceding company decides what its net retention will be for each class of business
4. In _____ form of reinsurance the direct insurer decides the maximum loss arising from any event or series of events he is prepared to bear, and then arranges with reinsurers for them to pay the excess of that amount up to an upper limit.

CHAPTER EIGHT

INSURANCE IN ETHIOPIA

LEARNING OBJECTIVES

At the end of this chapter, learners should be able to:

Know the historical development of insurance in Ethiopia

Understand and explain theories of supervision and regulation

Differentiate between market failure and public choice theories of insurance regulation

Describe the reasons and objectives of insurance regulation

Discuss about licensing and supervision of insurance business in Ethiopia

INTRODUCTION

Dear students, in your earlier studies of the preceding chapters, you have learned about the nature and characteristics of insurance, its principles and limitations and the major types of insurance. In this chapter, you will primarily deal with insurance policies in Ethiopia. A short discussion on the historical development of insurance business is made in the first section. And the second section focuses on the theoretical aspects of regulation and supervision in general. A much greater emphasis has been placed on section three to the licensing and supervision of insurance business in Ethiopia.

8.1. HISTORICAL DEVELOPMENT

Traditional protection of risks in Ethiopia can be found in the form of Edir and Equib where people get in some financial contribution to save themselves and losses of properties from unexpected troubles in the future.

Insurance business in its modern sense in Ethiopia started in 1905 when the then Bank of Abyssinia got underwriting authority in the form of Agency for Fire and Marine Insurance business. This was further followed by Baloise when it set up a branch office in Addis in 1923. The first local insurance company was formed in 1951. Later on the number of insurance companies reached 15 of which two withdrew from business in 1972.

As a result of nationalization of these companies in 1975, proclamation No.68/1975 was declared to form the Ethiopia Insurance Corporation with a capital of Birr 11 million. Since nationalization, its premium production on the average has continuously grown at the rate of 26.5% in 1976 to Birr 300 million in 1994/95. While its claims increased from 20 million in 1976 to Birr 160 million in 1991/92.

With the declaration of proclamation No.86/94, this allowed the licensing and supervision of insurance companies, there emerged seven more than private insurance companies with a total capital of nearly Birr 205 million. The total market that was Birr 50 million in 1976 reached Birr

345 million in two decades time. These insurance companies have reinsurance arrangements with reputable international reinsurers from Munich Re., Swiss Re. etc.

Though there is a growing performance in the industry over the last few years, the industry is facing some problems. The major problems of the existing insurance companies in Ethiopia today are listed below in the order of importance:

Lack of adequate public awareness

II. Shortage of skilled manpower

III. Price cutting

IV. Lack of professional ethics

V. Unfavourable policies

VI. Lack of proper data to conduct business analysis.

8.2. THEORIES OF SUPERVISION AND REGULATION

1. Reasons for Insurance Regulation

Insurers are regulated by the states for several reasons, including the following:

Maintain insurer solvency.

Equity.

Competence.

Insurable Interest.

Provision of certain forms of insurance.

National Insurance.

Maintain Insurer Solvency: Perhaps the greatest step taken by legislation was to introduce solvency margins that were related to premium income. In this way, a ratio was established between the margin and the amount of business undertaken. This prevented certain people with fraudulent aims from providing insurance, and acted as a continual monitor on those already transacting it.

Equity: The term equity has been used, but equally suitable would have been morality, fairness or reasonableness, because each implies the fact that an element of fairness must exist between companies and policyholders. The insurance contract is one of considerable complexity and it is essential that controls exist for the protection of policyholders.

Competence: The buying and selling of insurance is unlike many other forms of product purchasing. A tangible product is not being purchased; a promise to provide indemnity, an exact compensation, is what is being bought and sold. Those who deal in such promises must be competent persons and able to fulfill their pledges when the need arises. Therefore, regulations are necessary in the management of insurance and investment business.

Insurable Interest: Insurable interest is one of the basic doctrines of insurance. Governments have found it necessary to introduce legislation in order to eradicate any element of gambling. It was not acceptable that unscrupulous persons could benefit by effecting policies of insurance where they had no financial interest in the potential loss, other than the profit they would make if it occurred.

Provisions of certain forms of insurance: An element of intervention has been in evidence where forms of cover have been make compulsory, as the case of employers" liability and third party motor accident injuries. The intervention is not in the provision of cover by government, but in establishing the nature of the cover to be granted.

National Insurance: For some areas of social risk, the Governments" intervention has been total and it has assumed the responsibility for providing certain covers. This has been case in areas such unemployment, sickness and widows benefits; the state carries the risk under the National Schemes.

The Ethiopian Insurance Corporation is the sole entity, which is responsible for all affairs and practices of the insurance industry in the country. The general objectives and function of the corporation being to:

Engage in all classes of insurance business in Ethiopia.

Ensure that insurance services reach the broad masses of the people.

Subject to government regulations and provisions, promote efficient utilization of both material and fanatical insurance resources.

Enter into contract.

Appoint agents or act as an agent for other in matters related to its activities.

Manage, administer, supervise, and direct all insurance business transactions and

Negotiate, arrange, underwrite and contract reinsurance treaties and with foreign re-insurers.

Approaches to Government Control of Business

Broadly speaking, government control of business takes one of two forms, paralleling the two economic philosophies just noted, **antitrust** and **regulation**.

Antirust concentrates on maintaining competition, while regulation requires the application of specific performance standards to the firms in an industry. The principal objective of antitrust is to curtail monopoly power. It focuses on preventing collusion, opposing mergers that lead to excessive concentration, and abating market power. The theory of antitrust is competition; competition will result in the welfare.

Regulation, in contrast to antitrust, represents a more direct involvement of government in the affairs of business. It usually consists of two types of actions by government: restricting entry into the market (usually on the grounds that competition is to be infeasible, but sometimes on other grounds) and controlling prices to guarantee that the firms in an industry do not obtain excessive profits. In a sense, regulation replaces competition in industries that are natural monopolies or industries that are considered to have special importance in size or influence.

Understanding why regulation sometimes fails to deal with the economic problems it is intended to solve.

The Market Failure Theory of Regulation

The predominant theory of regulation is the market failure theory, which is based on the view that the purpose of regulation is to correct market failures. A "market failure" occurs when the free market produces too much or too little of a product or a service at a price that is too high or too low. The classic example of a market failure occurs in the case of a monopoly with the incentive and the ability to produce too little and charge too much for a product.

Another market failure is an unstable competitive process that leads to destructive competition. Still another is a lack of safety or security for consumers in financial markets or industries of a fiduciary nature. The role of regulation under the market failure theory is to restrict the actions of firms in an industry, forcing them to behave in a manner that will produce results as near as possible to those that would occur in a competitive market.

The public Choice Theory of Regulation

Regulatory systems are complicated, cumbersome and costly and there is a serious question as to whether they achieve their intended purpose. Indeed, it is clear that they sometimes produce objectionable results. Proponents of regulation argue that the defects of regulation are due to legal and procedural problems that can be corrected by reform of the regulatory system. Another view is that the market failure theory simply does not explain the way regulation works in the real regulatory agencies and suggests that regulators operate under an entirely different set of incentives.

The public choice theory of regulation views regulation as a part of a political economic system that serves to reallocate wealth amount the majority in a political economic market place. It is based on the fact that every regulation reallocates resources and in the process makes same regulators perform the same function as legislators in imposing "taxes" on some groups (the regulatory "tax payers") and dispensing "benefits" to others (the regulatory recipients). Any proposed regulation will attract the attention of both payer and beneficiaries and they will express their opposition or support though political and economic channels. The major goal of

regulation is to transfer resources to groups that generate the most support for the program in a manner that minimizes opposition to the regulatory tax.

The most important implication of the public choice theory is the conclusion that regulation will tend to favour (subsidize) relatively small and well organized groups that have a high per capita stake in the regulation, at the expense of relatively large poorly organized groups with a lower per capital state.

Importance of the two theories

Both the market failure theory and the public choice theory of regulation are important in understanding the regulation of insurance. While the market failure theory remains the standard against which regulatory programs should be measured, the public choice theory helps to explain why regulation in some areas departs from this standard.

2. Objectives of Regulation

The main objective is to protect the policyholder‟s interest. This is particularly important given the long time nature of most life insurance policies. Even non-life insurance claims are not reported and settled until a considerably much time after the contract was enforce. The insured pays his premium at the very beginning of the contract, but before the insurer performs his part, time may have changed the insurer‟s financial strength to pay its commitment. Hence regulation must be in place to ensure that insurers remain solvent and financially strong to pay claim benefit for the insured whenever needed.

Regulation helps to maintain public confidence in the insurance industry. The on going supervision of insurers will often make the public place their insurance need on insurance companies with trust. Regulation also helps to have healthy and competitive insurance market and to avoid incidences of market failure and imperfections. When the insurance market is healthy and competitive, the policyholders may get a wide range of products at reasonable rates.

QUICK CHECK

List the major problems of insurance companies in Ethiopia

What are the rationales for insurance regulation in Ethiopia?

Discuss the general objectives and functions of Ethiopian Insurance Corporation

Differentiate between market failure theory and public choice theory of regulation

What are the main objectives of insurance regulation?

8.3. LICENSING AND SUPERVISION OF INSURANCE BUSINESS IN ETHIOPIA

The government of Ethiopia has adopted a new economic policy to guide the country"s economic development direction. Under the new economic policy, the involvement and active participation of all economic sectors in the economy is called for. To this end, there arisen a need for a new and comprehensive law that governs the licensing and supervision of insurance business to enable the full participation was stipulated. Dear student, in the forthcoming sections, we will discuss about some of the points related with the licensing and supervision proclamation, viz., Proclamation No.86/94.

Functions of the National Bank of Ethiopia

The licensing and supervision proclamation attempts to figure out some of the functions expected to be played by the National Bank of Ethiopia in connection with insurance businesses be licensed to operate in Ethiopia. The principal functions of the National Bank of Ethiopia with regard to insurance business are to formulate policy:

To promote the business of insurance in Ethiopia

In respect of reinsurance and of investments of insurance funds and

On such other matters as may be conductive to the attainment of sound insurance business in Ethiopia.

Conditions for insurers

The proclamation also discusses some more points in connection with the conditions that need to be fulfilled to operate in the insurance industry of the country. Accordingly, in order to carry on insurance business in Ethiopia, any person is expected to meet the following conditions.

It has to be a company. Insurance businesses need to have their separate legal personality as a separate entity, distinct from its owners. As such they will have an artificial (judiciary) personality created by law and carrying limited liability.

As stipulated in the commercial code of Ethiopia, the minimum capital required for a share company is Ethiopian Birr 50,000. However, proclamation no.86/94 demands a much bigger figure for minimum share capital. The capital requirement also varies with the types of insurance being carried on. Thus, the insurance share capital should not be less than:

Birr 3,000,000 if the business is a **general insurance** business
Birr 4,000,000 if the business is a **long-term insurance** business
Birr 7,000,000 if the business is a both **general** and **long-term insurance** business.

The insurer is required to deposit cash in its own name to the amount of the capital stated above. Deposit requirements, as will be discussed in the subsequent pages, will also be extended to statutory reserves, as a percentage of paid up capital and legal reserves, a percentage of annual profits of insurer.

The insurance company, after fulfilling the requirements set by proclamation No.86/94 and the National Bank of Ethiopia, needs to obtain a license for operation.

It needs to have principal officers that meet the standard set by the National Bank.

Shares

The proclamation also discusses about the features of the shares to be issued by the insurance companies. In this regard, it indicates insurance companies to issue only one class and registered ordinary shares of the some par value. In addition, the proclamation prevents owning of more than twenty percent (20%) of the company‟s share by any one person or with persons related with him to first degree.

Licensing of Insurers

Persons should get the license for the particular class or classes of insurance business they would like to operate. In addition, the proclamation stipulates that every application for the grant of a license should be accompanied by memorandum and articles of association, insurance policy forms and such other particulars as may be prescribed by directive to be issued by the National Bank. A license granted by the National Bank shall constitute final authorization to carry on insurance business in Ethiopia.

Cancellation of licenses

The National Bank may cancel the license of an insurer either wholly or in so far as it relates to a particular class of insurance business:

If the provisions stated in the proclamation are not being complied with by the insurer.

If the margin of solvency of the insurer fails below the line provided.

If the insurer, at anytime during the period of validity of the license injects his funds, moneys or assets or any part thereof in investments prohibited by law.

If the business or a class of business of the insurer has been transferred to or amalgamated with any other insurer.

If the insurer carries on business other than insurance business without the authorization of the National Bank or any class of insurance other than the one for which he is licensed.

If the insurer has not conducted any insurance business for twelve months after the grant of license.

If the insurer has failed to comply with the requirements of the NBE.

Statutory Deposits

The proclamation stipulated articles with regard to the amount of deposits to be made by the insurance companies as well. According to it, every insurer shall, in respect of each main class of insurance business he carries in Ethiopia, deposits and keeps with the National Bank an amount equal to fifteen percent (15%) of his paid up capital, in government securities.

The deposit specifies above shall be held to the credit of the insurer provided that the aforesaid deposit or any part thereof shall not be withdrawn except with a written permission of the NBE, nor shall such deposit be used as a pledge or security against any loan or overdraft.

Legal reserve

According to this same proclamation, every insurer shall credit for ten percent (10%) of his annual profit into its legal reserve account. As soon as the amount deposited in the legal reserve equals the capital of the insurer, it shall maintain other reserves as may be determined by the National Bank.

Reserve Accounts (Provisions)

In addition to the aforementioned reserves, every insurer is required to maintain provisions for:

Premium that have already been collected but the risks have not yet materialized.

Claims that are outstanding.

Insured claims but not yet reported, and

Others similar matter to be determined by the Bank

Preparation of Accounts

Every insurer shall, in respect of all insurance business transacted by him prepares statements showing its financial position at the expiration of each financial year with reference to that year.

These financial statements include:

A balance sheet in the prescribed form, showing the financial position of the company at a specific date for each financial year.

A profit and loss account in the prescribed form in respect of each required to prepare revenue account in the prescribed form in respect of each class of insurance business for which the insurer is required to keep separate account of income and expenditure.

The statements referred to above should be signed by the chairman of the board of directors and the principal officer of the insurer and shall be deposited with the Bank within three months from the end of the financial year to which the statement relates.

Licensed insurance auxiliaries only to act as such

The proclamation disallows any party from acting as an auxiliary or an actuary unless he obtains a license a authorizing him to act as such by the NBE. A license to act as an insurance agent, insurance broker, assessor, insurance surveyor or actuary will be granted by the national bank of Ethiopia upon the receipt of a fee set and an application.

In addition, the proclamation stipulates that it would be unlawful for any insurer to:

Appoint an actuary or
Appoint an insurance agent or
Entrust any work of assessing insurance claims to an insurance assessor and pay brokerage to any person whether an individual, a firm or a company which is not licensed or whose license has expired and not been renewed or has been cancelled.

Investigation

The National Bank, as stated earlier, is given the authority to license, supervise and regulate the insurance business. To this effect, the bank may, at any time investigate the affairs of any insurer. The bank may, whenever necessary employ trust worthy and qualified persons or firms for the purpose of assisting its investigation. On receipt of any report the Bank after giving the insurer such an opportunity to be heard as it thinks, in connection with the report by order in writing, may:

Require the inspected or examined insurer to call a meeting of its board of directors for the purpose of considering any matter arising out of or relating to the affairs of such insurer or require an officer of such insurer to discuss any such matter with an officer of the Bank.

Depute one or more of its officers to watch the proceeding at any meeting of the board of directors of the inspected or examined insurer or of any committee or of any other body constituted by it, require the inspected or examined insurer to give an opportunity to offices so deputed to be heard at such meetings.

Require the insurer to take such action in respect of any matter arising out of the report as the Bank may think.

Prohibit the inspected or examined insurer from under writing new insurance policies and publish a notice of such prohibition in news papers of general distribution.

Order the removal of one or more of the directors and officials of the inspected or examined insurer.

Direct the inspected or examined insurer to temporarily suspend business in whole or in part.

Revoke the license of the inspected or examined insurer.

Initiate a liquidation procedure.

Appointment of Administrator

Any insurer should do its business in a manner that keeps the interests of its policyholders. However, in case where the Bank has evidence that the insurer carrying on long term insurance business is acting in a manner likely to be prejudicial to the interests of holders of long term insurance policies, it may, after giving such an opportunity to the insurer to be heard as it thinks fit, appoint an administrator to manage the affairs of insurer under its direction.

The insurer, however, may apply to the high court for such act of the bank. The high court may on the application of the insurer, revoke, for good cause, the appointment of the administrator or may if the appointment of an administrator is in the court‟s opinion justified; either confirms the appointment made by the Bank or appoints a new administrator.

Power and Duties of Administrator

The administrator appointed by the Bank or the federal high court will conduct the management of the business of the insurer and shall, as soon as practicable, file with the bank a report stating the course which in his opinion shall be most advantageous to the general interests of the holders of insurance polices. The Bank shall, after examining the report filed with it take measures it thinks appropriate, including, where necessary, legal action to promote the interest of holders of insurance polices in general.

Restrictions on Loans, Advances etc by an Insurer

No insurer shall grant any loan, advance, financial guarantee or other credit facility against the security of its own shares. This restriction doesn‟t apply to loans on life polices issued by him within their value to any shareholder or the insurer or to any director, manager, actuary, auditor or offices.

Power of Bank regarding returns

It has already been discussed that the insurer is required to submit financial statements at the end each financial year. However, where it appears to the NBE the returns are inaccurate or defective in any respect it may require from the insurer such further information, certified where it so directs by an auditor or actuary as the cases may be to correct or supplement such returns or can upon the insurer to submit for its examination only books of account, register or other document or any other statement which it may specify in a notice served on the insurer for the purpose.

Power of the Bank to order Revaluation

In addition to regulating, further information on returns, if it appears to the NBE that the returns by reason of wrong method of valuation, doesn‟t properly indicate the condition of the affairs of the insurer, it may after giving to the insurer a notice and an opportunity to be heard may order re investigation or re-valuation to be made by the actuary.

The insurer should place at the disposal of an actuary all the information records and materials for the purpose of re-investigation or re-valuation.

Certification of soundness of Terms of Insurance Business

The NBE will conduct activities to the effects of insuring that the terms of insurance polices safeguard the rights of policy –holders, under the laws of Ethiopia. Where at the time of considering an application for a license or a license or at any other time, the insurance businesses are in any respect not workable or sound, the insurer may require the bank to certify that the said rates, advantages terms and conditions are workable and sound.

Power of issue directives to be issued by the bank

The bank also regulates the manner, in which reinsurance business may be transacted, fees for insurers and insurance auxiliaries‟ licenses, winding up of insurer. In addition, the bank is

empowered to apply to the court for the dissolution of an insurer whose license has been cancelled. The court may dissolve an insurer on the petition of the bank.

Amalgamation

No insurer can amalgamate with or takes over the insurance business of another insurer except with the prior approval of the bank. Schemes of amalgamation approved by the bank will be affected in accordance with the procedure laid down in the commercial code. The manual of issuing shares by insurers and the transfer or assignment by shareholders of shares. The minimum academic qualification and practical experience to be possessed by actuaries and insurance auxiliaries:

Investment government securities within specified limits.

Investments in which insurers may not invest their money, assets of funds. Limits for reinsurance business which insurers may place with non-domestic insurers. Procedure for investigation to be made by the bank into the affairs of insurers and any others matter which is necessary for supervision of insurance business will be issued by the bank.

QUICK CHECK

Explain the principal functions of the National Bank of Ethiopia with regards to insurance business

What are the conditions to be meet by insurers in order to start insurance business?

In what conditions National Bank may cancel the license of an insurer either wholly or in so far as it relates to a particular class of insurance business

What are the minimum academic qualification and practical experience to be possessed by actuaries and insurance auxiliaries?

CHAPTER SUMMARY

Insurance (the insurer) has to maintain its solvency adequately at all times to ensure that it can discharge its obligation and there by up hold its credibility. Since the magnitude of the liability element at a future date is uncertain, it follows logically that an insurer not only needs solvency by matching assets value against the aggregate of abilities, it must also provide additional margin to take care of fluctuation in the provisions made.

Adequate protection of consumer interest in the above described context is vital and it thus becomes obvious that in any given environment of insurance operation, be it controlled or free market, there is a need for regulation by an independent authority to preserve the interests of both the policy holders and insures appropriately so that the entire activity of insurance is developed in a manner that serves the best long term interest of the community as a whole.

Regulation helps to maintain public confidence in the insurance industry. The on- going supervision of insurers will often make the public place their insurance need on insurance companies with trust.

There are many possible factors that contribute to the likelihood of the occurrence of insolvencies. Among these the following can be traced as an example:

Improper under writing reserving and claim handling

Inappropriate investment strategy

Inadequate solvency margin

Incompetent management

REVIEW QUESTIONS

PART I- TRUE OR FALSE

Instruction: Dear learners, please write true if the statement is correct and write false if the statement is wrong

Antirust concentrates on maintaining competition, while regulation requires the application of specific performance standards to the firms in an industry

The predominant theory of regulation is the market failure theory, which is based on the view that the purpose of regulation is to correct market failures.

The main objective of regulation is to protect the policyholder‟s interest.

The insurance share capital should not be less than Birr 4,000,000 if the business is a general insurance business.

The National Bank may cancel the license of an insurer either wholly or in so far as it relates to a particular class of insurance business, if the margin of solvency of the insurer fails above the line provided.

Any insurer should do its business in a manner that keeps the interests of its policyholders

No insurer shall grant any loan, advance, financial guarantee or other credit facility against the security of its own shares

No insurer can amalgamate with or takes over the insurance business of another insurer except with the prior approval of the bank.

PART II- FILL IN THE BLANK SPACES

Instruction: Dear Learners, please fill in the blank spaces with appropriate words or phrases

1.Traditional protection of risks in Ethiopia can be found in the form of ____and ____

2.Insurance business in its modern sense in Ethiopia started in 1905 when the then Bank of Abyssinia got underwriting authority in the form of Agency for _____ and _____

3.Broadly speaking, government control of business takes one of two forms, paralleling the two economic philosophies just noted, _____ and _____

4._____ views regulation as a part of a political economic system that serves to reallocate wealth amount the majority in a political economic market place

5._____ , is given the authority to license, supervise and regulate the insurance business

ANSWER KEYS

CHAPTER ONE

PART I

True

False

True

False

True

True

True

False

PART II

Pure risk

Personal risks

Premature death

A direct loss

Static risks

Dynamic risks

Moral hazard
Morale hazard
Pure risk
Objective risk

PART III

C

A

B

C

A

CHAPTER TWO

PART I

C

B

D

E

C

PART II

Flow charts
Insurance
Loss frequency
Avoidance
Posterior or Empirical probabilities
Loss severity
Concurrent Activities
frequency reduction or Loss Prevention
The law of large numbers
Risk management

PART III

True
True
True
False
True
False
True

CHAPTER THREE

PART I

Pooling
Risk transfer
Indemnification
Underwriting
The manual or class rating
Single line insurance organizations

PART II

True
False
True
True
True

PART III

F
E
E
C
B

CHAPTER FOUR

PART I

A
D
C
C
B
E
E

PART II

False
True
True
True
False
False
False
True
False
False

PART III

Replacement cost

A valued policy law

Subrogation

Material, false, and relied on by the insurer

Concealment

Representations, warranties

Contribution

An aleatory contract

Adhesion

Broad evidence rule

CHAPTER FIVE

PART I

B

D

D

E

E

PART II

True

True

True

False

False

False

False

PART III

The family and the employer

Premature death, loss of health, old age and unemployment

Term insurance or cash-value life insurance.

A term insurance

Decreasing term insurance

Current assumption whole life insurance

Juvenile insurance

Home service life insurance

The net single premium

Sickness or bodily injury

PART IV

NSP= 22.0535 birr

NLP= 8.075 birr

CHAPTER SIX

PART I

D

C

E

E

E

PART II

True

False

True

True

False

False

PART III

Marine insurance

Ocean marine insurance

Inland marine cargo

Fidelity guarantee insurance

Burglary

Property , liability

Aviation insurance

Worker‟s compensation insurance

Third party cover

CHAPTER SEVEN

PART I

True

True

False

True

PART II

Re insurer

Automatic reinsurance treaty

Surplus share reinsurance

Excess of Loss Reinsurance

CHAPTER EIGHT

PART I

True

True

True

False

False

True

True

True

PART II

Edir, Equib

Fire, Marine Insurance business

Antitrust, regulation.

The public choice theory of regulation

The National Bank

PART I: Choose the Best Answer

One of the following is not true regarding the definition of risk

Risk is the possibility of an unfortunate occurrence

Risk is unpredictability – the tendency that actual results may differ from predicted results

Risk is possibility of loss.

Risk is uncertainty concerning the occurrence of loss.

Risk is a condition in which there is a possibility of an unfavorable deviation from a desired outcome that is expected or hoped for

None

One is different

Facultative Reinsurance b)

Quota-share reinsurance. c)

Surplus-share reinsurance.

Excess of loss reinsurance.

All

None

A condition that creates or increases the chance of loss is

Uncertainty

Hazard

Peril

Risk

All

None

4. _____ refers to dishonest by an insured that increases the frequency or severity of loss

Physical Hazard

Moral Hazard

Morale Hazard

Legal Hazard

All

None

One of the following is not major requirements of an insurable risk

Accidental and Unintentional Loss

Determinable and Measurable Loss

No Catastrophic Loss

Calculable Chance of Loss

Indemnification

None

One is not sources of underwriter information regarding the hazards inherent in an exposure

Application

Inspections

Observation

Investigations

Information from Agent

None

In certain cases the underwriter will agree to accept an exposure that does not meet the underwriting requirements of the company. Such exposures are referred as

Speculative risk

Accommodation risk

Pure risk

Dynamic risk

All

None

The principle states that the insured should not profit from a loss is called

Principles of subrogation

Principles of indemnity

Principles of insurable interest

Principles of ut most good faith

All

None

Life insurance purchased by a parent or adult on the lives of children younger than a certain age, such as age 14or 15

Juvenile Insurance

Group Life Insurance

Savings Bank Life Insurance

Industrial Life Insurance

All

None

10. insurance indemnifies an employer for any loss suffered at the hands of dishonest employees.

Inland marine cargo insurance

Theft insurance

Fidelity guarantee

Aviation insurance

All

None

PART II: Work Out Questions

Q1. Assume that Baron plc has purchased fire policies from 4 insurers and suffered from risk of fire accident that resulted in property loss of birr 350,000. The total sums insured from is given below

Hibret Insurance Co.	Birr 240,000
Anbesa Insurance Co.	170,000
Awash Insurance Co.	340,000
Nile Insurance Co.	230,000
Total sums insured	**Birr 980,000**

Required; determine the contribution of each insurer based on

Contribution according to independent liability method

Contribution according to sums insured method

Q2. ABC manufacturing produces three different types of products; A, B, and C. The probability that a firm will be sued for a defective product of type A, B and C is 0.01, 0.02 and 0.10 respectively. Determine the probability of the firm under the following independent assumptions:

Will not be sued

Will be sued for defective products of all the three types?

Will be sued for a defective product of either type B or types C?

Q3. Given the following probability distribution for a business of total property losses per year:

Loss amount	Probability of each event
$0	0.700
$500	0.150
$1,000	0.008
$5,000	0.100
$10,000	0.036
$15,000	0.005
$50,000	0.001
	1.000

What is the probability that the business will suffer some birr loss in the next year?

What is the probability that the business will suffer losses totaling birr 5,000 or more?

What is the expected birr loss?

If the standard deviation is birr 2,200, how can we measure the risk?

What is the maximum possible loss? The maximum probable loss?

Q4. Suppose the marks obtained by students of Accounting and Finance in the examination of risk management and insurance are normally distributed with mean of 47.64 and standard deviation of 14.71. If A is greater than or equal to 60 and F is less than or equal to 40, Find

The probability of getting an A.

The probability of getting an F.

Q5. A manufacture of light bulbs knows that 2 % of his production is defective bulbs. Find the probability that a box of 100 bulbs contains at most 3 defectives.

Using the binomial distribution.

Using Poisson approximation for binomial distribution

Q6. Given the following information, compute NSP and NLP

A 5 year term policy for birr 18,000 to be insured at the beginning of the year

The number of policy holders at age 26 is 760,000

Interest rate is 12 %

Age	Number Living	Number dying
26	760,000	1453
27	780,960	1625
28	812,120	1695

Q7. Suppose a Manufacturer of TV tubes draws a random sample of 10 tubes. The production process is such that the probability that a single TV tube, selected at random, is defective is 10 percent. Calculate the probability of finding:

exactly 3 defective tubes

no more than 2 defective tubes