CHAPTER SEVEN

INSURANCE: PART TWO

7.1 The Law of Large Numbers

The law of large numbers *states that the greater the number of exposures, the more closely will the actual results approach the probable results that are expected from an infinite number of exposures*.2 For example, if you flip a balanced coin into the air, the *a priori* probability of getting "heads" is 0.5. If you flip the coin only 10 times, you might get heads eight times. Although the observed probability of getting heads is 0.8, the true probability is still 0.5. If the coin were flipped 1 million times, however, the actual number of heads would be approximately 500,000. Thus, as the number of random tosses increases, the actual results approach the expected results.

average loss is substituted for actual loss. In addition, pooling involves the grouping of a large number of exposure units so that the law of large numbers can operate to provide a substantially accurate prediction of future losses. Ideally, there should be a large number of similar, but not necessarily identical, exposure units that are subject to the same perils. Thus, pooling implies:
(1) The sharing of losses by the entire group
(2) The prediction of future losses with some accuracy based on the law of large numbers.

Example: Calculating Average Losses in Auto Insurance

Imagine an auto insurance company that has 1,000 policyholders. Each policyholder has a one-year insurance policy to cover their car against accidents. Based on historical data, the company knows that, on average, 5% of policyholders will file a claim during the year, and that from historical data the average claim amount is Ksh10,000. Assume each policy costs Ksh.1000.

Required: Estimate the average amount it will pay out in claims over the course of a year based on the historical data.

Answer: Policyholders: 1,000, Total Premiums Collected=1000*ksh.1000= Ksh. 1,000,000

Expected Claims: 5% of 1,000 = 50 claims

Total Claims Payout = Number of Claims * Average Claim Amount

Total Claims Payout = 50 claims * Ksh. 10,000 = Ksh. 500,000

Based on the Law of Large Numbers, the insurance company expects to pay out approximately Ksh. 500,000 in claims over the course of the year.

7.2 Requisites for Insurability

Private insurers generally insure only pure risks. However, some pure risks are not privately insurable. From the viewpoint of a private insurer, an insurable risk ideally should have certain characteristics. There are ideally six characteristics of an insurable risk:

- There must be a large number of exposure units.
- The loss must be accidental and unintentional.
- The loss must be determinable and measurable.
- The loss should not be catastrophic.
- The chance of loss must be calculable.
- The premium must be economically feasible.

i. 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. 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 over all insured's in the underwriting class.

ii. Accidental and Unintentional Loss

A second requirement is that the loss should be accidental and unintentional; ideally, the loss should be unforeseen and unexpected by the insured and outside of the insured's control. Thus, if an individual deliberately causes a loss, he or she should not be indemnified for the loss. The loss should be accidental because the law of large numbers is based on the random occurrence of events. A deliberately caused loss is not a random event because the insured knows when the loss will occur. Thus, prediction of future experience may be highly inaccurate if a large number of intentional or non-random losses occur.

iii. 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 a monthly benefit to the disabled 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. Sickness and disability are highly subjective, and the same event can affect two persons quite differently.

iv. No Catastrophic Loss

The fourth requirement is that ideally the loss should not be catastrophic. This means that a large proportion of exposure units should not incur losses at the same time. 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 viable arrangement by which losses of the few are spread over the entire group. Insurers ideally wish to avoid all catastrophic losses. In reality, however, that 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 problem of a catastrophic loss. First, reinsurance can be used by which insurance companies are indemnified by reinsurers for catastrophic losses.

Reinsurance *is an arrangement by which the primary insurer that initially writes the insurance transfers to another insurer (called the reinsurer) part or all of the potential losses associated with such insurance.* The reinsurer is then responsible for the payment of its share of the loss.

Insurers can avoid the concentration of risk by dispersing their coverage over a large geographical area. The concentration of loss exposures in a geographical area exposed to frequent floods,

earthquakes, hurricanes, or other natural disasters can result in periodic catastrophic losses. If the loss exposures are geographically dispersed, the possibility of a catastrophic loss is reduced.

Finally, financial instruments are now available for dealing with catastrophic losses. These instruments include catastrophe funds, which are designed to help fund catastrophic losses.

v. 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 yields 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 severity of losses is difficult.

vi. Economically Feasible Premium

A final requirement is that the premium should be economically feasible. The insured must be able to afford 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 percent, the cost of the policy will exceed the amount that the insurer must pay under the contract.

7.3 Distinct features of Insurance Contracts

Other than the normal features of every contract, Insurance contracts have distinct legal characteristics that make them different. These unique characteristics are:

- Aleatory contract
- Unilateral contract
- Conditional contract
- Personal contract
- Contract of adhesion

a) Aleatory Contract

Aleatory contract has a chance element and an uneven exchange. Under such contract the performance of at least one of the parties depend on chance and the party promises to do much more than the other party. An insurance contract is aleatory rather than commutative. An aleatory contract is a contract where the values exchanged may not be equal but depend on an uncertain event while a commutative contract is one in which the values exchanged by both parties are theoretically equal .

b) Unilateral Contract

An insurance contract is a unilateral contract. This means that the court will enforce the contract in one direction only.i.e. against one of the parties and in this case, the insurer. Soon after the insurer has received premiums from insured, the insured has fulfilled his part of the agreement. 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 to 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.

c) Conditional Contract

An insurance contract is a conditional contract. That is, the insurer's obligation to pay a claim depends on whether the insured or the beneficiary has complied with all policy conditions. Conditions *are provisions inserted in the policy that qualify or place limitations on the insurer's promise to perform.* The conditions section imposes certain duties on the insured if he or she wishes to collect for a loss. Although the insured is not compelled to abide by the policy conditions, he or she must do so to collect for an insured loss. The insurer is not obligated to pay a claim if the policy conditions are not met. For example, under a homeowner's policy, the insured must give immediate notice of a loss. If the insured delays for an unreasonable period in reporting the loss, the insurer can refuse to pay the claim on the grounds that a policy condition has been violated.

d) Personal Contract

Insurance contracts are personal contracts. Though subject of a property contract. Through subject of a property contract is an item of property the contract insurer the legal interest of a person or an entity not property itself. If the owner of a property that is insured sells it the new owner is not insured under the contract. This reduces the likelihood of moral hazard that could arise if the identity of the insured were not known by the insurer.

e) 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. Although the contract can be altered by the addition of endorsements and riders or other forms, the contract is drafted by the insurer. To redress the imbalance that exists in such a situation, *the courts have ruled that any ambiguities or uncertainties in the contract are construed against the insurer.* If the policy is ambiguous, the insured gets the benefit of the doubt.

The general rule that ambiguities in insurance contracts are construed against the insurer is reinforced by the principle of reasonable expectations. *The* principle of reasonable expectations *states that an insured is entitled to coverage under a policy that he or she reasonably expects it to provide, and that to be effective, exclusions or qualifications must be conspicuous, plain, and clear*

7.4 Factors affecting the Value of insurance Premiums

The value of insurance premiums, or the cost of insurance coverage, is influenced by various factors. Insurance companies use a combination of these factors to calculate premiums for policyholders. Here are some key factors that affect the value of insurance premiums:

1. **Type of Insurance**: The type of insurance coverage the insured need plays a significant role in determining the premium cost. Auto insurance, health insurance, life insurance, and property insurance all have different risk profiles and cost structures.
2. **Coverage Amount**: The more coverage the insured require, the higher the premium will be. For example, in life insurance, a policy with a higher death benefit will have a higher premium.

3. **Risk Factors**: Insurance companies assess the risk associated with insuring the policyholder. For instance, in auto insurance, factors like driving history, age, and the make and model of the vehicle can impact the premium. Similarly, in health insurance, the insureds age, pre-existing medical conditions, and lifestyle habits are considered.
4. **Location**: Where the insured live or operate affects insurance premiums. For example, if the insured live in an area prone to natural disasters, like hurricanes or earthquakes, property insurance premiums may be higher.
5. **Deductibles**: The insureds choice of deductible i.e. the amount the insured pay out of pocket before insurance coverage kicks in can impact premiums. Higher deductibles typically result in lower premiums, but the insured will pay more if a claim occurs.
6. **Claims History**: The insured's personal or business claims history is significant. If the insured have made multiple claims in the past, insurance companies may view the insured as a higher risk and charge higher premiums.
7. **Occupation**: Certain occupations are riskier than others. Insurance companies consider the insured's profession when calculating premiums. For example, a firefighter may pay higher life insurance premiums than an office worker.
8. **Policy Type**: The specific policy the insured choose can impact premiums. For example, a term life insurance policy will generally have lower premiums than a whole life insurance policy.
9. **Bundling**: Some insurance companies offer discounts if the insured bundle multiple insurance policies (e.g., home and auto insurance) with them.
10. **Government Regulations**: Insurance premiums can also be influenced by government regulations and state-specific insurance laws.