LEARNER GUIDE

Unit Standard Title:	**Demonstrate knowledge and understanding of the fundamental principles of risk finance in order to propose an insurance solution**
Unit Standard No:	**242562**
Unit Standard Credits:	**5**
NQF Level:	**5**

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Demonstrate knowledge and understanding of the fundamental principles of risk finance in order to propose an insurance solution

On completion of this module, the qualifying learner will be able to:

- Explain the concept of risk transfer as opposed to insurance.
- Explain the limits of insurance and risk retention/risk transfer parameters.
- Explain the different facilities involved in risk transfer.
- Propose an insurance solution to transfer risk in a business entity

Introduction

Prior to the eve of the year 2000, thousands of people flocked to the stores, stocking up on numerous supplies. They feared that something catastrophic was going to take place once the clock struck midnight, and if so, they wanted to be prepared. Is it not a form of insurance? Sure – in its basic definition. The supplies they purchased would act as reimbursement in the case of loss.

In order for the concept of insurance to arise, a pre-payment of some type is required. In the case of typical, everyday general vehicle, health and life insurance, for example, the pre-payment is in the form of a premium.

In the 19th century, many societies were founded to insure the life and health of their members. Fraternal orders were created to provide low-cost insurance strictly for their members. Today, many of these fraternal orders and labour organizations still exist. Most employers offer group insurance policies for their employees, providing them with life insurance, sickness and accident benefits, and pensions.

Insurance was the accepted thing to do. Everybody needed to protect themselves against the many risks in life. Farmers wanted crop insurance.

People wanted deposit insurance at their banks. Travellers wanted travel insurance. Everybody turned to insurance companies to give them peace of mind.

And really, isn't that what insurance is – the paying of a premium to protect against some form of loss?

In everyday usage, risk means 'the danger (or uncertainty) of injury, damage or loss'. In a financial services environment, risk refers to the uncertainty of achieving the expected rate of return on an investment, or of suffering a physical or financial loss – quantified in terms of the probability of these outcomes.

The short-term insurance sub-sector addresses the risk of damage to, or loss of physical assets, and the financial consequences. However, insured parties cannot gain from short-term insurance contracts, which only indemnify them against loss. Investors may gain (more than they expect) from risky investments, but they may also suffer a serious loss, perhaps even losing their capital. (Substantial gains or losses are most likely in high-risk investments.)

Module 1

The concept of risk transfer as opposed to insurance

This module looks at:

- Reasons why an organisation would seek to transfer risk, with examples
- The underlying principles of risk transfer with examples
- Possible indicators of risk tolerance in a business in order to determine ways of mitigating risk

1.1   Reasons why an organisation would seek to transfer risk, with examples

In the terminology of practitioners and scholars alike, the purchase of an insurance contract is often described as a "transfer of risk." However, technically speaking, the buyer of the contract generally retains legal responsibility for the losses "transferred", meaning that insurance may be described more accurately as a post-event compensatory mechanism.

For example, a personal injuries insurance policy does not transfer the risk of a car accident to the insurance company. The risk still lies with the policy holder namely the person who has been in the accident. The insurance policy simply provides that if an accident (the event) occurs involving the policy holder then some compensation may be payable to the policy holder that is commensurate to the suffering/damage.

Some ways of managing risk fall into multiple categories. Risk retention pools are technically retaining the risk for the group, but spreading it over the whole group involves transfer among individual members of the group. This is different from traditional insurance, in that no premium is exchanged between members of the group up front, but instead losses are assessed to all members of the group.

For those charged with the responsibility of transferring risks of loss to others, you know it can be a thankless task. Do risk management / transfer have a meaningful role in your organization's contracting process, or is it an afterthought? Is input from risk management expected without full knowledge of the big picture? Do you see the whole contract or just the insurance and indemnification provisions? Are business agreements loosely worded without the benefit of legal or risk management review?

Whether it's the risk manager or the chief financial officer with the added responsibility for risk management, the practice of transferring risk is often still perceived as a roadblock to business deals rather than the creation of a safety net for the organization.

If your organization is (1) allowing its premises to be used or leased by others, (2) contracting with others to perform services or (3) acquiring another organization, opportunities exist to transfer risks of loss to others that control the loss exposures. Too often, however, the importance of the deal takes precedence, and risk transfers

are not properly effected, making your organization potentially responsible for loss exposures for which others should be responsible. You should be vigilant in your risk-transfer efforts so your insurance and self-insurance programs are not needlessly used because of the negligence of others!

Proper risk-transfer techniques include the imposition of reasonable insurance and indemnification requirements on the parties creating the loss exposures. Risk-transfer provisions must also include a detailed means of verifying that the other party to the contract is meeting your risk-transfer requirements.
This is accomplished by requiring the other party to provide you with proof to clearly demonstrate compliance with all insurance requirements. In addition to requiring additional insured status under a a general liability policy, for example, you should require a copy of the additional insured endorsement or policy provision to be attached to the proof in order to provide better documentation of the transfer. Such requirements should be specified in the contract or agreement.

Incorporating requirements into formalized contracts to effectively transfer the risks of loss to the parties that control or create the loss exposures will help reduce your cost of risk. Your insurance underwriters will look more favorably upon your business if such transfers are routinely accomplished, which should result in more favorable pricing.

Your loss experience will also improve if the parties responsible for injuries or damage are the ones required to insure against such injuries or damage, thereby reducing your costs.

Although risk-transfer efforts may occasionally create delays or impediments to programs, activities or business relationships desired or needed by your organization, be assured that there is a value to these efforts. The risk-transfer process yields benefits to companies every year, and all levels of the management team should embrace and support this process.

The transfer of risk is the underlying principle behind insurance transactions. The purpose of this action is to take a specific risk, which is detailed in the insurance

contract, and pass it from one party who does not wish to have this risk (the insured) to a party who is willing to take on the risk for a fee, or premium (e.g., an insurer). For example, whenever someone purchases home insurance, he or she is essentially paying an insurance company to take the risk involved with owning a home. In the event that something does happen to the house, such as property damage from a fire or natural disaster, the insurance company will be responsible for dealing with any resulting consequences.

In today's financial marketplace, insurance instruments have grown more and more intricate and complex, but the transfer of risk is the one requirement that is always met in any insurance contract.

Risk of loss may be transferred by one entity to another in a variety of ways. All methods of transfer fall into three basic categories

- Insurance - transfer to an insurer under an insurance contract
- Judicial - transfer to another party by virtue of a successful legal action
- Contractual - transfer to another party under contracts other than insurance

1.1.1 Standard Contractual Liability Exclusions

When reviewing liability assumed under contract, you have to remember that your liability is insured only to the extent of the coverage provided by the policy. A standard Contractual Liability endorsement carries more than a dozen specific exclusions and usually won't automatically apply to all contracts.

When you transfer your risk to another party, the same concern may be appropriate with respect to the adequacy of insurance protection carried by the other party. Unless the indemnitor is a very large, very profitable firm, its financial ability to assume the risk transferred will be dependent on whether it has insurance applicable to the type of loss involved. In the absence of adequate insurance coverage, the indemnification that you have received may not be worth the paper it's printed on.

1.1.2 What risks of loss can be transferred?

- **Construction -** A company anticipating the construction of a new plant or plant addition may wish to pass some or all of the risk involved on to a general

contractor. The construction contract he signs will determine the degree to which risks of loss inherent in the venture will be retained or transferred. The transfer of the following risks should be considered:

➢ Damage to the building under construction

➢ Construction cost overruns

➢ Employee injuries

➢ Theft of building materials and equipment

➢ Third party injuries

➢ Lost income due to delay in building completion

➢ Loss due to failure to comply with government regulation

- **Leases -** A lease agreement determines the apportionment (between lessor and lessee) of risks of loss arising out of:

➢ Damage to the real or personal property leased

➢ Consequential loss arising out of such damage

➢ Third party injuries

➢ Fluctuations in building (and rental) value

- **Bailee and Carrier Agreements-** Some risk of loss to property placed in the custody of a wide variety of bailees and carriers is almost always transferred. The extent to which it is transferred varies greatly, however.
Bailees and carriers have specifically limited liability under law for property entrusted to them (this is especially true where carriers for hire are concerned). Their responsibility for loss varies greatly depending on the nature of the loss and the conditions under which loss occurs. Under these circumstances, it's obvious that some knowledge of statutory terms and conditions must be acquired before you can determine what risks of loss exist and are subject to transfer in a given situation.
Transfer of risk in the following areas might be considered under specially drawn contracts between involved parties.

➢ Responsibility for loss caused by acts of nature

➢ Responsibility for loss caused by enemy nations

➢ Responsibility for non-negligent loss

> ➤ Responsibility for loss of sale or decline in market value due to delayed delivery

> ➤ Responsibility for loss of profits due to damage to property involved

1.2 The underlying principles of risk transfer with examples

Risk transfer, defined as shifting the responsibility or burden for disaster loss to another party through legislation, contract, insurance or other means, can play a key role in helping to manage natural hazard risk and mitigate or minimise disaster losses.

As the international community places increasing emphasis on disaster risk reduction, there is growing interest in the potential of risk financing solutions, of which risk transfer is a major component, as part of an overall disaster risk management strategy.

Recent developments in this field include the use of a range of risk transfer mechanisms such as catastrophe bonds, catastrophe pools, index-based insurance and micro-insurance schemes.

Social protection programmes such as safety nets and calamity funds can also provide effective financial instruments for managing risk and dealing with natural disaster shocks.

The purpose of applying the principles of risk transfer at every level are:

- identifying and evaluating risks;
- avoiding or eliminating them where practical and;
- minimizing, controlling or contractually transferring them when possible.

The main underlying principles of risk transfer can be summarized as follows:

- When practical, retain risk that can be self-insured from current funds without seriously affecting the financial condition of the organization.
- Purchase insurance coverage when:
  - I. the risk is catastrophic in nature or beyond the capacity of the organization to absorb from current funds and when the purchase of insurance is permitted by law for a state agency; or
  - II. the expenditure for premiums is justified by services incidental to the insurance contract, or other expected benefits; or

III.   required by law or contract.

The procurement of insurance shall be limited to the availability of coverage at a reasonable cost and be subject to the practicality of adopting programs of self-insurance, or self assumption, in whole or in part, consistent with the probable frequency, severity and impact of losses on the financial stability.

Risk transfer is the shifting of the responsibility for meeting one's own losses from oneself to someone else. The transfer of pure risk can take two forms:

1.2.1   The transfer of responsibility for paying losses

The transfer of activity risk is most usually undertaken by sub-contracting that activity – that is, by hiring another enterprise to do the job. In civil engineering contracts for example, underwater works and pile-driving are often sun-contracted.

The whole purpose of the exercise is for the sub-contractor, and not the hirer, to be responsible for losses. The hope is that the sub-contractor will be better able to do the work, with fewer losses, because of his specialist knowledge.

The transfer of responsibility to pay for losses may be undertaken either by insurance or via special clauses placed in contracts of sale, purchase, employment, rent, etc.

Clauses excluding one party to the contract from responsibility for any losses arising in connection with that contract, no matter how caused, are known as exclusion or indemnity clauses, depending on their specific construction.

Exclusion clauses have the effect of relieving one party of liabilities that he might otherwise incur towards another. Indemnity clauses place an obligation on one part to indemnify the one for losses, however caused, that arise out of the performance of the contract.

Insurance is the most common methods of transference of risk. By paying a premium, the insured can transfer the risk of loss to the insurer. The policyholder purchasing full insurance can therefore substitute the unknown cost of losses for a known cost. Often, however, less that full (partial) insurance is purchased. Insurance has several advantages as a method of risk transfer. They include:

- the insured can transfer risk for unexpectedly larger than expected or frequent losses to the insurer

- the insured can substitute a known cost (the premium) for an unknown cost (the losses)

- in any one financial period, premiums paid will only represent a very small proportion of values exposed to the risk of loss

- insurance acts smooth out the payment of losses over time

- in addition to the risk transfer mechanism, the insured also benefits from the insurer's subsidiary functions – specialist advice on claims handling, risk reduction, etc.

- Insurance has several disadvantages:

- not all risks are insurable; in particular, speculative risk

- insurance rarely provide a full compensation for losses – for example, no compensation is paid for use of management time or loss of goodwill

- not all premiums are certain in timing and amount, and they may vary widely from year to year

- in the very long run, the insured will pay more in premiums than he receives in claims

1.3 Possible indicators of risk tolerance in a business in order to determine ways of mitigating risk

What Does Risk Tolerance Mean? Risk tolerance is the degree of uncertainty that an investor can handle in regard to a negative change in the value of his or her portfolio.

An investor's risk tolerance varies according to age, income requirements, financial goals, etc. For example, a 70-year-old retired widow will generally have a lower risk tolerance than a single 30-year-old executive, who generally has a longer time frame to make up for any losses she may incur on her portfolio.

Proper asset allocation is dependent upon two inputs: (1) expected capital market returns and (2) the individual client's desire and ability to tolerate risk. Though much

has been done to explain capital market returns, little has been added to our understanding of the factors which influence client risk tolerance.

As money managers begin the task of allocating a client's money into various investment vehicles they face two potential problems.

First, the money manager may poorly allocate the funds. This can lead to the client either not having the required funds at a desired point in the future or perhaps lead to a loss of client wealth.

The second problem stems from the first; the money manager may be held liable for poor performance.

Individual asset allocation is a twofold process. First, the expected capital market returns must be estimated and second, the risk tolerance of the client must be determined.

Proper measurement of client risk tolerance is essential for suitable asset allocation. To date, asset allocation studies typically possessed the risk measures related to the market, but not the proportions to be invested in the various assets.

There is an ongoing debate exists between psychologists and economists as to what drives the risk tolerance of individuals. Psychologists tend to believe, "that individuals' choices are primarily determined by factors unique to the particular decision setting, whereas economists assume that there is some individual-specific mechanism playing a common role in all economic decisions."

This research, advances a quantitative model for asset allocation which incorporates features of psychological and economic paradigms. The model hypothesizes client risk tolerance to be a function of time horizon, salary, expected salary growth, age, gender, marital status, and number of children.

The hypothesized relationship between perceived client risk tolerance and horizon, client salary, and projected salary growth, are all positive. The longer the planning horizon, the greater the client's salary, and/or the higher the projected salary growth, the more risk the client should be able to tolerate.

Time horizon is often thought to be the most important variable in the allocation process. The fundamental logic underlying this hypothesis is the longer the time period between initial investment and need for monies from the portfolio, the greater

the probability the client can recoup any temporary loss in wealth. Therefore greater risk (with its promise of greater returns) can be assumed by the portfolio.

Client risk tolerance should also be an increasing function of both the client's salary level and anticipated salary growth. Client's with these characteristics should be capable of tolerating a short term loss of principal,and hence capable of accepting higher risk within the portfolio.

Studies which have addressed gender and client risk tolerance, have concluded that men tend to seek out greater risk than do women. Additional factors included in the model relate to marital status and number of children. Being married, divorced, widowed, and/or having children are factors hypothesized to reduce the risk tolerance of the client.

Thus, as marital status moves from that of being single, and/or as the number of children becomes greater than zero, the risk tolerance of the client should decrease.

While conventional wisdom holds that increased risk should lead to increased returns, little work has been done which specifically addresses those elements which identify the determinants of individual risk.

Module 2

The limits of insurance and risk retention/risk transfer parameters

This module deals with:

- Aggregate annual losses using probability theory
- A distribution graph in relation to risk retention and risk transfer
- The risks in an entity to determine which risks could be transferred to insurance (covered in the assessment)
- Knowledge of the cost of insurance to determine risk retention
- The difference between a provision and a reserve with examples

2.1   Aggregate annual losses using probability theory

Probability can be defined as a measure of the likelihood that an event in the future will actually happen.

Let's look at an experiment. A spinning wheel has four equal sectors, yellow, blue, green and red. What are the chances that the wheel will stop on blue after being spun? What are the chances of the wheel stopping on red?

Yellow   Blue
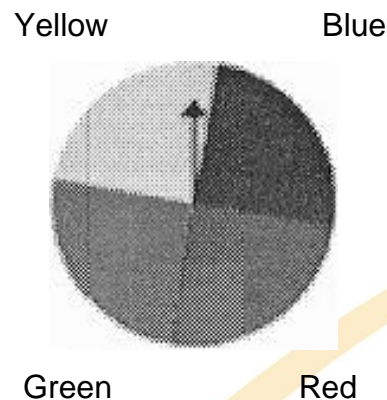
Green   Red

The chances of stopping on blue are 1 in 4, or one fourth.
The chances of stopping on red are 1 in 4, or one fourth.
The chances of stopping on yellow are 1 in 4, or one fourth.
The chances of stopping on green are 1 in 4, or one fourth.

In the experiment, the probability of each outcome is always the same, that is, the outcomes are all equally likely to occur.

Let's now look at an experiment in which the outcomes are not equally likely to occur.
In the next page, a glass jar contains six red, five green, eight blue and three yellow marbles. You have to choose a single marble from the jar.
What is the probability that you will choose a.red marble, a green marble, a blue marble or a yellow marble?
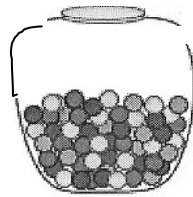
We can calculate the probability as follows:

P (red)	=	Number of red marbles Total number of marbles	=	6 22	3 11
P (green)	=	Number of green marbles Total number of marbles	=	5 22	
P (blue)	=	Number of blue marbles Total number of marbles	=	8 22	4 11
P (yellow)	=	Number of yellow marbles Total number of marbles	=	3 22	

The outcomes in this experiment are not equally likely to occur. You are more likely to choose a blue marble than any other colour. You are least likely to choose a yellow marble.

In the next experiment you must choose a number at random from one to five. What is the probability of each outcome? What is the probability that the number chosen is even? What is the probability that the number chosen is odd?

We can calculate the probability as follows:

P (1)	=	Chances of choosing 1 Total number of numbers	=	1 5
P (2)	=	Chances of choosing 2 Total number of numbers	=	1 5

P (3)	=	Chances of choosing 3 Total number of numbers	=	1 5
P (4)	=	Chances of choosing 4 Total number of numbers	=	1 5
P (5)	=	Chances of choosing 5 Total number of numbers	=	1 5
P (even)	=	Chances of choosing an even number Total number of numbers	=	2 5
P (odd)	=	Chances of choosing an odd number Total number of numbers	=	3 5

The chances that you might choose 1,2,3,4 or 5 are equally likely. However, the probability that you might choose even numbers is not the same as the probability that you might choose odd numbers, since there are three odd numbers and only two even numbers from one to five.

Now look at the following three methods of measuring probability:

A priori (using logic) - we can express the probability of rolling a two with a six-sided dice as $1 \div 6 = 0,17$

Empirically (by observing) - if 1 in 100 items produced by a machine is known to be defective, the probability that a randomly selected item will be defective is expressed as
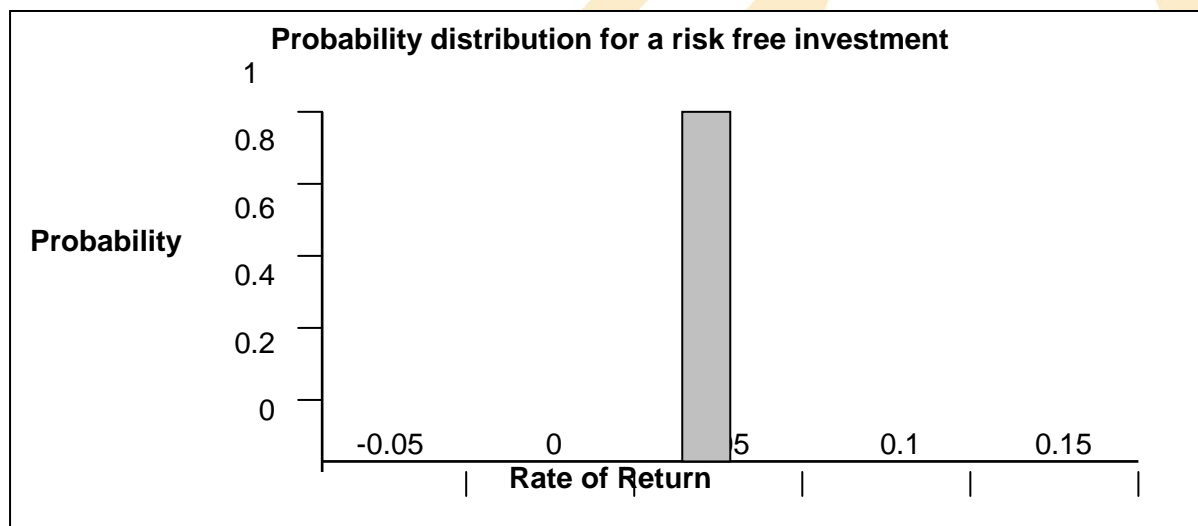$1 \div 100 = 0,01$

Subjectively (using judgement) - in many cases, managers must use their experience to judge a likely outcome. For example, if we do this, there is a 0,3 probability that we will produce a similar product within 12 months.

Probability values may range from 0 to 1. If the value is 0, there is zero probability that a particular investment will yield the estimated return. If the value is 1, there is complete certainty that the investment will yield the estimated rate of return.

These probabilities are typically subjective estimates based on the historical performance of the investment or similar investments, and modified by the investor's expectations for the future.

For example, you may know that about. 30% of the time the rate of return on this particular investment has been 10%. Using this information, along with future expectations regarding the economy, you can derive an estimate of what might happen in the future. We can analyze the effect of risk by means of an example where the investor is absolutely certain of a 5% return.

The figure below illustrates this scenario.

Probability distribution for a risk free investment

(Chart: Probability on vertical axis from 0 to 1; Rate of Return on horizontal axis with values -0.05, 0, 5, 0.1, 0.15; a single bar reaching approximately 0.9 at a rate of return near 0.05)

Source: Investment Analysis and Portfolio Management, Frank K. Reilly, Keith C. Brown 1997

Figure   *Probability distribution for a risk-free investment*

Few investments provide returns that are perfectly certain. Perfect certainty allows only one possible return. The probability of receiving that return is 1.

You can also calculate several rates *of return* depending on different possible economic conditions. Let's look at an example. In a strong economic environment with high corporate profits and little or no inflation, the investor might expect the rate of return on common stocks during the next year to be as high as 20%. In contrast, if there is an economic decline with a higher-than average rate of inflation, the investor might expect the rate of return on common stocks during the next year to be - 20%. With no major change in the economic environment, the rate of return during the next year would probably approach the long-run average of 10%.

The figure below illustrates this scenario.
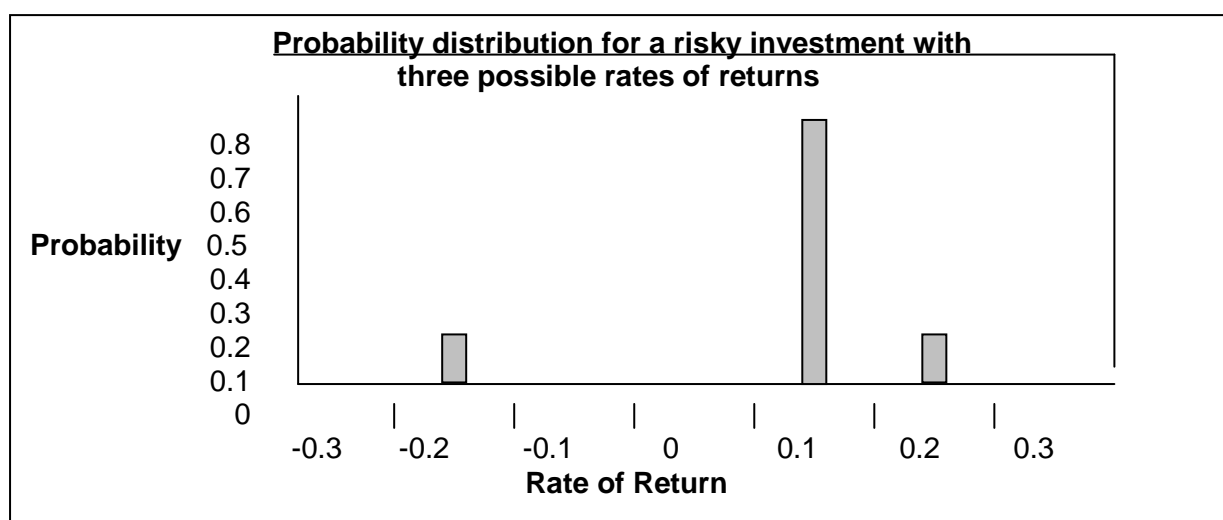
Probability distribution for a risky investment with three possible rates of returns

Source: Investment Analysis and Portfolio Management, Frank K. Reilly, Keith C. Brown 1997

Figure   *Probability distribution for a risky investment with three possible rates of return.*

The aggregate annual loss can be defined as the summated losses in rands, for a specified financial year. A diversity of analytical approaches is emerging in industry, combining and weighting these inputs in different ways. Most current approaches seek to estimate loss frequency and loss severity to arrive at an aggregate loss distribution. Institutions then use the aggregate loss distribution to determine the appropriate amount of capital to hold for a given soundness standard.
Scenario analysis is also being used by many institutions, albeit to significantly varying degrees. Some institutions are using scenario analysis as the basis for their analytical framework, while others are incorporating scenarios as a means for

considering the possible impact of significant operational losses on their overall operational risk exposure.

The primary differences among approaches being used today relate to the weight that institutions place on each input. For example, institutions with comprehensive internal data may place less emphasis on external data or scenario analysis. Another example is that some institutions estimate a unique loss distribution for each business line/loss type combination (bottom-up approach) while others estimate a loss distribution on a firm-wide basis and then use an allocation methodology to assign capital to business lines (top-down approach).

The figure below illustrates a scenario where an investment has ten possible outcomes ranging from -40% to 50%, with the same probability for each rate of return.
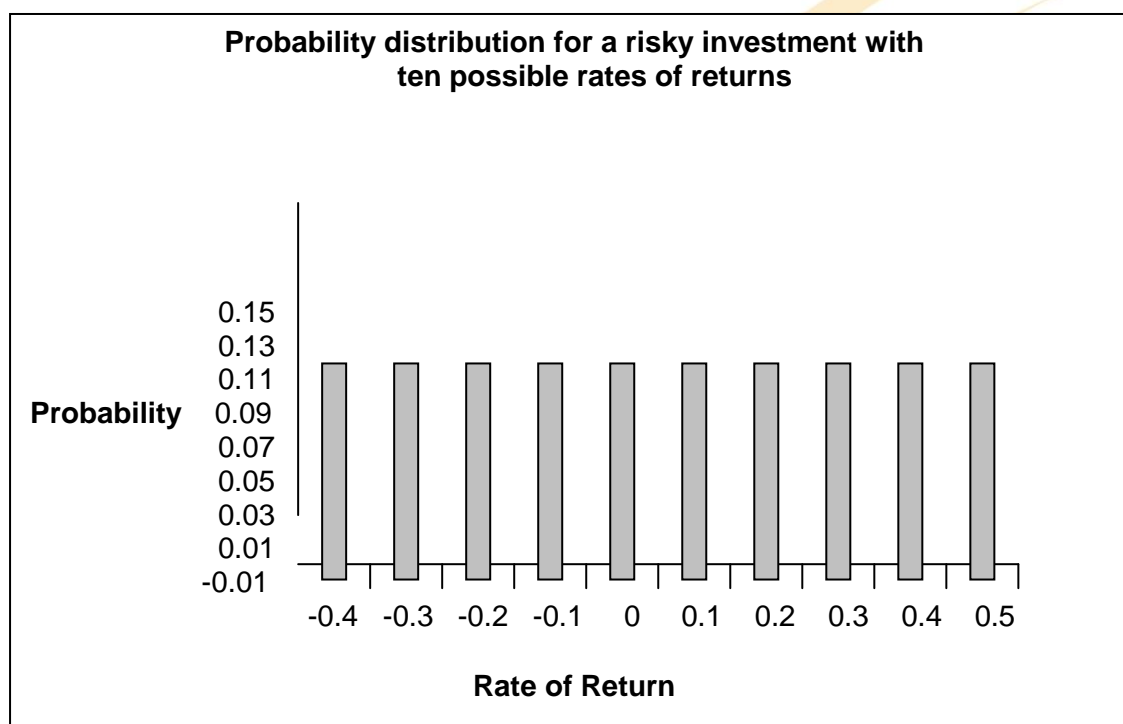
Source: Investment Analysis and Portfolio Management, Frank K. Reilly, Keith C. Brown 1997

Figure   *Probability distribution for a risky investment with ten possible rates of return.*

2.2 A distribution graph in relation to risk retention and risk transfer

Risk retention involves accepting the loss when it occurs. True self insurance falls in this category. Risk retention is a viable strategy for small risks where the cost of insuring against the risk would be greater over time than the total losses sustained. All risks that are not avoided or transferred are retained by default.

This includes risks that are so large or catastrophic that they either cannot be insured against or the premiums would be infeasible. War is an example since most property and risks are not insured against war, so the loss attributed by war is retained by the insured.

Also any amounts of potential loss (risk) over the amount insured is retained risk. This may also be acceptable if the chance of a very large loss is small or if the cost to insure for greater coverage amounts is so great it would hinder the goals of the organization too much.

Risk transfer means causing another party to accept the risk, typically by contract or by hedging. Insurance is one type of risk transfer that uses contracts. Other times it may involve contract language that transfers a risk to another party without the payment of an insurance premium.

Liability among construction or other contractors is very often transferred this way. On the other hand, taking offsetting positions in derivatives is typically how firms use hedging to financially manage risk.

Some ways of managing risk fall into multiple categories. Risk retention pools are technically retaining the risk for the group, but spreading it over the whole group involves transfer among individual members of the group.

This is however different from traditional insurance, in that no premium is exchanged between members of the group up front, but instead losses are assessed to all members of the group.

The normal distribution, also called the Gaussian distribution, is an important family of continuous probability distributions, applicable in many fields. Each member of the family may be defined by two parameters, location and scale: the mean ("average", μ) and variance (standard deviation squared) s2 , respectively. The standard normal distribution is the normal distribution with a mean of zero and a variance of one. Carl Friedrich Gauss became associated with this set of distributions when he analyzed

astronomical data using them, and defined the equation of its probability density function. It is often called the bell curve because the graph of its probability density resembles a bell.

The importance of the normal distribution as a model of quantitative phenomena in the natural and behavioral sciences is due in part to the central limit theorem. Many measurements, ranging from psychological to physical phenomena (in particular, thermal noise) can be approximated, to varying degrees, by the normal distribution.

While the mechanisms underlying these phenomena are often unknown, the use of the normal model can be theoretically justified by assuming that many small, independent effects are additively contributing to each observation. The normal distribution is also important for its relationship to least-squares estimation, one of the simplest and oldest methods of statistical estimation.
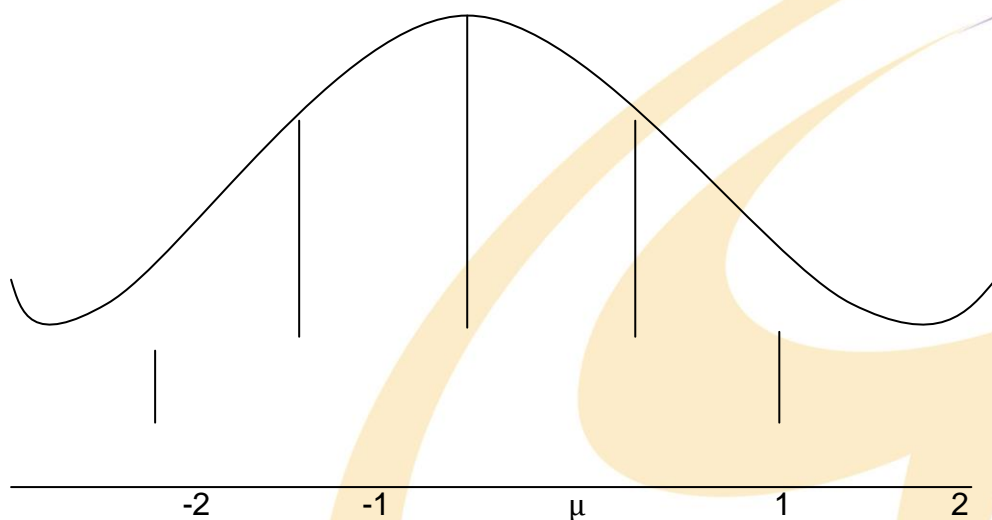
Source: Statistical Techniques in Business & Economics, Robert D. Mason, Douglas A. Lind 1996

A normal distribution (a bell-shaped curve)

The normal distribution also arises in many areas of statistics. For example, the sampling distribution of the sample mean is approximately normal, even if the distribution of the population from which the sample is taken is not normal. In addition, the normal distribution maximizes information entropy among all distributions with known mean and variance, which makes it the natural choice of

underlying distribution for data summarized in terms of sample mean and variance. The normal distribution is the most widely used family of distributions in statistics and many statistical tests are based on the assumption of normality. In probability theory, normal distributions arise as the limiting distributions of several continuous and discrete families of distributions.

2.3 Knowledge of the cost of insurance to determine risk retention

Prior to the risk retention act, risk retention groups already existed, but it was hard for them to form and compete with insurance companies. The act was designed to change the rules to make it easier for groups to form. The overall goal was to lower premiums for all businesses through competition between retention groups and insurance companies.

There are some other good reasons to retain some risk instead of transferring it all to an insurance company.

- **High premiums**. Part of the premiums you pay go toward the cost of the insurance company doing business. Why pay them if you don't need to?

- **Small claims are expensive**. One benefit to transferring all risk to a company is to deal with the all the small claims that come up during your normal business operations. The problem is that managing small claims can be expensive, to the point where it may be better to just pay the claims.

- **Small claims can increase your premiums**. By letting your insurance company handle--and pay for--small claims, you risk having your premiums go up even more.

- **You already retain some risk**. Even if you think you have "full coverage" you really don't. You retain certain risks through having a deductible, for example, or by not purchasing coverage for natural catastrophes.

This involves accepting the loss when it occurs. True self insurance falls in this category. Risk retention is a viable strategy for small risks where the cost of insuring against the risk would be greater over time than the total losses sustained. All risks that are not avoided or transferred are retained by default.
This includes risks that are so large or catastrophic that they either cannot be insured against or the premiums would be infeasible. War is an example since most property and risks are not insured against war, so the loss attributed by war is

retained by the insured. Also any amounts of potential loss (risk) over the amount insured is retained risk. This may also be acceptable if the chance of a very large loss is small or if the cost to insure for greater coverage amounts is so great it would hinder the goals of the organization too much.

Risk retention activities can be executed in various ways:

- by charging to current operating costs, i.e., by paying losses out of net profit
- by selling other assets to replace other assets that are lost
- by building up a fund or pool of near-cash assets, known as a contingency
- by arranging loan facilities to be taken up in the event of loss
- by forming a captive insurance company, specifically to cover its parents' insurance

It is evident that various options exist within the various risk management options, i.e. risk transfer and risk retention. What is important is for t he financial advisor to analyse the risks in an entity to determine which risks could be transferred to insurance.

2.3.1 Cost of insurance

The first cost to consider is of course the premium that is going to be paid to get the cover needed to transfer enough risk as to justify the premium paid. This explicit cost, however, is not the only one that should be considered.

There is also the loss of the time value of money, which is lost if funds are paid to the insurer, as well as the loss of investment potential and growth, should the funds be reinvested in the company.

Other costs, like that of the long term payments, compared to the long term returns from insurance, should be considered as a cost of insurance.

2.4 The difference between a provision and a reserve with examples

In financial accounting, provision is word that creates an ambiguous account title. In laymens terms, a provision can be described as a present obligation which satisfies the rest of the definition of a liability, even if the amount of the obligation has to be estimated.

Example:

Whole Call Provision

A type of call provision on a bond allowing the borrower to pay off remaining debt early. The borrower has to make a lump sum payment derived from a formula based on the net present value (NPV) of future coupon payments that will not be paid because of the call.

The issuer doesn't expect to have to use this type of provision, but if the issuer does, investors will be compensated, or "made whole." Because the cost can often be significant, such provisions are rarely invoked.

Both provision and reserve are proactive methods in managing risk and the potential impact they might have on the entity. Provision refers to actions taken to transfer risk i.e. providing for potential loss by taking out insurance. Reserve refers to actions taken to retain risk i.e. providing for potential risk by creating a contingency fund.

Module 3

The different facilities involved in alternative risk transfer

This module deals with:

- The concepts of risk retention and risk transfer with reference to degrees of risk
- Available options for retention and transfer of risk with examples
- The difference between risk transfer and alternative risk transfer with examples

3.1   The concepts of risk retention and risk transfer with reference to degrees of risk

The degree of risk is the extent or level of uncertainty in a given situation—the likelihood of the actual result being different from the estimated result. The concepts of risk retention and risk transfer was explained earlier in this module.

3.2   Available options for retention and transfer of risk with examples

The degree of risk that the entity is exposed to must be assessed and a position must be established. The financial advisor must then evaluate the various options for risk retention and transfer and choose the most appropriate method.

3.3   The difference between risk transfer and alternative risk transfer with examples

As previously discussed, risk transfer means causing another party to accept the risk, typically by contract or by hedging. Insurance is one type of risk transfer that uses contracts. Other times it may involve contract language that transfers a risk to another party without the payment of an insurance premium.

Alternative Risk Transfer (often referred to as ART) is the use of techniques other than traditional insurance and reinsurance to provide risk bearing entities with coverage or protection. The field of ART grew out of a series of insurance capacity crises in the 1970s through 1990s that drove purchasers of traditional coverage to seek more robust ways to buy protection.

Most of these techniques permit investors in the capital markets to take a more direct role in providing insurance and reinsurance protection, and as such the broad field of ART is said to be bringing about a Convergence of insurance and financial markets. Alternative risk transfer is the collective name given to devices of seeking risk protection using non-traditional routes, that is, other than through traditional insurance companies.

Apart from insurance risk securitisation, the other usual methods are captive insurance companies, renting of insurance companies, etc.

3.3.1 Key Areas of ART Activity

A major sector of ART activity is risk securitization including catastrophe bonds and Reinsurance Sidecars.

Standardization and trading of risk in non-indemnity form is another area of ART and includes Industry Loss Warranties.

In addition, a number of approaches involve funding risk transfer, often within the structures of the traditional reinsurance market. Captive Insurance Companies are formed by firms and re/insurers to receive premiums that are generally held and invested as a "funded" layer of insurance for the parent company.

Some captives purchase excess of loss reinsurance and offer coverage to third parties, sometimes to leverage their skills and sometimes for tax reasons. Financial reinsurance in various forms (finite, surplus relief, funded, etc.) consists of various approaches to reinsurance involving a very high level of prospective or retrospective premiums relative to the quantity of risk assumed. While such approaches involve "risk finance" as opposed to "risk transfer," they are still generally referred to under the heading of ART.

ART is often used to refer to activities through which re/insurers transform risks from the capital markets into insurance or reinsurance form. Such transformation can occur through the policy itself, or through the use of a transformer reinsurer.

This type of activity has been important in credit risk markets, hard asset value coverage and weather markets. Reinsurers were notable participants in the early development of the synthetic CDO and weather derivative markets through such activities.

A subset of activities in which reinsurers take capital markets risks is dual-trigger or multiple trigger contracts. Such contracts exist between a protection buyer and a protection seller, and require that two or more events take place before a payment from the latter to the former is "triggered."

For example, and oil company may desire protection against certain natural hazards, but may only need such protection if oil prices are low, in which case they would purchase a dual trigger derivative or re/insurance contract. There was a great deal of

interest in such approaches in the late 1990's, and re/insurers worked to develop combined risk and enterprise risk insurance.

Reliance Insurance extended this further and offered earnings insurance until the company suspended its own business operations. This area of ART activity diminished after the general hardening of the commercial insurance and reinsurance markets following the 9-11 terrorist attacks.

Life insurance companies have developed a very extensive battery of ART approaches including Life Insurance Securitization, full recourse reserve funding, funded letters of credit, surplus relief reinsurance, administrative reinsurance and related approaches.

Because life reinsurance is relatively more "financial" to begin with, there is less separation between the conventional and alternative risk transfer markets than in the property & casualty sector.

Emerging areas of alternative risk transfer include intellectual property insurance, automobile insurance securitization and life settlements.
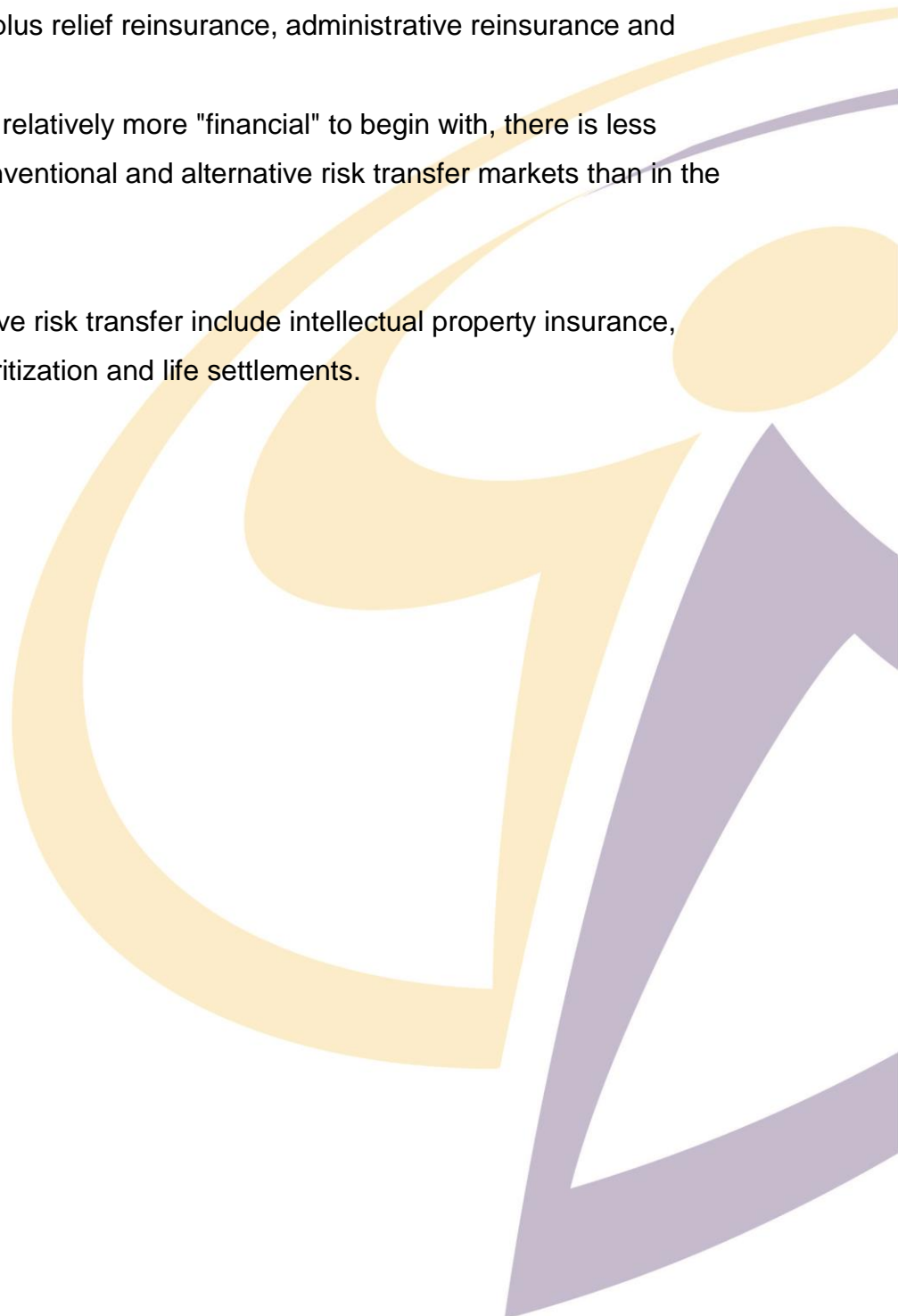
Module 4

Proposal of an insurance solution to transfer risk in a business entity

This module deals with:

- The prices of risk transfer and risk retention (compared) to determine the most cost effective solution for a specific entity
- A short term insurance solution proposed for a specific entity (covered in the assessment)

4.1   The prices of risk transfer and risk retention (compared) to determine the most cost effective solution for a specific entity

Insurance carries little or no risk, since losses are paid by the insurer; risk retention may carry considerable risk, since the company leaves itself exposed to every possible loss. On the other hand, full insurance is likely to be more expensive than risk retention, since the insurance premiums must cover the insurer's administrative expenses and profits.

The decision whether to ensure fully or to retain risk completely or in part is complicated, and there is no easy rule or formula that can be used. In some instances the purchase of a minimum amount of insurance is compulsory, but companies might want to buy more than the minimum level. Usually, however, everything depends on the company's overall attitude to risk.

The more the company dislikes risk or uncertainty, the more likely it is to buy full insurance. If the company's attitude to risk is neutral, it will take its decision on purely monetary grounds – that is, it will choose the cheapest method. The most sensible approach is to evaluate the monetary costs of the various methods of financing risk, to arrange these in ascending order of cost, and then to work down the list, asking in turn: "Does this method carry to great a risk?"

4.2   Guidelines for proposing a short term insurance solution for a specific entity / client

When proposing an insurance solution to a client, always take the following guidelines into consideration:

- Be prepared when putting forward the proposal to your client
- Have all relevant facts readily available
- All proposals should be done in writing, so that no discrepancies can occur at a later stage
- Make sure that your proposal meets all your client's possible needs
- Take the affordability of your proposal for the client into consideration

- Make sure that your proposal is professionally done. A proposal that does not look professional will reflect poorly on you and your company
- Make sure the content and pricing of your proposal is market related: do not over quote or under quote a client

Glossary of terms

Insurance term	Meaning
Bailee	Bailment describes a legal relationship in common law where physical possession of personal property (chattels) is transferred from one person (the 'bailor') to another person (the 'bailee') who subsequently holds possession of the property
Bottom-up	An approach which means that the adviser takes the needs and wishes of the would-be entrepreneur as the starting point, rather than a market opportunity
Continuous	A probability distribution is called continuous if its cumulative distribution function is continuous. That is equivalent to saying that for random variables X with the distribution in question, $Pr[X = a] = 0$ for all real numbers
Discrete	For a discrete probability distribution one could say that an event with probability zero is impossible, this cannot be said in the case of a continuous random variable, because then no value would be possible
Indemnitor	Indemnity is a sum paid by A to B by way of compensation for a particular loss suffered by B
Normal distribution	The standard normal distribution is the normal distribution with a mean of zero and a variance of one
Raison d'être	A phrase borrowed from French where it means simply "reason for being"; Reinsurance A means by whic h an insurance company can protect itself against the risk of losseswith other insurance companies
Scenario Analysis	A process of analyzing possible future events by considering alternative possible outcomes (scenarios).

Insurance term	Meaning
Ubiquitous	Seeming to appear everywhere at the same time

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