

# Chapter 1

## Risk in Our Society

### ■ Teaching Note

In presenting the material in this chapter, keep in mind that students must master a certain amount of new insurance terminology. Studying insurance is similar to becoming fluent in a foreign language. The student starts by building upon a basic vocabulary. The same is true for insurance. Insurance is a technical subject that requires a basic vocabulary.

It is also worthwhile to point out that there is no single definition of risk. However, risk has been traditionally defined as uncertainty concerning the occurrence of a loss.

Take some time to discuss the major types of pure risks that can result in great financial insecurity. The transparency masters for this chapter summarize the important points concerning the different types of risk and methods of handling risk.

In discussing the major methods of handling risk, several points should also be stressed. First, explain that these concepts are discussed in greater detail in Chapter 3. Second, stress the idea that insurance is only one of several methods for handling risk. Finally, explain that, in many cases, other methods for handling risk may be more effective.

### ■ Outline

#### I. What is Risk?

- A. Uncertainty Concept—risk traditionally has been defined as uncertainty
- B. Objective Risk
  - 1. Defined as the relative variation of actual loss from expected loss
  - 2. Declines as the number of exposure units increases
  - 3. Is measurable by using the standard deviation or coefficient of variation
- C. Subjective Risk
  - 1. Defined as uncertainty based on one's mental condition or state of mind
  - 2. Difficult to measure

#### II. Chance of Loss

- A. Objective Probability
  - 1. A priori—by logical deduction such as in games of chance
  - 2. Empirically—by induction, through analysis of data

- B. Subjective Probability—a personal estimate of the chance of loss. It need not coincide with objective probability and is influenced by a variety of factors including age, sex, intelligence, education, and personality.
- C. Chance of Loss Distinguished from Risk—although chance of loss may be the same for two groups, the relative variation of actual loss from expected loss may be quite different.

### **III. Peril and Hazard**

- A. Peril—defined as the cause of loss
- B. Hazard
  - 1. Physical hazard—physical condition that increases the chance of loss. Examples are icy streets, poorly designed intersections, and dimly lit stairways.
  - 2. Moral hazard—dishonesty or characteristics of an individual that increase the chance of loss
  - 3. Morale hazard—carelessness or indifference to a loss because of the existence of insurance
  - 4. Legal hazard—characteristics of the legal system or regulatory environment that increase the frequency or severity of losses

### **IV. Basic Categories of Risk**

- A. Pure and Speculative Risk
  - 1. Pure risk—a situation where there are only the possibilities of loss or no loss
  - 2. Speculative risk—a situation where either profit or loss is possible
- B. Fundamental and Particular Risks
- C. Enterprise Risks

### **V. Types of Pure Risks**

- A. Personal Risks
  - 1. Four personal risks are premature death, insufficient income during retirement, poor health, and unemployment.
  - 2. Types of losses are loss of earned income, extra expenses, and depletion of financial assets.
- B. Property Risks
  - 1. Types of losses include direct physical damage losses, indirect or consequential losses, extra expenses, and theft losses.
  - 2. Perils include fire, lightning, windstorm, natural disasters, dishonesty, and other perils.
- C. Liability Risks—the loss is legal liability for damages arising out of bodily injury or property damage to another party.

### **VI. Burden of Risk on Society**

- A. Need for a Larger Emergency Fund
- B. Loss of Needed Goods and Services
- C. Fear and Worry

## VII. Methods of Handling Risk

- A. Avoidance
- B. Loss Control
  - 1. Loss prevention
  - 2. Loss reduction
- C. Retention
  - 1. Active (desirable) is the deliberate choice to assume part or all of a loss exposure.
  - 2. Passive (dangerous) often results from ignorance or inertia.
- D. Noninsurance Transfers
  - 1. Contracts
  - 2. Hedging
  - 3. Incorporation
- E. Insurance

## ■ Answers to Case Application

- (a) *Retention*. Because the car is old and has a limited market value, collision insurance should not be purchased. Retention can be used to deal with the exposure.
- (b) *Liability insurance*. Because the exposure has the potential for causing a catastrophic loss, automobile liability insurance should be purchased.
- (c) *Insurance*. Property insurance could be purchased to deal with the property exposure of \$10,000. The policy should contain a deductible.
- (d) *Retention*. The dollar value of the loss of a disposable contact lens is small.
- (e) *Loss control*. The waterbed should be carefully checked for possible leaks to reduce the possibility of damage to the apartment. As an alternative, an endorsement can be added to a homeowners policy to cover the liability exposure.
- (f) *Avoidance*. Michael should pick a new running route.
- (g) *Life insurance*. Michael's father should purchase life insurance. If his father dies, the loss of tuition would be replaced by life insurance.

## ■ Answers to Review Questions

1. (a) There is no single definition of *risk*. Many insurance authors traditionally have defined *risk* in terms of uncertainty. We define *risk* as uncertainty concerning the occurrence of a loss.
- (b) *Objective risk* is the relative variation of actual loss from expected loss. As the number of exposure units under observation increases, objective risk declines. *Subjective risk* is uncertainty based on one's mental condition or state of mind. Accordingly, objective risk is measurable and statistical; subjective risk is personal and not easily measured.

2. (a) *Chance of loss* can be defined as the probability that an event will occur.  
(b) *Objective probability* refers to the long-run relative frequency of an event based on the assumption of an infinite number of observations and no change in the underlying conditions. *Subjective probability* is the individual's personal estimate of the chance of loss.
3. (a) *Peril* is the cause of loss. *Hazard* is a condition that creates or increases the chance of loss.  
(b) *Physical hazard* is a physical condition that increases the chance of loss. *Moral hazard* is dishonesty or character defects in an individual that increase the chance of loss. *Morale hazard* is carelessness or indifference to a loss because of the presence of insurance. *Legal hazard* refers to characteristics of the legal system or regulatory environment that increase the frequency or severity of losses.
4. (a) *Pure risk* is defined as a situation in which there are only the possibilities of loss or no loss. *Speculative risk* is defined as a situation where either profit or loss is possible.  
(b) A *fundamental risk* is defined as a risk that affects the entire economy or large numbers of persons or groups within the economy. In contrast, a *particular risk* is a risk that affects only the individual and not the entire community or country.
5. (a) Enterprise risk is a term that encompasses all major risks faced by a business firm, which include pure risk, speculative risk, strategic risk, operational risk, and financial risk.  
(b) Financial risk is the uncertainty of loss because of adverse changes in commodity prices, interest rates, foreign exchange rates, and the value of money.
6. (a) Enterprise risk management combines into a single unified treatment program all major risks faced by the firm. These risks include pure risk, speculative risk, strategic risk, operational risk, and financial risk.  
(b) Traditional risk management considered only major and minor pure risks faced by a corporation. Enterprise risk management considers all risks faced by a corporation as described in (a) above.
7. Pure risks associated with great financial and economic insecurity include the risks of premature death, insufficient income during retirement, old age, poor health, and unemployment. In addition, persons owning property are exposed to the risk of having their property damaged or lost from numerous perils. Finally, liability risks are also associated with great financial and economic insecurity.
8. Pure risk is a burden to society for at least three reasons:
  - (a) The size of an emergency fund must be increased.
  - (b) Society may be deprived of needed goods and services.
  - (c) Worry and fear are present.
9. Indirect loss results from or is the consequence of a direct loss. For example, if a student's car is stolen (direct loss), he or she will lose the use of the car until it is replaced or recovered (indirect loss).
10. There are five basic methods of handling risk:
  - (a) *Avoidance*. A drug manufacturer can avoid producing a dangerous drug that may result in a lawsuit.
  - (b) *Loss control*. Certain activities are undertaken that reduce both the frequency (loss prevention) and severity (loss reduction) of losses. An example of loss prevention is periodic inspection of boilers to prevent an explosion. An example of loss reduction is an automatic sprinkler system in a department store.

- (c) *Retention*. An individual may retain the first \$500 of physical damage loss to his or her automobile by purchasing an automobile collision policy with a \$500 deductible.
- (d) *Noninsurance transfers*. The risk of a defective television set can be shifted or transferred to the retailer by the purchase of a service contract by which the retailer is responsible for all repairs after the warranty expires.
- (e) *Insurance*. An automobile insurance policy can be purchased covering the negligent operation of an automobile.

## ■ Answers to Application Questions

1. Objective risk is the relative variation of actual loss from expected loss. Although the chance of loss may be identical for two different groups, the relative variation of actual from expected loss may be quite different. For example, if a company has a fleet of 1000 trucks, the expected number of collision losses each year may be 30. However, actual losses may vary each year from 25 to 35. In contrast, another fleet of 1000 trucks may have the same number of expected losses (30), but the annual variation may be considerably higher, such as 20 to 40. Thus, objective risk is greater for the second fleet.
2.
  - (a) This is a fundamental risk because the entire nation can be affected by terrorist attack.
  - (b) This is a pure risk. Rarely will an insured profit if a house is damaged in a fire.
  - (c) This is pure risk because of the loss of earned income. You usually do not profit if you are totally disabled.
  - (d) This is a speculative risk. Both profit or loss are possible.
  - (e) This is a fundamental risk because large numbers of people can lose their homes in a major flood.
  - (f) This is a fundamental risk because large numbers of homebuyers will be adversely affected by higher interest rates and higher monthly mortgage payments. From the viewpoint of homebuilders and realtors, a rise in interest rates is also a financial risk that can slow down the sale of new and used homes.
  - (g) This is a speculative risk because both profit and loss are possible.
3.
  - (a) Loss control can reduce the chance of dying prematurely from a heart attack, such as exercise, losing weight, and following a healthy diet. Life insurance can also be used, which reduces or eliminates the financial consequences to surviving family members if a family head dies prematurely.
  - (b) Property insurance is an appropriate technique for dealing with the risk of a hurricane. Retention can also be used by purchasing the policy with a deductible.
  - (c) Collision insurance on the new car is an effective way to deal with this exposure. Retention can also be used by purchasing the policy with a deductible for collision losses. The insured can also drive defensively, which is a form of loss control.
  - (d) A catastrophic loss exposure is present. Auto liability insurance should be purchased to deal with the exposure.
  - (e) Professional liability insurance should be purchased to deal with malpractice suits. The surgeon could also use loss control to reduce the possibility of injuring a patient.
  - (f) A major medical individual or group health insurance plan could be purchased to deal with the risk of catastrophic medical bills. Retention can also be used by purchasing the insurance with a sizable deductible.

4. Andrew has three noninsurance options:
  - (a) *Avoidance*. Andrew can avoid the risk of burglary or robbery by going into a different line of business. However, this is not a practical solution and may not be feasible.
  - (b) *Loss control*. Loss control efforts can be undertaken to reduce both the frequency and severity of losses. A burglary alarm system can be installed. The pawn shop can be relocated to another part of the city where crime rates are lower. Losses also can be prevented by hiring a guard or patrol service to protect the property.
  - (c) *Retention*. Andrew may decide to retain all losses, thereby eliminating the need for burglary insurance. However, since a large loss could result in financial ruin, he may decide to retain losses only up to a certain amount, such as \$1000. Excess insurance can be purchased for losses exceeding the retention limit.
5.
  - (a) *Retention*. The firm is retaining the earthquake exposure.
  - (b) *Loss control*. If a fire occurs, the sprinkler system will operate automatically to extinguish the fire thereby reducing the size of the loss.
  - (c) *Avoidance*. The firm is avoiding a lawsuit by not manufacturing products that could injure customers who use the product.
  - (d) *Noninsurance transfer*. The firm manufacturing the product has transferred the risk of a liability suit to the retailers by such an agreement. This agreement is often called a hold-harmless agreement. For example, a manufacturer may insert a hold-harmless clause in a contract with a retailer by which the retailer agrees to hold the manufacturer harmless if a scaffold collapses and someone is injured.