Insurance Defined

- Two main elements
  1) Financial Definition: Premium Payment
  2) Legal Definition: Contractual Relationship

Loss (definition of)

- Types of losses
  - Direct Loss
  - Indirect Loss

Chance of Loss

- Number expected / Total exposed = Fraction

Proximate cause of the loss

- Also known as the Doctrine of proximate cause
- First insured peril in an unbroken chain of events leading to the loss – all is paid.
Introduction
Definitions and terms

- Peril – The cause of a loss or contingency that causes a loss
  - "Named peril" or Specified peril contracts
  - "Open-peril" contracts
    - burden of proof is different

- Hazard
  - Something that increases the probability of loss or increases the severity when a loss occurs (or both)
    - Physical and/or moral

Introduction
Definitions and terms

- Risk – many definitions – the term is used in a variety of ways
  1. To describe that there is a possibility of loss
  2. To identify the probability of loss
  3. To identify the cause of loss – peril
  4. To identify conditions that increase frequency of severity of loss – hazard
  5. To identify the property or person exposed
  6. To identify the potential $ amount of loss
  7. To describe the variation in potential losses – the ability to predict

Branches of Insurance – Successful transactions

- Social Insurance
- Private Insurance
  - Non-life – fire, marine, casualty, bonding
  - Life – life health, annuities
  - Other – weather, municipal bond, boiler and machine, motion picture completion
Building Blocks of an Insurance Premium

- Earned Premium [EP]
- Insured Loss Claim [ILC]
- Loading Expenses [LE]
- Investment Income [II]
- Fair Rate of Return [FRoR]

\[ EP = ILC + LE - II + FRoR \]

Mathematical Basis for Insurance – Example

- Houses in pool: 10,000
- Avg. value of each: $80,000
- Total property value: $800 million
- Predicted losses = 1.5% of value: $12 million
- Predicted Loss per house: $1,200
- Rate per $100 of value: $1.50

Mathematical Basis for Insurance – Example continued

- Insurance Premium
  - Insured Loss Claims: $1.50
  - Loading Expenses: .45
  - Fair Rate of Return: .10
  - Investment Income: (0.07)
  - Rate per $100 value: $1.98
Additional Concept:

- Combined ratio:
  - Sum of the insurer’s loss ratio and expense ratio in a given product line.
  - Value of less than 100% reflects profitable insurance operations.
  - Remember that Investment Income needs to cover short-fall, if any.

Costs to Society:

- The costs of operating the insurance mechanism
  - Commissions
  - Overhead of the company
  - Exaggerated claims
  - Intentional losses (moral)
  - General indifference about the way we treat our property, etc. (morale)
- Does not include losses that would have occurred anyway – not a cost of operating the system
Insurance Benefits to Society

- Stability of families
- Aids planning ability to businesses
- Facilitates credit transactions
- Anti-monopoly device
- Reduces credit costs
- Increases capital efficiency