Lecture 6 notes: Chapter 12:

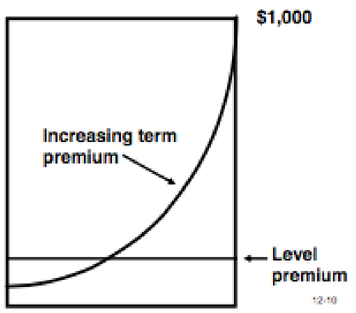
Life insurance: A protection against the loss of income that would result if the insured suddenly died. The beneficiary receives the proceeds and therefore safeguarded from the financial impact of the death of the insured. Other insurance is generally bundled with life insurance.

- The event insured is an eventual certainty and the probability of loss increases each year.
- Life insurance does not violate requisites of an insurable risk; it is not the possibility of death that is insured, but of untimely death.
- There is no possibility of partial loss. Therefore, all policies are cash payment policies.

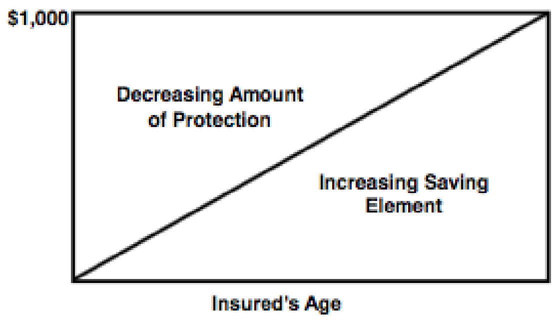
Types of life insurance:

- **Term insurance- Pure protection-**
  - Temporary protection: Pays the face amount if the insured dies within a stated period or before reaching a stated age.
  - Renewable: Policy coverage may be extended for additional time periods without evidence of insurability.
  - Convertible: A permanent policy can be obtained without evidence of insurability.
  - Uses of term insurance: Amount of income that can be spent on life insurance is limited; need for protection is temporary; term insurance can also be used to guarantee future insurability.
  - Advantages: Provides greatest amount of protection for given dollar outlay. Although, temporary protection only.
  - Limitations: Premiums increase with age, not suitable for lifetime protection, no saving component.
- **Whole life insurance- Protection & Savings-**
  - The simplest form is yearly renewable term.
    - Provides coverage for 1 year only.
    - Permits insured to renew for successive years at higher premium.
    - Increasing mortality produces increasing rates as the insured grows older.
- **Premium eventually becomes unaffordable for person who wants to continue coverage:**
  - Age 21- $0.48
  - Age 40- $1.30
  - Age 100- $275.73
    - Insurers developed the principle of the level premium as a practical method of providing lifetime insurance.

Comparison of Term & Whole Life Premiums



Increase in Reserve on Whole Life Policy



Characteristics of whole life insurance:

- Level premiums and lifetime protection.
- Actuarially overcharged during early years and undercharged during later years.
- Excess premiums paid during early years are accumulated at compound interest and used to supplement the inadequate premiums paid during the later years.
- Cash surrender values are available if the policyholder wishes to surrender the policy or obtain a policy loan.

Major advantages of ordinary life insurance:

- Lifetime protection and a method for saving money.

Disadvantages:

- Some people are underinsured after the policy is purchased.

Variations of whole life insurance:

- <u>Variable life insurance-</u> A whole life contract in which insured has the right to direct how cash value will be invested. Insured bears the investment risk in the form of fluctuations in cash value and amount of protection. Amount of premium is fixed, but cash value and face amount vary, subject to a minimum.
- <u>Universal life insurance-</u> Unbundling of component parts. Subject to specified limits, the premium, cash value and the level of protection can move up or down to meet insured's needs. Cash withdrawals permitted. Considerable flexibility.
- <u>Variable Universal life-</u> Combines features of both life insurances.
  - Cash values can be invested in a wide variety of investments.
  - No minimum guaranteed rate of interest and cash values are not guaranteed.
  - Policy has a substantial investment risk for the policyholder.

Life Insurance Premium Computation:

- Mortality- prediction of number of deaths among a given group of people at a given age.
- 2001 CSO Table (separate tables for males and females)
- Interest- time value of money.
  - Insurance company collects the premium in advance and does not pay claims until a future date, they invest this money and earn interest on it.
- Loading- for insurer expenses, taxes, profit.

Net single premium:

- A lump-sum payment that if made by the members of the group, will pay all mortality costs over a term longer than one year. E.g. For the 35-year-old female group, how much must we charge everyone at the beginning of the 5-year policy to permit us to pay the death claims as they mature? <u>$4.8725.</u>

- Note: individual annual premium over 5 years = \$5.30. This is greater than the net single premium.

- Net level premium: The net level premium converts the net single premium to a series of annual payments.

Reserve on life insurance policies:

- Under the level premium plan, the insured pays more than the cost of the protection during the early years of the contract.
- The difference between what the insured pays and the cost of the protection represents the policy reserve.

Reserves on whole of life policies:

- Insureds overpay the cost of protection in the early years.
- This creates a reserve, which accumulates interest.
- The reserves do not diminish, and continue increasing until age 121 (Hypothetically.)
- Part of the reserves represent a savings component.
- This is the surrender value of cash value policies.

Reserve = Present value of future benefits – Present value of future premiums

- Represents the prepayment of future premiums & is the basis for the cash value

Benefit certain vs benefit uncertain contracts:

- Benefit certain:
    - If the insured persists in premium payments, the policy will eventually mature and benefits will be payable.
    - Probability the insurer will have to pay is 100%.
- Benefit uncertain:
    - The insurer will only pay if the insured dies during the policy period.
    - Probability the insurer will have to pay < 100%

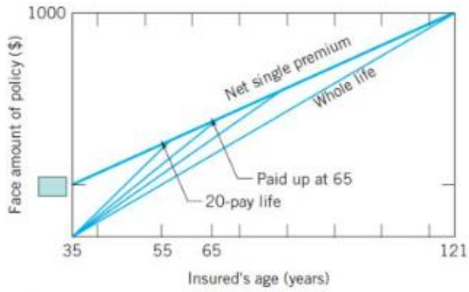


FIGURE 13.1 Reserve accumulation of cash value policies.

The life insurance contract:

- If the application is sent to insurer without the initial premium, the insurer offers the policy to be insured. It is not a contract until accepted by the insured.
- Normally, the initial premium is sent to the insurer with the application. The insurer acknowledges receipt of the premium with a conditional binding receipt.
- Conditional binding receipt makes the policy effect at the date of application if the applicant is found to be insurable according to the insurers underwriting rules.

General provisions in life insurance contracts:

1. Entire contract clause- policy and the application which is part of the policy represent the entire contract. Statements by the insured are representations and not warranties. The representations of the insured become contractual provisions.
2. Ownership clause- right to assign or transfer the policy, to receive cash value and dividends, to borrow against the policy. The owner is usually the insured. In the event of the death of the insured, the beneficiary becomes the owner.
3. Beneficiary clause- Primary or contingent- A primary beneficiary is the person first entitled to the proceeds of the policy following the death of the insured. A contingent beneficiary is entitled to the policy benefits only after the death of the primary or direct beneficiary.

Revocable or irrevocable- In the former, the insured reserves the right to change the designation at any time. In the latter, the insured imposes a restriction on the use of this right.

4. Incontestable clause- (based on the long-term nature of the life insurance contract) Insurer cannot contest the policy after it has been in effect for two years during the lifetime of the insured. After the insurer has had a reasonable opportunity to investigate validity of the contract, social advantages outweigh undesirable consequences.

5. Reinstatement- If a lapsed policy has not been surrendered for its cash value, it may be reinstated within 5 years from the date of lapse. Reinstatement requires that the insured- provides evidence of insurability, pay overdue premiums plus interest, reinstate any indebtedness with interest.

<u>Other clauses:</u> Misstatement of age, grace period, suicide, aviation exclusions, war clause.

<u>Settlement options:</u>

1. The interest option- Under this option, the proceeds of the policy may be left with the insurance company, to be paid out at a later time. (Only the interest on the principle amount is paid to the beneficiary. & a minimum rate of interest is guaranteed in the policy.)
2. Instalments for a fixed period- E.g. 3.5% interest rate every month for 10 years.
3. Instalments for a fixed amount- pays the specified amount of money for as long as the policy proceeds ad investment income on the unpaid balance lasts. The length of time for which the payments will last will vary with the amount of the policy.
4. Life income options- Gives the insured's beneficiary the right to have the proceeds paid out in the form of an annuity. Straight life income, life income with period certain or life income with cash refund.