Week 3
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LIFE INSURANCE CONTRACTS

OBJECTIVE: pay benefits upon death or upon survival
Benefits are quantified in several ways and depend on the lifetime of the insured, therefore they are RANDOM

TYPICAL ARRANGEMENTS on the insured amount

- CONSTANT AMOUNT
- VARYING AMOUNT according to some deterministic rule

} CLASSICAL LIFE INSURANCE

- AMOUNT LINKED TO THE MARKET hence stochastic (inflation linked, unit linked

} MODERN LIFE INSURANCE

⇒ COMBINES RISK OF MORTALITY and MARKET RISK

PARTIES INVOLVED IN A LIFE INSURANCE CONTRACT

- Insurance company ⇒ RECEIVES PREMIUMS and PAYS THE BENEFIT

- the insured life ⇒ UPON WHICH DEPENDS THE CONTRACT
- Policy holder ⇒ PAYS THE PREMIUMS
- Beneficiary ⇒ RECEIVES THE BENEFIT

↳ DEPENDING ON THE CONTRACT THESE THREE COULD BE THE SAME PERSON OR DIFFERENT PEOPLE

MONETARY INGREDIENTS

- BENEFITS
- EXPENSES

} paid by the insurance company

- PREMIUMS — paid by the policyholder
  - SINGLE PAYMENT at the issue of the contract
  - or
  - PERIODIC PAYMENTS the first of which at the issue of the contract

the rule that combines monetary ingredients is called PREMIUM CALCULATION PRINCIPLE

We focus on the EQUILIBRIUM PRINCIPLE

- the NET SINGLE PREMIUM is defined as the EXPECTED PRESENT VALUE OF BENEFITS

- the GROSS SINGLE PREMIUM is defined as the EXPECTED PRESENT VALUE of BENEFITS and EXPENSES

the NATURAL CONCLUSION OF THE CONTRACT is either a termination date (maturity) apriori fixed, or the time of death of the insured