

## Risk Management ... The Role of Insurance

### Insurance model

The insurance contract transfers a risk that you are unwilling to take yourself to a third party.  
Suppose your home is worth \$1M (excluding land), and there is a 1 in 2000 chance that it could burn to the ground in any given year:

$$\begin{aligned} \text{Premium cost} &= \text{Actuarial cost of risk} + \text{Overhead cost} + \text{Profit} \\ &= \$500 + \text{say } \$150 \text{ (i.e. 30\%)} + \text{say } \$50 \text{ (i.e. 10\%)} \text{ pa.} \end{aligned}$$

Insurance is **inherently expensive**.

Only buy insurance where you really need it; self-insure for small items

Best suited for low probability risks with a high financial cost, e.g. homeowners insurance

Least suitable for low cost events with a high probability of occurrence, e.g. vision care.

Insurance is **not an investment** (or at best a lousy one!)

**Theory of Large Numbers** ..... the big advantage the insurance companies have:

For example, you cannot predict the end of your personal retirement, say age 85 +/- 15 years .....  
..... but the actuaries know to the day the lifespan of the average person.

### Auto Insurance

Liability: Bodily injury, property damage, e.g. \$250k/500k/100k

\$1,000 deductible collision, \$1,000 deductible comprehensive, uninsured motorist, etc.

### Homeowner's insurance

Dwelling, personal property, loss of use. Personal liability, property damage, etc.

Does not cover damage from a flood or an earthquake.

### Flood insurance

Mandatory if you live in a flood plain.

### Earthquake insurance

Dwelling (5% - 25% deductible), contents, living expenses, etc.

Cost ~0.2% pa with 15% deductible, e.g. ~\$2,000 pa for \$1M coverage with \$150,000 deductible

### Life insurance [www.term4sale.com](http://www.term4sale.com)

Term insurance (pure insurance) is suitable for younger people to protect their family

Suitable for a wage-earner with two young kids to put thru college

Replaces future earnings if the wage-earner should die prematurely

Less necessary as the wage-earner(s) build an investment portfolio to cover the costs directly.

Whole life policies are usually sold, not bought, and usually make lousy investments

Sales commission can be high, say 50% - 100% of first year's premium

Usually have a negative return for the first 5 - 15 years, 2% - 4% long-term.

### Disability insurance (Potential train wreck)

Premature death is not the worst case for our young wage-earner.

The family could be in a much worse financial condition if a freeway accident disables

him/her for life. They could lose not only the wage-earner's future income stream, but also be burdened with expensive long term care for decades.

### Health insurance

Very expensive in U.S: Twice the cost, with inferior care, compared to other developed countries.

## Medicare

Health care for those over age 65: Will be covered in detail at our April 8th discussion group.  
Major gaps require independent supplemental coverage, e.g. foreign travel, long term care, etc.

## Long-term care insurance (Potential train wreck) [www.aaltc.org](http://www.aaltc.org) [www.genworthltcquote.com](http://www.genworthltcquote.com)

70% of people over age 65 will need assistance with the activities of daily living (ADLs)

Bathing, continence, dressing, eating, toileting, transferring (and cognitive impairment)

Average stay is 2 to 3 years, but dementia patients could need care for two decades.

Expensive: >\$100k pa for assisted living facility. Not covered by health care policy or Medicare  
Most suitable for middle income people; Poor can't afford it, and rich can self-insure.

Important parameters:

Premium cost: 3% to 10% pa at age 65

Elimination period: Typically 3, 6, 9 months

\$ amount of monthly benefit

Coverage: Qualified facility, in-home care

Term of policy: 3 - 5 years, longer if possible

Inflation rider if possible

Rating of the insurance company

Consider a hybrid life insurance policy or an annuity to get longer coverage.

## Social Security

Pension benefits starting at age 62 to 70. Will be covered in detail in April 8th discussion.

## Annuities [www.stantheannuityman.com](http://www.stantheannuityman.com) [www.immediateannuities.com](http://www.immediateannuities.com)

### Single premium immediate annuity (SPIA)

Pay premium now to buy a monthly cash flow for the rest of your life, starting immediately

| \$100,000 premium at ..... | <u>Male</u>          | <u>Female</u>       | <u>Joint (same age)</u> |
|----------------------------|----------------------|---------------------|-------------------------|
| ..... age 60               | \$436/mth (5.2% pa)  | \$419/mth (5.0% pa) | \$385/mth (4.6% pa)     |
| ..... age 70               | \$565/mth (6.8% pa)  | \$535/mth (6.4% pa) | \$469/mth (5.6% pa)     |
| ..... age 80               | \$872/mth (10.5% pa) | \$794/mth (9.5% pa) | \$661/mth (7.9% pa)     |

### Single premium deferred annuity (SPDA), or longevity annuity

Pay premium now to buy a monthly cash flow for the rest of your life, starting at say age 85

| \$100,000 premium at ..... | <u>Male</u>          | <u>Female</u>        | <u>Joint (same age)</u> |
|----------------------------|----------------------|----------------------|-------------------------|
| ..... age 60               | \$3,645/mth (44% pa) | \$2,853/mth (34% pa) | \$2,195/mth (26% pa)    |
| ..... age 70               | \$2,421/mth (29% pa) | \$2,029/mth (24% pa) | \$1,527/mth (18% pa)    |
| ..... age 80               | \$1,573/mth (18% pa) | \$1,350/mth (16% pa) | Call for quote          |

## Liability insurance (Potential train wreck) [www.whatsmyliability.com](http://www.whatsmyliability.com)

Protects against claims in excess of your auto and homeowner's policies for ...

... Bodily injury to others: Your teenage driver hits a carful of attorneys on the freeway.

... Property damage: Your prized oak tree crashes thru your neighbors living room.

... Lawsuits for slander, libel, mental anguish, etc.

Who needs umbrella insurance? Probably anyone with assets greater than their auto/HO policies

How much coverage?

\$1M to \$2M minimum: incentivizes the insurance company to provide good legal support

\$2M - \$5M typical: Net worth + small delta ?

\$5M - \$10M maximum except for HNW people

Cost is relatively low: approximately \$150 - \$300 per \$1M per annum.

**Social Security and Medicare:** April 8th, 2020

**Estate Planning:** May 13th, 2020

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AAII/FP\_SIG/FP2003Insurance.pdf