

Economics 26 – Lecture 17 Insurance and Pensions

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Today

- Insurance and Insurance Companies
 - Life Insurance
 - Property and Casualty Insurance
 - Adverse Selection and Moral Hazard Issues
- Pensions and Pension Funds
 - Types of Pensions

Insurance Companies & Pension Funds

■ **TABLE 2** Principal Financial Intermediaries

Type of Intermediary	Value of Assets (\$ billions, end of year)			
	1970	1980	1990	1998
Depository Institutions (Banks)				
Commercial banks	517	1481	3334	5635
Savings and loan associations and mutual savings banks	250	792	1365	1088
Credit unions	18	67	215	394
Contractual Savings Institutions				
Life insurance companies	201	464	1367	2819
Fire and casualty insurance companies	50	182	533	884
Pension funds (private)	112	504	1629	4331
State and local government retirement funds	60	197	737	2344
Investment Intermediaries				
Finance companies	64	205	610	826
Mutual funds	47	70	654	3626
Money market mutual funds	0	76	498	1334

Source: Federal Reserve Flow of Funds Accounts.

Why is there an insurance industry?

- People are risk averse: they prefer a stable stream of income and consumption.
- Insurance companies collect insurance premiums and pay out benefits if a loss occurs.
- Profits are earned from investing premiums.
- How are insurance companies able to predict their losses from claims accurately enough to let them price their policies such that they will make a profit?
 - They use actuaries who are experts at assessing risk.

Risk Pooling

- Individuals can be protected from losses by pooling their funds and diversifying their risk across a group of people.
- Some risks like health risks and car accidents are independent \Rightarrow pooling greatly reduces variance of expected claims.
- Why do insurance companies not allow people to buy insurance on personally unrelated risks?
 - Insurance protects the insured from events that reduce their income or consumption.
 - Buying insurance on personally unrelated risks does not achieve this (It basically would be gambling).

Types of Insurance

- Life Insurance
- Property and Casualty Insurance
- Health Insurance

Life Insurance

- Term Life
 - Pays beneficiaries upon insured's death during the term that policy is in force. (e.g, 1-5 years.)
 - Premiums increase with age (upon renewal).
 - Contains no savings element.
- Whole Life
 - Lasts for insured's whole life while premiums are paid.
 - Contains a savings element
 - Premiums constant over time ($>$ term life premiums) \Rightarrow policy accumulates cash during early years.
 - Insured can borrow against accumulated cash at low rates and purchase an annuity upon termination.
 - Average annual return \approx 2-3% per year.

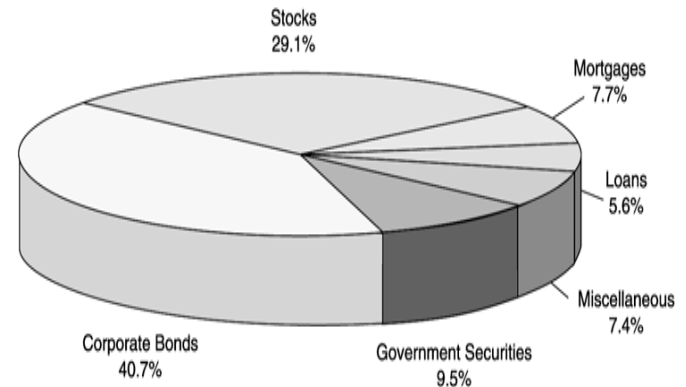
Life Insurance

- Universal Life
 - Combines term life with whole life savings element.
 - Pays off if you die or reach a specified age.
 - Savings accumulate at a higher rate than for whole life.
 - Interest earned on savings portion is tax-exempt until withdrawn.
- Annuities
 - Insures against outliving retirement funds.
 - Provides payments as long as beneficiary lives beyond a certain age.

Life Insurance

- Variable Life
 - Policy holder controls investment of premiums.
 - Death benefit or annuity paid depends on fund performance.
- Key advantage
 - No current taxes on the dividends, interest, and capital gains (It's basically a tax dodge).
- Main disadvantage
 - High fees, which undo much of the tax advantage

Life Insurance Assets - 2000



Other Types of Insurance

- Property and Casualty Insurance - What are they?
 - Protects property against losses due to accidents, fire, disasters, and other calamities.
 - Casualty insurance protects insured from liability for injuries caused to others by accidents or product failures.
 - About 10% is *reinsured* with larger insurance companies.
- Health Insurance
 - Protects insured against expenses associated with illness.
 - Usually fee-for-service or HMO.

Other Types of Insurance

- Farm & Business Insurance
 - Farms insure against crop failures.
 - Businesses insure against shipping & inventory damage.
 - Doctors insure against malpractice claims.
- Catastrophe Insurance
 - Recently, a few big storms, floods, and earthquakes have been hurting property and casualty insurers
 - e.g., Hurricanes Andrew & Floyd, Mississippi flooding
 - The U.S. Government sells flood insurance, even to people who live in the desert.
- Unemployment & Disability Insurance
 - Firms pay premiums and government pays claims.

Adverse Selection in Insurance

- The Problem
 - Those who are more at risk are more likely to seek insurance.
- Some Cures
 - Application screening
 - Risk-based premiums
 - Mandatory coverage for all.

Moral Hazard in Insurance

- The Problem
 - Insured are more likely to engage in risky activities or fail to take adequate precautions against losses.
- Some Cures
 - Deductibles
 - Coinsurance
 - Restrictive provisions

Insurance Company Structure

- Organized as either stock or mutual companies.
- Stock companies aim to make profits.
- Mutual companies aim to minimize costs
 - Policyholders are part-owners.
 - Paid annual dividends from surplus of premiums over insurance payments (not taxed).
- Most are stock corporations & many have demutualized.
- The number of insurers is declining due to mergers and the growing number of conglomerates.

Lloyds of London

- An important part of the reinsurance market.
- Not an insurance company, but an exchange.
 - Independent brokers bring risks to the floor.
 - Premiums are set in competitive double-auction market.
 - Wealthy individuals (known as *names*) agree to take on pieces of the risk as parts of syndicates.
- Once accounted for over 50% of the world's non-life insurance and still sells a lot of marine and hurricane insurance.
- Willing to insure many unique types of risks
 - e.g., communication satellites, Marilyn Monroe's legs, Venus William's arms

Insurance Industry Regulation

- Asymmetric Info. & Consumer Protection
 - Disclosure and standardization of contracts.
 - Insurers can be prosecuted if fail to fulfill contract.
 - Moody's and Standard & Poor's rate financial health.
 - Anti-discrimination laws.
- Intervention in Provision of Insurance
 - Tax subsidies (life) & required coverage (auto)
- Social Safety Net
 - Public provision (disability, unemployment).
 - Insurer of last resort (disasters)
- State level only, but all comply with NY laws.

Pension Plans

- A pension plan is a savings pool that accumulates over an individual's working years and is paid out during retirement.
- Funds are invested in various assets.
- Vesting period
 - Time employed until eligible to receive firm's payments (e.g., an employee is vested after 3 yrs).
 - Used to tie workers to a firm.

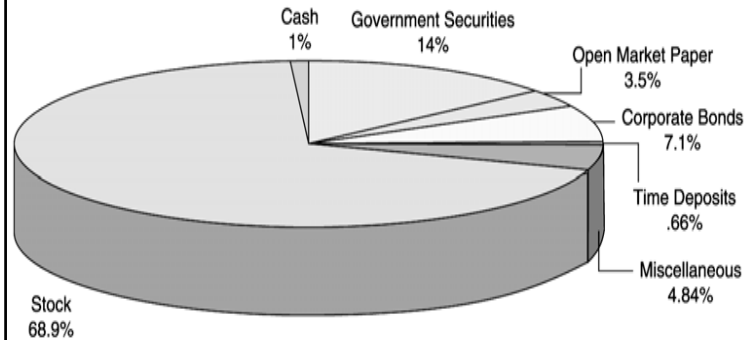
Defined-Benefit vs. Defined-Contribution

- Defined-Benefit Plans
 - Requires the employer to pay the employee a specific benefit upon retirement.
 - Annual payout usually depends on the employee's time of employment with the employer and final salary.
- Defined-Contribution Plans
 - Specify how much the employer will contribute, usually as a fixed percentage of the employee's wages.
 - Employee sometimes may contribute as well.
 - Employee often has a say in how funds are invested.
 - Accumulated balance is paid out when employee retires.

401Ks and IRAs

- 401Ks
 - Defined-contribution plans offered by firms
 - Non-profits like Dartmouth offer 403Bs
 - Allow pre-tax employee contributions.
 - Earnings are tax deferred (pay taxes on the capital gains when funds are withdrawn).
- IRAs
 - If not contributing to a 401k, can put \$2000 of labor income in an IRA pre-tax.
 - A Roth IRA allows you to use after-tax money. Then money withdrawn at retirement is not taxed
 - Returns on two types are about the same, but depend on tax rates while working vs. tax rates at retirement.

Private Pension Plan Assets 1999



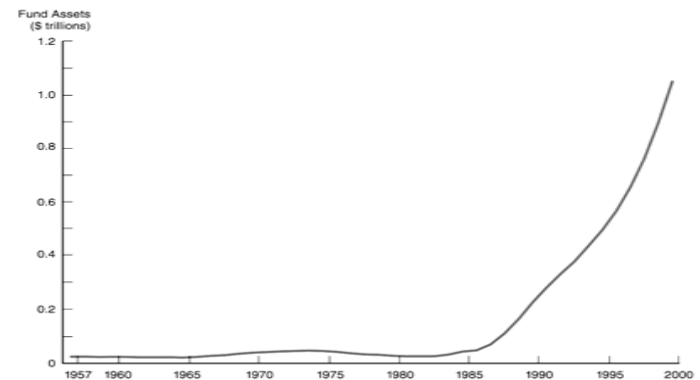
Pension Fund Regulation

- Employee Retirement Income Security Act (1974)
 - Sponsors must fully vest pension rights within 7 years.
 - Vested pensions must be portable across employers.
 - Funds must meet reporting & disclosure requirements.
 - Funds must meet standards for funding.
 - Must make investments in interest of fund participants.
- Pension Benefit Guarantee Corporation
 - Insures benefits of up to \approx \$30K per person per year.
 - All funds are required to purchase coverage.

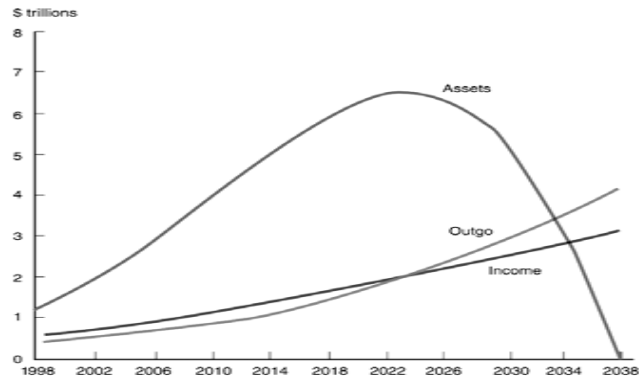
Social Security

- Pay as you go system
- Projected number of workers is falling while projected number of retirees is increasing

Social Security Fund Assets, 1957–2000



Projected Social Security Trust Fund Assets



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Next Class

- Investment Banks
- Brokerage Services
- Mutual Funds

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