

**Topic 3c**  
**Contractual Saving Institutions:**  
**Insurance Companies**

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**Contractual Saving Institutions:**  
**Insurance Companies**

General background on insurance

Life insurance companies

- Products and their evolution
- Performance
- Income sources: banks vs insurance companies
- Balance sheets
- Asset management

Property and casualty companies

- Types
- Underwriting cycle
- Performance
- Balance sheet

Insurance regulation

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**Who Are the**  
**Contractual Savings Institutions?**

*Insurance Companies*

- Life
- Property and Casualty
- Health

*Pensions*

- Defined contribution plans
- Defined benefit plans

Life insurance firms are also major providers of pension plans.

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## Pension Funds and Life Insurance Companies

Pension products provided by life insurance companies are separate from their insurance activities

Effects of these pension products are reflected in

- Growth and relative importance of the various sources of premium income for life companies
- The size of the balance sheets of life companies, since pension fund reserves are the major liability of life companies

This topic covers the insurance products of life insurance companies

A subsequent topic covers pension products

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## Life Insurance Companies and Health Insurance

This section does not cover health insurance in detail. Rather, it offers only some summary comments.

Health insurance is basically a third part method of paying for medical care.

- As such, insurance companies involved in health care insurance are processor of claims.
- It is an important business line for many life insurance companies. Insurance companies write about 59% of health insurance premiums

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## Health Insurance

In addition to life insurance companies, health insurance is provided by such private organizations as:

- Blue shield-Blue Cross organization
- Health Maintenance Offices
- Preferred Provider Organizations

These other writers of health insurance are NOT considered insurance companies and are NOT regulated as insurance companies

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## General Background on Insurance

Benefit:

- Risk is transferred to institutions better able to manage the associated risk
- Reduces society's cost of risk
- Uncertainty (chance of financial loss) is exchanged for a known premium

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## Risks Faced by Insurers

*Objective Risks*

Deviation between the actual loss and the expected loss

*Law of large numbers* plays a role in determining objective risk

- The larger the number of loss exposures, the more predictable becomes the average loss

*Profitability* depends, among other things, on the success of predicting losses. For the profitable, objective loss is small

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## Risk Reduction by Insurers

Risk reduction entails reducing objective risk or the difference between expected and actual loss

Three procedures help

- Try to prevent losses
- Assure probability of individual loss is average
- Deductibles and other risk sharing techniques

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## General Structure of Insurance Companies

### Organization

#### Stock

Mutual-fewer due to demutualization

- Largest demutualization in recent years: John Hancock and Prudential

### Size

Here, too, large organizations dominate the field

P/C: State Farm Mutual

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## Life Insurance Companies

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## Life Insurance Products

### *Insurance Only*

Term Insurance

### *Insurance and Investment Products*

Fixed investment return

Whole Life

Performance-based return

Universal life

Variable life

Universal variable life

### *Investment Only*

Annuities

Fixed

Variable

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## Evolution of Life Insurance Products

Until 1975, only choice was term and whole life insurance

- BUT: investment return in whole life did not keep pace with the inflation of the 1970s

*Results:* new customers unbundled their insurance premiums

- Purchased term insurance
- Invested or spent the difference between the term and the whole life premiums

*Result:* existing policy holders also responded to low yields on the investment portions of whole life policies

- Policy loans
- Policies lapses

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## Product Evolution (Continued)

Effect:

- Premium portion of industry's cash inflow deteriorated

Industry response:

- Performance based return on the investment portion of bundled contracts
  - 1975: Variable Life
  - 1979: Universal Life
  - 1985: Variable-Universal Life

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## Operational Consequences of Increased Customer Sophistication

Management had to place more emphasis on performance, since yield was the key to product differentiation among insurers

Policies were expensive to service which squeezed net underwriting margins

- Market rates are paid on accumulated premiums
- This led to higher contribution to reserves

Cash flow in and out was less predictable, increasing the need for accurate liquidity management

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## Net Underwriting Income

### Revenue

- Premium payments
- Gross investment earnings
- Other income

### Expenses

- Benefits payments
- Addition to policy reserve
- Operating expenses
  - Commissions
  - Office Expenses
- Investment Expenses

### Taxes

Net income

Dividends to stockholders for stock-owned firms

Addition to capital or surplus

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## Net Underwriting Income

$NUI = \text{premium income less policy expenses}$

This can be expressed as a margin

$NUM = [\text{premium income} - \text{policy expenses}] / \text{assets}$

Premium income must be large enough to pay operating expense and earn an acceptable return for shareholders (stock-owned) or policy holders (mutually-owned) firms

Typically NUI is too small to accomplish these objectives, so additional income is needed:

INVESTMENT INCOME

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## Sources of Premium Income

Life insurance premiums  
Health insurance premiums  
Annuity considerations

Annuity sales have increased dramatically as a source of premium income to life insurance companies

Annuities are sold as retirement vehicles to individuals and through group contracts

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## Depository Institutions Versus Life Insurers

These institutions have opposite key sources of income

### Depository Institutions

Main source: net interest income  
Supplemental: fee income

### Life Insurers

Main source: net fee income  
Supplemental: net investment income

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## Asset Management at Life Companies

For years, life insurers practiced simple maturity matching of assets and liabilities

- Liabilities (policy reserve) were long-term liabilities, so long-term assets (bonds) were acquired

This approach simple approach is no longer applicable, due to:

- Need to pursue return for performance related products
- Need for better liquidity management
- Interest rate risk

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## Property and Casualty Insurance Companies

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## Types of Property and Casualty Insurance

*Property*: protection from financial loss associated with direct and indirect loss to property owned. Two broad types:

- Named peril
- All risk

*Liability*: protection against financial loss because of a claim of negligence

*Marine*: protection from losses related to transportation

- Ocean
- Inland

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## Property and Casualty Insurers

Policy duration is shorter than life insurance companies

Six months for many auto policies

One-year for most types of p/c policies

Probability of claim is higher and will likely be paid during the policy period

Effect: premium income must be invested for shorter period than life companies

Objective risk is greater

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## Income Analysis

Total premiums written	Net underwriting Income
- Unearned premium	+ Net Investment Income
= Earned premiums	+ Other misc income
- Losses incurred	= Operating income
- Operating expenses	+ Realized capital gains
- Policy Holders dividends	- Income tax
= Net underwriting gain (loss)	= Net income after tax
	- Dividends to stock holders
	= Addition to surplus

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## Cash Flow of P/C Insures

Cash inflow (revenue) less stable than life insurers

- This is a product of the underwriting cycle

Cash outflow less stable than life insurers

- No actuarial foundation of many of the claims
- Some experience foundation for auto claims

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## The Underwriting Cycle

This refers to the movement in premium income over time

- Phases
  - Soft market
  - Hard market
- Exaggerated by
  - Regulatory approval of premium increases
  - Unanticipated interest rate cycle
  - Ease of entry and exit by reinsurers
- Hard market was particularly severe in the mid-1980s for commercial liability insurers
  - Exaggerated by sizable damage awards
  - Effects of inflation on claims

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## Performance Measures

Net Underwriting Margin:

$$\frac{[\text{Premium income} - \text{policy expenses}]}{\text{total assets}}$$

Combined ratio

Sum of

- Loss ratio
  - $$\frac{\text{Loss expenses}}{\text{total earned premiums}}$$
- Expense ratio
  - $$\frac{\text{Operating expense}}{\text{total premiums written}}$$
- Dividend ratio
  - $$\frac{\text{Policy holder dividends}}{\text{total earned premiums}}$$

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## Industry Developments

Risk retention groups

- Groups with similar exposure that pool and share losses

Purchasing groups

- Transfer risk to insurance companies but negotiate as a group

Claims-made liability insurance

- Covers only losses filed during the coverage period

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## Reserves and Capital

In the FOF data, *reserves* are classified as miscellaneous liabilities

There are two types of *reserves* at P/C companies

- Loss reserves
  - Funds set aside for claims that have been made but have not yet been paid
- Unearned premium reserves
  - Funds set aside for premiums paid in advance

Capital: to absorb losses if income is inadequate

- Stock companies: net worth
- Mutual companies: policy holders surplus

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## Reserves and Net Worth

Reserves account for most of the miscellaneous liabilities

*Loss reserves*

- Claims made but not yet paid
- Estimate of claims that will be made

*Unearned premium reserve*

- Presumes that service is rendered for one-half the premiums in a given year

*Net worth*

- Must be sufficient to absorb losses not covered by income

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## Insurance Regulation

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## Insurance Regulation

### McCarran-Ferguson Act

- Federal government has right to regulate insurance industry, but will not exercise that right if states do an adequate regulatory job

Some efforts in the 1980s to argue that states were not doing an adequate job

- Skyrocketing premium
- Policy cancellation
- Frustration reflected in voter initiatives in California and NJ to roll back premiums

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## Insurance Regulation

Each state regulates insurance through state insurance commissioners

Areas

- Solvency regulation
- Market regulation
- Market regulation

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## Solvency Regulation

Capital standards are the key element in solvency regulation

- Both Life and P/C companies now have risk-based capital standards

Solvency monitoring is conducted through examinations

Intervention and guaranty funds

- Actions against troubled companies
  - Actions to prevent deterioration to insolvent
  - Actions to conserve, rehabilitate, reorganize or liquidate company
- State guaranty associations
  - To protect policy holders, claimants and beneficiaries in event of insolvency

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## Market Regulations

Policy language:

- The policy is a contract

Products must be approved

Market practices

- Sales and underwriting activities must conform to minimum standards
- Assures claims are handled according to contract

Rates

- Specifics vary from state to state
- Laws typically require that rates not be inadequate, excessive or discriminatory

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## Market Regulations

Rates: P/C companies

- Rates must be approved
- Companies often rates filed by advisory organizations (e.g., ISO)

Rates: Life companies

- Rates are not regulated.
  - Policy benefits must be commensurate with premiums
- Standards set to assure sufficient reserves to cover future claims. For life companies, this amounts to floors on premiums

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## Market Regulations

### Health

- Some state require prior approval of rates
- Most utilize a file and use system
- Some states have no review
- Blue Cross-Blue Shield rates must be approved
- States set minimum loss ratios for Medicare supplement

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## Insurance Regulation

Potential for widely different rule among states

National Association of Insurance Commissioners (NAIC)  
tries to minimize this possibility

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## NAIC Support Of State Regulatory Effort

- Maintain insurance database and computer network linking insurance departments
- Analyze and inform regulators as to the financial condition of insurance companies
- Coordinate examinations and regulatory actions with respect to troubled companies
- Establish and certify states' compliance with minimum financial regulation standards
- Provide financial, reinsurance, actuarial, legal, computer, and economic expertise to insurance departments
- Value securities held by insurers
- Analyze and list accounting rules for insurers
- Conduct education and training programs for insurance departments
- *Develop model laws and coordinate regulatory policy on significant insurance issues*
- Conduct research and provide information on insurance and its regulation

Source: Robert W. Klein, "Structural Change and Regulatory Response in the Insurance Industry," NAIC

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## Model Laws, Regulations and Guidelines

Proposals made by NAIC with in important areas of the insurance business  
Prepared by taskforces and subcommittees utilizing insurance commissioners, the NAIC legal staff  
When adopted by NAIC, states may adopt the proposals outright or modify them to meet local conditions  
Some models are deemed essential for effective solvency regulation  
The models or substantially equivalent laws must be adopted by states seeking formal NAIC accreditation

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## Important Areas In Recent Years

Risk-based capital  
Asset valuation reserves  
Interest maintenance reserves  
Investment model law

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## Competition With Depository Banks

Big issue in 1990s:

- Sales of annuities by banks
- Sales of insurance products (other than credit insurance) by banks
  - Supreme court upheld National Bank Act that permits national banks in cities with a population of less than 5000 to sell insurance
  - OCC issued guidelines on this issue for banks

No longer an issue with the passage of the Financial Modernization Act

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