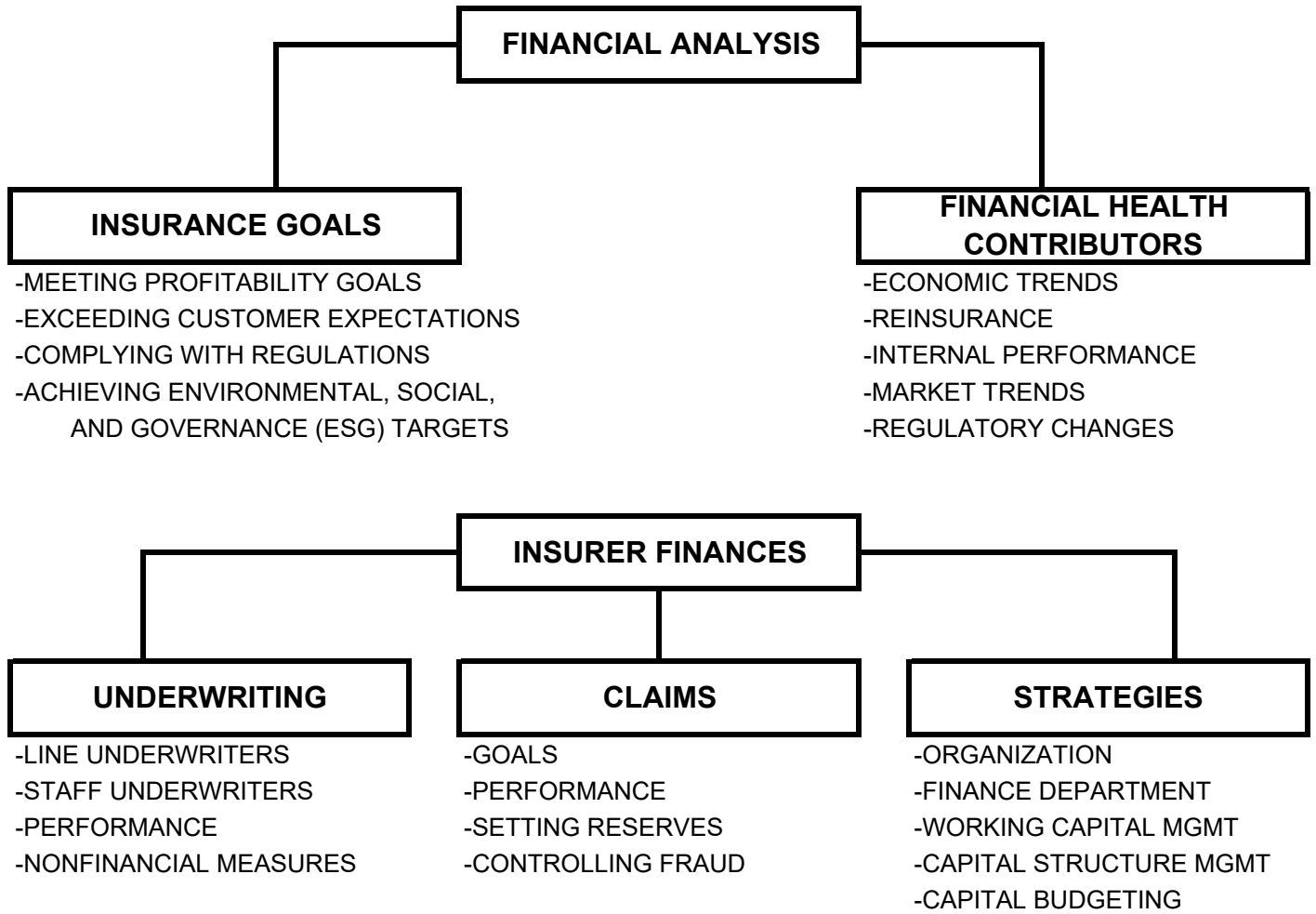


Module 1

Overview of Insurer Finances



**Overview of Insurer
Finances**

**Module 1
Chapter 1**

1

1

Objectives

- Obj I: Insurer Financial Analysis
- Obj II: Factors that Affect an Insurer's Financial Health
- Obj III: Underwriting and Insurer Finances
- Obj IV: Claims and Insurer Finances
- Obj V: Insurer Finance Department Strategies

2

2

**Insurer Financial
Analysis**

Objective I

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Insurer Goals

- Insurance professionals must understand goals of the insurance organization:
 - Meeting profitability goals.
 - Exceeding customer expectations.
 - Complying with regulations.
 - Achieving Environmental, Social, and Governance (ESG) targets.

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Meeting Profitability Goals

- Profitability depends on three factors:
 - Revenue – premiums, investment income, and sale of risk management services.
 - Expenses – covered losses, operating expenses, and taxes.
 - Ability to absorb risk – dependent on surplus, loss reserve adequacy, and investment performance.

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Meeting Profitability Goals

- Net operating income is equal to revenue minus expenses.
 - Owners may receive a portion of this as dividends.
 - Leftover (after dividends are paid) is added to policyholders' surplus.
- Rapid premium growth may be undesirable.
 - Could indicate lax underwriting standards or inadequate premium levels.

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Exceeding Customer Expectations

- To compete effectively, insurers must offer superior customer service and convenience.
 - Hard to compete on price alone.
 - Must provide prompt, professional service.
 - Commercial customers are looking for a risk management partner to help them avoid losses (not just pay for them).
- Big data allows insurers to construct accurate pricing models.

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Exceeding Customer Expectations

- Gauging the customer experience:
 - Reviews – online reviews from customers.
 - Customer satisfaction data – surveys, interviews, or focus groups.
 - Retention ratio – percentage of expiring insurance policies that an insurer renews.
 - Lapse ratio – percentage of policies written in a given period that lapse during that period.
 - Relationship between the insurer and its agents and brokers.

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Complying with Regulations

- Regulators try to prevent improper underwriting.
- To protect consumers, regulators:
 - Constrain insurers' ability to accept, modify, or decline applications for insurance.
 - Establish allowable classifications.
 - Restrict the timing of cancellations and nonrenewals.
- Good-faith claims handling requires insurer to give at least equal consideration to the insured's interests as it would to its own.

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Complying with Regulations

- Unfair underwriting practices include:
 - Misclassifying loss exposures.
 - Cancelling policies contrary to statutes.
 - Using underwriting rates that are not approved by the state.
 - Failing to apply newly implemented underwriting factors to renewals.

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Complying with Regulations

- Unfair claims settlement practices include:
 - Knowingly misrepresenting policy provisions.
 - Failing to properly investigate claims.
 - Failing to make a good-faith effort to pay claims.
 - Failing to approve or deny coverage within a reasonable period.

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ESG Targets

- ESG targets are used by socially conscious stakeholders to gauge how an organization's actions align with their own values.
 - Environmental – protection of environment.
 - Social – how social issues are addressed, employees are treated, and community is affected.
 - Governance – how leadership addresses areas such as pay, audits, internal controls, compliance, and shareholders' rights.

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Practice

- Which one of the following would be considered an unfair underwriting practice?
 - A. Knowingly misrepresenting important facts or policy provisions.
 - B. Failing to properly investigate and settle claims.
 - C. Cancelling or nonrenewing policies contrary to statutes and policy provisions.
 - D. Failing to approve or deny coverage within a reasonable period.

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Factors that Affect an Insurer's Financial Health

Objective II

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Factors Determining Insurer Health

- Profitability remains vital to insurer's survival.
- Significant contributors to insurer's health:
 - Economic trends.
 - Reinsurance.
 - Internal performance.
 - Market trends.
 - Regulatory changes.

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Economic Trends

- Two relevant economic trends for insurers:
 - Inflation – can increase the cost to repair or replace covered property.
 - Can be exacerbated by supply chain problems and consumer demand.
 - Can lead to higher interest rates.
 - Availability of capital – higher interest rates can reduce demand for loans.
 - Limits capital available for insurers.

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Reinsurance

- Reinsurance is the transfer of the financial consequences of a loss from the primary insurer to a reinsurer.
- Can be used to meet financial goals:
 - Increases large-line capacity.
 - Provides catastrophe protection.
 - Stabilizes the peaks and valleys of insurer’s loss experience.
 - Provides surplus relief from regulatory constraints of rapid growth.

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Internal Performance

- Insurers evaluate performance metrics.
 - Negative trends must be identified/corrected.
 - Increases in loss expenses are often caused by inflation, unanticipated losses, and supply chain issues.
 - Increases in underwriting expenses without a corresponding increase in written premiums is another red flag.
 - Underwriting costs are driven by data costs, professional fees, & audit expenses.

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Market Trends

- External trends can affect strategies.
 - A new competitor can drive down prices.
- Underwriting cycles must be recognized.
 - Hard markets – decreased competition, rising prices, increased profitability.
 - Soft markets – increased competition, falling prices, decreased profitability.
 - In periods of abundant capital, extended soft market conditions tend to prevail.

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Regulatory Trends

- Changes in regulatory landscape can lead to rapid and significant changes in insurer practices.
 - Regulations stipulate the conduct to which insurers must adhere.
- Regulatory changes can occur in response to:
 - Technological innovation.
 - Requests from consumers or insurers.
 - Catastrophic events.
 - Societal shifts.

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Practice

- Which one of the following statements is correct regarding factors that shape the insurance marketplace?
 - A. The NAIC has developed a standardized approach to measure environmental, social, and governance (ESG) criteria.
 - B. Inflation and reinsurance affect the cost of insurer operations.
 - C. During periods of abundant capital, protracted hard market conditions often prevail.
 - D. Factors that drive underwriting costs include interest rates, marketing fees, and depreciation costs.

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Underwriting and Insurer Finances

Objective III

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Purpose of Underwriting

- ❑ The main purpose of underwriting is to develop and maintain a profitable book of business for the insurer.
- ❑ Other purposes of underwriting:
 - ❑ Guard against adverse selection.
 - ❑ Ensure adequate policyholders' surplus.
 - ❑ Enforce underwriting guidelines.

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Underwriting Activities

- ❑ Underwriting responsibilities are delegated by members of senior management to line and staff underwriters.
 - ❑ Line underwriters – responsible for implementing steps in underwriting process.
 - ❑ Have a role in ensuring that applicants obtain the coverage they request.
 - ❑ Staff underwriters – assist management in forming underwriting policy.
 - ❑ Usually located in home office.

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Line Underwriting Activities

- Line underwriting activities include:
 - Select insureds – must meet the criteria established in underwriting guidelines.
 - Classify and price accounts – grouping accounts with similar attributes so that they can be priced appropriately.
 - Recommend or provide coverage – inquiring about insured’s risk management program.
 - For complex accounts, line underwriter may draft manuscript policy or endorsement.

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Line Underwriting Activities

- Line underwriting activities include:
 - Managing a book of business – some insurers make line underwriters responsible for the profitability of a book of business.
 - Support producers and customers – line underwriters are usually directly involved with producers in preparing policy quotations.
 - Coordinating with marketing efforts – insurer marketing efforts should conform to the insurer’s underwriting policy.

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Staff Underwriting Activities

- Staff underwriting activities include:
 - Researching the market – insurers must continually research fundamental issues such as which markets the insurer should target.
 - Formulating underwriting policy – work with employees from other departments to formulate underwriting policy.
 - Guides individual and aggregate decision making.
 - Communicated through underwriting guidelines.

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Staff Underwriting Activities

- Staff underwriting activities include:
 - Revising underwriting guidelines – must reflect changes in underwriting policy.
 - Some underwriting guides include systematic instructions for handling particular classes of commercial accounts.
 - Evaluating loss experience – determining if changes should be made in guidelines.

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Staff Underwriting Activities

- Staff underwriting activities include:
 - Researching and developing coverage forms – working with actuarial & legal departments to:
 - Develop new coverages.
 - Modify existing forms developed by advisory organizations.
 - Reviewing and revising pricing plans – updated continually to respond to changes in loss experience, competition, and inflation.

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Staff Underwriting Activities

- Staff underwriting activities include:
 - Arranging treaty reinsurance – determining the insurer’s needs for reinsurance and negotiating the terms and conditions.
 - Assisting others with complex accounts – serving as consultants to other underwriters.
 - Conducting underwriting audits – a way of monitoring line underwriter activities and adherence to underwriting authority.

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Staff Underwriting Activities

- Staff underwriting activities include:
 - Participating in industry associations – representing the insurer as a member of national and state insurance associations.
 - Conducting education and training – determining education and training needs of line underwriters.
 - Staff underwriters often develop courses and serve as instructors.

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Measuring Underwriting Results

- Insurers use financial and nonfinancial measures to track their results.
 - Financial measures are not always reliable in the short term.
 - Nonfinancial measures can be used to evaluate actions of underwriters and underwriting departments.

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Financial Measures

- The combined ratio is the most common financial measure of underwriting results.
 - Sum of the loss ratio and the expense ratio.

$$\frac{\text{Loss} + \text{LAE Expenses}}{\text{Premiums Earned}} + \frac{\text{Underwriting Expenses}}{\text{Premiums Written}}$$

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Financial Measures	
Combined Ratio	Meaning
= 100%	Every premium dollar is being used to pay claims and cover operating costs, with no remaining profit.
> 100%	Underwriting loss occurs; more dollars paid out than received as premiums.
< 100%	Underwriting profit occurs; expenses and claims are less than premiums received.

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Financial Measures	
<p>□ The combined ratio can be distorted by:</p> <ul style="list-style-type: none"> □ Changes in premium volume – restrictive underwriting reduces premium volume. □ Major catastrophic losses – likely to cause an underwriting loss for the year. □ Delays in reporting and loss development – significant time can elapse from when a loss is reported to when a claim is settled. □ Underwriting cycle – difficult to determine when next cycle phase will begin. 	

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Nonfinancial Measures	
<p>□ Nonfinancial measures link an organization's strategy and its outputs to its performance.</p> <ul style="list-style-type: none"> □ Selection – insurers often establish selection goals for underwriters to ensure the quality of the book of business does not deteriorate. □ Product or line of business mix – building a proper mix requires underwriters have a knowledge of the insurer's business goals. □ Pricing – pricing standards enable insurers to determine levels of premium adequacy. 	

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Nonfinancial Measures

- Other nonfinancial measures include:
 - Accommodated accounts – accepting substandard exposures in return for more profitable accounts.
 - Retention ratio – percentage of expiring policies an insurer renews, measured by policy count, premium volume, or both.
 - Low retention rate might indicate poor service to producers, noncompetitive pricing, or unfavorable claim service.

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Nonfinancial Measures

- Other nonfinancial measures include:
 - Hit ratio – ratio of policies written to those that have been quoted to applicants.
 - A high hit ratio might indicate:
 - Competition is easing.
 - Rates are inadequate.
 - Coverage is broader than other insurers.
 - The underwriter has the skill set for production underwriting.
 - Selection criteria are deteriorating.

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Nonfinancial Measures

- Other nonfinancial measures include:
 - Service to producers – requires establishing a set of minimum acceptable standards for certain types of service to producers.
 - Premium to underwriter – management uses this measure to determine if underwriters are assuming their share of work.

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Practice

- Which one of the following statements is correct regarding measuring underwriting results?
 - A. From an insurer’s perspective, a higher combined ratio is desirable.
 - B. Major catastrophic losses make it difficult to evaluate the financial underwriting performance measures in the short run.
 - C. The retention ratio is considered the accepted financial measure of underwriting performance.
 - D. Proper underwriting should produce an underwriting profit large enough to absorb any investment losses of the insurer.

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Practice

- Which of the following represents an activity of a line underwriter?
 - A. Evaluating loss experience.
 - B. Selecting insureds.
 - C. Reviewing and revising pricing plans.
 - D. Researching the market.

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The Claims Function and Insurer Finances

Objective IV

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42

Claims Department Goals

- Claims Department has great influence on insurer's success.
 - Directly affects insurer's loss costs.
 - Generates large quantities of data essential to other departments.
- Primary goals of Claims Department:
 - Comply with contractual promises.
 - Support insurer's financial goals.

43

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Claims Department Goals

- Complying with contractual promises.
 - Paying, defending, and reimbursing the insured when a claim is submitted.
- Supporting insurer's financial goals.
 - Accomplished by controlling expenses and paying only legitimate claims.
 - Claims managers oversee all claims function expenses, set appropriate spending policies, and use providers that are fairly priced.

44

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Claims Department Goals

- Claims Department performance is measured using the loss ratio.
 - Measures loss adjustment expenses against earned premiums.
 - Reflects the percentage of premiums being consumed by losses.
- If loss ratio increases, Claims Department and others are pressured to reduce expenses.

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Affecting the Bottom Line

- The Claims Department can affect an insurer's bottom line through:
 - Setting accurate case reserves.
 - Controlling fraud.
- Reserves are the amount an insurer sets aside to pay existing claims.
 - Occasional inadequate reserves may not affect the insurer.
 - Consistent inaccurate reserves can lead to insolvency.

46

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Setting Accurate Case Reserves

- Reserving errors can be caused by:
 - Limited information with initial reserves.
 - Poor planning, lack of expertise, or rigidity in evaluating facts.
- Reserving errors may lead to stairstepping.
 - Setting reserves too low initially.
 - Increasing reserves after payments are issued and again when bills arrive.

47

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Setting Accurate Case Reserves

- Common methods of setting case reserves:
 - Individual case method – subjective in nature, reserves vary widely.
 - Roundtable method – consensus from two or more claims personnel.
 - Time consuming and may not be suitable.
 - Average value method – average of settlements from similar claims.
 - Usually adjusted for inflation.

48

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Setting Accurate Case Reserves

- Common methods of setting case reserves:
 - Formula method – reserve determined using mathematical formula based on the facts of the claim.
 - Expert system method – algorithms are used to estimate the amount of reserves needed.
- Both the roundtable method and the expert system method can be used to prevent stairstepping.

49

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Controlling Fraud

- Insurance fraud is deliberate deception of an insurer for unwarranted financial gain.
 - One of the costliest white-collar crimes in U.S.
- Claims reps are front line defense against fraud.
- Technological advances help control fraud.
 - Telematics – combines GPS tracking and wireless data transmission.
 - Internet of Things – a network of objects that send and receive data.

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Practice

- Ronnie, a new claims representative with Super Insurer, sets a low reserve on a bodily injury claim he is handling. He later raises the reserve after receiving additional medical bills so that he can issue payment. He raises the reserve again when subsequent bills are submitted. This stairstepping process can best be prevented by using which one of the following methods of setting reserves?
 - A. Individual case method.
 - B. Combined ratio method.
 - C. Roundtable method.
 - D. Average value method.

51

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Insurer Finance Department Strategies

Objective V

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Organization

- ❑ The company's financial manager is typically the chief financial officer.
 - ❑ Primary responsibility is determining the company's financial strategy.
 - ❑ Responsible for the activities of the treasurer and the controller.
- ❑ Treasurer's primary responsibilities include budgeting and capital management.
- ❑ Controller's primary responsibilities include financial reporting and accounting.

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Corporate Finance Department

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graph TD
    CFO[CFO] --> Treasurer[Treasurer]
    CFO --> Controller[Controller]
    Treasurer --> WCMgt[Working Capital Mgmt]
    Treasurer --> CSMgt[Capital Structure Mgmt]
    Treasurer --> CBudgeting[Capital Budgeting]
    Controller --> FAccounting[Financial Accounting]
    Controller --> Taxation[Taxation]
    Controller --> FReporting[Financial Reporting]
  
```

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Working Capital Management

- Working capital management focuses on the short-term needs of a company.
 - Allows a business to meet its day-to-day financial obligations.
 - Mainly involves cash management.
- Working capital is current assets less current liabilities.
 - Current assets – cash, inventory, accounts receivable, and securities.
 - Current liabilities – debts due within one year.

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Working Capital Management

- Working capital management involves the receipt and payments of cash, and the following types of decisions:
 - Whether the company should pay cash or borrow.
 - How cash should be invested.
 - How much inventory should be carried.
 - Whether the company should extend customer credit.

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Capital Structure Management

- Capital structure management focuses on long-term needs of a corporation.
 - Represents the mix of long-term debt and equity.
 - Affects stock value and financial risk.
 - Total value of company is not affected.
- Capital structure management decisions:
 - Whether to borrow or issue stock.
 - Vehicles to be used to raise capital.

57

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Capital Budgeting

- Capital budgeting involves decision-making around a company's long-term investments.
 - Investments can include equipment and insurance writing capacity.
- Financial managers perform cash flow analysis to determine which investments will provide more benefit than cost to the company.

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Accounting

- Accounting activities focus on recording and reporting financial data.
 - Includes financial accounting (bookkeeping), taxes, and financial reporting.
 - There is often overlap between individuals performing accounting and finance activities.
- Financial reports can be used by the finance department to determine capital needs.

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Practice

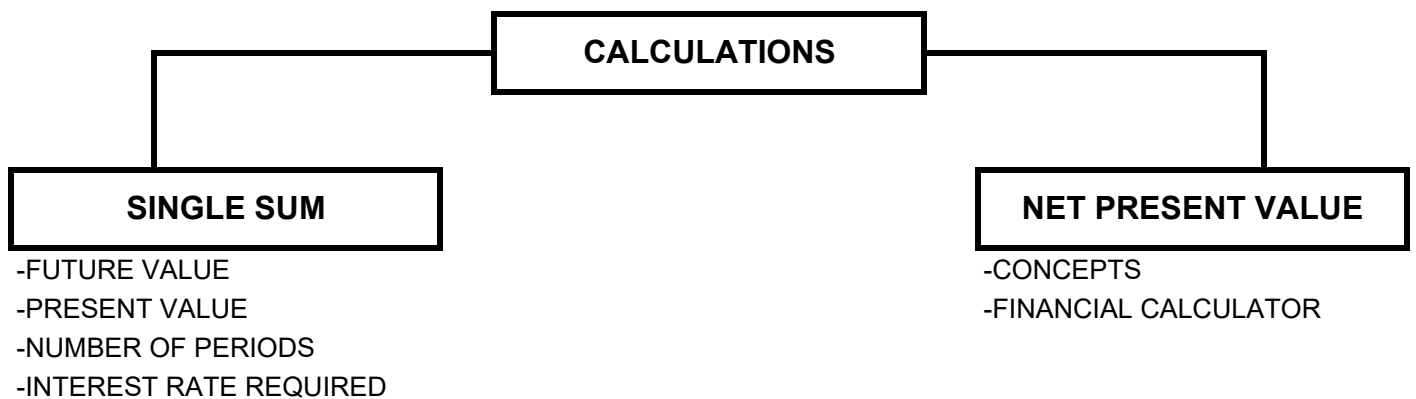
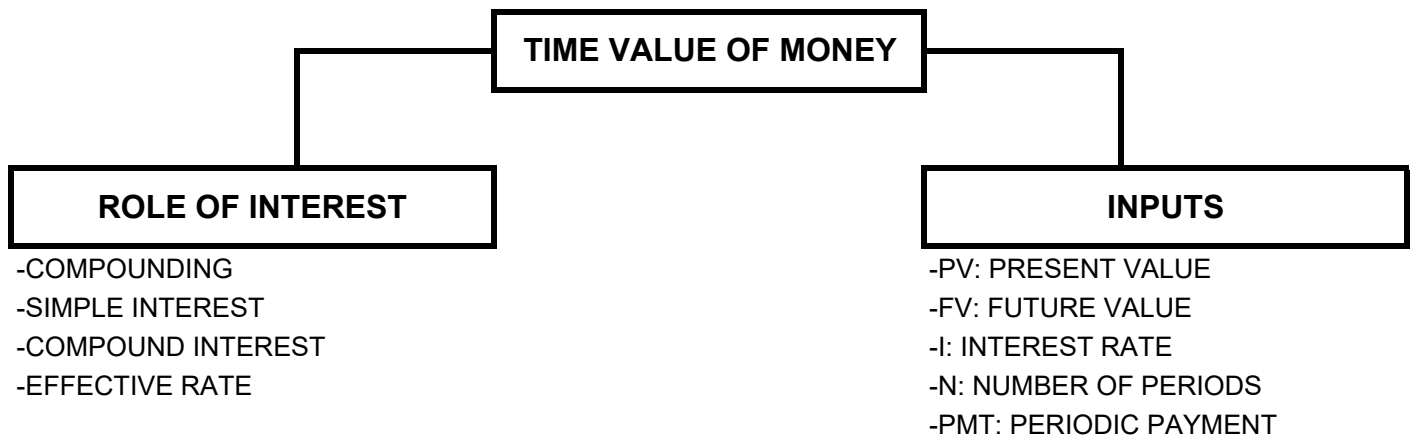
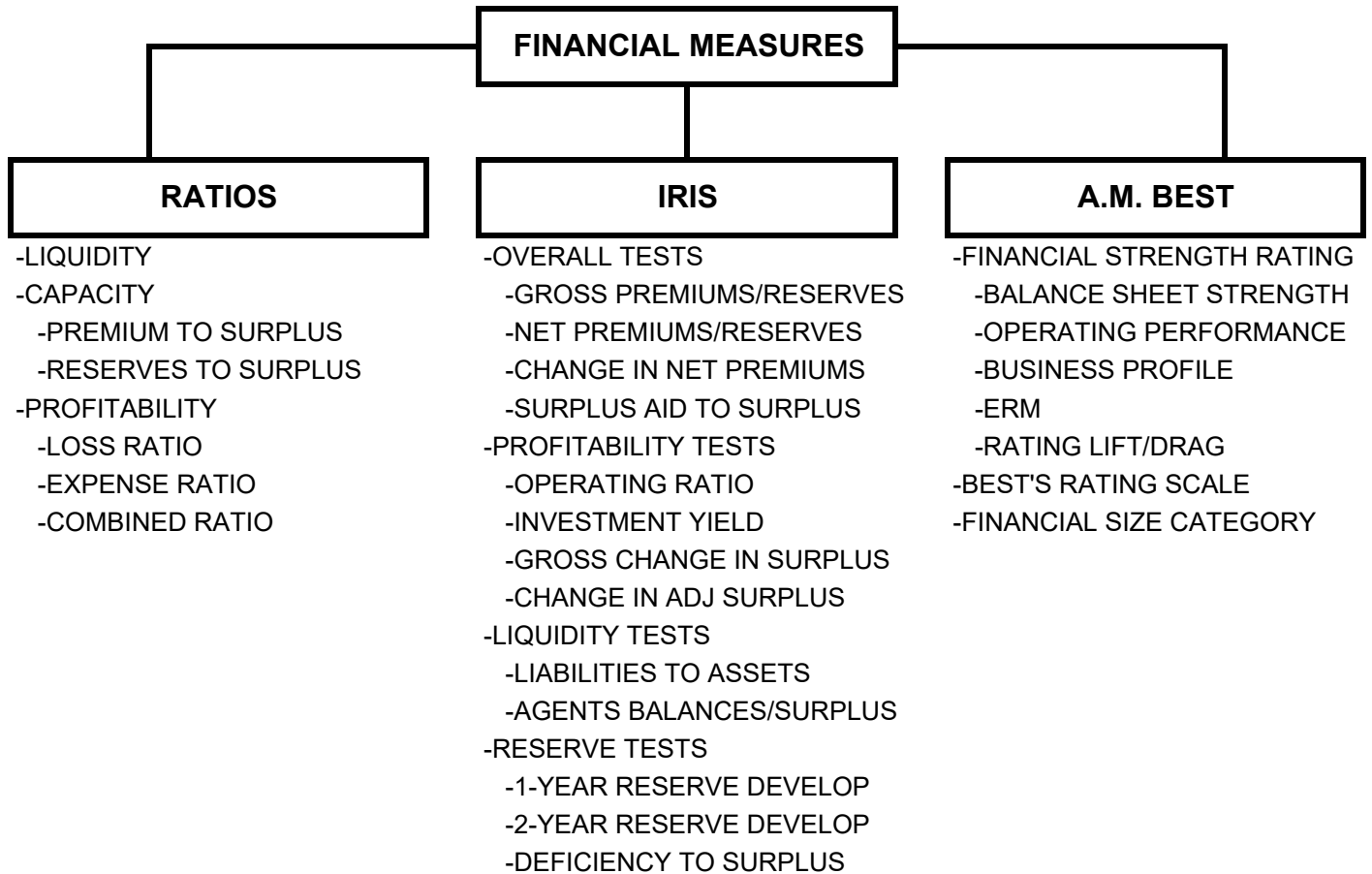
- Which one of the following is an example of capital budgeting?
 - A. A digital imaging company is preparing its annual financial statements.
 - B. A clothing store is deciding on the level of inventory to carry.
 - C. A publisher determining if a new printing press should be purchased.
 - D. An oil and gas company is determining if it should raise capital by borrowing.

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Module 2

Key Financial Measures



Key Financial Measures

**Module 2
Chapter 2**

1

1

Objectives

- Obj I: Insurer Performance Ratios
- Obj II: Insurer Performance Ratings
- Obj III: Monetary Calculations

2

2

Insurer Performance Ratios

Objective I

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Performance Ratios

- Insurers can use ratios to measure financial health.
 - Capacity ratios – measure reasonableness of reserves or insurance writings.
 - Liquidity ratios – measure insurer’s ability to satisfy short-term obligations.
 - Profitability ratios – measures insurer’s profits.

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Capacity

- Capacity is primarily determined by:
 - Amount of capital an insurer can commit to underwriting of loss exposures, or
 - Capability to write new business.
- Capacity is a function of policyholders’ surplus.
 - As insurer grows, regulators require more of policyholders’ surplus to be kept as a buffer.
 - Surplus is temporarily depressed when new policies are written.

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Liquidity

- Liquidity is an insurer’s ability to raise cash to meet its financial obligations.
 - Stocks are considered liquid.
 - Can be quickly sold for cash.
 - Real estate is considered illiquid.
 - Sale can take months to be completed.
- Insurer’s cash and liquid investments should at least be equal to unearned premium reserve and loss reserve.

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Profitability

- Profitability is essential to insurer survival.
 - Provides surplus to support additional sales and premium growth.
- Profitability is based primarily on underwriting and investment results.
 - Combined ratio is most common profitability ratio for property-casualty insurers.
 - Combines loss ratio and expense ratio.

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Profitability

- Combined ratio is used to determine if the insurer is making an underwriting gain or loss.
 - Combined ratio = Loss Ratio + Expense Ratio
- There is an inverse relationship between the ratio and profitability.
 - Ratio of less than 100 indicates profit.
- The limitation of the ratio is that it does not factor in the investment income.
 - May not provide accurate information about the profitability of the insurer.

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Profitability

- Elements of the Combined Ratio:
 - Loss ratio – how much of the premium dollar is used to pay losses and loss adjustment expenses.
 - A loss ratio of 70 indicates that 70% of the premium dollar is spent on paying losses and loss adjustment expenses.
 - Expense ratio – how much of the premium dollar is used to pay the insurer’s expenses.

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Practice

- Which one of the following statements is correct regarding liquidity?
 - A. Growing insurers would anticipate that their underwriting operations would negatively affect liquidity.
 - B. The combined ratio is the key ratio used to measure an insurer's liquidity.
 - C. Liquidity is primarily determined by the amount of capital an insurer can commit to underwriting a portfolio of loss exposures.
 - D. An insurer can enhance its liquidity by purchasing liquid investments such as real estate.

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Insurer Performance Ratings

Objective II

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IRIS

- Insurance Regulatory Information System (IRIS) was developed by NAIC and state regulators.
 - Identifies insurers that may be impaired.
 - Contains statistical and analytical phases.
 - IRIS results may not be used by insurance companies for advertising purposes.
- Statistical phase consists of 13 ratios.
 - Overall, Profitability, Liquidity, and Reserve.

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IRIS

- Ratios are compared to NAIC benchmarks.
 - Ratios can be positive or negative.
 - Help identify companies for whom regulatory oversight or regulatory review is necessary.
- There are no specific rules or procedures to follow when a company falls outside the appropriate ranges.
 - Regulatory response depends on several factors.

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Overall Tests

- Overall tests measure insurer exposure to unfavorable underwriting results:
 - 1 – Gross Premiums Written to Surplus – measures insurance exposure
 - 2 – Net Premiums Written to Surplus – measures exposure after reinsurance.
 - Large difference between ratios 1 and 2 may indicate over-reliance on reinsurance.
 - Liability insurers should generally maintain lower ratio than property insurers.

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Overall Tests

- 3 – Change in Net Writings – percentage change in premiums written during most recent year.
 - Increase/decrease of 33% or less acceptable.
 - Excessive premium growth may be a sign of poor pricing.
- 4 – Surplus Aid to Surplus – surplus aid is commissions on ceded reinsurance.
 - Large amounts of aid indicate insufficient capitalization for direct insurance written.

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Profitability Tests

- ❑ 5 – Two-year Overall Operating – combined ratio less investment income ratio for past two years.
- ❑ 6 – Investment Yield – investment income divided by cash and invested assets.
- ❑ 7 – Gross Change in Surplus – measures percentage change in surplus for the year.
 - ❑ Decreases can result from poor underwriting or investment results, dividends, etc.
- ❑ 8 – Change in Adjusted Surplus – measures percentage change in surplus from operations.

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Liquidity Tests

- ❑ 9 – Adjusted Liabilities to Liquid Assets – ability to meet obligations with liquid assets.
 - ❑ Ratio over 100% may indicate liquidity issues.
- ❑ 10 – Gross Agents' Balances to Surplus – indicates dependency of surplus on assets of questionable liquidity.
 - ❑ Agents balances may be uncollectible in the case of insurer liquidation.

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Reserve Tests

- ❑ 11 – One-Year Reserve Development to Surplus – measures change in surplus attributable to loss development of prior year reserves.
 - ❑ High value may indicate inadequate reserves.
- ❑ 12 - Two-Year Reserve Development to Surplus
 - ❑ Can help determine if reserves have been understated to inflate surplus.
- ❑ 13 – Estimated Current Reserve Deficiency to Surplus – based on historical reserves.

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Best Ratings

- A.M. Best Company rates insurers annually.
 - Identifies strong companies, as well as vulnerable companies.
- A.M. Best rating categories:
 - Financial Strength Rating (FSR).
 - Best's Rating Scale.
 - Financial Size Category (FSC).

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Financial Strength Rating

- The rating process begins with a review of:
 - Balance sheet strength.
 - Operating performance.
 - Business profile.
 - Enterprise risk management.
 - Rating lift/drag.
- A.M. Best refers to the subjects of its reviews as rating units.

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Balance Sheet Strength

- When reviewing the balance sheet, A.M. Best uses Best's Capital Adequacy Ratio (BCAR).
 - Quantifies investment and insurance risks in relation to capital.
 - A stable ratio is desirable.
- A.M. Best also considers diversification, asset quality, and liquidity.

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Operating Performance

- A favorable rating is contingent upon consistent operating performance by the company.
 - Strong earnings allow a company to take more chances, develop new products, and handle economic downturns.
- A.M. Best reviews performance of underwriting, investment returns, and total operating earnings.
 - Management reports may also be reviewed.

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Business Profile

- The strength of an insurer’s business profile can have a tremendous effect on the rating.
 - A strong profile can help drive future operating performance.
- Factors affecting business profile:
 - Diversification of business mix.
 - Ability of management.
 - Competitiveness of the market.

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Enterprise Risk Management

- Efficient ERM program can demonstrate that an insurer is serious about risk management.
 - Analysts look for ERM program that helps manage exposures and maximizes the organization’s value to stakeholders.
- Established ERM program should reach every facet of an insurer.
 - Every level of management should consider potential risks.

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Rating Lift/Drag

- After an initial review, a rating unit could receive a rating increase or decrease if part of a larger rating unit.
 - Rating units that receive a large lift are generally a very important part of the group's overall operations.

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Best's Rating Scale

- FSRs are rated with a letter grade.
 - A++ through B+ is considered secure.
 - B through F is considered vulnerable.
 - S means FSR is suspended.
- Rating modifiers:
 - u – rating under review.
 - g – rating considers group affiliation.
 - p – rating considers pooling affiliation.
 - r – rating considers reinsurance affiliation.

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Financial Size Category

- FSC measures size by adjusted surplus.
 - Roman numerals are assigned based on size.
 - Class I is smallest, and represents less than \$1,000,000 of adjusted policyholders' surplus.
 - Class XV is largest.
- FSC is not a measure of financial strength.
 - Instead, measures ability to handle large insurance or investment risks.

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Practice

- Which one of the following statements is correct regarding the A.M. Best rating scale applicable to insurers?
 - A. The Financial Size Category (FSC) is used to measure an insurer’s financial performance.
 - B. A Financial Strength Rating (FSR) of “B” would indicate an insurer that is vulnerable.
 - C. A Financial Strength Rating (FSR) of “S” would indicate an insurer that is secure.
 - D. A Class I insurer is considered a large insurer as measured by adjusted surplus.

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Practice

- A.M. Best’s Financial Strength Rating (FSR) begins with a detailed review of several key rating factors. Which one of the following represents a key rating factor?
 - A. Qualitative significance.
 - B. In-force policies.
 - C. Yield on invested assets.
 - D. Enterprise risk management.

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Practice

- All of the following statements are correct regarding IRIS ratios, EXCEPT:
 - A. They can help identify companies for whom regulatory oversight or possibly regulatory review may be necessary.
 - B. They may be either positive or negative.
 - C. They prescribe a set of procedures for regulatory agencies to follow if a company falls outside appropriate ranges.
 - D. The ratios can be grouped into four general areas – liquidity, profitability, reserve tests, and overall tests.

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Monetary Calculations

Objective III

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Role of Interest

- ❑ The time value of money concept indicates that the value of an amount received today is greater than the value of receiving that same amount in the future.
- ❑ Interest can be determined two different ways:
 - ❑ Simple interest – applies interest rate each period to the original amount of principal.
 - ❑ Compound interest – applies interest rate each period to the original amount of principal as well as interest earned.

32

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Calculator Keys


- ❑ All time value of money calculations for this course can be solved using an HP-10bII.
- ❑ Critical keys for basic TVM problems:
 - ❑ N – number of periods.
 - ❑ I/YR – interest rate PER YEAR.
 - ❑ PV – present value.
 - ❑ FV – future value.
- ❑ [SHIFT] key used to access secondary functions on calculator.

33

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Using a Calculator


- Clear memory.
- Check frequency of compounding
 - 1, [SHIFT], P/YR
- Set desired number of decimal places
 - [SHIFT], DISP, 4



34

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Using a Calculator



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Future Value of Single Sum

- When calculating the FV of a single sum, the following variables are given:
 - N – number of periods.
 - I/YR – interest rate PER YEAR.
 - PV – present value.
- Must solve for future value (FV).
 - Formula: $FV = PV * (1 + i)^n$
 - Table: PV * FV Factor

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Future Value of Single Sum

- Steps for calculating FV on HP-10bII:
 - [SHIFT], C ALL (clears the calculator).
 - \$x, +/-, PV (enters -\$x as the present value).
 - x, I/YR (enters x% as interest rate).
 - x, N (enters x as number of years).
 - FV (displays the solution to the question).

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Future Value on Calculator

- Example - Jack has a \$30,000 lump sum to invest today. Assuming a compound annual interest rate of 6%, what is the future value of this amount in five years (ans. = \$40,147)?
 - [SHIFT], C ALL (clears the calculator).
 - 30000, +/-, PV (enters -\$30,000 as PV).
 - 6, I/YR (enters 6% as interest rate; no need to enter this as a percentage).
 - 5, N (enters 5 as number of years).
 - FV (displays the solution to the question).

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Future Value

- Example - in five years, \$20,000 will grow to how much at 7% interest compounded quarterly (answer = \$28,296)?
 - 4, [SHIFT], P/YR (quarterly compounding).
 - 20000, +/-, PV (enters -\$20,000 as PV).
 - 7, I/YR (enters 7% as annual interest rate).
 - 5, x, 4, =, N (enters 20 as number of periods).
 - FV (displays the solution to the question).

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Practice

- If \$20,000 is deposited today into an account earning 5% compound annual interest, how much will be in the account at the end of 12 years?
 - A. \$11,137.
 - B. \$31,137.
 - C. \$35,247.
 - D. \$35,917.

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Change in Frequency

- Higher frequency creates higher effective rate.
 - Nominal and effective interest rates will be identical when compounding occurs annually.
 - Increase in effective annual rate becomes smaller as compounding frequency increases.
- Effect on future values of higher frequency:
 - The higher the FV of a single sum or annuity.
 - The lower the size of a required payment needed to meet a targeted future amount.
 - The lower the number of years to reach FV.

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Effective Interest Rate

- The effective annual interest rate can be determined the following keystrokes:
 - [SHIFT], DISP, 4 (displays 4 decimal places).
 - 6, [SHIFT], NOM % (enters 6% as the nominal interest rate).
 - x, [SHIFT], P/YR (sets the calculator to x payments per year)
 - [SHIFT], EFF % (determines the effective interest rate).

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Effective Interest Rate

- Example – assuming a 6% nominal annual interest rate, what is the effective annual interest rate that is compounded monthly (answer = 6.1678%)?
 - [SHIFT], DISP, 4 (displays 4 decimal places).
 - 6, [SHIFT], NOM % (enters 6% as nominal rate).
 - 12, [SHIFT], P/YR (sets the calculator to monthly payments per year).
 - [SHIFT], EFF % (determines the effective interest rate).

43

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Practice

- Which of the following is the effective annual interest rate for a 4% nominal rate that is compounded semi-annually?
 - A. 4.0240%
 - B. 4.0400%
 - C. 4.0604%
 - D. 4.0808%

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Present Value of Single Sum

- When calculating the PV of a single sum, the following variables are given:
 - N – number of periods.
 - I/YR – interest rate.
 - FV – future value.
- Must solve for present value (PV).
 - Formula: $PV = FV / (1 + i)^n$
 - Table: FV * PV Factor

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Present Value on Calculator

- Steps for calculating PV on HP-10bII:
 - \$x, FV (enters \$x as the future value).
 - x, I/YR (enters x% as interest rate).
 - x, N (enters x as number of years).
- PV (displays the solution to the question).

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Practice

- A business needs to accumulate \$15,000 in a savings account in five years. Assuming the account will earn a 3% compound annual interest rate, how much do they need to deposit into the account today to achieve this goal?
 - A. \$11,859.52
 - B. \$12,939.13
 - C. \$12,957.56
 - D. \$13,225.47

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Interest Rate Required

- When calculating the interest rate required, the following variables are given:
 - N – number of periods.
 - PV – present value.
 - FV – future value.
- Must solve for interest rate (I/YR).

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Interest Rate on Calculator

- Example - Ginger needs to accumulate \$10,000 in a savings account in 7 years, with an initial deposit of \$6,000 today. What is the annual compound rate of interest that must be earned (answer = 7.57%)?
 - [SHIFT], C ALL (clears the calculator).
 - 6000, +/-, PV (enters -\$6,000 as the PV).
 - 10000, FV (enters \$10,000 as the future value).
 - 7, N (enters 7 as the number of years).
 - I/YR (displays the solution to the question).

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Practice

- What is the rate of return on an investment of \$15,000 that will be worth \$18,000 in five years?
 - A. 3.71%.
 - B. 4.66%
 - C. 5.00%
 - D. 6.38%

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Net Present Value

- The net present value is the present value of a series of unequal cash flows.
 - Positive NPV indicates the investment's rate of return exceeds the discount rate.
- Will be provided with following variables:
 - N – number of periods.
 - I/YR – interest rate.
 - Cash flow stream – most difficult variable to enter on calculator.
- Must solve for net present value (NPV).

51

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Net Present Value

- The net present value can be determined using the following keystrokes:
 - 0, CFj (enters \$0 for cash flow at time zero).
 - \$x, CFj (enters \$x for the end of year 1).
 - \$x, CFj (enters \$x for the end of year 2).
 - \$x, CFj (enters \$x for the end of year 3).
 - x, I/YR (enters x% as interest rate).
 - [SHIFT], NPV (displays the solution to the question).

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Practice

- Assuming a discount rate of 8%, what is the net present value of an investment with the following cash flow structure?

Timing of Cash Flow	Cash Flow Amount
□ Initial investment (today)	\$250,000 outflow
□ End of year 1	\$120,000 cash inflow
□ End of year 2	\$100,000 cash inflow
□ End of year 3	\$80,000 cash inflow

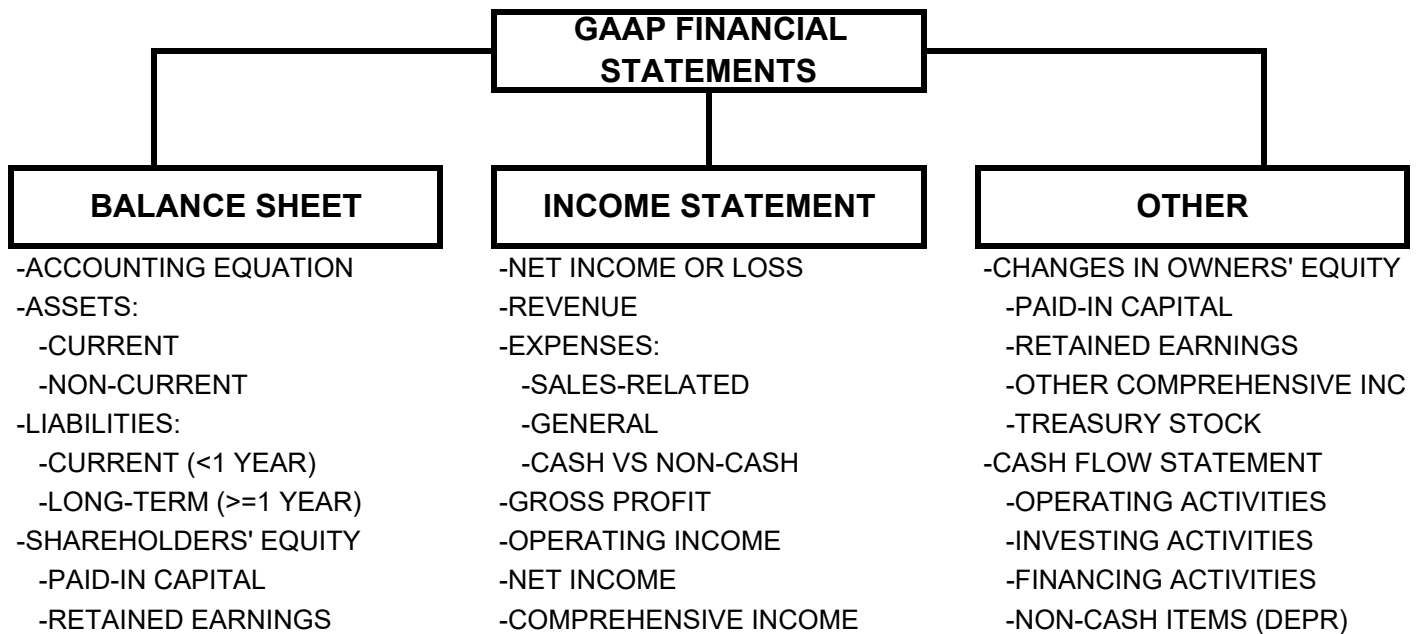
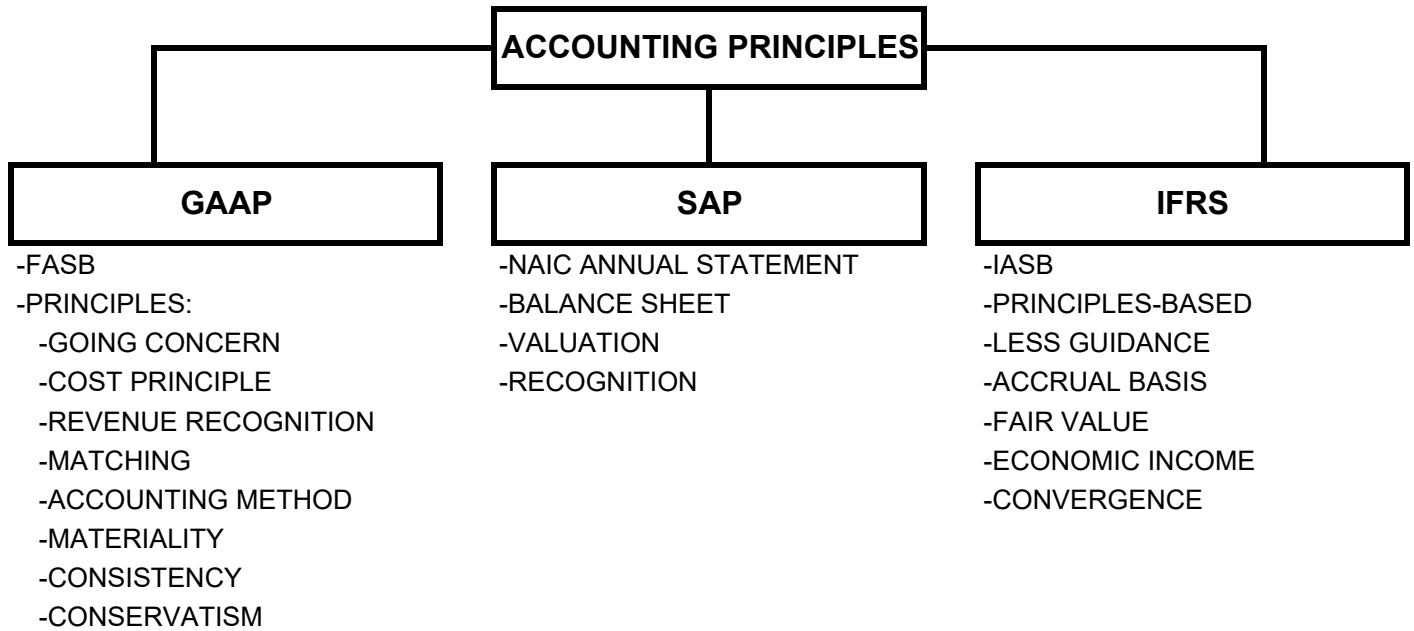
 - A. -\$18,366.67
 - B. \$10,351.57
 - C. \$33,975.78
 - D. \$260,351.57

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Module 3

Insurer Financial Statements



**Insurer
Financial Statements**

**Module 3
Chapter 3**

1

1

Objectives

- Obj I: GAAP and SAP Basics
- Obj II: Balance Sheet
- Obj III: Income Statement
- Obj IV: Other Financial Statements
- Obj V: Components of the NAIC Annual Summary

2

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GAAP and SAP Basics

Objective I

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GAAP

- Generally accepted accounting principles (GAAP) are common standards used in financial statement preparation.
 - The Financial Accounting Standards Board (FASB) maintains GAAP standards.
 - FASB standards are recognized by the SEC and the AICPA.
- GAAP includes both basic financial reporting objectives as well as detailed rules.

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GAAP Principles and Concepts

- GAAP principles and concepts include:
 - Going concern concept – assumes a business entity will continue indefinitely.
 - Affects valuation of company’s assets.
 - Cost principle – many assets must be reported at historical cost, not current value.
 - Revenue recognition principle – revenue must be recorded when services are rendered or goods are sold.

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GAAP Principles and Concepts

- GAAP principles and concepts include:
 - Matching principle – expenses incurred in generating revenues must be matched against the revenue.
 - Accrual vs. Cash basis accounting – determines timing of revenue and expenses.
 - Cash method may result in the mismatching of revenue and expenses.
 - Accrual method is more frequently used by companies.

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GAAP Principles and Concepts

- GAAP principles and concepts include:
 - Materiality principle – allows accountants to ignore GAAP for items that are immaterial.
 - Materiality is relative.
 - Consistency principle – the same reporting practices must be used by a company in each reporting period.
 - Conservatism principle – assets and income cannot be overstated.

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Statutory Accounting Principles

- Insurers in the U.S. create an NAIC Annual Statement.
 - Based on statutory accounting principles.
 - Filed with state insurance departments.
- Statutory accounting principles (SAP) are based on GAAP.
 - NAIC reviews changes in GAAP to determine if changes are needed in SAP.
 - SAP is generally more conservative than GAAP.

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SAP Balance Sheet

- A SAP balance sheet reflects an amount for policyholders' surplus.
 - Similar to shareholders' equity.
 - Surplus = Assets – Liabilities.
 - Value of assets and liabilities directly affects policyholders' surplus.
- SAP reflects the principle of solvency.

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Valuation

- ❑ SAP financial statements are conservative.
 - ❑ Helps ensure surplus will be available to meet unforeseen needs, such as a catastrophe.
- ❑ Under SAP, emphasis is on liquidation value, not going concern value.
 - ❑ Assets are valued at liquidation price.
 - ❑ Illiquid (nonadmitted) assets are not counted, thus lowering policyholders' surplus.

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Recognition

- ❑ Recognition represents the timing of income and expenses.
 - ❑ Matching principle requires expenses incurred to match the revenues generated.
 - ❑ Premium revenue is recognized over the term of the policy, even if collected up-front.
 - ❑ Losses and LAE are expensed as incurred.
- ❑ Policy acquisition costs are an exception to matching principle.
 - ❑ Must be expensed immediately.

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IFRS vs. GAAP

- ❑ International Financial Reporting Standards (IFRS) are principles-based standards.
 - ❑ International Accounting Standards Board is responsible for the development of IFRS.
- ❑ More room for interpretation with IFRS.
 - ❑ GAAP is rules-based.
- ❑ IFRS and GAAP financial statements must be prepared under the accrual method of accounting.

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IFRS vs. GAAP

- IFRS and GAAP both require reporting of certain assets at fair market value.
 - Equity securities.
 - Debt securities.
 - Intangible assets.
- Under IFRS, property and equipment must be reported at fair value.
 - Reported under historical cost for GAAP.

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Implications to Insurers

- All publicly traded property-casualty insurers are required to file GAAP financial statements.
 - Insurers are also required to file SAP financial statements.
- GAAP and IFRS statements value many insurer assets in the same way.
 - Insurance company liabilities are valued using significantly different methods.

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Practice

- Which one of the following statements is correct regarding International Financial Reporting Standards (IFRS)?
 - A. The Financial Accounting Standards Board is responsible for the development of IFRS.
 - B. IFRS leaves much less room for interpretation than generally accepted accounting principles.
 - C. IFRS financial statements must be prepared under the accrual method of accounting.
 - D. Equipment must be reported on IFRS financial statements at historical cost.

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Practice

- Financial statements prepared in accordance with statutory accounting principles (SAP):
 - A. Presume the insurer will continue operations for the foreseeable future.
 - B. Feature a more conservative statement of policyholders' surplus than GAAP-based financial statements.
 - C. Include both admitted and non-admitted assets in the determination of policyholders' surplus.
 - D. Require amortization of policy acquisition costs over the life of the policy.

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Practice

- Which one of the following statements is correct regarding accounting concepts and principles?
 - A. A company that records revenues when earned and expenses when incurred is practicing accrual basis accounting.
 - B. General accounting principles require companies to report both data related to the organization and data related to the owners.
 - C. Financial statements must generally be prepared in accordance with rules established by the Securities and Exchange commission.
 - D. The business entity concept assumes that a business entity will continue to operate indefinitely.

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Balance Sheet

Objective II

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Balance Sheet

- The balance sheet reflects a company's shareholders' equity for a specific point in time.
 - Lists everything the company owns (assets) and the company owes (liabilities).
 - The accounting equation ties the balance sheet together:
 - $Assets - Liabilities = Shareholders' Equity$
 - $Assets = Liabilities + Shareholders' Equity$
 - Shareholders' equity can be negative.

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Assets

- Assets represent property owned by company.
 - Excludes property rented.
- Current assets are assets that will generally be used within one year.
 - Expected to be sold or otherwise converted to cash within the normal operating cycle.
 - Includes cash, inventory, accounts receivable, and marketable securities.

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Assets

- Non-current assets will generally be used in more than one year.
 - Tangible – buildings, equipment, land.
 - Intangible – patents, copyrights, goodwill.
 - Goodwill typically results from acquisition.
- Buildings and equipment should be reported at their original cost.
 - Reduced by an allowance for depreciation.

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Liabilities

- Liabilities represent amounts owed by a company to creditors.
 - Current liabilities – payable within one year.
 - Includes accounts payable and short-term debt.
 - Long-term debt – payable in more than one year.
- Reported based on outstanding balance as of date of balance sheet.

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Shareholders' Equity

- Shareholders' equity is calculated by subtracting liabilities from assets.
 - Includes amounts contributed to the company by shareholders.
 - Includes retained earnings of the company.
 - Negative shareholders' equity indicates bankruptcy.
- Does not represent net worth of company, since many assets are reported at historical cost.

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Practice

- Ten years ago, ABC Company purchased an office building. The company is in the process of preparing its financial statements for the current year. Based on generally accepted accounting principles, ABC Company should record the building on their financial statements based on the building's:
 - A. Current fair market value.
 - B. Historical cost.
 - C. Salvage value.
 - D. Capitalized earnings value.

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Income Statement

Objective III

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Income Statement

- ❑ The net income (or loss) for a company is calculated on the income statement.
 - ❑ Reflects profitability over a period of time.
- ❑ Net income is also reported on the Statement of Changes in Owner's Equity and Statement of Cash Flows.
- ❑ A capital expenditure will appear on the income statement gradually over time.

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Revenue and Expenses

- ❑ Revenue represents the gross income generated from the sale of products or services.
 - ❑ Does not include gains from the sale of equipment.
- ❑ Expenses represent certain cash outflows and non-cash costs, such as depreciation.
 - ❑ Expenses can be related to sales directly, such as cost of goods sold or commissions.
 - ❑ Expenses may be general in nature, such as rent and electricity.

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Revenue and Expenses

- ❑ Gross profit represents the net income from sales of products.
 - ❑ Sales less cost of goods sold.
- ❑ Operating income represents gross profit, less general operating expenses.
 - ❑ Includes office expenses and depreciation.
- ❑ Net income represents operating income, plus additional income, less other expenses.
 - ❑ Additional income includes investment income.

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Comprehensive Income

- ❑ Comprehensive income represents net income, as well as items not required to be reported on the income statement.
 - ❑ Unrealized gains and losses on securities.
 - ❑ Gains and losses on foreign currency translation.
 - ❑ Changes in minimum pension liability.
- ❑ FASB requires companies to report comprehensive income.

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Practice

- ❑ A company's net income is reported on a separate line of all of the following financial statements, EXCEPT:
 - ❑ A. Statement of Cash Flows.
 - ❑ B. Statement of Changes in Owner's Equity.
 - ❑ C. Income Statement.
 - ❑ D. Balance Sheet.

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**Other
Financial Statements**

Objective IV

31

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Shareholders' Equity

- ❑ The Statement of Changes in Owners' Equity details the change in shareholders' equity.
 - ❑ Reconciles beginning and ending balance.
- ❑ Components of shareholders' equity:
 - ❑ Paid-in capital.
 - ❑ Retained earnings.
 - ❑ Accumulated other comprehensive income.
 - ❑ Treasury stock.

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Shareholders Equity

- ❑ Paid-in capital represents the total amount invested by the shareholders in the corporation.
 - ❑ Includes par value and additional amounts contributed by owners.
 - ❑ Par value represents an arbitrary value assigned to stock when it is first issued.
- ❑ Retained earnings is the cumulative profits/losses of a company, reduced by any dividends paid out to shareholders.

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Shareholders Equity

- Treasury stock represents stock that has been repurchased by the company.
 - Cost of stock reduces shareholders' equity.
 - Cash is also reduced since it was used to pay for the stock.

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Statement of Cash Flows

- The statement of cash flows reconciles the beginning and ending cash of the corporation.
 - Used to determine ability to meet obligations.
- Sections included in statement:
 - Cash flows from operating activities – begins with net income.
 - Items not affecting cash flow – depreciation, increase or decrease in payables/receivables.
 - Cash flows from investing activities.
 - Cash flows from financing activities.

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Practice

- Patriot, Inc. just completed its first year of operation. Which one of the following statements is correct regarding Patriot's year-end financial statements?
 - A. The statement of changes in shareholders' equity will not be required because no equity existed at the beginning of the year.
 - B. The change in cash on the statement of cash flow will be equal to the company's ending cash balance on the balance sheet.
 - C. The balance sheet will not reflect any liabilities.
 - D. The net income or loss for the company that is reflected on the income statement will be zero.

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Practice

- ABC Company recorded the following items:
 - Checking account – current balance \$5,000
 - Accounts receivable – \$45,000
 - Building – purchase price \$300,000, value \$320,000
 - Leased auto – value \$30,000, monthly payments \$600
 - Long-term debt payable – original loan \$250,000, current balance \$190,000
 - Annual salary expense - \$125,000
- What is ABC Company’s shareholders’ equity?
 - A. \$100,000.
 - B. \$160,000.
 - C. \$180,000.
 - D. \$285,000.

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Components of the NAIC Annual Summary

Objective V

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Insurer GAAP Balance Sheet

- Assets – insurer balance sheet is dominated by debt and equity investment assets.
- Unique assets on an insurer balance sheet:
 - Premium receivables.
 - Reinsurance recoverables – loss payments due from a reinsurer.
 - Paid on losses incurred that were covered by reinsurance contracts.
 - Deferred policy acquisition costs – prepaid expenses relating to premium revenue.

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Insurer GAAP Balance Sheet

- **Liabilities – unique liabilities for insurer:**
 - **Unpaid losses and loss adjustment expenses.**
 - **Estimated payables from losses incurred that have not been paid.**
 - **Unearned premium reserve – premiums received from policy holders that have not been earned.**
- **Shareholders’ equity – for a stock company, common and preferred stock may be included.**
 - **Also includes comprehensive income.**

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Insurer GAAP Income Statement

- **Revenues – primary revenues for an insurer are investment income and premium income.**
 - **Unrealized gains are included in statement of comprehensive income.**
- **Expenses – primary expenses are losses and loss adjustment expenses.**
 - **Policy acquisition costs appear as an expense on the insurer’s income statement.**

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Other Insurer GAAP Statements

- **Statement of comprehensive income – components are similar to those for a non-insurer.**
 - **Unrealized capital gains and losses may be significant for an insurer.**
- **Statement of cash flows – if insurer has its own debt or equity securities issued, this appears in cash flow from financing activities section.**

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Practice

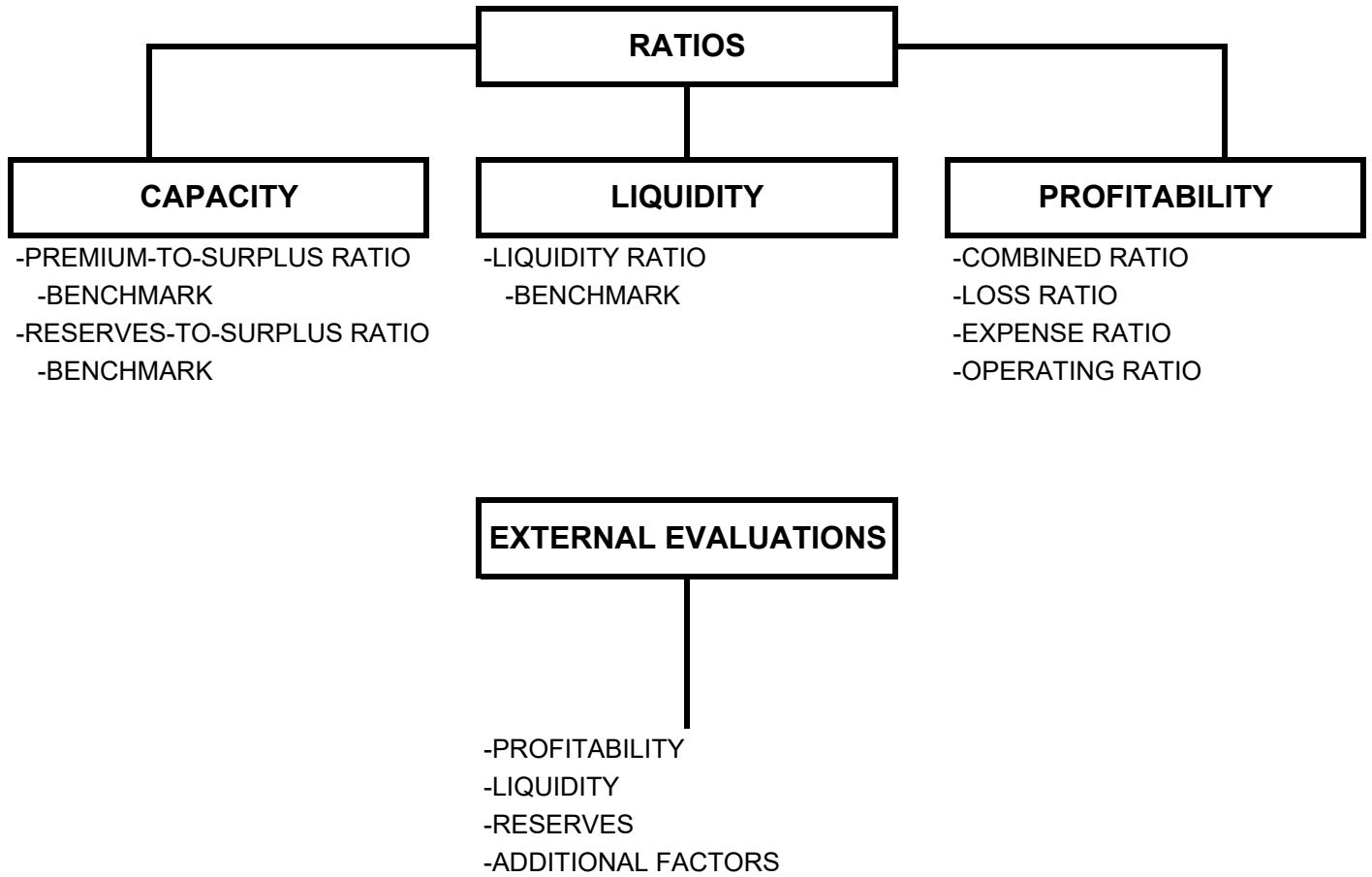
- Which one of the following statements is correct regarding the GAAP-based financial statements of an insurer?
 - A. On an insurer's balance sheet, incurred but not reported losses are reported as a long-term asset.
 - B. Policy acquisition costs appear as an asset on an insurer's balance sheet.
 - C. Insurance premium receivables are typically the largest asset on the balance sheet for an insurer.
 - D. The comprehensive income of an insurer may include a substantial amount for unrealized gains on investments.

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Module 4

Analyzing Key Ratio Results



Analyzing Key Ratio Results

**Module 4
Chapter 4**

1

1

Objectives

- Obj I: Statement Capacity Ratios
- Obj II: Statement Liquidity and Profitability Ratios
- Obj III: External Evaluations of Insurer Financial Strength

2

2

Statement Capacity Ratios

Objective I

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Analysis Concepts

- Analysts look at the following concepts when analyzing insurer financial statements:
 - Liquidity – ability to convert an asset to cash with little or no loss of principal.
 - Capacity – amount of capital that an insurer can commit to underwriting a portfolio of loss exposures.
 - Profitability – earnings from underwriting and investments.

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Insurer Ratios

- Ratios are calculated based on data from the insurer’s NAIC Annual Statement.
 - Ratios can be used to evaluate insurer, groups of insurers, or the industry.
 - Ratios can track trends over time.
- Benchmarking is the comparison of an insurer’s ratios to industry standards.
 - Results outside accepted ranges require further analysis.

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Capacity Ratios

- Premium-to-surplus – measures insurer’s relative exposure to underwriting risks.

$$\text{Ratio} = \frac{\text{Net Written Premiums}}{\text{Policyholders' Surplus}}$$

- Weakness of ratio is that it only considers one year of net written premiums.

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Capacity Ratios

- Higher ratio means insurer is aggressive in using surplus to leverage premium writing.
 - NAIC suggests 3 to 1 ratio or less.
 - If losses and LAE exceed earned premiums, surplus will be depleted, increasing the ratio.
- Company with the lowest premium-to-surplus ratio is the company with the highest ability to issue new policies.

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Capacity Ratios

- Reserves-to-surplus – one of the most widely used leverage ratios for insurance companies.

$$\frac{\text{Unearned Premium Reserve} + \text{Loss /LAE Reserve}}{\text{Policyholders' Surplus}}$$

- The higher the reserve, the larger the impact of reserve estimation errors in reducing surplus.
 - Higher reserve value is often associated with long-tail liability coverage.
- No well-established benchmark exists.

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Practice

- Quality Insurance Company's financial statements reflect the following amounts:
 - Losses and Loss Adjusting Expense Reserve – \$6,000,000
 - Net Written Premiums – \$2,500,000
 - Earned Premiums – \$2,200,000
 - Policyholders' surplus – \$5,000,000
- Quality's premium-to-surplus ratio is:
 - A. 0.42.
 - B. 0.44.
 - C. 0.50.
 - D. 0.83.

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Statement Liquidity and Profitability Ratios

Objective II

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Liquidity Ratio

- **Liquidity – compares liquid assets to reserves.**
 - Reserves are subject to estimation errors, which can have large affect on ratio.

$$\text{Ratio} = \frac{\text{Cash} + \text{Invested Assets (FMV)}}{\text{Unearned Prem Reserve} + \text{Loss/LAE Reserve}}$$

- **Value of 1.0 or greater is desirable.**
 - Indicates ability to liquidate investments and have enough cash to pay obligations.

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Profitability Ratios

- **Combined ratio is sum of loss and expense ratio.**
 - **Loss ratio – reflects percentage of earned premiums consumed by losses.**
 - Less predictable than expense ratios.
 - **Expense ratio – reflects percentage of written premiums consumed by expenses.**
- **Combined ratio greater than 100% means insurer experienced underwriting loss.**
 - Common for long-tail lines such as workers compensation.

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Profitability Ratios

- Operating ratio measures overall pre-tax operating profits.

$$\text{Combined Ratio} = \frac{\text{Net Investment Income}}{\text{Earned Premium}}$$

- Ratio below 100% indicates an insurer is able to generate a profit from core operations.
- Ratio excludes other income and expense, meaning ratio below 100% does not indicate overall net income.

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Profitability Ratios

- Investment Yield Ratio – measures investment, not underwriting, results.
 - Includes investment income, such as interest and dividends.
 - Also includes realized capital gains.
- Broader measure than investment income ratio.
 - Investment Income Ratio does not include capital gains.

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Profitability Ratios

- Return on Policyholders' Surplus – summarizes overall operating success relative to resources.

$$\text{Return on Surplus} = \frac{\text{Net Income}}{\text{Policyholders' Surplus}}$$

- Assists in comparison of insurers.
 - Eliminates issues related to premium volume, underwriting results, and investment gains.

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Practice

- KLM Insurance Company had the following information from their most recent financial statements:
 - Earned Premiums – \$5,800,000
 - Written Premiums – \$6,000,000
 - Underwriting Expenses – \$1,100,000
 - Incurred Losses and LAE – \$5,700,000
- What was KLM Insurance Company’s combined ratio?
 - A. 97.5%
 - B. 101.3%
 - C. 107.1%
 - D. 116.6%

16

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Practice

- Ratios for four different insurance companies:

□ Company;	Premium-to-Surplus ratio;	Liquidity ratio
□ Company A;	1.04	1.10
□ Company B;	1.89	2.04
□ Company C;	2.07	1.60
□ Company D;	2.19	1.58
- Based on the ratios provided, which of the insurance companies has the highest ability to issue new policies?
 - A. Company A.
 - B. Company B.
 - C. Company C.
 - D. Company D.

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External Evaluations of Insurer Financial Strength

Objective III

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External Evaluations

- Capacity and liquidity ratios are crucial:
 - Decision-making tools for insurers.
 - To evaluating insurers' ability to fulfill promises made to policyholders.
 - To evaluating insurers' ability to function as a going concern.

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External Evaluations

- External evaluators, such as NAIC and A.M. Best, use various factors to evaluate insurers.
 - Profitability.
 - Liquidity.
 - Reserves.
 - Additional factors.

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Profitability

- Insurer profitability matters to external evaluators.
 - A.M. Best and IRIS ratios assign importance to an insurer's profitability.
- The greater an insurer's profit, the more likely the insurer will be able to meet its financial obligations.
 - Regulators have a goal of preventing insolvency.

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Profitability

- Regulators examine insurer's rates.
 - Try to balance profitability with the mission of ensuring access to insurance.
- No method of rate regulation guarantees that rates will be adequate.
 - Insurers could charge higher rates than necessary to ensure a profit.
 - Therefore, regulators have considerable discretion in determining whether rates are excessive.

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Profitability

- Factors complicating goal of rate adequacy:
 - Insurer doesn't know what expenses will be when policy is written.
 - Price competition may cause insurers to charge inadequate rates.
 - Unanticipated events may lead to higher losses than originally projected.
 - Regulator and actuary might disagree about assumptions used.

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Liquidity

- Insurers can use liquidity ratios to help guide investment decisions.
 - Goal is to balance lower-yield liquid and higher-yield illiquid investments.
- External evaluators focus on liquidity because it is connected to insurer solvency.
 - A profitable insurer could have trouble meeting current obligations if liquidity is lacking.

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Liquidity

- Regulators are the primary source of constraints on insurer investment practices.
 - Asset restrictions – insurers can only show certain assets on their balance sheet.
 - Investment limitations:
 - Insurers can only hold certain types of investments.
 - Insurers are restricted in the amount they can hold in any single investment.

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Reserves

- Reserves strongly reflect an insurer’s overall financial health.
 - This is the reason that many internal barometers include surplus or reserves.
- Insurers and external evaluators often look at loss trends when determining reserve adequacy.
 - Inflation and technology advances can influence loss trends.

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Reserves

- Social influences can affect loss costs.
 - Legal precedents and court practices.
- Distributional changes can also affect loss frequency and loss severity.
 - If proportion of risky policies is increasing, loss costs would be expected to increase.
- Short-tail lines can be analyzed by reviewing paid losses each quarter.

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Additional Factors

- **A.M. Best ratings provide assessments of an insurer's ability to pay claims, debts, and other financial obligations in a timely manner.**
 - **Widely used and respected.**
- **To improve their rating, an insurer may:**
 - **Strengthen its balance sheet.**
 - **Improve its operating performance, risk management, or business profile.**
 - **A.M. Best Innovation Score.**

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Additional Factors

- **A.M. Best considers innovation an important factor in determining the financial stability of insurers.**
 - **Innovation Score = Input Score + Output Score**
- **Companies that leverage new technologies to improve their products and services are often rated more favorably.**

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Additional Factors

- **Input score components:**
 - **Leadership – reviews if management is driving innovation.**
 - **Culture – organizations should foster a culture that encourages experimentation.**
 - **Resources – evaluates how resources have been allocated toward innovation.**
 - **Processes and structure – quality of data management and governance.**

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Additional Factors

- **Output score components:**
 - **Results – innovation should produce measurable results that are sustainable.**
 - **Level of transformation – innovation initiatives should help organization grow and improve the customer experience.**
- **Examples of outputs include increased revenue, greater brand recognition, and improved use of data.**

31

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Practice

- **Regulators are the primary source of constraints imposed on insurer investment practices. These constraints take the form of:**
 - **A. Asset restrictions and liquidity requirements.**
 - **B. Investment limitations and asset restrictions.**
 - **C. Profit restrictions and liquidity requirements.**
 - **D. Investment limitations and profit restrictions.**

32

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Practice

- **Under the A.M. Best Innovation Score Formula, which one of the following would be considered an output score component?**
 - **A. Leadership.**
 - **B. Processes.**
 - **C. Structure.**
 - **D. Level of transformation.**

33

33

Module 5

Investment Opportunities

BONDS

TYPES

- TREASURY
- GOVERNMENT AGENCY
- CORPORATE
- MUNICIPAL
- INTERNATIONAL
- DEBENTURES
- ASSET-BACKED SECURITIES

CHARACTERISTICS

- INDENTURE AGREEMENT
- CONVERTIBLE
- CALLABLE
- GUARANTEED
- SERIAL
- PARTICIPATING
- FLOATING-RATE
- SINKING FUND
- COLLATERAL

STOCKS

TYPES

- COMMON
- VOTING RIGHTS
- DIVIDEND PRIORITY
- LIQUIDATION PRIORITY
- SECONDARY MARKET
- PREFERRED STOCK
- CUMULATIVE
- CONVERTIBLE
- CALL OPTION
- DERIVATIVES

PRICE FLUCTUATIONS

- ECONOMIC THEORY
- FINANCIAL THEORY
- EFFICIENT MARKET HYPOTHESIS
- FUNDAMENTAL ANALYSIS
- TECHNICAL ANALYSIS
- INSIDER INFORMATION

PORTFOLIO MANAGEMENT

RISKS

- VARIABILITY
- VARIANCE
- STANDARD DEVIATION
- COEFFICIENT OF VARIATION
- VALUE AT RISK
- BETA

BOND PORTFOLIOS

- RISKS
- INTEREST RATE RISK
- REINVESTMENT RISK
- CASH MATCHING
- DURATION

PORTFOLIO CONCEPTS

- RISK-RETURN TRADEOFF
- DIVERSIFICATION
- MARKET RISK
- COMPANY-SPECIFIC RISK
- CORRELATION
- MODERN PORTFOLIO THEORY

Investment Opportunities

**Module 5
Chapter 5**

1

1

Objectives

- Obj I: Insurer Investment Portfolio Basics
- Obj II: Understanding the Market for Stocks and Bonds
- Obj III: Investment Evaluation Strategies
- Obj IV: Bond Valuation
- Obj V: Investment Portfolio Management Strategies

2

2

**Insurer Investment
Portfolio Basics**

Objective I

3

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Federal Government Bonds

- Treasury securities are guaranteed by the U.S. government.
 - Generally have lower interest rates due to lack of default risk.
 - Offered by the Treasury in book-entry form.
 - Minimum investment of \$100.
 - Not subject to state income tax.

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Federal Government Bonds

- Treasury bills – maturity of one year or less.
 - Issued at a discount and mature at par.
- Treasury notes – mature from 2-10 years.
 - Pay interest semi-annually.
- Treasury bonds – mature in 30 years.
 - Pay interest semi-annually.
- Treasury Inflation Protected Securities.
 - Coupon rate is fixed percentage of principal.
 - Par value of bond adjusted by CPI.

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Federal Government Bonds

- Government agencies securities - provide slightly higher returns than Treasury securities.
 - Issued by government-sponsored enterprises.
 - Not guaranteed by federal government.
 - Include FNMA, FHLMC, GNMA, and CMOs.

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Corporate Bonds

- Corporate bonds – agreement between corporation and bondholder.
 - Majority are classified as utility bonds, industrial bonds, and bank and finance company bonds.
 - Pay taxable interest.
 - Principal purchasers are corporations, banks, insurance companies, money managers, and pension plans.

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State and Local Bonds

- Municipal bonds – issued by state and local governments, and have default risk.
 - Typically offer lower interest rates, because interest income is tax-exempt.
- Types of municipal bonds:
 - Revenue bonds – backed by revenues from a designated project.
 - General obligation bonds – backed by the taxes collected by the government body.

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International Bonds

- Generally pay a higher coupon rate than domestic bonds due to their additional risks.
 - Eurobonds – long-term debt that is offered outside issuer’s country.
 - Never denominated in issuing country.
 - Typically have maturities of 3-7 years.
 - Typically pay taxable interest annually.
 - Typically unsecured.
 - Foreign bonds – similar to Eurobonds, but generally more regulated.

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Indenture Agreement

- Bonds are created by indenture agreements, which is essentially a contract.
 - Includes face value and maturity date.
 - States coupon rate – interest rate paid.
 - Coupon is based on face value of bond.
 - Lists the rights and duties of seller and buyer.
 - Buyers are creditors, and have rights above shareholders.
 - Buyers do not share in company profits.

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Optional Bond Features

- Bonds may have some additional features:
 - Convertible bonds – can be converted to common stock at a fixed price in the future.
 - Profit potential is generally higher because value is supported by bond and stock.
 - Less market risk than stock.
 - Callable bonds – can be paid off by issuer before stated maturity date.
 - May have higher interest rates initially.

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Optional Bond Features

- Bonds may have some additional features:
 - Guaranteed bond – guaranteed by an entity other than the issuer (parent company).
 - Serial bond – portions of principal mature on different dates.
 - Participating bonds – tie interest to the issuer’s financial results.
 - Floating-rate bonds – adjusted interest rates.
 - Sinking fund – money is set aside each year to repay principal.

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Bond Collateral

- Secured bonds are backed by collateral.
- Debentures are unsecured bonds.
 - Highest credit risk to the bondholder.
- Property-casualty insurers typically purchase:
 - Asset-backed securities – collateralized by auto loans, credit cards, student loans.
 - Mortgage-back securities – collateralized by 15-30 year mortgages.

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Overview of Stock

- Stock represents ownership in a company.
 - Stock investments are the second largest investment for property-casualty insurers.
- Common stock:
 - Typically provides voting rights in company.
 - Dividends are variable, and are not required.
 - Lowest priority regarding dividends and liquidation rights.
 - Most trades occur on secondary market.

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Preferred Stock

- Preferred stock is an alternate class of stock that may be issued by a company.
- Characteristics of dividends:
 - Usually pay a fixed dividend, similar to coupon payment of bonds.
 - Dividend paid to preferred stock before common stock dividend can be paid.
 - Cumulative – past unpaid dividends must be paid before dividend paid on common stock.

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Preferred Stock

- Shareholder rights:
 - Usually does not have voting rights.
 - Shareholders have liquidation preference over common shareholders.
 - Claim is subordinate to creditors.
 - Some shares have a redemption value.
 - Convertible – allows conversion to common shares.
 - Call option – if exists, stock priced like bond.

16

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Investment Regulation

- Insurer investments are regulated by states.
 - Insurers must generally hold prudent, even conservative, investments.
 - Portfolios must be well diversified.
- Insurer’s investment strategy must be tied to its underwriting strategy.
 - Investment returns are used to pay losses as they come due.

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Asset Restrictions

- Only certain assets are permitted on the balance sheet of an insurer.
 - Other investments are assigned zero value.
- Permitted investments (admitted assets):
 - Money market investments.
 - Treasury bills and commercial paper.
 - High quality bonds.
 - Common and preferred stock.
 - Real estate and mortgages.

18

18

Investment Restrictions

- State regulators have a primary goal of ensuring solvency and liquidity of the insurer.
 - Insurers are only allowed to invest a certain percentage in many assets.
 - Insurers have restrictions as to the amount that can be invested in a single asset.
 - Insurers are limited as to the percentage of stock they can own in another company.
- Restrictions tend to cause insurers to invest mainly in high-quality bonds.

19

19

Practice

- Which one of the following statements is correct regarding investment considerations for an insurance company?
 - A. The primary goal of insurance investment regulation is to ensure that the investment portfolio is well diversified to maximize return for a given level of risk.
 - B. The Securities and Exchange Commission represents the primary source of constraints imposed on insurer investment practices.
 - C. An insurer's investment strategy must be tied to its underwriting strategy because underwriting results are extremely negatively correlated to investment returns.
 - D. The overall effect of the investment restrictions placed on insurers is to encourage investments predominantly in high-grade bonds.

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Practice

- An individual purchased a bond that pays him tax-exempt interest income. The bond proceeds were used to build a dormitory at the local university, and the bond debt is being repaid with the rents received from the students staying in the dormitory. Which one of the following represents the type of bond purchased by the investor?
 - A. General obligation bond.
 - B. Ginnie Mae bond.
 - C. Treasury Inflation Protected Security.
 - D. Revenue bond.

21

21

Practice

- ❑ A credit card company sold its receivables to David for cash. The interest and principal repayments on the credit cards will be passed directly to David after passing through the credit card company. David has purchased a(n):
 - ❑ A. Mortgage-backed security.
 - ❑ B. Asset-backed security.
 - ❑ C. Debenture.
 - ❑ D. Serial bond.

22

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Practice

- ❑ Which one of the following statements is correct regarding cumulative preferred stock?
 - ❑ A. The stock offers priority voting rights to the holder when compared to common stock.
 - ❑ B. The holder has the right to receive accrued unpaid dividends prior to any distribution to common shareholders.
 - ❑ C. The issuing company typically increases the dividend quarterly.
 - ❑ D. The holder can convert it into a stated number of common shares of the issuing company.

23

23

Understanding the Market for Stocks and Bonds

Objective II

24

24

Volatility Theory

- Economic theory suggests that stock prices fluctuate due to supply and demand.
 - Investors may believe prices of certain stocks will move up or down due to economy.
 - Investors may believe individual company stocks move in the same direction as other stocks of companies in same industry.
 - Investors may be influenced by individual company performance, such as a new product.

25

25

Volatility Theory

- Financial theory suggests that stock price is discounted present value of future cash flows.
 - Stock value is present value of future dividends, plus stock value at end of holding period.
 - Cost of capital may also have an effect.
- Fundamental analysis, technical analysis, and the efficient market hypothesis are approaches to pricing stock.

26

26

Fundamental Analysis

- Fundamental analysis involves analysis of financial data and macroeconomics to determine stock price.
- Determines the extent to which the following factors exceed S&P averages:
 - Expected earnings growth.
 - Stability of sales.
 - Dividend payout ratio.
 - Leverage.
 - Institutional ownership of stock.

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Technical Analysis

- Technical indicators can be used to determine if an investor should invest in a certain asset class.
 - Attempts to determine patterns in market activity and past prices.
 - Does not attempt to measure intrinsic value of stock.
 - Usually more effective when combined with fundamental analysis.

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Efficient Market Hypothesis

- The efficient market hypothesis (EMH) contends that the market is efficient at pricing securities.
 - The market is difficult to beat, especially for individual investors.
 - Market information is widely available and generated in a random fashion.
 - It may be a waste of time for an individual to attempt to locate undervalued stocks.

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Summary

Technical			
Fundamental	☺		
Insider	☺	☺	
	Weak	Semi-Strong	Strong

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Overview of Return

- There are two components of return:
 - Income generated by the investment (yield).
 - Capital gain or loss on the disposition.
- Annual rate of return is the sum of yield and capital gain/loss, expressed in percentage terms.

31

31

Bond Return

- The annual rate of return from a bond can be expressed in the following formula:

$$\text{Bond Return} = \frac{\text{Interest Income} + \text{Capital Gain}}{\text{Beginning Price of Bond}}$$

- Capital gain represents the difference between the ending and beginning price of the bond.

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Stock Return

- The annual rate of return from a stock can be expressed in the following formula:

$$\text{Stock Return} = \frac{\text{Dividend Income} + \text{Capital Gain}}{\text{Beginning Price of Stock}}$$

- Capital gain represents the difference between the ending and beginning price of the stock.

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Practice

- On January 1 of the current year, an investor purchased 1 share of ABC Company stock for \$50 per share. During the year, the investor received cash dividends of \$0.10 per share. On December 31 of the year, the stock was valued at \$60 per share. The annual rate of return on this investment is:
 - A. 6.1%
 - B. 10.3%
 - C. 18.7%
 - D. 20.2%

34

34

Practice

- Cindy is an investment analyst, and she is attempting to determine the price of a stock. In order to help determine the price, she is reviewing the company's sales stability, dividend payouts, financial leverage, and expected growth. Cindy is practicing:
 - A. Efficient market analysis.
 - B. Technical analysis.
 - C. Fundamental analysis.
 - D. Cost analysis.

35

35

Investment Evaluation Strategies

Objective III

36

36

Risk Measures

- Variability of return represents the likelihood that actual returns will differ from expectations.
 - Variability is risk.
- Quantitative measures of risk:
 - Variance.
 - Standard deviation.
 - Coefficient of variation.
 - Value at risk.
 - Beta.

37

37

Variance

- Variance measures deviation of actual return from average return over a specific period.

Actual Return	Expected Return	Difference	Squared Difference
10%	11%	-1%	0.000
-6%	11%	-17%	0.029
23%	11%	12%	0.014
5%	11%	-6%	0.004
14%	11%	3%	0.001
Total			0.048
Variance (Total divided by n-1)			0.012

- The difference is squared to create an increased penalty when difference in returns is large.

38

38

Standard Deviation

- Standard deviation is square root of variance.
 - Expressed in same units as data set.
 - Uses same number of data points as variance.
 - Larger standard deviation means more risk.
 - Can determine probability of ranges of return.
- A drawback is that the larger the values in a data set, the larger the standard deviation.

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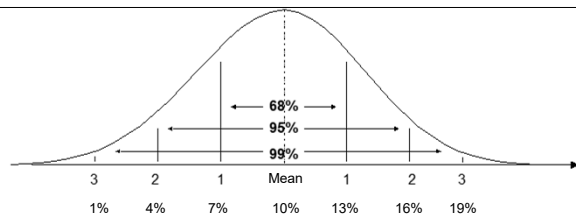
Standard Deviation

- Example: Assume mean return of 10% and standard deviation of 3%.
 - 68% chance the return will be within one standard deviation of the mean: 7%-13%
 - 95% chance the return will be within two standard deviations of the mean: 4%-16%
 - 99% chance the return will be within three standard deviations of the mean: 1%-19%

40

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Standard Deviation



41

41

Coefficient of Variation

- The coefficient of variation is a measure of risk per unit of return.
 - Calculated as the standard deviation divided by the expected (or mean) return.
 - Allows for comparison of risk regardless of magnitude of difference in data sets.
- Example:
 - Investment A: SD = 4%, E(r) = 10%
 - Investment B: SD = 6%, E(r) = 20%

42

42

Value at Risk

- Value at risk (VaR) provides an indication of the dollar amount involved in a risk being assessed.
 - Standard deviation and coefficient of variation do not provide this information.
- VaR is based on two inputs – probability of loss and time horizon in which loss could occur.
 - Example – an investment portfolio might have a 6%, one-day, VaR of \$400,000.

43

43

Value at Risk

- Advantages of VaR:
 - Expresses the loss in monetary terms that are easy to understand.
 - Quantifies in numerical terms the potential loss associated with a decision.
 - Requires only two inputs.
- A disadvantage is that the extent to which a loss exceeds the VaR threshold is not accurately measured.

44

44

Beta

- Beta represents an asset’s market risk.
 - Extent to which a change in the overall marketplace can affect a particular asset.
- The beta of the market is 1.0.
 - An asset with a beta greater than one is more volatile than the market.
 - An asset with a beta less than one is less volatile than the market.
- Appropriate measure when a portfolio is diversified.

45

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Practice

- Chuck has determined that there is a 90% chance he will not lose more than \$150,000 in one day on his investment. What measure is being used for Chuck's investment?
 - A. Standard deviation.
 - B. Coefficient of variation.
 - C. Value at risk.
 - D. Beta.

46

46

Practice

- An investor is experiencing the following results of his investment portfolio:
 - Rate of return – 8%
 - Standard deviation – 12%
- Investment options he is considering:
 - A: Return – 8%; Standard deviation – 15%
 - B: Return – 8%; Standard deviation – 19%
- Which would be the best option to add?
 - A. Option A only.
 - B. Option B only.
 - C. 50% Option A and 50% Option B.
 - D. 25% Option A and 75% Option B.

47

47

Bond Valuation

Objective IV

48

48

Bond Investments

- Property-casualty insurance companies tend to invest most heavily in long-term bonds.
 - Most important objective is to match the timing of investment cash inflows with expected cash outflows of the company.
- Bonds have the following risks:
 - Credit risk – eliminated through diversification.
 - Interest rate risk – cannot be eliminated through diversification.
 - Reinvestment rate risk.

49

49

Cash Matching

- Cash matching for an insurer involves matching the maturity of bonds with the expected time losses must be paid.
 - Can eliminate interest rate risk.
- Limitations of cash matching:
 - Insurer must purchase correct amount of bonds to offset loss payments.
 - Insurer must find zero-coupon bonds that mature at the exact time losses are paid.

50

50

Bond Duration

- Most bonds pay a coupon interest rate.
 - Insurer must consider how to reinvest interest as it is received.
 - Coupon rate bonds expose insurer to reinvestment rate risk.
- Duration of a bond represents the amount of time, in years, required to recover true cost.
 - Weighted average number of years until principal and interest payments are received.

51

51

Bond Duration

- Assumptions – 6% coupon, 8% YTM, 3 yr maturity

Year	Cash Flow	Present Value	Year x PV
1	\$60	\$55.56	\$55.56
2	60	51.44	102.88
3	1,060	841.46	2,524.38
Totals		\$948.46	\$2,682.82

- Duration = $\$2,682.82 / \$948.86 = 2.83$

52

52

Bond Duration

- Duration of zero coupon bond is maturity.
 - Coupon bond duration is less than maturity.
- Uses of duration:
 - Compare price volatility of bonds.
 - Immunize a portfolio – matching the duration of the underwriting and bond portfolios.
 - Primarily reduces interest rate risk.
 - Ongoing process.

53

53

Bond Duration

- Duration matching:
 - Portfolio duration equals liability duration – insurer will have sufficient cash to settle liabilities regardless of interest rate changes.
 - Portfolio duration exceeds liability duration – price effect will outweigh effect of reinvesting interest payments.
 - Portfolio duration less than liability duration – reinvestment effect will outweigh price effect.

54

54

Practice

- Which one of the following investments would be best to match an insurer's investment portfolio maturity to the insurance company's expected loss payments?
 - A. U.S. Treasury securities.
 - B. Low beta stocks.
 - C. Zero-coupon bonds.
 - D. Corporate bonds.

55

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Investment Portfolio Management Strategies

Objective V

56

56

Risk-Return Tradeoff

- Economic and financial theory generally assumes that investors are risk averse.
 - Assuming the same return, an investor will choose the investment with the lowest risk.
 - Investors will require a higher return as the level of risk increases.
- Modern Portfolio Theory indicates that asset allocation can optimize risk and return.

57

57

Diversification

- Diversification reduces unsystematic risk by adding assets to a portfolio.
 - Market risk – systematic risk.
 - Cannot be diversified away.
 - Company-specific risk – unsystematic risk.
 - Can be diversified away.
 - Includes business risk, default risk, etc.

58

58

Diversification

- Benefits of diversification include:
 - Standard deviation of portfolio is less than weighted avg of SDs of individual securities, due to low correlation of returns.
 - Can allow investor to achieve higher return for a given risk level than can be achieved with a single asset.
- Major benefit of investing internationally is diversification.

59

59

Diversification

- Correlation of two securities is measured by the correlation coefficient.
 - Ranges from +1 to -1.
 - Not necessary to have a negative correlation in order to reduce risk through diversification.
 - Only necessary to have securities that are not perfectly positively correlated.
- Number of securities in a portfolio may not be a good measure of diversification, if weights are not evenly balanced.

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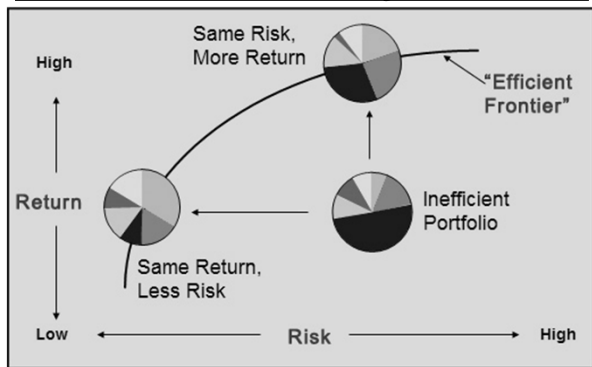
Modern Portfolio Theory

- MPT indicates that diversification can achieve the optimal return for a given level of risk.
 - Since there is an optimum mix of securities, there is a limit to the benefit of diversification.
- Efficient frontier consists of portfolios with the highest return for a given level of risk.
 - Once efficient frontier is reached, no new risk sources can make the portfolio more efficient.
 - Efficient frontier may shift over the long-term.

61

61

Modern Portfolio Theory



62

62

Practice

- The overall market is currently providing a rate of return of 6%. An investor is looking to add ABC Company stock to his portfolio. Research indicates that ABC Company stock is currently providing a rate of return of 4.5%. Based on this information, the beta of ABC Company stock is likely:
 - A. Equal to 1.
 - B. Less than 0.
 - C. Less than 1.
 - D. Greater than 1.

63

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Practice

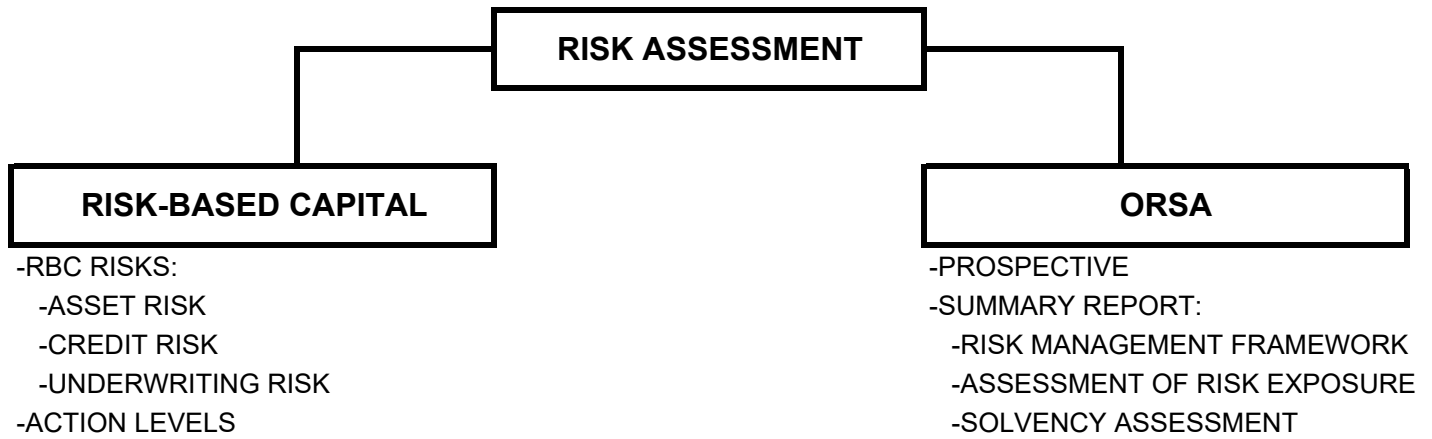
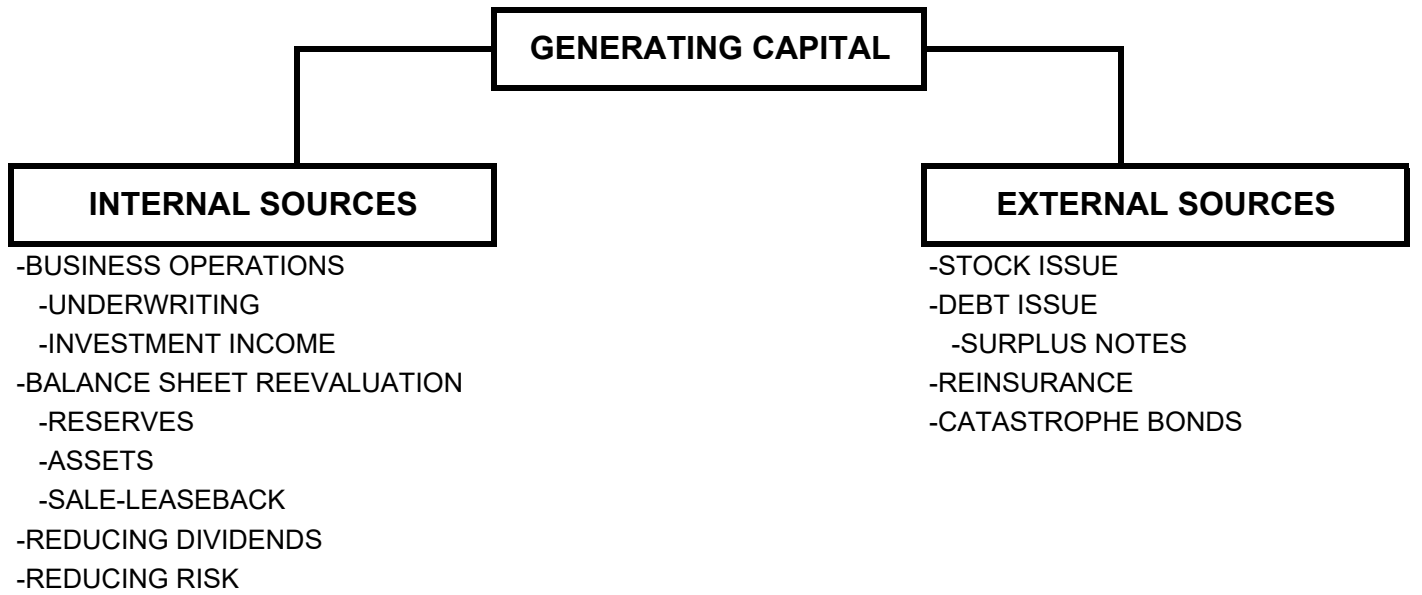
- All of the following statements regarding portfolio diversification are correct, EXCEPT:
 - A. The major benefit of investing internationally is diversification.
 - B. To achieve diversification, at least one stock in a portfolio of stocks must have a negative correlation with the other stocks.
 - C. Diversification can allow an investor to achieve a higher rate of return for a given level of risk than would have been possible with a single asset.
 - D. The number of securities in a portfolio may not be a good measure of diversification, if the weights are not evenly balanced.

64

64

Module 6

Managing Capital



Managing Capital

**Module 6
Chapter 6**

1

1

Objectives

- Obj I: Internal Capital Sources
- Obj II: External Capital Sources
- Obj III: Risk-Based Capital Requirements
- Obj IV: NAIC and ORSA

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Internal Capital Sources

Objective I

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Internal Methods

- ❑ The most common internal way for an insurer to generate capital is through business operations.
 - ❑ Underwriting operations.
 - ❑ Investment income.
- ❑ Insurers can also generate capital by:
 - ❑ Reevaluating balance sheet values.
 - ❑ Reducing dividends.
 - ❑ Reducing risk.

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Business Operations

- ❑ An insurer's capital is increased by net income.
 - ❑ Adds to capital without increasing financial risk associated with taking on more debt.
 - ❑ Income consists of profits from underwriting, income from investments, and realized gains.
- ❑ Underwriting profits depend on many factors.
 - ❑ Internal – ratemaking, expense control, marketing.
 - ❑ External – regulation, competition, and inflation.

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Business Operations

- ❑ Insurers receive premium income from business operations.
- ❑ Two most significant liabilities from sale of insurance:
 - ❑ Unearned premium reserve – insurer receives up-front premium, but its earned over time.
 - ❑ Reserve is zero at end of policy period.
 - ❑ Loss reserve – includes loss adjustment expense (LAE) reserves.

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Business Operations

- Investment income is another source of capital.
 - Policyholders' surplus is also increased by unrealized gains on investments.
 - Investments are reported at fair market value.
- Liability insurers generally have a greater rate of return on their investments than the return received by property insurers.
 - Funds generated by long-tail lines are available for a longer period of time.

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Reevaluating Balance Sheet

- One internal method an insurer can use to meet its capital needs is reevaluation of balance sheet reserves or assets.
- Management is responsible for estimating needed loss and LAE reserves.
 - External factors must be considered.
 - Decreases to reserves will lower expenses, increase income and policyholders' surplus.
 - Discounting loss reserves for time value of money increases surplus.

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Reevaluating Balance Sheet

- Sale-leaseback transactions can be used to increase capital.
 - Insurer sells asset at market value.
 - Insurer then rents asset from purchaser.
- Appropriate for assets that are normally carried at historical cost on the books.
 - Capital increase will be the difference between the sales price and historical cost.

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Reducing Dividends

- Dividends can be reduced or eliminated in an effort to maintain/increase capital.
 - Stock insurer – reduce shareholder dividends.
 - May cause reduction in stock price and loss of investor confidence.
 - Mutual insurer – reduce policyowner dividends.
 - Does not happen very often, due to negative reaction by policyholders.

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Reducing Risk

- Insurer capital is used to cushion risk of loss.
 - If risk is lowered, insurer needs less capital.
 - Risk can be reduced by limiting growth or reducing amount of insurance written.
 - Insurer could also withdraw from risky lines.

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Practice

- Which one of the following represents an insurer's primary method of generating internal capital?
 - A. Reductions in shareholder dividends.
 - B. Increases in underwriting profits.
 - C. Adjustments to loss reserves.
 - D. Sales of equity securities.

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Practice

- Which one of the following represents the main reason liability insurers generally have a greater rate of return on their investments than the return received by property insurers?
 - A. Regulatory restrictions on property insurers limit the rate of return on fixed income investments.
 - B. Statutory accounting requires property insurers to reduce investment income by inflation.
 - C. Funds generated by long-tail lines are available for a longer period of time.
 - D. Cash matching is only available to liability insurers.

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External Capital Sources

Objective II

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External Methods

- Insurers can generate capital externally in the following ways:
 - Stock (equity).
 - Debt.
 - Reinsurance.
 - Catastrophe bonds.

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Stock

- A stock insurer can raise external capital by issuing stock (equity capital).
 - Can improve liquidity and solvency.
 - Mutual insurer must reorganize to issue stock.
 - Issuing stock is more expensive than issuing long-term debt.
- An advantage of issuing stock is that financial stress will not be increased.
 - Failure to pay dividends is not a default.

16

16

Debt

- Insurers can issue debt to raise capital by issuing bonds or surplus notes.
 - Debt holders have priority claim.
 - Can produce higher returns for stockholders.
- Surplus notes are unsecured debt.
 - Characteristics of both equity and debt.
 - Main way mutual insurers raise surplus.
 - Classified as policyholders' surplus for SAP.
 - Strengthens RBC ratio.

17

17

Reinsurance

- Reinsurance can increase capital through loss portfolio transfer (LPT).
 - LPTs are typically used to withdraw from a segment of business, rather than raise capital.
- Capital increases if cash transferred by insurer is less than loss reserves on balance sheet.
 - Cash paid out is typically based on discounted value of estimated losses.
 - Loss reserve is generally undiscounted, typically resulting in an increase in capital.

18

18

Reinsurance

- Reinsurance can provide surplus relief.
 - Provides ceding commission from reinsurer.
 - Ceding commission covers policy acquisition expenses.
 - Surplus relief is a secondary goal of reinsurance, with primary goal being the transfer of insurance risk.
- Reinsurance can reduce exposure to risk.
 - Reduced risk results in lower capital need.

19

19

Catastrophe Bonds

- Catastrophe bonds transfer risk of a catastrophe to bond investors.
 - Repayment is reduced or eliminated in the case of a catastrophe (event).
 - Bond rating is based on likelihood of catastrophe occurring.
 - Coupon rates are typically higher than those of investment-grade corporate bonds.
- Insurance securitization is used.
 - Intermediary sells bonds to investors.

20

20

Practice

- Which one of the following statements is correct regarding catastrophe bonds?
 - A. They transfer the risk of a catastrophe to the issuer of the bond.
 - B. Coupon rates are typically lower than those of investment-grade corporate bonds.
 - C. The payment of interest or principal are reduced in the event of a specified catastrophe.
 - D. Ratings are based on the probability of default due to the bankruptcy of the issuer.

21

21

Risk-Based Capital Requirements

Objective III

22

22

Risk-Based Capital Standard

- RBC standards were developed by NAIC.
 - Determines acceptable level of capital based on asset risk, credit risk, and underwriting risk.
 - Attempts to combine risks into a single index.
- Regulators review RBC measures annually.
 - Actual capital is compared to standards.
 - Insurers not meeting requirements face regulatory oversight.

23

23

Benefits of RBC Standards

- Benefits of RBC system include:
 - Insurers can perform the RBC calculation internally to determine if they have sufficient capital.
 - State regulators are mandated to use RBC.
 - No political motivations or biases.
 - Policyholders have greater security.
 - Financial concerns will be addressed by the insurer or regulators.

24

24

Asset Risk

- RBC asset risk element represents the risk that the value of assets will be lower than expected.
 - Decrease in value affects surplus.
 - RBC considers equity, fixed income, and investments in subsidiaries.
 - Riskier assets require more capital.
- Amount of capital required is determined by multiplying asset value by RBC factor.
 - U.S. government bonds have factor of zero.

25

25

Credit Risk

- RBC credit risk represents risk the insurer will not collect amounts owed.
 - Largest risk is the risk a reinsurer will default on a reinsurance agreement.
 - Other risks include accrued investment income, receivables from affiliated companies, and receivables from uninsured health plans.

26

26

Underwriting Risk

- Underwriting risk is the risk that premiums or reserves are too low.
 - Inadequate reserves may reflect a need to draw into capital.
- Insurer interested in expansion would most likely be affected by underwriting risk.
 - Excessive premium growth is also a risk recognized in RBC formula.

27

27

Action Level

□ Authorized Control Level is minimum capital.

Action	% of ACL	Result
No Action Required	200% +	N/A
Company Action Level	150%-200%	Insurer must submit plan to regulator
Regulatory Action Level	100%-150%	Regulator must examine insurer
Authorized Control Level	70%-100%	Regulator may place insurer under control
Mandatory Control Level	< 70%	Regulator must place insurer under control

28

28

Practice

□ Safety Insurance Company's Risk-Based Capital (RBC) amount fell slightly below 200% of the authorized control level. Which of the following actions will be required?

- A. The regulator will be required to place the company under regulatory control.
- B. The company will be required to submit a financial plan to the regulator containing proposals to correct their financial problems.
- C. The regulator can choose to place the company under regulatory control but is not required to do so.
- D. The regulator will be required to conduct an analysis or examination as deemed necessary.

29

29

NAIC and ORSA

Objective IV

30

30

ORSA

- ❑ The Risk Management and Own Risk and Solvency Assessment was developed by NAIC.
 - ❑ Requires insurers to assess their risk management adequacy.
 - ❑ Insurers also must determine current and probable future solvency.
- ❑ ORSA promotes enterprise risk management.
 - ❑ Also advocates financial soundness and challenges insurers to manage their risks.

31

31

ORSA Summary Report

- ❑ ORSA requires a Summary Report if premiums are above a certain level.
 - ❑ Insurance commissioner may require report if insurer financial condition is deteriorating.
- ❑ Section One – Risk Management Framework.
 - ❑ Describes insurer’s risk mgmt. policy.
 - ❑ Lists categories of risk and how they are managed and monitored.
 - ❑ 2-5 year plan relating to risks that might hinder business.

32

32

ORSA Summary Report

- ❑ Section Two – Assessment of Risk Exposure.
 - ❑ Quantitative exposure of the risk categories listed in Section One.
 - ❑ Risks are quantified under normal and stressed situations.
- ❑ Section Three – Prospective Solvency Assessment.
 - ❑ Determination of capital necessary to maintain current business for 2-5 years.

33

33

Practice

- The model act requiring a risk and solvency self-assessment by insurers with a focus on enterprise risk management planning and processes is known as the NAIC:
 - A. Solvency and Risk Assessment Act.
 - B. Assessment of Risk Exposure and Solvency Program.
 - C. Enterprise Wide Risk Management Survey.
 - D. Risk Management and Own Risk and Solvency Assessment.

34

34