ALM 101

AN INTRODUCTION TO
INTEREST RATE RISK (IRR)

PRESENTED BY
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SESSION 2

DEFINING AND IDENTIFYING INTEREST RATE RISK

OBJECTIVES

What You Will Learn —

Learn what interest rate risk (IRR) is and how it may impact your credit union.

Also learn the comparative-scenario approach to measuring IRR.

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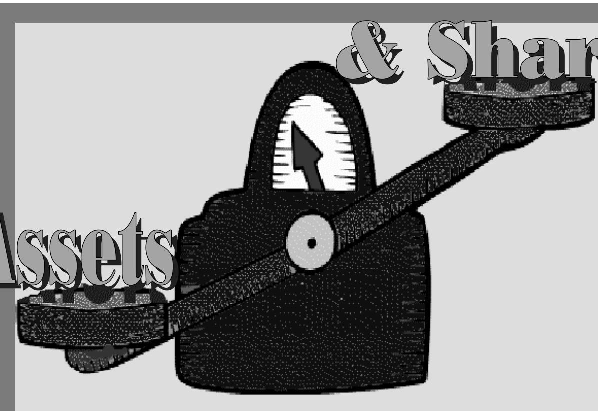
IRR DEFINED



Mismatch Risk—

The risk that adverse changes in the prevailing rates of interest, when combined with the repricing schedules for liabilities (such as shares and deposits) and assets (such as loans and investments), may adversely affect the credit union's net interest spread, net income, and capital/net worth.

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COMMON TERMS

- <u>IRR</u>: Interest Rate Risk (not Internal Rate of Return)
- <u>Net capital, owner's equity, net worth, reserves</u>: All effectively mean and refer to the credit union's unimpaired capital
- <u>Banking</u>: A generic term which refers to the process of depositing, withdrawing, making loans, etc.
- <u>COF</u>: Cost of Funds
- <u>NII</u>: Net Interest Income (Interest spread)
- <u>Net or NI</u>: Net Income, Net Profit, Net Earnings
- <u>Financial Instruments</u>: Bonds, loans, commercial paper, etc.
- <u>GAAP</u>: Generally Accepted Accounting Principles
- <u>RAP</u>: Regulatory Accounting Principles
- <u>GAAP + RAP = CRAP</u>

MANAGING IRR

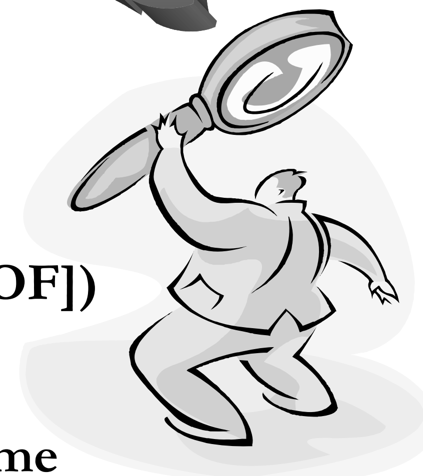
- **Measure and Quantify IRR (remainder of this session and following sessions)**

- **Later sessions —**

  - ✔ **Determine the amount of acceptable IRR and state limits in written policies and procedures**
  - ✔ **Manage IRR level on an ongoing basis**
  - ✔ **Take corrective action when necessary**

MEASURING & QUANTIFYING IRR

What to measure in terms of IRR :



- **Net Interest Income (NII) —**
  Interest Income less Interest Expense (cost of funds [COF])

- **Net Income (NI) —**
  NII less Operating Expense plus Other Income

- **Capital/Networth —**
  Increases with profits and decreases with losses
  - **Book value (net worth ratio)**
  - **Market value (NEV)**
  - **Adverse events may impact net worth ratio and NEV**

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MEASURING IRR USING COMPARATIVE SCENARIOS

Benchmark/Base-case vs. Shock

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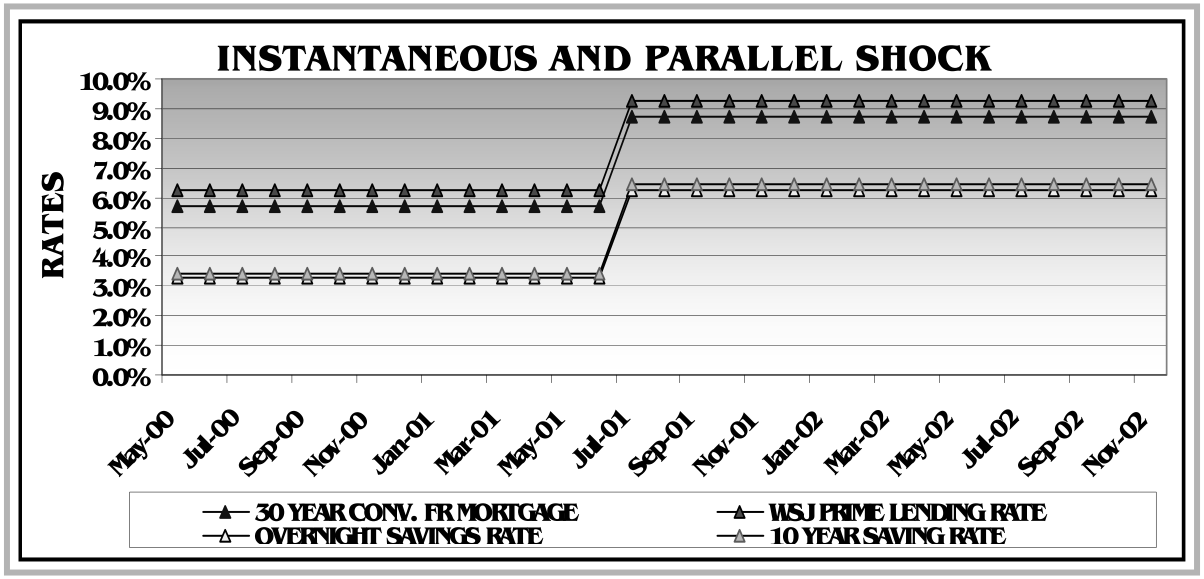
THE GOLD STANDARD FOR MEASURING IRR

A 300-Basis-Point Instantaneous and Parallel Shock:

- **Simplifies the process**
- **Fences in the risk**
- **Amplifies the effect of the shock**
- **May be considered worst-case**

FORMULATING SHOCK SCENARIOS

- Instantaneous Assumption—
  - Worst Case
  - Simple



- Parallel Assumption—

  All rates move in lock step
  - Worst Case

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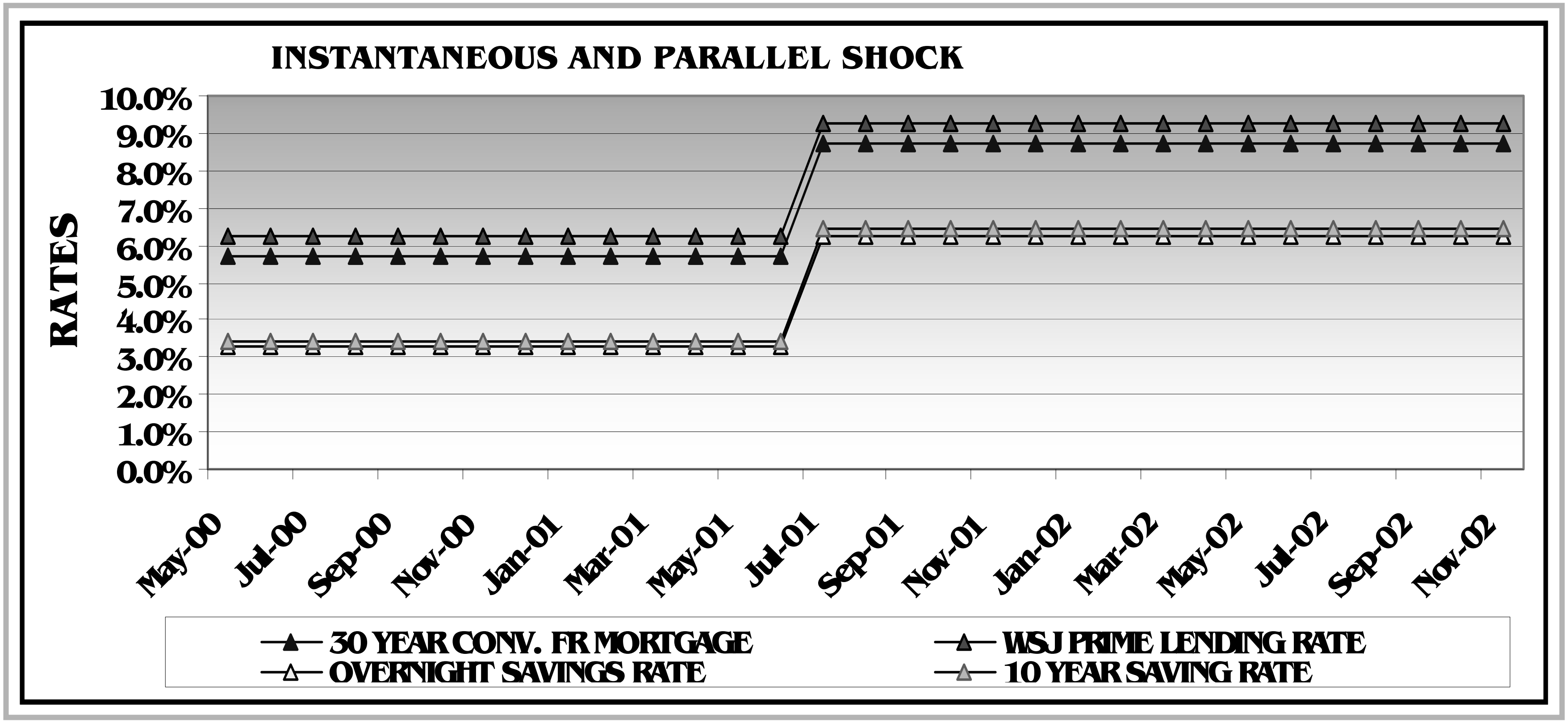
FORMULATING SHOCK SCENARIOS



FORMULATING SHOCK SCENARIOS

Determining the magnitude of shock scenarios

A 300-basis-point Instantaneous and Parallel Shock :

- Previously used a 500-basis-point ramp shock
- Rate shock of 1970s and 1980s was approximately 500-basis-point ramp shock
- Yields approximately the same result as 50-basis-points ramp shock
- Instantaneous and parallel 300-basis-point shock may be considered a worst-case scenario

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FORMULATING THE BASE-CASE SCENARIO

- Remember—This is a macro analysis
- Using KISS approach
- No change in rates
- Internal or moderate growth
- Hold all other things constant – such as loans, shares, investments, etc
- Minimize other changes
- Base-case is NOT a likely scenario

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FORMULATING THE SHOCK SCENARIO

- Remember—This is a macro analysis
- 300 Basis Points
- Limit changes from base to interest rate only
- Maintain the base-case static parameters in other areas
- Determine the repricing velocity of assets
  - Loan—history and judgment
  - Investments—contractual
- Determine the repricing speed of liabilities in the shock environment

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ANALYZE THE RESULTS

- IRR is reflected in the difference between base-case and shock
- Present in analytical format appropriate to user
  - Executive management
  - ALCO
  - Board

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SUMMARY

- Credit unions must now manage IRR along with traditional risks
- IRR (for credit unions) is the risk that the mismatch of repricing events will put the credit union's NII at risk
- Management's responsibility is to:
  - Measure and quantify IRR
    - NII
    - Net Income
    - Net Worth/Capital
    - NEV/Market Value
  - Use comparative scenarios (Base-case vs. Shock)
    - Employ KISS method (<u>K</u>eep <u>I</u>t <u>S</u>imple, <u>S</u>tupid)
    - Use parallel assumptions
    - Magnitude (300-basis points [per NCUA])
  - Set risk limit (later session)
  - Manage IRR on an ongoing basis (later session)
  - Take corrective action—when necessary (later session)

We at

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wish you success!

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