

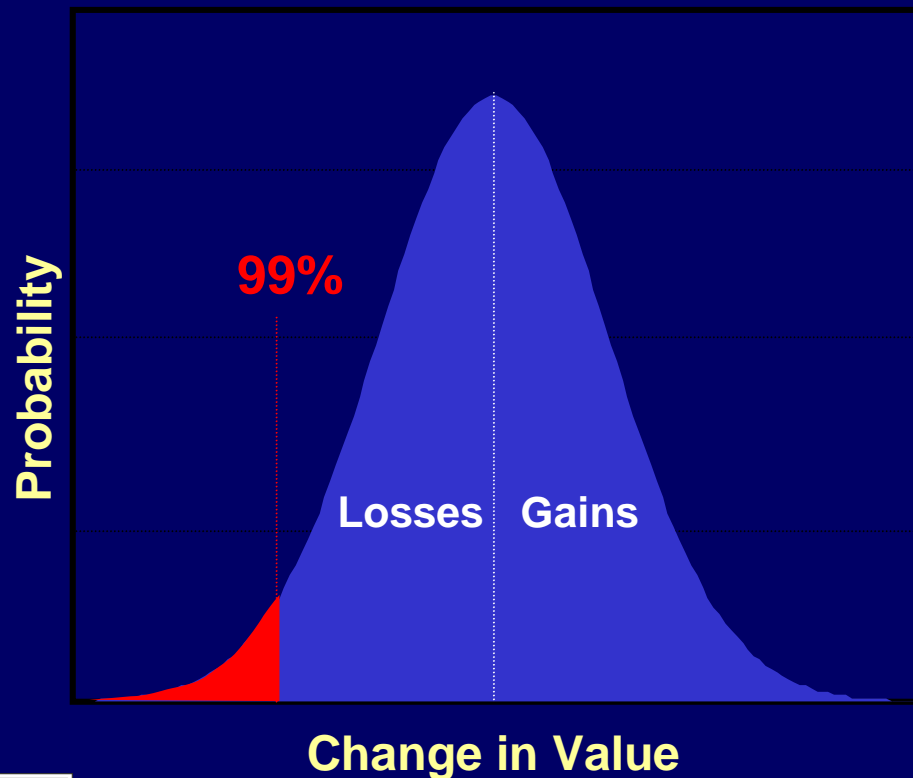
What is VaR?

Capital Market Risk Advisors



VAR

Value at Risk Definition



- Portfolio measure of risk
- Potential loss in a portfolio over a specified period of time
- Usually based on history:
 - ◆ Volatility
 - ◆ Correlation

Three Key Questions

Exposure
*What risk?
How much?*

**Volatility &
Correlation**
*How much could
prices change?*

Sensitivity
*How much will P&L
change per unit?*

*How much can I
lose?*

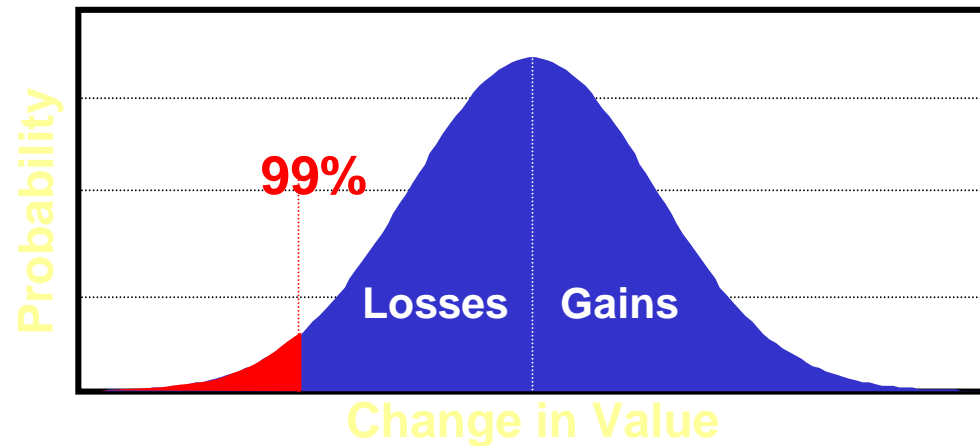
A Common Language

Comprehensive Coverage

Consistent Policies & Limits

Uniform Measures

VAR and Capital



CAPITAL
MARKET
• RISK •
ADVISORS



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What is VAR?

- ◆ VAR is the maximum loss a portfolio can incur over a specified time period, with a specified probability
- ◆ VAR is a vital component of current "best" practices in risk measurement
- ◆ VAR is embraced by practitioners, regulators and academics
- ◆ VAR is valuable as a probabilistic measure of potential losses

What VAR is NOT?

- ◆ VAR is NOT the worst case scenario
- ◆ VAR does NOT measure losses under any particular market conditions
- ◆ VAR does NOT address cumulative losses
- ◆ VAR -- by itself -- is NOT sufficient for risk measurement
- ◆ VAR does NOT capture positive skewness

Typical Uses of VAR

- ◆ Translates portfolio exposures into potential P&L
- ◆ Aggregates and reports multi-product, multi-market exposures into one number
- ◆ Uses risk factors and correlations to create a risk weighted index e.g. what is my S&P equivalent risk position
- ◆ Monitors VAR limits
- ◆ Meets external risk management disclosure and expectations

Increasing Use of VAR

1988

1990

1992

1994

1996

1998

2000

- ◆ Bankers Trust RAROC Implementation

- ◆ VAR Disclosure in Banks' Annual Reports

- ◆ RiskMetrics

- ◆ BIS Market Risk Based Capital - use of internal models

- ◆ RAROC 2020 for Buy Side Firms

- ◆ Corporations disclose VAR in annual reports

- ◆ SEC Risk Based Capital for Dealers

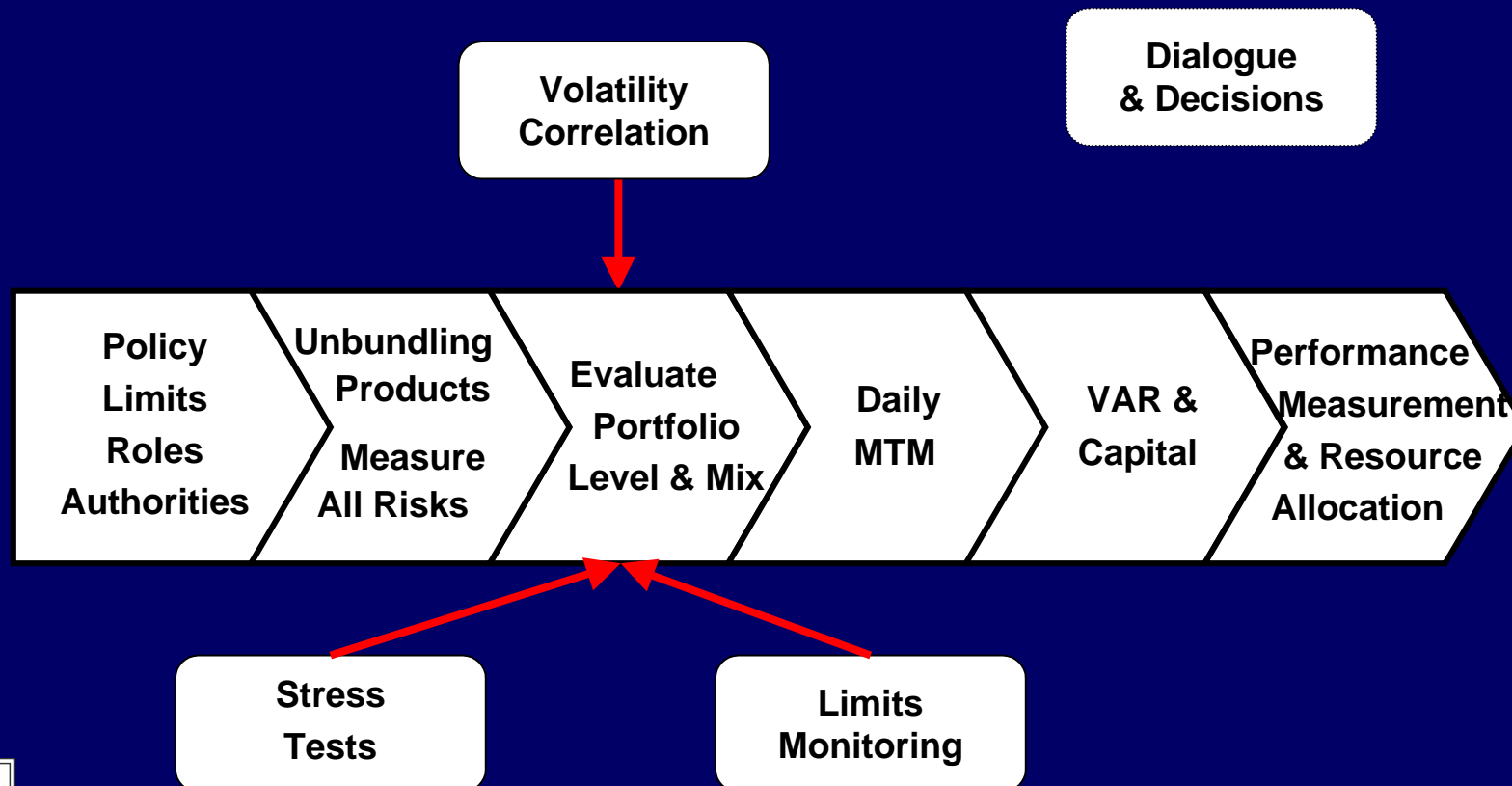
- ◆ Heightened Buy Side Interest

- ◆ Lenders and Investors Require VAR and Risk Management



VAR is Only One Tool

Risk Management Framework



VAR is Part of IRO

- ◆ Scenario Analysis
- ◆ Stress Testing
- ◆ Limits Structure and Approval Process
- ◆ Empirical Backtesting & Model Calibration
- ◆ A healthy dose of common sense