

ACE Memorization Cards

ERM Exam

SAMPLE CARDS

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Instructions for Cards

- You should allow 6-8 weeks to memorize the cards
- Feel free to add or delete cards as necessary
- Card Layout
 - Bottom left -- Resource (text, SN, PR)
 - Bottom right -- ACE study guide section / page
- Make notes or add to cards in white space
- All of the extension texts are included

Consider purchasing the ACE memorization CDs to help you memorize.

When topics from different texts are consolidated, there will be multiple resources in the bottom left-hand corner of the card

Please email us any questions or recommendations,
Good Luck!

Major Categories of Risk

1. Market risk
2. Credit risk
3. Insurance and demographic risk
4. Operational risk
5. Liquidity risk
6. Strategy risk
7. Frictional risk
8. Aggregation and diversification risk
9. Systematic Risk

Skew Statistic

1. Skew

$$\omega = \frac{1}{T} \frac{\sum_{t=1}^T (X_t - \mu)^3}{\sigma^3} \quad (9.5)$$

2. Sample Skew

$$w = \frac{T}{(T-1)(T-2)} \frac{\sum_{t=1}^T (X_t - \bar{X})^3}{s^3} \quad (9.6)$$

3. Negative (positive) skew means the left (right) handed tail of distribution is longer

Advantages and Disadvantages of VaR

Advantages

1. Express risk in one number
2. Can be applied to any type of risk
3. Allows aggregation and interaction of risk
4. Easy to translate into a benchmark (pass/fail easy to assess)
5. Flexible - can choose various time horizons and/or levels of confidence

Disadvantages

1. Does not describe the shape of the tail
2. Only gives loss at one point in distribution
3. Doesn't indicate how much is expected to be lost
4. Parametric VaR could be misleading if distribution not appropriate
5. Not coherent
6. Cannot add VaRs of various portfolios/BUs together

Properties of Coherent Risk Measures

1. Subadditivity - for all random losses X and Y , reflects diversification

$$\rho(X + Y) \leq \rho(X) + \rho(Y)$$

2. Monotonicity – if $X \leq Y$ for each scenario

$$\rho(X) \leq \rho(Y)$$

3. Positive Homogeneity – for all $\lambda \geq 0$ and random losses X

$$\rho(\lambda X) = \lambda \rho(X)$$

4. Translation Invariance – for all random losses X and constants α

$$\rho(X + \alpha) = \rho(X) + \alpha$$

Porter's Five Forces Model

1. Threats of new entrants
2. Bargaining power of buyers
3. Bargaining power of suppliers
4. Threat of substitute products
5. Intensity of competition

Key Rate Duration Advantages

1. Identifies the price sensitivity to each point on the yield curve
2. KRD aggregates linearly
3. KRDs are applicable over a wide range of yield curve movement
4. Can create a replicating portfolio to mimic an embedded option
5. Compare different types of products/structures
6. Portfolios immunized using key rates will withstand non-parallel yield curve shifts

Uses/Drivers of an EC Model

1. Help price a new product
2. Capital allocation and management
3. Determine optimal mix of business
4. Assess a change in investment strategy
5. Determine optimal mix of assets and funding sources
6. How to cope with extreme events
7. Determine risk limits
8. Calculate RAROC
9. Satisfy regulators and rating agencies
10. Quantification of risk