2003 年 FRM 考試

考試重點預測

編者按:

FRM 考試時間迫近，準備上要縮小閱讀範圍，並提升命中率。吾人在準備今年 FRM 考試之際，特參照歷次考題及模擬試題，規劃出以下出題重點，請各位 FRM 考生多加利用，茲收畫龍點睛之效!

FRM 班導師，馬丁上

10/21/2003 於台北市中正區

數量及統計

- ✓ Determine the percentage of distribution that lies a stated number of deviations from the mean using Chebyshev's Inequity
- ✓ Calculate the expected value and variance of a binominal random variable
- ✓ Calculate the expected value and variance of the Poisson distribution
- ✓ Explain how the probabilities of Type I and Type II errors are affected by the choice of significance level
- ✓ Conduct a chi-square test for a single population variance

- ✓ Describe the generalized autoregressive conditional heteroskedastic (GARCH)(1.1) model in volatility estimation
- ✓ Determine when and whether a GARCH or EWMA model of volatility estimation should be used in volatility estimation
- ✓ Discuss how GARCH model parameters are estimated, and explain how GARCH models perform in volatility forecasting
- ✓ Describe the problem with VAR estimation for which extreme value theory (EVT) provides a potential solution
- ✓ Describe the generalized Pareto distribution and its use in estimating VAR
- ✓ Discuss the limitations of EVT in computing VAR
- ✓ Discuss four steps in the Monte Carlo simulation method
- ✓ Identify the situations in which liquidity-adjusted VAR is useful, and discuss its limitations
- ✓ Explain the linear yield interpolation and piecewise cubics methods for estimating complete discount functions

資本市場風險衡量及管理

- ✓ Compute the payoff and value of a FRA
- ✓ Identify and apply the three most common day count conventions
- ✓ Explain the Eurodollar futures contract convexity adjustment
- ✓ Formulate a duration-based hedging strategy using interest-rate futures
- ✓ Calculate the dollar value of an 01(DV01) of a security, given a change in yield and the resulting change in price
- ✓ Calculate the face amount of one security required to hedge a position in a second security, given the DV01 of each
- ✓ Calculate and interpret the effective duration of a security, given a change in yield and the resulting change in price
- ✓ Define and interpret the yield-based DV01, the modified duration, and the MacCauley duration of a security, and explain how each is calculated

- ✓ Describe the prepayment risk of planned amortization class (PAC) bonds, support bonds, principal only (PO) strips, and interest only (IO) strips
- ✓ Explain basis risk and compute the basis
- ✓ Define the optimal hedge ratio and compute the number of futures contracts necessary to hedge a spot market exposure
- ✓ State and explain the cost-of-carry model for forward prices using both assets that have interim cash flows and assets that do not have interim cash flows
- ✓ Define, calculate, and interpret the minimum variance hedge ratio
- ✓ Calculate the number of stock index futures contracts to buy or sell to hedge an equity portfolio or individual stock
- ✓ Describe a flex option and long-term equity anticipation securities (LEAPS)
- ✓ Explain how the six factors affect option price for both European and American options
- ✓ Identify the upper and lower pricing bounds for both European and American options
- ✓ Explain put-call parity and use it to compute option values
- ✓ Calculate the value of a European call or put option using a one-step and a two-step binomial model
- ✓ Calculate the value of an American call or put option using a two-step binomial model
- ✓ Explain the Markov property
- ✓ Describe a Wiener process, a generalized Wiener process, and an Ito process
- ✓ Explain why a Geometric Brownian Motion (GBM) is a reasonable stochastic process for modeling stock prices
- ✓ Describe Ito's lemma
- ✓ Explain how dividends affect the early exercise decision for American call and put options
- ✓ Illustrate and explain why an investor would enter into a spread strategy (e.g., bull spread, bear spread, calendar spread, or butterfly spread)
- ✓ Illustrate and explain why an investor would enter into a combination strategy (e.g., straddles, strangles, strips, or straps)

- ✓ Define and discuss “theta” for option positions
- ✓ Define and discuss “gamma” for option positions
- ✓ Describe how to create a gamma-neutral position
- ✓ Discuss the relationship between delta, theta, and gamma
- ✓ Define and discuss “vega” for option options
- ✓ Describe how the volatility smile affects calculation of option Greeks
- ✓ Discuss how the implied volatility of an option might be affected be jumps in asset prices
- ✓ Demonstrate the pricing of an interest-rate swap
- ✓ Calculate the implied forward rate/floating payment on a swap
- ✓ Identify three differences in credit-risk concerns with swaps and loans
- ✓ Describe the characteristics of barrier options
- ✓ Explain the characteristics and workings of weather derivatives
- ✓ Explain the difference between parametric and nonparametric VAR
- ✓ Discuss the delta-normal approach, its strengths and limitations
- ✓ List and discuss the advantages and disadvantages of the variance-covariance, historical, and Monte Carlo approaches to estimating VAR
- ✓ List and explain the four properties of a risk measure required for capital adequacy purposes
- ✓ Compute diversified VAR, individual VAR, and undiversified VAR of a two asset portfolio
- ✓ Describe the two problems and associated solutions with VAR measurement as the portfolio size increases
- ✓ Explain how risk-mapping is used to implement the delta-normal method
- ✓ Compare and contrast VAR and extreme VAR (EVAR)
- ✓ Identify the situations in which selective hedging is appropriate for a firm
- ✓ Discuss the impact of the use of foreign currency derivatives on firm value
- ✓ Define the role of VAR as risk capital and discuss important

measurement characteristics
- ✓ Compare and contrast RAPM using asset versus earnings-based measures of VAR
- ✓ Compute standard VAR and benchmark-relative VAR of a two asset portfolio
- ✓ Describe the Basel framework for backtesting VAR models, and discuss its strengths and weaknesses
- ✓ Compare and contrast pro forma, regression, and simulation methods of quantifying exposures, and identify situations when each method is appropriate
- ✓ Interpret a stressed VAR
- ✓ Calculate the change in portfolio risk for a given change in an individual position, given a portfolio risk decomposition
- ✓ Define and calculate a bank's repricing gap
- ✓ Calculate and interpret the gap ratio
- ✓ Define the maturity gap and explain how a bank's exposure to interest-rate risk is a function of its maturity gap
- ✓ Explain the differences between microhedging and macrohedging
- ✓ Explain how to use futures and forwards to hedge credit risk
- ✓ Describe how to hedge interest-rate risk on the whole balance sheet (or macrohedge)
- ✓ Describe how catastrophe risk can be minimized by using call-spread options
- ✓ Compare and contrast the use of caps, floor, and collars

信用市場風險衡量及管理

- ✓ List and discuss the two sources of liquidity risk facing financial institutions
- ✓ Compute the probability of default (marginal default probability) for 1-year corporate debt using Treasury and corporate-bond-yield curves
- ✓ Compute the cumulative default probability over a multiyear period given the marginal default probability for each year
- ✓ Compute a marginal default probability using the

term-structure approach

- ✓ Explain how to calculate marginal default rates from a cumulative default-rate table
- ✓ Explain how netting arrangements can reduce credit risk
- ✓ Justify the use of different confidence levels and horizons for market risk and credit-risk measurements
- ✓ Identify the attributes of CreditMetrics, CreditRisk+, and CreditPortfolioView
- ✓ Compare migration and default probabilities based on the KMV approach with those of the rating agencies
- ✓ Explain how CreditRisk estimates the default distribution for a portfolio
- ✓ Discuss the differences in default rate computations between the Altman model and the rating agencies
- ✓ Compute the joint migration probability for two bonds given a transition matrix (assume zero correlation among rating changes)
- ✓ Identify the buyers and sellers of loans and briefly discuss their motives for doing so
- ✓ Describe the CAMEL system as it applies to country risk measurement
- ✓ Define a credit default swap (CDS) and list the two settlement procedures
- ✓ Compare collateralized debt obligations (CDOs) with collateralized mortgage obligations
- ✓ Explain how collateralizaed loan obligations and collateralizaed bond obligations are formed, and describe their uses
- ✓ Calculate the replacement cost for an interest-rate swap for which default has occurred
- ✓ Compute exposure for an interest-rate swap

作業風險及整合風險

- ✓ Classify activities and events into one of Hoffman's five classes of operational risk
- ✓ List the four components of the cost of operational risk (COOR)

- ✓ Calculate COOR
- ✓ Describe the basic components of Bankers Trust's Operational risk adjusted return on Capital (RAROC) model
- ✓ Distinguish between economic and regulatory capital
- ✓ Compute the RAROC for a loan
- ✓ Describe the Tinkerbell syndrome providing examples of its occurrence
- ✓ Calculate and interpret transaction-level and portfolio-level risk measurement unit (RMU)

金融相關法令規定、會計及道德議題

- ✓ Discuss how embedded options are to be treated for accounting purposes under FAS 133
- ✓ Explain the cash flow accounting treatment under FAS 133, including examples, eligible risks, prerequisite requirements and disallowed situations
- ✓ Explain the fair value accounting treatment under FAS 133, including examples, eligible risks, prerequisite requirements, and disallowed situations
- ✓ Describe the main hedging effectiveness methodologies in FAS 133
- ✓ List the specific definition of a derivatives according to FAS 133
- ✓ List and describe the three FAS 133 hedge types
- ✓ Define option hedging according to FAS 133
- ✓ Define when securities will be measured in the financial statements at book or market value according to IAS 39
- ✓ Determine how hedging transactions are treated in IAS 39
- ✓ Identify the two stakeholders in the current regulatory system not included in Stigler's model
- ✓ Compare and contrast the standardized approach to the internal ratings approach when calculating risk-based weightings
- ✓ Describe the expectation of the amount of overall capital that should result either through the standardized approach or the internal ratings-based approach for risk weighted capital calculations

- ✓ Describe the New Accord's requirements for calculating risk-weights using both the standardized and IRB approaches when accounting for credit risk
- ✓ Discuss the New Accord's standardized and IRB treatments of asset securitization
- ✓ Discuss how the New Accord addresses operational risk
- ✓ Describe the two approaches to the measurement of market risk that were established in the BIS 1998 agreement
- ✓ Calculate the capital charge for an option using the delta-plus approach
- ✓ Calculate the capital charge for a portfolio of foreign currency and gold
- ✓ Describe tier 3 capital and its allowable uses
- ✓ Define the Cooke ratio
- ✓ Calculate a bank's credit-risk charge as required under the Basel Accord
- ✓ Discuss the standardized method of determining the market-risk charge
- ✓ Compare and contrast the standardized and internal model approaches to measuring market risk
- ✓ Explain the 1999 revisions to credit risk requirements
- ✓ Compare and contrast the risk-based deduction method to the risk-based aggregation method
- ✓ Describe three areas that form the foundation of operational-risk management
- ✓ Describe three components of capital
- ✓ Explain what is meant by regulatory arbitrage
- ✓ List the key players in the corporate reporting supply chain and determine how Sarbanes-Oxley impacts the responsibilities required of the players
- ✓ Illustrate how securitization may affect the financial condition of the originator
- ✓ Explain the tradeoff between a first-loss position in a securitization and funding liquidity
- ✓ Define securitization and discuss the purported benefits of securitization transactions
- ✓ Discuss some of the implications of securization for a firm's unsecured creditors

- ✓ Determine how the limited risk transference of a securitization may impact the true financial leverage position of a firm
- ✓ Determine how the proceeds from a securitization may impact the true financial leverage position of a firm
- ✓ Determine how the proceeds from a securitization can impact the originator's creditworthiness
- ✓ Determine the affect of operating on a cash-neutral basis on GAAP earnings in the mortgage market