2003 年 FRM 考試回憶精選

以下十九題「接近原版題目」要特別感謝 Matt 先生不計辛勞在百忙之餘提供出來，我們感謝每一位金證照學員的參與!

FRM2003Questions

#2.　　Doing a linear aggression, and getting the following result

Number verified: 250

R square=0.379

	Estimate	Standard Error
Alpha	0.013	0.015
Beta	0.85	0.18

Which one can be concluded?

a. beta is significantly different from 0, correlation coefficient=0.62
b. beta is significantly different from 1, correlation coefficient=0.38
c. beta is significantly different from 0, correlation coefficient=0.38
d. beta is significantly different from 1, correlation coefficient=0.62

#7. Calculate the marginal morality rate for the following company's bond

Year	Bond value in the beginning	Dollar Value of Bond if default at the year-end
1	USD 1,000	45
2		55
3		80

a.　3.45%
b.　6.38%
c.　6.40%
d.　8.59%

#14. A company has a bond portfolio with notional amount=100m, expected return =10%, costs=5.5m, capital earning=0.5m, and operational cost=1.5m, the company's cost of equity=15% the net economic profit is

a. 3.5m

b. 0.5m

c. 2.5m

d. 2m

#15. following #14, to calculate the RORAC, the answer of #14 should

a. divided by 100m

b. divided by 7.5m

c. deduct 7.5m then divided by 7.5m

d. 10.5m

#23. Stock A's volatility is 30% against 20% for the S&P500. If Stock A's beta is 1.2 against S&P500, then calculate the correlation coefficient and covariance?

#61. If a company's marginal default rate is 2.3%, what's the survival rate?

a. 2.3%

b. 7.7%

c. 97.7%

d. not enough information

#62.   Buying a option with strike price=103.75, and the underlying stock is currently traded at 104. The option is going to expire half an hour later, then the highest risky greek is?

a. delta

b. gamma

c. rho

d. theta

#63.   Which of the following has the lowest credit?

	Probability of default	Loss Given default	Time to maturity (month)
a.	1.99%	60%	3
b.	0.90%	70%	9
c.	1%	75%	6
d.	0.25%	50%	12

#72. A linear regression equation Y=0.10-0.50X, and correlation coefficient=0.9,

then the fraction of Variance of Y(X?) attribute to Variance X(Y?) is

a. –0.9

b. +0.9

c. +0.81

d. –0.5

#74. There are 17 names in a bond portfolio, and each name has an identical marginal

default rate=5.93%, calculate the probability of exactly 2 defaults in the first month?

a. 0.0325%

b. 0.325%

c. 0.024%

d. 0.24%

#79. If a bond has a constant default rate of 7%, the probability it will default after

3 years is

a. 7%

b. 19.6%

c. 21%

d. 22.5%

#80.   Two portfolio, and the first portfolio has a notional amount USD1.5m with

volatility=7%, and the second one's notional amount USD3m with

volatility=3%. If the correlation coefficient between the 2 portfolio is 10%,

calculate the 95% VaR for the combined portfolio.

a. USD 7,351

b. USD 212,920

c. USD 365,715

d. USD 234,015

#89. Currently, exchange rate for AUD/USD is traded at 0.6650 (1AUD=0.6650USD)

the interest rate is 4.5% for AUD and 1.0% for USD. The lower bound for a 5-

month put option for strike price=0.6880 is

a. 0.0135

b. 0.0245

c. 0.0325

d. 0.0455

#91. A company invest 100M in 10-year 6% coupon bond, and 100M 0-coupon rate,

the best estimate of the portfolio if interest rate falling 0.5% is

a. 219m

b. 195m

c. 209m

d. 206m

#93. If a 3-year bond has a notional amount 1,000 with a coupon=10%, and the

current yield to maturity is 5%, the modified duration of the bond is??

a. 2.62

b. 2.85

c. 3

d. 2.75

#98.   A company invests USD100m in a stock with beta=1.5, and plans to hedge with

S&P500 futures. Currently, the S&P500 futures is traded at 1,000,

and the movement=USD250. If the company wants reduce the beta to 0.8, it should

a. long 600 S&P500 futures

b. short 600 S&P500 futures

c. long 280 S&P500 futures

d. short 280 S&P500 futures

#107. If 1-year rate is 2% for 365days basis, then continuously compound rate with an

ACT/360 basis is

a. 1.98%

b. 2.0078%

c. 1.9846%

d. 2.0075%

#108. Company A has 3 transactions following netting agreement with Company B,

and the 3 netting amount for Company A is +5m, -4m, -2m.

In addition, Company has a 10m loan to Company B with no netting agreement, thus, the credit exposure of Company A is

a. 0

b. 9m

c. 10m

d. 15m

#140 If Y=ln(X), where Y is a lognormal distribution with a mean=0, standard

deviation=2.33, what is the expected value of X???

以下內容為該次 FRM 考試之重點部分記錄，由金證照學員馬丁所提供!

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A trader who set up a stock and option position that is gamma positive. What the trader should do in order to create a delta neutral and gamma neutral position?

a. buy call options and buy underlying stocks

b. sell call options and sell underlying stocks

c. buy put options and buy underlying stocks

d. sell put options and sell underlying stocks

0.688   five month USD/AUD 0.675
USD=0.01
AUD=0.045
Put option
Five months
Calculate the put option's intrinsic value

Binary options is most path dependent

Asia options
Return unlimited?

RAROC
100
10%
0.5
1.5
cost of capital=15%
fund needed 5.5
calculate economic profit

Basel 1996

Basel 1988
Market risk introduced already?

Basel 2001

Sarbanes-Oxley act
Board of directors audit every quarter
SEC review every three years

Add-on Factor

Mortality rate

1000

45

55

80

calculate the marginal mortality rate at year 3

5m limit

B bank buy undervalued put

C bank write deep in the money put

Is the trader responsible for?

Ans: unethical

Bond upgrade, the effect on duration?

Increase ans: B

Which instrument has negative effective duration?

IO

PO

CMO

CDS

4%

240 strike

280 spread

calculate net payment to credit spread option buyers

D

Two year zeros A rating, one year later migration as follows, compound annually:

Treasury bond flat at 4%

85% stay A   4.8

5% upgrade to AA 4.4

downgrade to BBB 5.5

calculate the value of the bond?

B bond 2 year default probability = 1 year default and second year stay or upgrade or downgrade and their associated probability and default rate, and add up these two year's probability together.

Answer: D

2.33
Answer A. 15.1

Which of the following stock price later has the largest time value in percentage of its underlying stock, given now the exercise price is 50
a. 10
b. 40
c. 50
d. 80

beta 1.5 want to down to 0.8, current sp500 at 1000, the portfolio has 100m, how much futures needed?

Can EVT distribution calculate both market VAR and operational VAR?

Shortfall VS VAR

GBM

Has the paying willingness is the definition of BBB or BB?

What is the lowest investment grade of Moody's?
a. Baa1
b. Ba
c. Baa3
d. Caa

Normal distribution has kurtosis of zero and skewness of 0

T distribution will approaches z distribution as sample enlarges

Rating agencies can price off balance sheet better than KMV's

KMV's distance to default: the formula

What is the probability of marginal default probability given a year (ask Hsu)

 # 69
violation of Interest Rate Parity and arbitrage opportunity
The question states that if you invest in USD one year with US risk free rate, you will end up being better than you switch to SF at spot rate and put on Swiss bank for a year at its risk free rate and change back to USD using future rate stated in the question.

Answer: either USD is undervalued at spot market, or USD is overvalued at futures market

Sell Swiss Franc spot
Buy Swiss futures
Invest in US dollars
A year later, change your USD principal and interest back to SF using agreed-upon future prices and use your SF to cover your SF short position

Incremental VAR
Ans: A)26400

Diversified VAR:
the answer is nothing closer to the four choices

The definition of collar is:
Buy a call and sell a put?

Probability and severity
MS and AS both have

Beta is 0.9
Benchmark SD=10%
Underlying SD=12%

Residual risk

Tracking error

Correlation

Coefficient of determination

Is the slope, and various slopes significant from Zero? Given the mean and standard error?

There is a question asking about how to calculate standard error? You need to divided by 400 (sample size)

Which of the following will create positive exposure to the party?
This is a very typical question to appear in FRM
Short put option and underlying stock price is declining
Received fixed rate and the interest rate is increasing
Buy a cap and the interest rate is decreasing

The price of the put option when you buy a corporate bond can be calculated by KMV model, given bond par price and interest income, since KMV is based on Merton model?

Volatility smile in currency options

Gamma's change in price axis and at the money and maturity

Which option is path dependent?
a. knock out options
b. binary
c. American call
d. European call

Which of the following is a acturial method?
a. creditmetrics
b. creditrisks
c. KMV
d. Portfolio risk view

	probability	number
	0.8	0
	0.2	1
	Probability	loss
	0.75	20000
	0.24	100000
	0.01	600000

#70
Which model is better for derivatives trading department risk control?
Sharpe or RAROC

Which of the distribution are EVT like?
a. Weibull
b. F....
c. GPD
d. student t distribution

draw a chart of negatively skewed distribution and list three items and choice which combinations are true?
Only I I I are true
(this question looks like CFA L1 style)

Synthetic CDS two tranches #one and #two, one's yield call S and junior one called J.　What happen to the premium if the portfolio's correlation reduced
a.
b. the J will increase more relative to S

Which of the following has largest credit risk in expiration?
a.　interest rate swap
b.　FX forward
c.　Cross rate currency swap

Your boss is asking you to review business line's operational risks.　Which of the following statements is inappropriate regarding your action?

As CRO you want to deal with your counterparty with bad credit rating, which action is best in mitigating that?
a. standby letter of credit

which credit enhancement is least effective?
a. parental guarantee

we know and spot and know the free interest rate and then calculate 1 month futures price. This is the easy one.

An equity position has 5 million is stake and annual standard deviation of 20% assuming 255 trading days. You come up with 6.25 VAR. What's wrong with that?
a. wrong volatility assumption

you have option position with A B C counterparties. A is +5m, B is –2, C is –4. and bond position with this bank at 10m but without netting with other parts. What is your exposure to this bank?
a. 10 million
b. 8 million

which of the following is not in ISDA agreement?

Spot rate of 0.08 for first year and 0.10 for second year, which of the following statements are true?
b) If second year spot rate is 3%, then 1F2 will be negative, which is theoretically impossible?
c)Forward rate can be approximate by (0.10)+(0.1-0.08)

You should know the definition of these option strategies:
Butterfly's definition
Vertical spread
Straddle
Short bull spread

A seller for bronze have to sell short futures to hedge, the correlation is 0.77 and the standard deviation of each is identified. Find the number of contracts need to do the hedge?

c. short 25 contracts

GBM, the variable X:
d ln(s) is normally distributed
d s/s is normally distributed
S is lognormal distributed

Novation

The difference in credit risk of swap and loan

Which of the following is not a hedge provided under FAS 133?
a. fair value hedge
b. cash flow hedge
c. macro hedge
d. net investment hedge

Which of the following is not option under FAS 133?
a. convertible bond
b. Exchanged traded REIT
c. Interest rate swaps
d. Currency forwards

Which of the following has the highest repayment risk?
a. residential mortgage
b. commercial mortgage
c. credit card

securitization are tested in 2 to 3 questions, including:
the benefit of securitization
how securitization change the structure of the bank and how to adjust it
from an risk management analytical viewpoint

which of the following combination has the largest funding liquidity risk?
a. 50 million in OTC currency put options and 50 million in corporate loans

when Russia crisis happened in 1998, which strategy would incur the
largest liquidity risk?

a. buy low grade corporate bonds and sell high grade ones

which of the following has the greatest expected loss?

	Default P.	Loss rate	Month
A	.02	.6	3 mo
B	.0099	.5	6 mo.
C	.01	.7	9 mo
D	.015	.8	1 yr

In embedded option, how the gain and loss being recognized in the financial statement?
a. in income statements

when of the following are ALL operational risk distribution being used?
a. poisson, Weibull
b. negative binominal, Cuur
c. exponential, GED
d. GED, poisson

An asset management has the following exposures most Correct?
a. a large market risk and a moderate credit risk
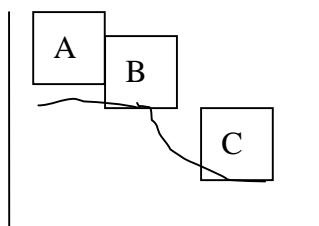b. a large credit risk and a large operational risk

Moral Hazard is the answer of a question

If the FX forward and its net investment's correlation is reduced from 0.9 to 0.1 in half year period, how would a company do under FAS 133?
A. book the gain and loss in the first half year period
B. didn't book and P/L

Which point is the bond's convexity equal to zero?

Which statements are wrong when the trading book is different from accounting book?

a. conformity to both

(this question appeared in previous questions)

which statement is true when a company defaults?

(kind of forget how the answer asks)

two options worth 50m each with 96% being -100 and 4% being 0, assuming independent, what is the expected VAR?

a. 50m

b. 100m

the relationship between spot rate and forward rate:

when yield curve is upward sloping, forward is larger than spot, vise versa

How to hedge with reverse floater?

a. pay fixed swap

b. received fixed swap

c. long Eurodollars

Terminology: Granular: something to do with operational risk estimation

what does economic capital do?

a. small probability, high severity

when a CRO found a head of trade have missed a large trading, and report to CEO about that, how will CEO do?

a. don't sign up the financial report

1) something about hedge effectiveness -- if during the first 6 month, R-squared= 0.9, the 2nd half predicted R-suqared = 0.75. what do you do? terminate the hedge at the end of the 6th month?

2) if not fully hedged, what do you do? report effective/ineffective part in earnings?

3) about options -- if you have a stock+options position with delta neutral and positive gamma, how do you hedge with buy/sell puts/calls as well as buy/sell stocks?

4) long-dated or short-dated ATM options have higher gamma?

5) which one has more time value premium? ATM/in-the-money/out-of the money call?

6) brownian motion - which one is normally/lognormally distributed? e.g. S, dS, dS/S

7) what is invert floater (ps: i may have typed it wrong....)

8) Y=ln(x). if Y is normally distributed, with mean of 0, what's the mean of x?

9) which distributions can do EVT? (I know generalized pareto dist., but that didn't help eliminate many answers.....)

10) quote 2%, which rate to input into black-scholes model?

11) relationship between notional amount and BPV, if yield changes by 1%, assuming paralell shift (ps: this quesiton may not be recalled right.)

12) options that are very path-dependent? barrier options?

13) asian calls have unlimited upside?

14) the lady trader sell deep-ITM puts to party C, ...etc. Is it appropriate?

15) a portfolio with 17 A-rated bonds, given default rate x%, the probabiliy of exactly 2 default at the end of the first month? (ps: for some reason, i couldn't find the answer in the given 4 choices?!)

16) 2-yr zero coupon bond, A-rated. After one year, probability of being upgraded to AA rating x%, stay A-rated y%, and downgraded to B rating z%. given spread over T-bill rate (4%) for three different rated bonds. ask the value of the zero coupon bond after one year. (ps: i can't remember the exact # or ratings. Do we calculate the expected spread over 4% and then calculate the PV of the bond? I got a closer answer, but not exactly the same....)

17) there's a table showing credit migration from the beginning of the year on the Y-axis to the end of the year on the X-axis. ask B-rated bond cumulative default rate in (/over?) two years. (ps: Is that 2% number in the table the final answer? I was confused about the "two" year word. I couldn't find another number to do any multiplication....)

18) as a CRO, which (of the four options) would be problematic? I was wondering if i should choose the 5% compensation one, but I still chose d), which said something like using 3rd party system, etc. But I have a feeling that I was wrong.

19) securitization -- rank from the least risky one. eg. cash, parental something, collateralized, etc. (ps: can't remember those terms exactly)

20) stock with volatility of 50%, 99% C.I., current (?reserve) capital more than market value. Right or wrong? why? (ps: i thought this has to do with Cooke ratio 8%, but apparently it didn't kick in at all....)

21) the company's (?compliance officer/lady) left the work a few months ago, as a CRO, should you sign the audit report or something like that.

22) A, B companies. A with securitization; B without. A's financial report may be misleading?

23) company A with netting agreements with B, A owes B 1 million (net). without agreements with B, B owes A 10 million. what's A's exposure to B?

24) actuarial approach? KMV, CreditMetrics, etc?

25) given beta, variance of portfolio and variance of benchmark. calculate specific risk and tracking error. (I think this is a question often seen in CFA level 3 exam too!)

26) similar to 25), given beta of portfolio, variance of benchmark, calculate covariance, correlation between portfolio and benchmark.

27) a couple of questions about the relationship between corr(X,Y) and R-squared, given an OLS simple regression result. (a good and basic question too; actually I'm going to ask my students in the econometrics class to do this as an exercise tomorrow! They might feel excited when they know that their knowledge can help them do the exam.)