2019 FRM Part I

百题巅峰班

估值与风险模型

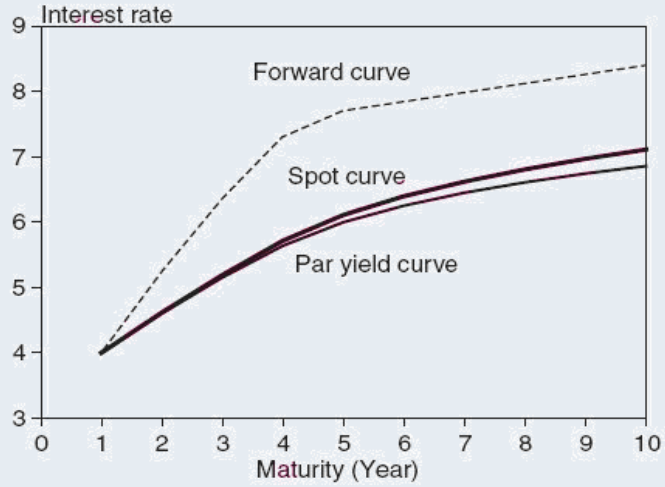
2019 年 3 月

4. Valuation and Risk Models

4.1. Spot, Forward, and Par Rates

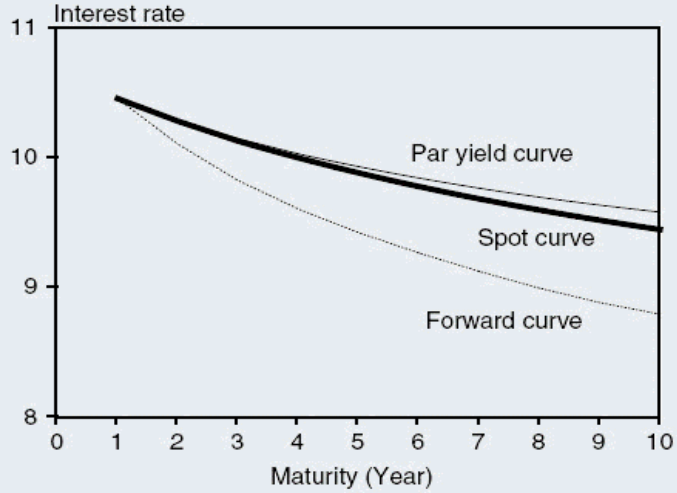
4.1.1. 重要知识点

4.1.1.1.



Upward-Sloping Term Structure

4.1.1.2.



Downward-Sloping Term Structure

4.1.2. 基础题

Q-1. Suppose that the yield curve is upward sloping. Which of the following statements is TRUE?

A. The forward rate yield curve is above the zero-coupon yield curve, which is above the coupon-bearing bond yield curve.

B. The forward rate yield curve is above the coupon-bearing bond yield curve, which is above the zero-coupon yield curve.

C. The coupon-bearing bond yield curve is above the zero-coupon yield curve, which is above

the forward rate yield curve.

D. The coupon-bearing bond yield curve is above the forward rate yield curve, which is above the zero-coupon yield curve.

Q-2. The price of a three-year zero coupon government bond is 85.16. The price of a similar four-year bond is 79.81. What is the one-year implied forward rate form year 3 to year 4?

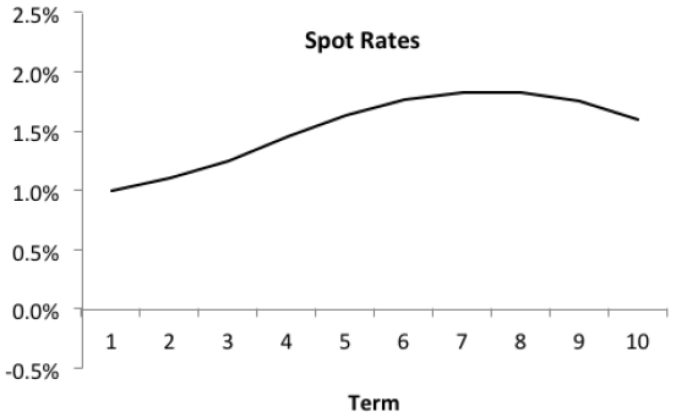
A. 5.4%

B. 5.5%

C. 5.8%

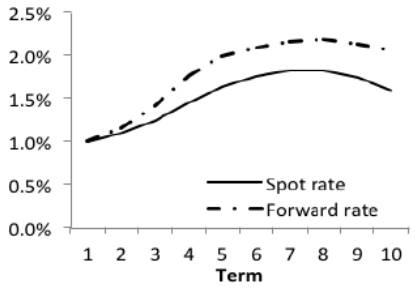
D. 6.7%

Q-3. Below is a chart showing the term structure of risk-free spot rates:

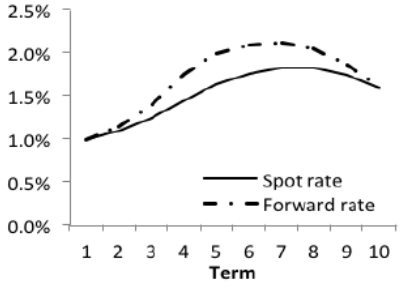


Which of the following charts presents the correct derived forward rate curve?

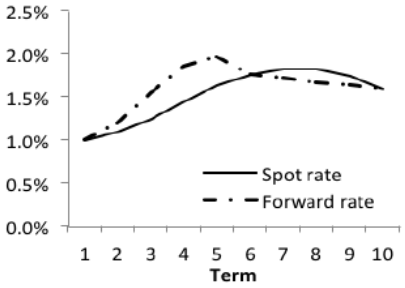
a.



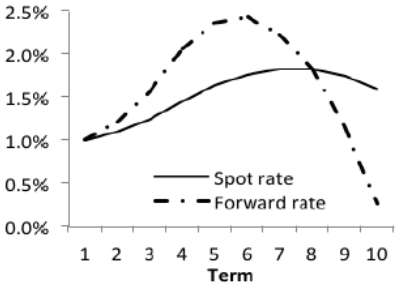
b.



c.



d.



Q-4. An asset manager at an insurance company is considering making a fixed income investment and holding it for 2 years. The manager is comparing two bond issues that have equal yield to maturity at origination. One is a semi-annual coupon bond paying ***7%,*** maturing in 2 years, and priced at USD 101.86. The other is a zero- coupon bond, also maturing in 2 years, and priced at USD 88.85. The manager is uncertain about the outlook for interest rates over the next two years but will incorporate the forecast of the company's economist when making the investment decision. Assuming no default risk, tax implications, or liquidity constraints, which of the following statements is correct?

A. The manager should be indifferent between the bonds if the interest rate is expected to rise since both bonds have the same yield and cash flows.

B. The manager should prefer the zero-coupon bond if the interest rate is expected to rise in the future.

C. The manager should prefer the zero-coupon bond if the expected average interest rate over the next 2 years is less than 6%.

D. The manager should prefer the coupon bond if the expected average interest rate over the next 2 years is less than 6%.

Q-5. The table below gives coupon rates and mid-market price for three U.S. Treasury bonds for settlement on (as of) May 31, 2013

Coupon	Maturity	Price
2 7/8	11/30/2013	$100.62600

2 1/2	5/31/2014	$99.45250
4 3/4	11/30/2014	$100.38000

Which of the following is nearest to the implied discount function (set of discount factors) assuming semi-annual compounding?

A. d(0.5) = 0.9370, d(1.0) = 0.8667, d(1.5) = 0.9210

B. d(0.5) = 0.9920, d(1.0) = 0.9700, d(1.5) = 0.9350

C. d(0.5) = 0.9999, d(1.0) = 0.7455, d(1.5) = 0.8018

D. d(0.5) = 1.0350, d(1.0) = 1.1175, d(1.5) = 0.6487

4.2. Duration and DV01

4.2.1. 重要知识点

4.2.1.1. Duration

- Macaulay Duration → Modified Duration

4.2.1.2. DV01 & DD

- DV01~1bps ↔ DD~100bps

4.2.1.3. Portfolio Duration

- $D_{Port} = \sum_{i=1}^{K} w_j \times D_j$

4.2.2. 基础题

Q-6. Suppose a 30-year fixed-rate bond with a market value of 100 million is split into a floater and an inverse floater with a market value of 80 million and 20 million respectively. Assume the floater has duration of zero and the 30-year bond has duration of 8. What is the duration of the inverse floater?

A. 8

B. 16

C. 32

D. 40

Q-7. A trading portfolio consists of two bonds, A and B. Both have modified duration of 3 years and face value of USD 1000, but A is a zero-coupon bond and its current price is USD 900, and bond B pays annual coupons and is priced at par. What do you expect will happen to the market prices of A and B if the risk-free yield curve moves up by 1 basis point?

A. Both bond prices will move up by roughly the same amount.

B. Both bond prices will move up, but bond B will gain more than bond A.

C. Both bond prices will move down by roughly equal amounts.

D. Both bond prices will move down, but bond B will lose more than bond A.

Q-8. A hedge fund manager wants to change her interest rate exposure by investing in fixed-income securities with negative duration. Which of the following securities should she buy?

A. Short maturity calls on zero-coupon bonds with long maturity.

B. Short maturity puts on interest-only strips from long maturity conforming mortgages.

C. Short maturity puts on zero-coupon bonds with long maturity.

D. Short maturity calls on principal-only strips from long maturity conforming mortgages.

Q-9. Which of the following assumptions are made when using DV01 as a measure of interest rate risk?

I. Changes in the interest rates are small.

II. The yield curve is flat.

III. Changes to the yield curve are parallel.

IV. The yield curve is downward sloping.

A. I and III

B. I and II

C. I and IV

D. II and III

Q-10. Calculate the impact of a 10 basis point increase in yield on the following bond portfolio.

Bond	Value (USD)	Modified Duration
1	4,000,000	7.5
2	2,000,000	1.6
3	3,000,000	6.0
4	1,000,000	1.3

A. USD -41,000

B. USD -52,500

C. USD -410,000

D. USD -525,000

Q-11. A risk manager is evaluating the price sensitivity of an investment-grade callable bond using the firm's valuation system. The table below presents information on the bond as well as on the embedded option. The current interest rate environment is flat at 5%.

Value in USD per USD 100 face value		
Interest Rate Level	Callable Bond	Call Option
4.98%	102.07848	2.0871
5.00%	101.61158	2.0501
5.02%	100.92189	2.0131

The DV01 of a comparable bond with no embedded options having the same maturity and coupon rate is closest to:

A. 0.0185

B. 0.2706

C. 0.2891

D. 0.3077

4.3. Convexity

4.3.1. 重要知识点

4.3.1.1.

$$C = \frac{1}{P}\frac{d^2P}{dy^2} = \frac{1}{P(1+y)^2}\left[\sum_{t=1}^{n} t(t+1)\frac{CF_t}{(1+y)^t}\right]$$

4.3.2. 基础题

Q-12. A risk manager is evaluating the price sensitivity of an investment-grade callable bond using the firm's valuation system. The table below presents information on the bond as well as on the embedded option. The current interest rate environment is flat at 5%.

Value in USD per USD 100 face value		
Interest Rate Level	Callable Bond	Call Option
4.98%	102.07848	2.0871
5.00%	101.61158	2.0501
5.02%	100.92189	2.0131

The convexity of the callable bond can be estimated as:

A. -55,698

B. -54,814

C. -5.5698

D. -5.4814

4.4. Effective Duration& Effective Convexity

4.4.1. 重要知识点

4.4.1.1.

$$\text{Effective Duration} = \frac{P_{-} - P_{+}}{2 \times P_0 \times \Delta y}$$

4.4.1.2.

$$\text{Effective convexity} = \frac{P_{-} + P_{+} - 2 \times P_0}{P_0 \times \Delta y^2}$$

4.4.2. 基础题

Q-13. An 8-year 5% coupon bond with at par value of 100 is currently trading at a price of 94.65. The price of this bond rises to 96.35 when interest rates fall by 30 basis points and falls to 92.75 when interest rates rise by 30. The effective duration of this bond is closest to:

A. 5.99

B. 6.34

C. 6.69

D. 7.04

Solution: B

$D = (P_{-} - P_{+})/(2P_0 \triangle Y) = (96.35 - 92.75)/ (2 \times 94.65 \times 0.003) = 6.34$

Q-14. A portfolio manager uses her valuation model to estimate the value of a bond portfolio at USD 125.482 million. The term structure is flat. Using the same model, she estimates that the value of the portfolio would increase to USD 127.723 million if all interest rates fell by 30 basis points and would decrease to USD 122.164 million if all interest rates rose by 30 basis points. Using these estimates, the effective duration of the bond portfolio is closest to:

A. 7.38

B. 8.38

C. 14.77

D. 16.76

4.5. Bullet versus Barbell Portfolio

4.5.1. 基础题

Q-15. A fixed-income portfolio manager currently holds a bullet 7-year US Treasury position with USD 60 million face value. The manager would like to create a cost matching barbell portfolio by purchasing a combination of a 2-year Treasury and a 15-year Treasury that

would have the same duration as the 7-year US Treasury position. The data for the three US Treasuries are listed below:

Maturity	Price	Duration
2 Years	100.972	1.938
7 Years	106.443	6.272
15 Years	122.175	11.687

Which of the following combinations correctly describes the weights of the two bonds that the manager will use to construct the barbell portfolio?

	Weight of 2-Year Treasury	Weight of 15-Year Treasury
A.	14.22%	85.78%
B.	44.46%	55.54%
C.	55.54%	44.46%
D.	85.78%	14.22%

4.6. Price Approximation, Effect of Convexity

4.6.1. 重要知识点

4.6.1.1. The actual, exact price

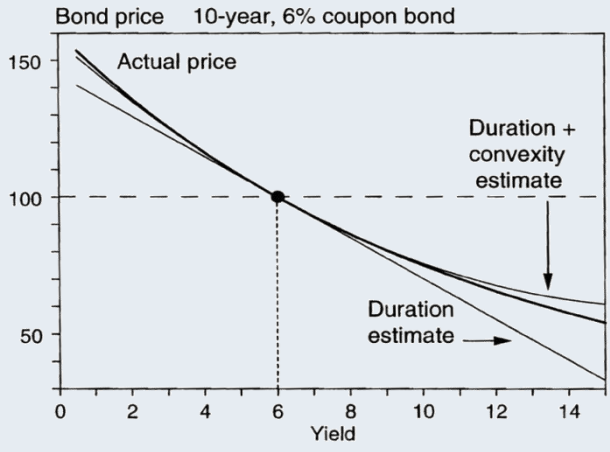
- $P = f(y_0 + \Delta y)$

4.6.1.2. The duration estimate:

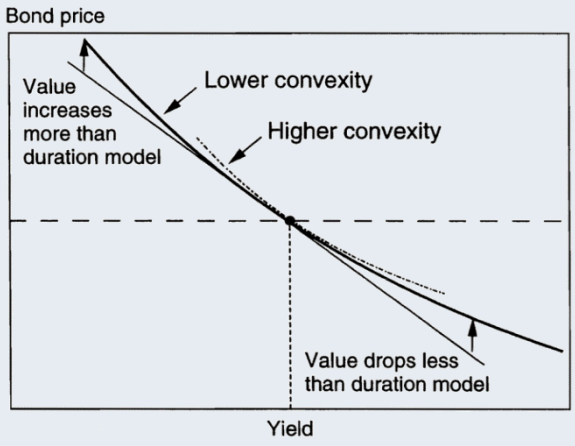
- $P = P_0 - D^* P_0 \Delta y$

4.6.1.3. The duration and convexity estimate:

- $P = P_0 - D^* P_0 \Delta y + \frac{1}{2} C P_0 (\Delta y)^2$



Price Approximation



Effect of Convexity

➢

4.6.2. 基础题

Q-16. For an option-free bond, which of the following are the effects of the convexity adjustment on the magnitude (absolute value) of the approximate bond price change in response to an increase in yield and in response to a decrease in yield, respectively?

	Decrease in Yield	**Increase in Yield**
A.	Increase in magnitude	Decrease in magnitude
B.	Increase in magnitude	Increase in magnitude
C.	Decrease in magnitude	Decrease in magnitude
D.	Decrease in magnitude	Increase in magnitude

Q-17. Consider the following three methods of estimating the profit and loss (P&L) of a bullet bond: full repricing, duration (DV01), and duration plus convexity. Rank the methods to estimate the P&L impact of a large negative yield shock from the lowest to the highest.

A. Duration, duration plus convexity, full repricing

B. Duration, full repricing, duration plus convexity

C. Duration plus convexity, duration, full repricing

D. Full repricing, duration plus convexity, duration estimating

4.7. Bond Replication

4.7.1. 基础题

Q-18. You have been asked to check for arbitrage opportunities in the Treasury bond market by comparing the cash flows of selected bonds with the cash flows of combinations of other bonds. If a 1-year zero-coupon bond is priced at USD 96.12 and a 1-year bond

Duration + Convexity

paying a 10% coupon semi-annually is priced at USD 106.20, what should be the price of a 1-year Treasury bond that pays a coupon of 8% semiannually?

A. USD 98.10

B. USD 101.23

C. USD 103.35

D. USD 104.18

Q-19. The following table gives the prices of two out of three US Treasury notes for settlement on August 30, 2008. All three notes will mature exactly one year later on August 30, 2009. Assume semi-annual coupon payments and that all three bonds have the same coupon payment date.

Coupon	Price
2 7/8	94.40
4 1/2	?
6 1/4	101.30

Approximately what would be the price of the 4 1/2 US Treasury note?

A. 99.20

B. 99.40

C. 97.71

D. 100.20

4.8. Key Rate

4.8.1. 重要知识点

4.8.1.1. The key rate shift technique is an approach to nonparallel shifts in the yield curve, which is allows for changes in all rates to be determined by changes from selected key rates.

4.8.1.2. The rate of a given maturity is affected solely by its closest key-rate.

4.8.1.3. Shifts in the key-rates are decline linearly.

4.8.2. 基础题

Q-20. The main problem associated with using single-factor approaches to hedge interest rate risk is:

A. No method can hedge interest rate risk.

B. Single-factor models assume mean-reversion between one short-term and one long-term rate.

C. Single-factor models assume effects across the entire curve dictated by one rate.

D. Single-factor models assume risk-free securities have credit exposure.

Q-21. You are using key rate shifts to analyze the effect of yield changes on bond prices. Suppose the 10-year yield has increased by 10 basis points and this shock decreases linearly to zero for the 20-year yield. What is the effect of this shock on the 14-year yield?

A. Increase of 0 basis points

B. Increase of 4 basis points

C. Increase of 6 basis points

D. Increase of 10 basis points

Q-22. Using key rates of 2-year, 5-year, 7-year, and 20-year exposures assumes all of the following except that the:

A. 2-year rate will affect the 5-year rate

B. 7-year rate will affect the 20-year rate

C. 5-year rate will affect the 7-year rate

D. 2-year rate will affect the 20-year rate

Use the following information to answer the following two questions:

The following table provides the initial price of a C-strip and its present value after application of a one basis shift in four key rates.

Value	
Initial value	25.11584
2-year shift	25.11681
5-year shift	25.11984
10-year shift	25.13984
30-year shift	25.01254

Q-23. What is the key rate ’01 for a 30-year shift?

A. -0.058

B. 0.024

C. 0.103

D. 0.158

Q-24. What is the key-rate duration for a 30-year shift?

A. -4.57

B. 15.80

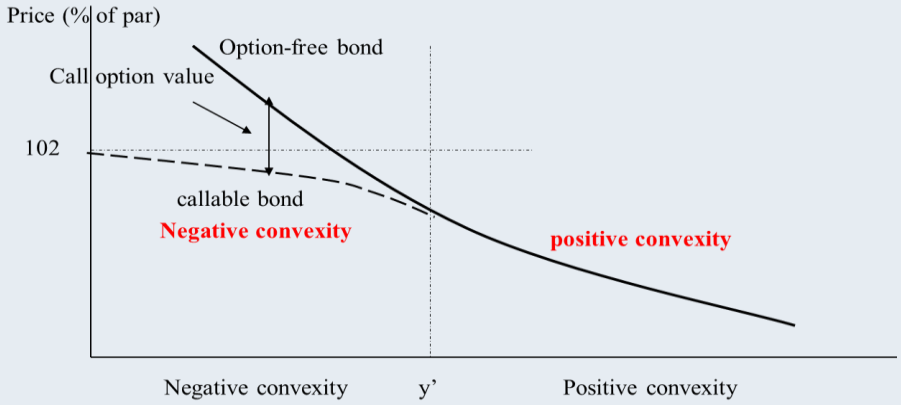
C. 38.60

D. 41.13

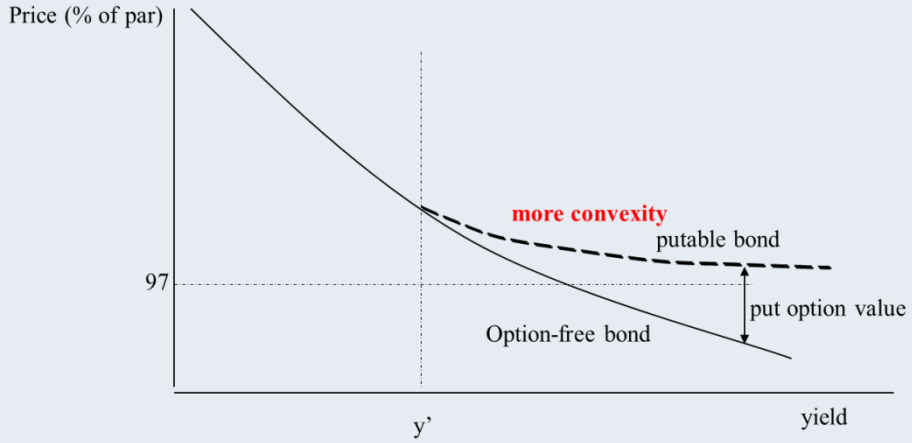
4.9. Callable, Putable Bond

4.9.1. 重要知识点

4.9.1.1. Callable bond： issuer has the right to buy back the bond in the future at a set price; as yields fall, bond is likely to be called; prices will rise at a decreasing rate-negative convexity.



4.9.1.2. Putable bond: bondholder has the right to sell bond back to the issuer at a set price.



4.9.2. 基础题

Q-25. An investment in a callable bond can be analytically decomposed into a:

A. Long position in a non-callable bond and a short position in a put option

B. Short position in a non-callable bond and a long position in a call option

C. Long position in a non-callable bond and a long position in a call option

D. Long position in a non-callable bond and a short position in a call option

Q-26. Which of the following statements about a putable bond and a callable bond is correct?

A. The put option of a putable bond is more expensive than the call option of the callable bond.
B. A putable bond will have a lower yield than a comparable callable bond.
C. The value of a callable bond increases when interest rate volatility increases.
D. Long position in a putable bond has more interest rate risk than a long position in a callable bond.

Q-27. Bonds issued by the XYZ Corp. are currently callable at par value and trade close to par. The bonds mature in 8 years and have a coupon of 8%. The yield on the XYZ bonds is 175 basis points over 8-year US Treasury securities, and the Treasury spot yield curve has a normal, rising shape. If the yield on bonds comparable to the XYZ bond decreases sharply, the XYZ bonds will most likely exhibit:

A. Negative convexity
B. Increasing modified duration
C. Increasing effective duration
D. Positive convexity

Q-28. Which of the following statements are TRUE?

I. The convexity of a 10-year zero coupon bond is higher than the convexity of a 10-year, 6% bond.
II. The convexity of a 10-year zero coupon bond is higher than the convexity of a 6% bond with a duration of 10 years.
III. Convexity grows proportionately with the maturity of the bond.
IV. Convexity is always positive for all types of bonds.
V. Convexity is always positive for "straight" bonds.

A. I only
B. I and II only
C. I and V only
D. II, III, and V only

4.10. Value Option Using a Binomial Tree

4.10.1. 重要知识点

4.10.1.1. $f = e^{-rt}\left[pf_u + (1-p)f_d\right]$

4.10.1.2. $p = \dfrac{e^{rT} - d}{u - d} \quad u = e^{\sigma\sqrt{\Delta t}} \quad d = \dfrac{1}{u}$

4.10.1.3. Stocks with dividends and stock indices: replace e^{-rT} with $e^{(r-q)T}$ where q is the dividend yield of a stock or stock index.

4.10.2. 基础题

Common text for questions following two questions:

A risk manager for Bank XYZ, Mark is considering writing a 6 month American put option on a non-dividend paying stock ABC. The current stock price is USD 50 and the strike price of the option is USD 52. In order to find the no-arbitrage price of the option Mark uses a two-step binomial tree model. The stock price can go up or down by 20% each period. Mark's view is that the stock price has an 80% probability of going up each period and a 20% probability of going down. The annual risk-free rate is 12% with continuous compounding.

Q-29. What is the risk-neutral probability of the stock price going up in a single step?

A. 34.5%

B. 57.6%

C. 65.5%

D. 80.0%

Q-30. The no-arbitrage price of the option is closest to:

A. USD 2.00

B. USD 2.93

C. USD 5.22

D. USD 5.86

Q-31. Which of the following statements about American options is incorrect?

A. American options can be exercised at any time until maturity.

B. American options are always worth at least as much as European options.

C. American options can not be valued with Monte Carlo simulation.

D. American options can be valued with binomial trees.

Q-32. Which of the following statements is correct about the early exercise of American options?

A. It is always optimal to exercise an American call option on a non-dividend-paying stock before the expiration date.

B. It can be optimal to exercise an American put option on a non-dividend-paying stock early.

C. It can be optimal to exercise an American call option on a non-dividend-paying stock early.

D. It is never optimal to exercise an American put option on a non-dividend-paying stock before the expiration date.

4.11. Black-Scholes-Merton Model

4.11.1. 重要知识点

4.11.1.1. Black-Scholes-Merton model on a non-dividend-paying stock

$$c = S_0 N(d_1) - Ke^{-rT} N(d_2)$$
$$p = Ke^{-rT} N(-d_2) - S_0 N(-d_1)$$
$$d_1 = \frac{\ln(S_0/K) + (r + \sigma^2/2)T}{\sigma\sqrt{T}}$$
$$d_2 = d_1 - \sigma\sqrt{T}$$

4.11.1.2. Black-Scholes-Merton model on a dividend-paying stock

$$\text{call}(c) = (S_t e^{-\delta T}) N(d_1) - Xe^{-rT} N(d_2)$$

4.11.2. 基础题

Q-33. What is the price of a three month European put option on a non-dividend-paying stock with a strike price of $50 when the current stock price is $50, the risk-free interest rate is 10% per annum, and the volatility is 30% per annum.

A. 2.37

B. 2.48

C. 2.25

D. 2.63

Q-34. A non-dividend-paying stock is currently trading at USD 40 and has an expected return of 12% per year. Using the Black-Scholes-Merton (BSM) model, a 1-year, European-style call option on the stock is valued at USD 1.78.

The parameters used in the model are:

$N(d_1) = 0.29123$ $N(d_2) = 0.20333$

The next day, the company announces that it will pay a dividend of USD 0.5 per share to holders of the stock on an ex-dividend date 1 month from now and has no further dividend payout plans for at least 1 year. This new information does not affect the current stock price, but the BSM model inputs change, so that:

$N(d_1) = 0.29928$ $N(d_2) = 0.20333$

If the risk-free rate is 3% per year, what is the new BSM call price?

A. USD 1.61

B. USD 1.78

C. USD 1.95

D. USD 2.11

Q-35. The CFO at a non-dividend-paying firm asks a financial analyst to evaluate a plan by the firm to grant stock options to its employees. The firm has 60 million shares outstanding. Under the proposal, the firm would issue 3 million employee stock options, with each option giving the holder the right to buy one share of the firm's stock at a strike price of USD 70. The employee stock options would expire in 4 years. A four-year call option on the stock with the same strike price is currently valued at SGD 4.39 using the Black-Scholes-Merton model. Which of the following is the best estimate of the price of one employee stock option assuming that the call option is correctly priced?

A. SGD 3.97

B. SGD 4.18

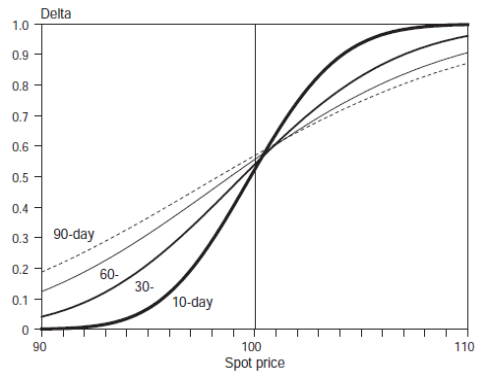
C. SGD 4.39

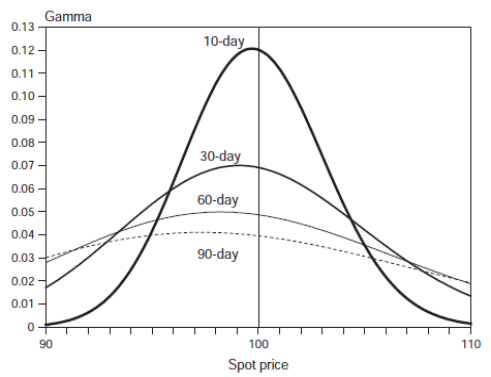
D. SGD 4.45

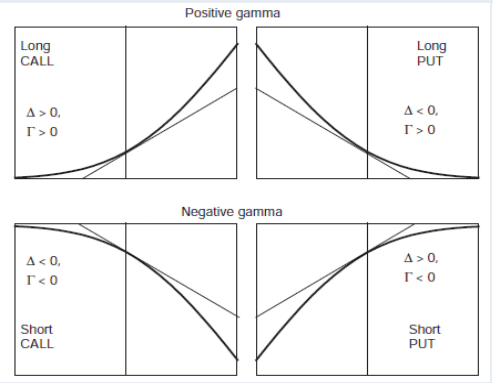
4.12. Greek Letters

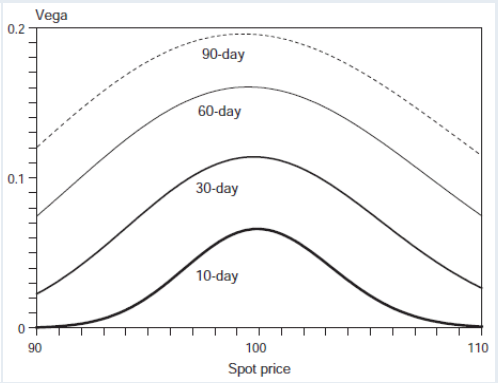
4.12.1. 重要知识点

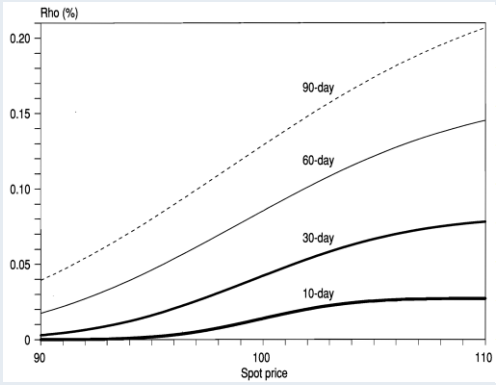
4.12.1.1.

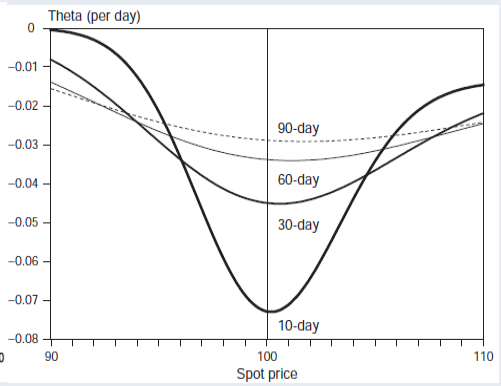












- Delta of an at-the-money call option is close to 0.5. Delta moves to 1as the call goes deep in the money. It moves to zero as the call goes deep out of the money.
- Gamma is highest for short-term at-the-money options.
- Vega is highest for long-term at-the-money options.
- Rho is similar to Delta.
- Theta is the variation in option value due to the passage of time. This is also the time decay. Unlike other factors, however, the movement in remaining maturity is perfectly predictable. Time is not a risk factor.

4.12.2. 基础题

Q-36. If risk is defined as a potential for unexpected loss, which factors contribute to the risk of a short call option position?

A. Delta, Vega, Rho

B. Vega, Rho

C. Delta, Vega, Gamma, Rho

D. Delta, Vega, Gamma, Theta, Rho

Q-37. Mr. Black has been asked by a client to write a large put option on the S&P 500 index. The option has an exercise price and a maturity that is not available for options traded

on exchanges. He, therefore, has to hedge the position dynamically. Which of the following statements about the risk of his position are not correct?

A. He can make his portfolio delta neutral by shorting index futures contracts.
B. There is a short position in an S&P 500 futures contract that will make his portfolio insensitive to both small and large moves in the S&P 500.
C. A long position in a traded option on the S&P 500 will help hedge the volatility risk of the option he has written.
D. To make his hedged portfolio gamma neutral, he needs to take positions in options as well as futures.

Q-38. Portfolio manager Sally has a position in 100 option contracts with the following position Greeks: theta = +25,000; vega = +330,000 and gamma = -200; ie., positive theta, positive vega and negative gamma. Which of the following additional trades, utilizing generally at-the-money (ATM) options, will neutralize (hedge) the portfolio with respect to theta, vega and gamma?

A. Sell short-term options + sell long-term options (all roughly at-the-money)
B. Sell short-term options + buy long-term options (~ ATM)
C. Buy short-term options + sell long-term options (~ ATM)
D. Buy short-term options + buy long-term options (~ ATM)

Q-39. Which of the following statements is correct?

I. The rho of a call option changes with the passage of time and tends to approach zero as expiration approaches, but this is not true for the rho of put options.
II. Theta is always negative for long calls and long puts and positive for short calls and short puts.

A. I only.
B. II only
C. I and II
D. Neither

Q-40. Which of the following statements is true regarding options Greeks?

A. Theta tends to be large and positive when buying at-the-money options.
B. Gamma is greatest for in-the-money options with long maturities.
C. Vega is greatest for at-the-money options with long maturities.
D. Delta of deep in-the-money put options tends toward +1.

Q-41. Which position is most risky?

A. Gamma-negative, delta-neutral

B. Gamma-positive, delta-positive

C. Gamma-negative, delta-positive

D. Gamma-positive, delta-neutral

Q-42. A portfolio of stock A and options on stock A is currently delta neutral, but has a positive gamma. Which of the following actions will make the portfolio both delta and gamma neutral?

A. Buy call options on stock A and sell stock A

B. Sell call options on stock A and sell stock A

C. Buy put options on stock A and buy stock A

D. Sell put options on stock A and sell stock A

Q-43. Which of the following choices will effectively hedge a short call option position that exhibits a delta of 0.5?

A. Sell two shares of the underlying for each option sold.

B. Buy two shares of the underlying for each option sold.

C. Sell the number of shares of the underlying equal to one-half the options sold.

D. Buy the number of shares of the underlying equal to one-half the options sold.

Q-44. Consider the following statements, which one is incorrect?

A. Short a coupon bond is equivalent to long effective duration and short effective convexity.

B. Long a plain vanilla call option is equivalent to long delta and also long gamma.

C. Short a plain vanilla put option is equivalent to short vega.

D. Long a deep in the money up and out call option is equivalent to long delta and short vega.

Q-45. The current stock price of a company is USD 80. A risk manager is monitoring call and put options on the stock with exercise prices of USD 50 and 5 days to maturity. Which of these scenarios is most likely to occur if the stock price falls by USD 1?

Scenario	Call Value	Put Value
A	Decrease by USD 0.94	Increase by USD 0.08
B	Decrease by USD 0.94	Increase by USD 0.89
C	Decrease by USD 0.07	Increase by USD 0.89
D	Decrease by USD 0.07	Increase by USD 0.08

A. Scenario A

B. Scenario B

C. Scenario C

D. Scenario D

Q-46. Wanda Zheng (FRM) is responsible for the options desk in a London bank. Zheng is concerned about the impact of dividends on the options held by the options desk. She asks you to assess which options are the most sensitive to dividend payments. What would be your answer if the value of the options is found by using the Black-Scholes model adjusted for dividends?

A. Everything else equal, out-of-the-money call options experience a larger decrease in value than in-the-money call options as expected dividends increase.

B. The increase in the value of in-the-money put options caused by an increase in expected dividends is always larger than the decrease in value of in-the-money call options.

C. Keeping the type of option constant, in-the-money options experience the greatest absolute change in value and out-of-the-money options the smallest absolute change in value as expected dividends increase.

D. Keeping the type of option constant, at-the-money options experience the largest absolute change in value and out of-the-money options the smallest absolute change in value as a result of dividend payment.

Q-47. In evaluating the dynamic delta hedging of a portfolio of short option positions, which of the following is correct?

A. The interest cost of carrying the delta hedge will be highest when the options are deep out-of-the-money.

B. The interest cost of carrying the delta hedge will be highest when the options are deep in-the-money.

C. The interest cost of carrying the delta hedge will be lowest when the options are at-the-money.

D. The interest cost of carrying the delta hedge will be highest when the options are at-the-money.

Q-48. If the current market price of a stock is USD 50, which of the following options on the stock has the highest gamma?

A. Call option expiring in 30 days with strike price of USD 50

B. Call option expiring in 5 days with strike price of USD 30

C. Call option expiring in 5 days with strike price of USD 50

D. Put option expiring in 30 days with strike price of USD 30

4.13. Delta Hedging

4.13.1. 基础题

Q-49. A bank has sold USD 300,000 of call options on 100,000 equities. The equities trade at 50, the option strike price is 49, the maturity is in 3 months, volatility is 20%, and the interest rate is 5%. How does it the bank delta hedge? (round to the nearest thousand share)

A. Buy 65,000 shares

B. Buy 100,000 shares

C. Buy 21,000 shares

D. Sell 100,000 shares

Q-50. Initially, the call option on Big Kahuna Inc. with 90 days to maturity trades at USD 1.40. The option has a delta of 0.5739. A dealer sells 200 call option contracts, and to delta-hedge the position, the dealer purchases 11,478 shares of the stock at the current market price of USD 100 per share. The following day, the prices of both the stock and the call option increase. Consequently, delta increases to 0.7040. To maintain the delta hedge, the dealer should:

A. sell 2602 shares

B. sell 1493 shares

C. purchase 1493 shares

D. purchase 2602 shares

4.14. Gamma and Vega Hedging

4.14.1. 基础题

Q-51. An option portfolio exhibits high unfavorable sensitivity to increases in implied volatility and while experiencing significant daily losses with the passage of time. Which strategy would the trader most likely employ to hedge his portfolio?

A. Sell short dated options and buy long dated options

B. Buy short dated options and sell long dated options

C. Sell short dated options and sell long dated options

D. Buy short dated options and buy long dated options

4.15. Value at Risk

4.15.1. 重要知识点

4.15.1.1. $VAR = Z_{\alpha} \times \sigma$

4.15.1.2. $VAR_{T\text{-days}} = VAR_{1\text{-days}} \times \sqrt{T}$

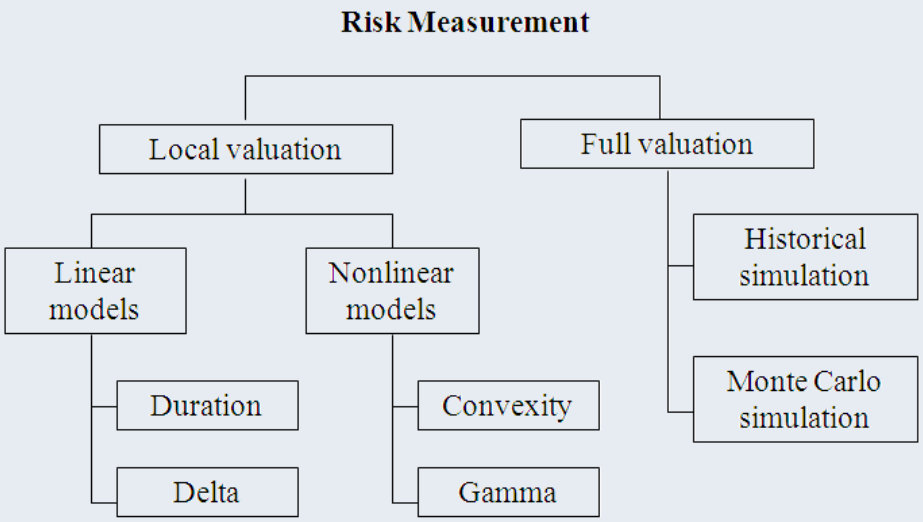
4.15.1.3. $VAR_{P}^{2} = VAR_{1}^{2} + VAR_{2}^{2} + 2\rho \times VAR_{1} \times VAR_{2}$

4.15.1.4. $VAR(dP) = |-D^{*}P| \times VAR(dy)$

4.15.1.5. $VAR(df) = \Delta \times VAR(dS)$

4.15.1.6. $VAR(dP) = |-D^{*}P| \times VAR(dy) - (1/2)(C \times P) \times VAR(dy)^{2}$

4.15.1.7. $VAR(df) = |\Delta| \times VAR(dS) - (1/2)\ \Gamma \times VAR(dS)^{2}$



4.15.2. 基础题

Q-52. There exist two portfolios A and B. Each has their individual VaR. When putting them together in a new portfolio C, which of the following will be always true?

A. VaR (C) < VaR (A) + VaR (B)

B. VaR (C) > VaR (A) + VaR (B)

C. VaR (C) = VaR (A) + VaR (B)

D. None of the above

Q-53. A commodity-trading firm has an options portfolio with a two-day Value-at-Risk (VaR) of 2.5 million. What would be an appropriate translation of this VaR to a ten-day horizon under normal conditions?

A. $3.713 million
B. $4.792 million
C. $5.590 million
D. Cannot be determined

Q-54. Mixed Fund has a portfolio worth USD 12,428,000 that consists of 42% of fixed income investments and 58% of equity investments. The 95% annual VaR for the entire portfolio is USD 1,367,000 and the 95% annual VaR for the equity portion of the portfolio is USD 1,153,000. Assume that there are 250 trading days in a year and that the correlation between stocks and bonds is zero. What is the 95% daily VaR for the fixed income portion of the portfolio?

A. USD 21,263
B. USD 46,445
C. USD 55,171
D. USD 72,635

Q-55. You have been asked to estimate the VaR of an investment in Big Pharma Inc. The company's stock is trading at USD 23 and the stock has a daily volatility of 1.5%. Using the delta-normal method, the VaR at the 95% confidence level of a long position in an at-the-money put on this stock with a delta of -0.5 over a 1-day holding period is closest to which of the following choices?

A. USD 0.28
B. USD 0.40
C. USD 0.57
D. USD 2.84

Q-56. Rational Investment Inc. is estimating a daily VaR for its fixed income portfolio currently valued at USD 800 million. Using returns for the last 400 days (ordered in decreasing order, from highest daily return to lowest daily return), the daily returns are the following:
1.99%, 1.89% 1.88% 1.87% ……, -1.76%, -1.82%, -1.84%, -1.87%, -1.91%
At the 99% confidence level, what is your estimate of the daily VaR using the historical simulation method?

A. USD 14.08 million
B. USD 14.56 million
C. USD 14.72 million
D. USD 15.04 million

Q-57. A market risk manager uses historical information on 1,000 days of profit/loss information to calculate a daily VaR at the 99th percentile, of USD 8 million. Loss observations beyond the 99th percentile are then used to estimate the conditional VaR. If the losses beyond the VaR level, in millions, are USD 9, USD 10, USD 11, USD 13, USD 15, USD 18, USD 21, USD24, and USD 32, then what is the conditional VaR?

A. USD 9 million

B. USD 32 million

C. USD 15 million

D. USD 17 million

Q-58. A portfolio manager invests $100 million in a 5-year inverse floater paying 18% – 2 × LIBOR. Assume that the modified duration of a 6% 5-year bond is 4.5 years, and the inverse floater is just before a reset day. The worst change in yields at the 95% level over a month is 0.66%. What is the VaR of this inverse floater at the 95% level over a month?

A. $3.0 million

B. $5.9 million

C. $8.9 million

D. $10.5million

Q-59. A trader has an option position in crude oil with a delta of 100000 barrels and gamma of -50000 barrels per dollar move in price. Using the delta-gamma methodology, compute the VaR on this position, assuming the extreme move on crude oil is $2.00 per barrel.

A. $100,000

B. $200,000

C. $300,000

D. $400,000

Q-60. The hybrid method is a combination of historical simulation and:

A. Historical Standard Deviation

B. MDE

C. EWMA

D. GARCH

Q-61. The historical simulation approach is more likely to provide an accurate estimate of the VaR than the Risk Metrics approach for a portfolio that consists of:

A. A small number of emerging market securities.
B. A small number of broad market indexes.
C. A large number of emerging market securities.
D. A large number of board market indexes.

Q-62. Which of the following is a disadvantage of the historical simulation method over the Risk Metrics model? The historical method requires:

I. A worst-case scenario as an input.
II. The future is determined by the past.
III. Standard deviations and correlations.
IV. The assumption of normal distributions for asset returns.

A. I and III only
B. II only
C. II and IV only
D. III only

Q-63. The hybrid approach for estimating VaR is the combination of a parametric and a nonparametric approach. It specifically combines the historical simulation approach with:

A. The delta normal approach.
B. The exponentially weighted moving average approach.
C. The multivariate density estimation approach.
D. The generalized autoregressive conditional heteroskedasticity approach.

Q-64. An at-the-money European call option on the DJ EURO STOXX 50 index with a strike of 2200 and maturing in 1 year is trading at EUR 350, where contract value is determined by EUR 10 per index point. The risk-free rate is 3% per year, and the daily volatility of the index is 2.05%. If we assume that the expected return on the DJ EURO STOXX 50 is 0%, the 99% 1-day VaR of a short position on a single call option calculated using the delta-normal approach is closest to:

A. EUR 8
B. EUR 53
C. EUR 84
D. EUR 525

Q-65. Howard Freeman manages a portfolio of investment securities for a regional bank. The portfolio has a current market value equal to USD 6,247,000 with a daily variance of

0.0002. Assuming there are 250 trading days in a year and that the portfolio returns follow a normal distribution, the estimate of the annual VaR at the 95% confidence level is closest to which of the following?

A. USD 32,595
B. USD 145,770
C. USD 2, 297,854
D. USD 2,737,868

Q-66. A portfolio manager bought 1,000 call options on a non-dividend-paying stock, with a strike price of USD 100, for USD 6 each. The current stock price is USD 104 with a daily stock return volatility of 1.89%, and the delta of the option is 0.6. Using the delta-normal approach to calculate VaR, what is an approximation of the 1-day 95% VaR of this position?

A. USD 112
B. USD 1,946
C. USD 3,243
D. USD 5,406

Q-67. Bank A and Bank B are two competing investment banks that are calculating the 1-day 99% VaR for an at-the-money call on a non-dividend-paying stock with the following information:

- Current stock price: USD 120
- Estimated annual stock return volatility: 18%
- Current Black-Scholes-Merton option value: USD 5.20
- Option delta: 0.6

To compute VaR, Bank A uses the linear approximation method, while Bank B uses a Monte Carlo simulation method for full revaluation. Which bank will estimate a higher value for the 1-day 99% VaR?

A. Bank A.
B. Bank B.
C. Both will have the same VaR estimate.
D. Insufficient information to determine.

Q-68. Assume that portfolio daily returns are independently and identically normally

distributed. A new quantitative analyst has been asked by the portfolio manager to calculate portfolio VaRs for 10-, 15-, 20-, and 25-day periods. The portfolio manager notices something amiss with the analyst's calculations displayed below. Which one of following VaRs on this portfolio is inconsistent with the others?

A. VaR(10-day) = USD 316M
B. VaR(15-day) = USD 465M
C. VaR(20-day) = USD 537M
D. VaR(25-day) = USD 600M

Q-69. Over the next year, an operational process model predicts a 95% probability of no loss occurrence and a 5% probability of a single loss occurrence. If the single loss occurs, the severity is characterized by three possible outcomes: $10.0 million loss with 20% probability, $18.0 million loss with 50% probability, and $25.0 million loss with 30% probability. What is the model's one-year 90% expected shortfall (ES)?

A. $9.25 million
B. $10.00 million
C. $13.88 million
D. $18.50 million

4.16. Credit Ratings

4.16.1. 重要知识点

4.16.1.1.

Explanation	Standard & Poor's	Moody's Services
Investment grade:		
Highest grade	AAA	Aaa
High grade	AA	Aa
Upper medium grade	A	A
Medium grade	BBB	Baa
Speculative grade:		
Lower medium grade	BB	Ba
Speculative	B	B
Poor standing	CCC	Caa
Highly speculative	CC	Ca
Lowest quality, no interest	C	C

In default	D
Modifiers: A+, A, A-, and A1, A2, A3	

4.16.2. 基础题

Q-70. You are considering an investment in one of three different bonds. Your investment guidelines require that any bond you invest in carry an investment grade rating from at least two recognized bond rating agencies. Which, if any, of the bonds listed below would meet your investment guidelines?

A. Bond A carries an S&P rating of BB and a Moody's rating of Baa.

B. Bond B carries an S&P rating of BBB and a Moody's rating of Ba.

C. Bond C carries an S&P rating of BBB and a Moody's rating of Baa.

D. None of the above.

Q-71. Which of the following is not a true statement about internal credit ratings?

A. The "at-the-point-in-time" approach makes heavy use of econometric modeling that relates current financial variables to estimated default risk.

B. The "through-the-cycle" approach is forward-looking and attempts to incorporate future economic scenarios into current default risk estimates.

C. "at-the-point-in-time" credit scores volatility is much higher than "through-the-cycle" score volatility.

D. A sound internal system uses at-the-point-in-time scoring for small-to-medium-sized companies and private firms and through-the-cycle scoring for large firms.

Q-72. The rating agencies have analyzed the creditworthiness of Company XYZ and have determined that the company currently has adequate payment capacity, although a negative change in the business environment could affect its capacity for repayment. The company has been given an investment grade rating by S&P and Moody's. Which of the following S&P/Moody's ratings has Company XYZ been assigned?

A. AA/Aa

B. A/A

C. BBB/Baa

D. BB/Ba

Q-73. The following statement is made by S&P about the creditworthiness of company XYZ: "Strong capacity to meet financial commitments, but somewhat susceptible to adverse economic conditions and changes in circumstances." What is the rating assigned by S&P

to company XYZ?

A. AAA

B. A

C. B

D. C

4.17. Transition Matrix

Q-74. Which of the following statements is incorrect, given the following one-year rating transition matrix?

From/To (%)	AAA	AA	A	BBB	BB	B	CCC/C	D	Non Rated
AAA	87.44	7.37	0.46	0.09	0.06	0,00	0.00	0.00	4.59
AA	0.60	86.65	7.78	0.58	0.06	0.11	0.02	0.01	4.21
A	0.05	2.05	86.96	5.50	0.43	0.16	0.03	0.04	4.79
BBB	0.02	0.21	3.85	84.13	4.39	0.77	0.19	0.29	6.14
BB	0.04	0.08	0.33	5.27	75.73	7.36	0.94	1.20	9.06
B	0.00	0.07	0.20	0.28	5.21	72.95	4.23	5.71	11.36
CCC/C	0.08	0.00	0.31	0.39	1.31	9.74	46.83	28.83	12.52

A. BBB loans have a 4.08% chance of being upgraded in one year.

B. BB loans have a 75.73% chance of staying at BB for one year.

C. BBB loans have an 88.21% chance of being upgraded in one year.

D. BB loans have a 5.72% chance of being upgraded in one year.

Q-75. Given the following ratings transition matrix, calculate the two-period cumulative probability of default for a B credit.

Rating at beginning of period	**Rating at End of period**			
	A	B	C	D
A	0.95	0.05	0.00	0.00
B	0.03	0.90	0.05	0.02
C	0.01	0.10	0.75	0.14
Default	0.00	0.00	0.00	1.00

A. 2.0%

B. 2.5%

C. 4.0%

D. 4.5%

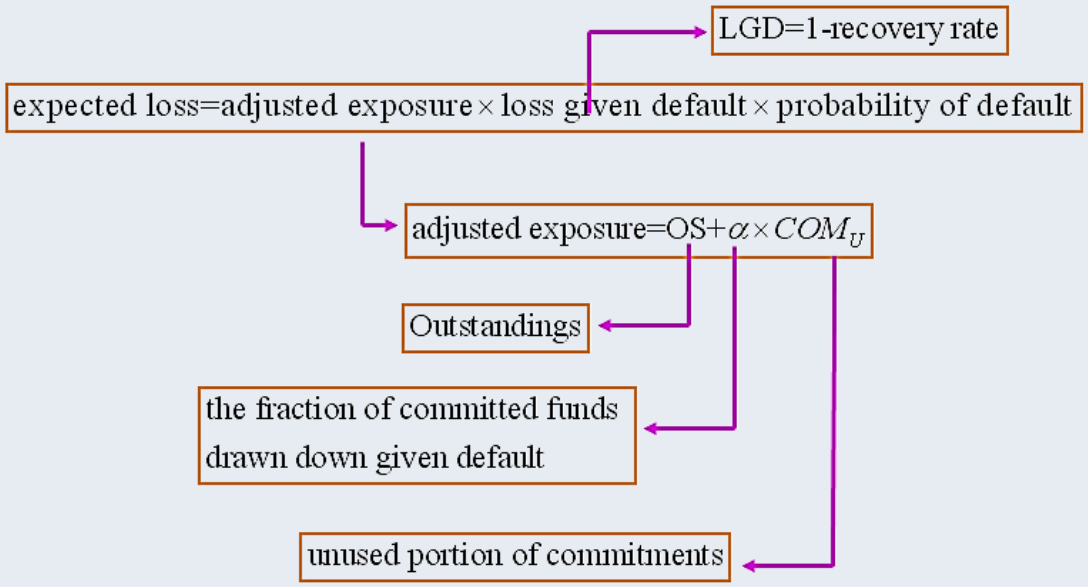
4.18. Expected Credit Loss and Unexpected Credit Loss

4.18.1. 重要知识点

4.18.1.1. $\text{Adjusted Exposure} = \text{OS} + \alpha \times \text{COM}_U$

4.18.1.2. $\text{EL} = \text{AE} \times \text{EDF} \times \text{LGD}$

4.18.1.3. $\text{UL} = \text{AE} \times \sqrt{\text{EDF} \times \sigma_{\text{LGD}}^2 + \text{LGD}^2 \times \sigma_{\text{EDF}}^2}$



4.18.2. 基础题

Q-76. An investor holds a portfolio of $100 million. This portfolio consists of A-rated bonds ($40 million) and BBB-rated bonds ($60 million). Assume that the one-year probabilities of default for A-rated and BBB-rated bonds are 3%and 5%, respectively, and that they are independent. If the recovery value for A-rated bonds in the event of default is 70% and the recovery value for BBB-rated bonds is 45%, what is the one-year expected credit loss from this portfolio?

A. $1672000

B. $1842000

C. $2010000

D. $2218000

Q-77. An exposure has a default probability (PD) of 4.0% and loss given default of 50.0%. The standard deviation of the LGD is 25.0%. What is the ratio of the unexpected loss to the

expected loss, UL/EL?

A. 1.33

B. 3.72

C. 5.50

D. 9.64

Q-78. Suppose ABC bank has booked a loan with following characteristics, it has total commitment of 3,000,000, outstanding is 2,000,000. The bank estimates 1% default probability (EDF) in one year, and draw down on default is 65%. The bank is currently experienced 60% of loss given default. The standard deviation of EDF and LGD is 5% and 30%, respectively. Please find the adjusted exposure.

A. 2,350,000

B. 2,650,000

C. 3,000,000

D. 3,300,000

Q-79. A risk manager is analyzing several portfolios, all with the same current market value. Which of the portfolios would likely have the highest potential level of unexpected loss during a sharp broad-based downturn in financial markets?

A. A portfolio of US Treasury notes with 2 to 5 years to maturity.

B. A portfolio of long stock positions in an international large cap stock index combined with long put options on the index.

C. A portfolio of mezzanine tranche MBS structured by a large regional bank.

D. A short position in futures for industrial commodities such as copper and steel

4.19. Country Risk

4.19.1. 重要知识点

4.19.1.1. Sources of country risk:

- where the country is in the economy growth life cycle;
- political risks;
- the legal systems of a country, including both the structure and the efficiency of legal system;
- the disproportionate reliance of a country on one commodity or service.

4.19.1.2. Factors influencing sovereign default risk:

- a country's level of and stability of tax receipts;
- political risks;

- a country's level of indebtedness;
- obligations such as pension and social service commitments;
- backing from other countries or entities.

4.19.2. 基础题

Q-80. One of the traders whose risk you monitor put on a carry trade where he borrows in yen and invests in some emerging market bonds whose performance is independent of yen. Which of the following risks should you not worry about?

A. Unexpected devaluation of the yen.
B. A currency crisis in one of the emerging markets the trader invests in.
C. Unexpected downgrading of the sovereign rating of a country in which the trader invests.
D. Possible contagion to emerging markets of a credit crisis in a major country.

Q-81. Which of the following reasons most completely describes why country risk assessment is prone to error?

A. While data is accurate, it is often incomplete.
B. Different accounting standards are used in different countries.
C. Disclosure requirements are inconsistent across international borders.
D. The exchange rate correlations are unstable during economic downturns.

Q-82. There are several challenges analysts face when using agency ratings on foreign debt as an indicator of default risk. Which of the following statements is false regarding weaknesses of rating agency sovereign debt ratings?

A. Ratings can be politically influenced.
B. Ratings are often subjective interpretations of available data.
C. Ratings are often delayed relative to changes in real-life situations.
D. Rating agencies are required to use government data for quantitative assessments of the likelihood of repayment.

Q-83. A risk analyst is analyzing several indicators for a group of countries. If he specifically considers the Gini coefficient in his analysis, in which of the following factors is he most interested?

A. Standard of living
B. Peacefulness
C. Perceived corruption
D. Income inequality

Q-84. In an attempt to understand country risk, Mary Ann Small, an analyst at Global Funds, examines multiple sources of information to determine the truest measure of risk. She considers sovereign risk ratings, default risk spreads, and composite measures of risk. Which of the following sources relies on surveys of several hundred economists to measures sovereign risk?

A. Political Risk Services.

B. The Economist.

C. Standard and Poor.

D. Euromoney.

Q-85. Which of the following statements regarding foreign currency defaults is true?

A. African countries are responsible for the greatest number of defaults in the last 50 years.

B. Prior to the 20th century, no country had ever defaulted on funds borrowed in a foreign currency.

C. Latin America accounted for more than 60% of foreign currency defaults in the 1990s.

D. Countries are more likely to default on funds borrowed from foreign banks than on sovereign bond issues.

4.20. Operational Risk

4.20.1. 重要知识点

4.20.1.1. The definition of Operational Risk for Basel Committee: the risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events, includes legal risk, but excludes strategic and reputational risk, which would be very difficult to measure.

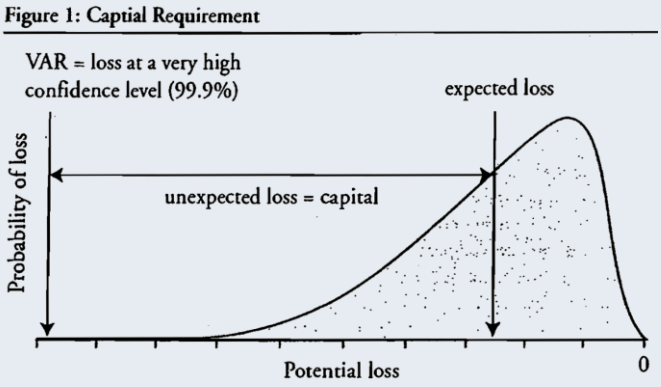
4.20.1.2. Three methods for capital requirements of Operational Risk

- Basic Indicator Approach: $ORC^{BIA} = \alpha \times GI$
- Standardized Approach: $ORC^{SA} = \sum_{i=1}^{8} \beta_i \times GI_i$

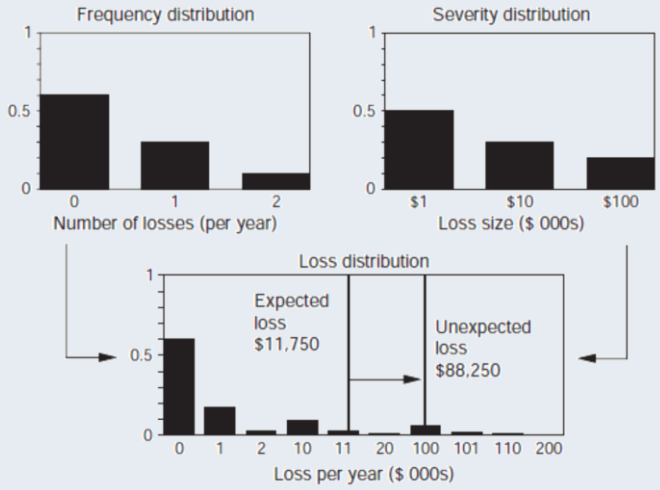
Business Line	Beta Factor
Corporate finance	18%
Trading and sales	18%
Retail banking	12%
Commercial banking	15%
Payment, settlement	18%
Agency services	15%

Asset management	12%
Retail brokerage	12%

- Advanced Measurement Approach: ORCAMA = VaR(1-year, 99.9% confidence)



- Construction of the Loss Distribution: loss frequency (Possion distribution) and loss severity (lognormal distribution)



24.1 Construction of the Loss Distribution

- High-frequency, low-severity (HFLS) risks occur frequently but result in small losses.
- Low-frequency, high-severity (LFHS) risks are the greatest area of concern for operational risk managers. Because they are rare, there is little available data to analyze such risks, and their cost to the firm could be catastrophic.
- Operational risk hedging methods: Insurance and Derivatives.

4.1.1. 基础题

Q-86. According to current Basel committee proposals, banks using the advanced

measurement approach must calculate the operational risk capital charge at a:

A. 99 percentile confidence level and a 1-year time horizon.
B. 99 percentile confidence level and a 5-year time horizon.
C. 99.9 percentile confidence level and a 1-year time horizon.
D. 99.9 percentile confidence level and a 5-year time horizon.

Q-87. Which of the following measurement approaches for assessing operational risk would be most appropriate for small banks?

A. Loss frequency approach
B. Basic indicator approach
C. Standardized approach
D. Advanced measurement approach (AMA)

Q-88. Which of the following statements about insurance and derivatives as a means of hedging operational risk is correct?

A. Hedging through insurance in inexpensive.
B. Hedging through derivative securities is subject to the moral hazard problem.
C. The insurance market is less developed than the market for operational derivative securities.
D. Insurance policies can be used to hedge a wider array of operational risks than derivative securities.

Q-89. Which of the following statements concerning the measurement of operational risk is correct?

A. Economic capital should be sufficient to cover both expected and worst-case operational risk losses.
B. Loss severity and loss frequency tend to be modeled with lognormal distributions.
C. Operational loss data available from data vendors tend to be biased towards small losses.
D. The standardized approach used by banks in calculating operational risk capital allows for different beta factors to be assigned to different business lines.

Q-90. An operational risk analyst is attempting to estimate a bank's loss severity distribution. However, there is a limited amount of historical data on operational risk losses. Which of the following is the best way to address this issue?

A. Generate additional data using Monte Carlo simulation and merge it with the bank's internal historical data.
B. Estimate the parameters of a Poisson distribution to model the loss severity of operational

losses.

C. Estimate relevant probabilities using loss information that is published by credit rating agencies.

D. Merge external data from other banks with the bank's internal data after making appropriate scale adjustments.

4.2. Stress Testing

4.2.1. 基础题

Q-91. A manager at an asset management firm relies on a VaR-based risk measurement system that calculates VaR for each of the firm's portfolios as well as an aggregate firm-wide VaR. The CRO proposes implementation of a stress testing approach to supplement the VaR system. Which of the following statements best supports the CRO's proposal?

A. In practice, stress tests utilize a great number of scenarios while VaR measures rely on just a few scenarios to create their loss estimates.

B. Stress testing makes it possible to capture dependencies between asset classes in specific scenarios that cannot be captured well through a VaR-based system.

C. Stress testing is more accurate than a VaR-based system in predicting the probability of losses at a point in time.

D. While stress testing is similar to VaR, it is restricted to using only distributions of macroeconomic variables to generate its predictions.

Q-92. After evaluating the results of a firm's stress tests, an analyst is recommending that the firm allocate additional economic capital and purchase selective insurance protection to guard against particular events. In order to give management a fully informed assessment, it is important that the following is noted related to this strategy:

A. While decreasing liquidity risk exposure, it will likely increase market risk exposure.

B. While decreasing correlation risk exposure, it will likely increase credit risk exposure.

C. While decreasing market risk exposure, it will likely increase credit risk exposure.

D. While decreasing credit risk exposure, it will likely increase model risk exposure.

Q-93. Which of the following statements about governance structure is/are not accurate?

I. Senior management has ultimate oversight responsibility and accountability for an entire institution.

II. Senior management should use scenario analysis, not stress testing, to evaluate an institutions risk decisions.

III. The board of directors has responsibility for implementing authorized stress testing

activities.

IV. The board of directors can change an institution's capital levels and exposures following a review of stress test results.

A. II only.

B. I, II, III.

C. IV only.

D. All not.

Q-94. Which of the following statements best reflects the responsibilities of an internal audit?

I. An internal audit should assess the staff involved in stress testing activities.

II. An internal audit should review the manner in which stress testing efficiencies are identified and tracked.

III. The internal audit function needs to be impartial but does not need to be independent.

A. I and II only.

B. I ,II and III.

C. II.

D. I only.

Q-95. Which of the following reasons best explains why institutions use reverse stress rests?

I. To test events that threatens the viability of the institution.

II. To assess where multiple risks occur simultaneously.

A. I only.

B. II only.

C. Neither I nor II.

D. Both I and II.

Q-96. Which of the following statements regarding differences between stress tests and economic capital (EC) methods is (are) not correct?

I. Stress tests tend to analyze a shorter period of time compared to EC methods.

II. Stress tests tend to compute losses from the perspective of the market as opposed to EC methods that compute losses from an accounting perspective.

III. Stress tests tend to use ordinal rank arrangements, while EC methods use cardinal probabilities.

IV. Stress tests tend to focus on unconditional scenarios, which EC methods tend to focus on conditional scenarios.

A. I and II only.

B. I ,II and III.

C. II only.

D. I ,II and Ⅳ.

Q-97. Which of the following statements regarding VaR models in stress tests is not correct?

A. If a scenario's loss magnitude corresponds to a 95th percentile loss on a VaR loss distribution, then one would take a much higher loss in the economic capital (EC) model as a proxy for the stressed loss resulting from market risk.

B. The use of stressed inputs has been especially notable in the area of market risk.

C. Financial institutions usually use a Merton model to simulate defaults and credit quality.

D. Assigning probabilities to outcomes often allows the results of stress tests to be generated.

Q-98. Which of the following statements most likely describes an advantage of using stressed risk metrics?

A. The risk metric will respond to current market conditions.

B. The risk metric will be more realistic.

C. The risk metric will be more conservative.

D. The risk metric will mirror the portfolio returns.

Q-99. Prior to the recent 2007 financial crisis, stress testing was primarily based on which of the following characteristics?

I. Significant system-wide correlations.

II. Historical or hypothetical scenarios.

A. I only.

B. II only.

C. Neither I nor II.

D. Both I and II.

Q-100. Which of the following statements related to conducting stress tests is (are) correct?

I. Results of stress testing should be used for strategic business planning purposes.

II. Stress testing can use sensitivity analysis to assess risk.

III. Stress testing should be used to identify risk concentrations.

IV. Basel II requires banks to undertake stress tests for assessing capital adequacy at least once a month.

A. I only.

B. II only.

C. I ,II and III.

D. All.