Finance 432 – Investment Analysis and Management
Review Notes for Final Exam

Chapters 10&11

1. Characteristics of bonds
   Coupon rate and interest payment
   Maturity date
   Call provision
   Call premium and call price
   Face value
   Zero coupon bonds
   Required rate of return – discount rate, i/y
2. Interest rate risk: price risk vs. reinvestment risk
   Interest rate price risk: risk that the bond price will fall if interest rates rise
   Interest rate reinvestment risk: risk that reinvestment value will fall if interest rates drop
3. Bond rating
4. Bond valuation: concepts and calculations
   P (intrinsic value); YTM; YTC; CY
5. Term structure theories
6. Principles of bond price behavior
7. Duration: concepts and calculations
   Macaulay duration, D = $\sum_{t=1}^{T} t * w_t$, where $w_t = \frac{CF_t /(1+y)^t}{P_0}$
   Relationship between duration and bond price volatility
   $\frac{\Delta P}{P} = - D \frac{\Delta(1+y)}{1+y} = - D^* \Delta y$
   where $D^* = \frac{D}{1+y}$, is the modified duration
8. Bond immunization: concepts and applications
9. Homework problems and examples discussed in class

Sample Problems for Chapters 10&11

1. Find the duration of a 3-year bond with annual coupon payments of $80 and a par value of $1,000. The current market price of the bond is $950.25. If the YTM of the bond dropped by 1%, what would happen to the bond price?

   Answer:
   First, solve for YTM. PV = -950.25, PMT = 80, FV = 1,000, N = 3, solve for i/y = 10%, which means that YTM= 10%
   Next, solve for duration: D = 2.78 years; modified duration = D* = 2.53 years
   Bond price will increase by 2.53%, or the new price is $974.27

2. Intermediate 10-18: Fair value, YTM, and N calculations

3. Intermediate 10-30: YTC calculations

4. CFA 10-1 and 10-5

5. Basic 11-2 and 11-5

6. Intermediate 11-14 and 11-15

7. CFA 11-1, 11-2, 11-10

8. Which of the following statements is correct? Answer: a

   a. You hold two bonds, a 10-year, zero-coupon bond and a 10-year bond that pays a 6% annual coupon. The same market rate, 6%, applies to both bonds. If the market rate rises from its current level, the zero coupon bond will experience the <u>larger</u> percentage decline.
   b. The time to maturity does not affect the change in the value of a bond in response to a given change in interest rates.
   c. You hold two bonds. One is a 10-year, zero coupon, bond and the other is a 10-year bond that pays a 6% annual coupon. The same market rate, 6%, applies to both bonds. If the market rate rises from the current level, the zero coupon bond will experience the <u>smaller</u> percentage decline.
   d. The shorter the time to maturity, the greater the change in the value of a bond in response to a given change in interest rates, other things held constant.
   e. The longer the time to maturity, the smaller the change in the value of a bond in response to a given change in interest rates.

9. Which of the following events would make it more likely that a company would call its outstanding callable bonds? Answer: c

   a. The company's bonds are downgraded.
   b. Market interest rates rise sharply.
   c. Market interest rates decline sharply.
   d. The company's financial situation deteriorates significantly.
   e. Inflation increases significantly.

10. Three $1,000 face value, 10-year to maturity, non-callable bonds have the same amount of risk, hence their YTMs are equal. Bond 8 has an 8% annual coupon, Bond 10 has a 10% annual coupon, and Bond 12 has a 12% annual coupon. Bond 10 sells at par. Assuming that interest rates remain constant for the next 10 years, which of the following statements is correct? Answer: d

a. Bond 8's current yield will increase each year.
b. Since the bonds have the same YTM, they should all have the same price, and since interest rates are not expected to change, their prices should all remain at their current levels until maturity.
c. Bond 12 sells at a premium (its price is greater than par), and its price is expected to increase over the next year.
d. Bond 8 sells at a discount (its price is less than par), and its price is expected to increase over the next year.
e. Over the next year, Bond 8's price is expected to decrease, Bond 10's price is expected to stay the same, and Bond 12's price is expected to increase.

11. A 12-year bond has an annual coupon of 9%. The coupon rate will remain fixed until the bond matures. The bond has a yield to maturity of 7%. Which of the following statements is correct? Answer: c

a. If market interest rates decline, the price of the bond will also decline.
b. The bond is currently selling at a price below its par value.
c. If market interest rates remain unchanged, the bond's price one year from now will be lower than it is today.
d. The bond should currently be selling at its par value.
e. If market interest rates remain unchanged, the bond's price one year from now will be higher than it is today.

12. Which of the following bonds would have the greatest percentage increase in value if all interest rates in the economy fall by 1%? Answer: e

a. 10-year, zero coupon bond.
b. 20-year, 10% coupon bond.
c. 20-year, 5% coupon bond.
d. 1-year, 10% coupon bond.
e. 20-year, zero coupon bond.

Chapter 12

1. Fundamental analysis: concepts
2. Global economy
3. Domestic economic analysis: concepts
   Business cycle; nominal and real GDP; Unemployment rate
   Fiscal policy: Government spending; Budget deficit; Taxes
   Monetary policy: Interest rate and inflation; Money supply
   Consumer spending; Exchange rate; Indicators (leading, coincident, lagging)
   Other factors
4. Demand and supply shocks
5. Industry analysis
6. Company analysis

Chapter 13

1. Common stocks
2. Characteristics of common stocks: concepts
3. Common stock earnings and dividends
   Net income, retained earnings, cash dividend, stock dividend, stock split
   EPS, DPS, dividend payout ratio and profit retention ratio
4. Types of common stocks: value vs. growth; cyclical vs. defensive
5. Valuation with comparables
6. Common stock valuation models: concepts and calculations
   Growth rate
   Market price vs. intrinsic value
   Dividend discount/valuation models (DDM or DVM)
   Zero growth model: $V_0 = D / k$
   Constant growth model: $V_0 = D_1 / (k-g)$
   Stock price and PVGO
   Variable growth (multi-stage growth) model
   Alternative models
7. Preferred stock valuation: concepts and calculations
   Preferred stocks can be valued in the same way as common stocks with no growth
8. Homework problems and examples discussed in class

Sample Problems for Chapters 12&13

1. Multi-stage growth model
   If N = 3 years, $g_s = 30\%$, $g_n = 8\%$, $D_0 = \$1.15$, RRR = 13.4%, what should be the value of stock today? What are the expected dividend yield and capital gains yield today? How about in 5 years?

   Answer:
   $D_1 = \$1.495$
   $D_2 = \$1.9435$
   $D_3 = \$2.52655$
   $D_4 = \$2.728674$
   $V_3 = \$50.53$ (value of the stock in 3 years, using the constant growth model)
   $V_0 = \$39.21$ (by discounting all the cash flows to the present)
   Expected dividend yield = $D_1/V_0 = 3.81\%$
   Expected capital gains yield = 9.59%

   In 5 years
   Dividend yield = 5.4%
   Capital gains yield = 8%

2. A share of XYZ stock is now selling at \$40.00. XYZ will pay a cash dividend of \$2.00 at the end of the year (D_1). The stock has a beta of 0.8. The expected return on the market is 10% and the risk-free rate is 5%. What should be the expected stock price in one year?

   Answer: expected rate of return = 9% (CAPM)
   Expected dividend yield = $D_1/P_0 = 2.00/40 = 5\%$
   Expected growth rate = g = 4%,
   Expected stock price in one year = P_1 = \$41.60 = 40*(1 + g)

3. Intermediate 12-12, 12-13, and 12-14.

4. A top-down analysis of a firm's prospects starts with an analysis of the _______.
   Answer: b

   a. firm's position in its industry
   b. U.S. economy or even the global economy
   c. industry
   d. specific firm under consideration

4. An increase in the value of the yen against the U.S. dollar can cause the Japanese automaker, Toyota, to either _____________ on its U.S. sales. Answer: a

   a. lose market share or reduce its profit margin
   b. gain market share or reduce its profit margin
   c. lose market share or increase its profit margin
   d. gain market share or increase its profit margin

5. Which one of the following stocks represents industries with below-average sensitivity to the state of the economy? Answer: c

   a. Financials
   b. Technology
   c. Food and beverage
   d. Cyclicals

6. Which of the following is not an example of fiscal policy? Answer: c

   a. Social Security spending
   b. Medicare spending
   c. Fed purchases of Treasury securities
   d. Changes in the tax rate

7. In macroeconomic terms an increase in the price of imported oil or a decrease in the availability of oil is an example of a _________. Answer: b

   a. demand shock
   b. supply shock
   c. monetary shock
   d. refinery shock

8. Intermediate 13-15 and 13-16

9. CFA 13-5

10. An underpriced stock provides an expected return which is ________ the required return based on the capital asset pricing model (CAPM). Answer: c

   a. less than
   b. equal to
   c. greater than
   d. greater than or equal to

11. The constant growth dividend discount model (DDM) can be used only when the _________. Answer: c

   a. growth rate is less than or equal to the required return
   b. growth rate is greater than or equal to the required return
   c. growth rate is less than the required return
   d. growth rate is greater than the required return

12. You wish to earn a return of 10% on each of two stocks, A and B. Each of the stocks is expected to pay a dividend of $4 in the upcoming year. The expected growth rate of dividends is 6% for stock A and 5% for stock B. Using the constant growth DDM, the intrinsic value of stock A _______. Answer: a

   a. will be higher than the intrinsic value of stock B
   b. will be the same as the intrinsic value of stock B
   c. will be less than the intrinsic value of stock B
   d. more information is necessary to answer this question

13. The market capitalization rate on the stock of Aberdeen Wholesale Company is 10%. Its expected ROE is 12% and its expected EPS is $5.00. If the firm's plow-back ratio is 50%, its P/E ratio will be _________. Answer: b

a. 8.33
b. 12.50
c. 19.23
d. 24.15

14. Grott and Perrin, Inc. has expected earnings of $3 per share for next year. The firm's ROE is 20% and its earnings retention ratio is 70%. If the firm's market capitalization rate is 15%, what is the present value of its growth opportunities? Answer: b

a. $20
b. $70
c. $90
d. $115

15. Todd Mountain Development Corporation is expected to pay a dividend of $3.00 in the upcoming year. Dividends are expected to grow at the rate of 8% per year. The risk-free rate of return is 5% and the expected return on the market portfolio is 17%. The stock of Todd Mountain Development Corporation has a beta of 0.75. Using the constant growth DDM, the intrinsic value of the stock is _________. Answer: d

a. 4.00
b. 17.65
c. 37.50
d. 50.00

16. Ace Frisbee Corporation produces a good that is very mature in their product life cycles. Ace Frisbee Corporation is expected to pay a dividend in year 1 of $3.00, dividend in year 2 of $2.00, and a dividend in year 3 of $1.00. After year 3, dividends are expected to decline at the rate of 2% per year. An appropriate required return for the stock is 8%. Using the multistage DDM, the stock should be worth __________ today. Answer: a

a. $13.07
b. $13.58
c. $18.25
d. $18.78

Chapter 18

1. Risk-adjusted returns: concepts and calculations
   The Sharpe Measure $S = (r_p - r_F) / \sigma_p$ (slope of CAL)
   The Jensen Measure $\alpha_p = r_p - (r_F + (r_m - r_F)\beta_p$
   The Treynor Measure $T = (r_p - r_F) / \beta_p$
   M^2 measure: adjust the total risk
   T^2 measure: adjust the market risk
2. Portfolio management
   Active vs. passive
3. Market timing: concepts
4. Homework problems and examples discussed in class

Chapter 19

1. Global Equity markets and international investments
2. International diversification: concepts
3. Exchange rate risk and political risk
   Exchange rate parity
4. Homework problems and examples discussed in class

Sample Problems

1. The M^2 measure is a variant of ________________. Answer: a

   a. the Sharpe measure
   b. the Treynor measure
   c. Jensen's alpha
   d. the appraisal ratio

   The information below applies to the next four questions (2-5)
   The risk free rate, average returns, standard deviations and betas for three funds and the S&P500 are given below.

Fund	Avg	Std dev	Beta
A	18%	30%	1.05
B	25%	35%	1.3
C	20%	25%	1.2
S&P500	15%	20%	1.0
rf	5%		

2. What is the T^2 measure for portfolio A? Answer: b

   a. 12.4%
   b. 2.38%
   c. 0.91%
   d. 3.64%

3. What is the M^2 measure for portfolio B? Answer: d

a. 0.43%
b. 1.25%
c. 1.77%
d. 1.43%

4. If those portfolios are subcomponents which make up part of a well diversified portfolio then portfolio ______ is preferred. (Check for T^2 measure)
Answer: b

a. A
b. B
c. C
d. S&P500

5. Based on the M^2 measure, portfolio C has a superior return of _____ as compared to the S&P500. Answer: c

a. -1.33%
b. 1.43%
c. 2.00%
d. 0.00%

The information below applies to the next three questions (6-8)
The average returns, standard deviations and betas for three funds are given below along with data for the S&P 500 index. The risk free return during the sample period is 6%.

Fund	Avg. Return	St. Dev.	Beta
A	13.6%	40%	1.1
B	13.1%	25%	1.0
C	12.4%	30%	1.3
S&P 500	12.0%	15%	1.0

6. You wish to evaluate the three mutual funds using the Sharpe measure for performance evaluation. The fund with the highest Sharpe measure of performance is __________. Answer: b

a. Fund A
b. Fund B
c. Fund C
d. indeterminable

7. You wish to evaluate the three mutual funds using the Treynor measure for performance evaluation. The fund with the highest Treynor measure of performance is __________. Answer: b

a. Fund A
b. Fund B
c. Fund C
d. indeterminable

8. You wish to evaluate the three mutual funds using the Jensen measure for performance evaluation. The fund with the highest Jensen measure of performance is __________. Answer: b

a. Fund A
b. Fund B
c. Fund C
d. S&P500

9. Which one of the following is largely based on forecasts of macroeconomic factors? Answer: d

a. Security selection
b. Passive investing
c. Market efficiency
d. Market timing

10. In creating the T^2 measure one mixes portfolio P and T-bills to match the _____ of the market and in creating the M^2 measure one mixes portfolio P and T-bills to match the _____ of the market. Answer: c

a. alpha; beta
b. beta; alpha
c. beta; standard deviation
d. standard deviation; beta

11. Intermediate 18-6

12. CFA 18-1 and 18-4

13. Intermediate 19-5 and 19-13

14. The proper formula for interest rate parity is given by _______. Answer: c

a. $(1 + r_f(UK))/(1 + r_f(US)) = F_1/E_0$
b. $(1 + r_f(US))/(1 + r_f(UK)) = E_0/F_1$
c. $(1 + r_f(US))/(1 + r_f(UK)) = F_0/E_0$
d. $(1 + r_f(US))/(1 + r_f(UK)) = F_0/E_1$

15. Investor portfolios are notoriously over weighted in home country stocks. This is commonly called ________. Answer: c

a. local fat
b. patriotism
c. home country bias
d. misleading representation

16. A U.S. insurance firm must pay €75,000 in 6 months. The spot exchange rate is \$1.32 per euro and in 6 months the exchange rate is expected to be \$1.35. The 6 month forward rate is currently \$1.36 per euro. If the insurer's goal is to limit its risk should the insurer hedge this transaction? If so how? Answer: b

a. The insurer need not hedge because the expected exchange rate move will be favorable.
b. The insurer should hedge by buying euro forward even though this will cost more than the expected cost of not hedging.
c. The insurer should hedge by selling euro forward because this will cost less than the expected cost of not hedging.
d. The insurer should hedge by buying euro forward even though this will cost less than the expected cost of not hedging.

17. The risk-free interest rate in the US is 8% while the risk-free interest rate in the UK is 15%. If the 1-year futures price on the British pound is \$2.40, the spot market value of the British pound today should be __________. Answer: c

a. \$1.93
b. \$2.22
c. \$2.56
d. \$2.76

The information below applies to the next three questions (18-20)
Suppose a U.S. investor wishes to invest in a British firm currently selling for £50 per share. The investor has $7,000 to invest and the current exchange rate is $1.40/£.

18. How many shares can the investor purchase? Answer: b

a. 140
b. 100
c. 71.43
d. none of the above

19. After one year, the exchange rate is unchanged and the share price is £55. What is the dollar-denominated return? Answer: b

a. 14%
b. 10%
c. 9.3%
d. 7.1%

20. After one year, the exchange rate is $1.60/£ and the share price is £55. What is the dollar-denominated return? Answer: a

a. 25.7%
b. 16%
c. 14.3%
d. 9.3%

21. The dollar per euro spot rate is 1.2 when an importer of French wines places an order. 6 months later, when she takes delivery, the spot rate is 1.3 dollars per euro. If her original invoice was for 30,000 euro, what is her gain or loss due to exchange rate risk? Answer: b

a. $3,000 gain
b. $3,000 loss
c. $6,000 loss
d. no gain or loss