***Corporate Finance, 4e, Global Edition* (Berk / DeMarzo)**

**Chapter 9 Valuing Stocks**

9.1 The Dividend-Discount Model

1) Which of the following is NOT a way that a firm can increase its dividend?

A) By increasing its retention rate

B) By decreasing its shares outstanding

C) By increasing its earnings (net income)

D) By increasing its dividend payout rate

2) Which of the following statements is false regarding profitable and unprofitable growth?

A) If a firm wants to increase its share price, it must cut its dividend and invest more.

B) If the firm retains more earnings, it will be able to pay out less of those earnings, which means that the firm will have to reduce its dividend.

C) A firm can increase its growth rate by retaining more of its earnings.

D) Cutting the firm's dividend to increase investment will raise the stock price if, and only if, the new investments have a positive NPV.

3) Which of the following statements is FALSE?

A) Estimating dividends, especially for the distant future, is difficult.

B) A firm can only pay out its earnings to investors or reinvest their earnings.

C) Successful young firms often have high initial earnings growth rates.

D) According to the constant dividend growth model, the value of the firm depends on the current dividend level, divided by the equity cost of capital plus the growth rate.

4) Which of the following statements is FALSE?

A) We should use the general dividend discount model to value the stock of a firm with rapid or changing growth.

B) As firms mature, their growth slows to rates more typical of established companies.

C) The dividend discount model values the stock based on a forecast of the future dividends paid to shareholders.

D) The simplest forecast for the firm's future dividends states that they will grow at a constant rate, *g*, forever.

5) Which of the following statements is FALSE?

A) A common approximation is to assume that in the long run, dividends will grow at a constant rate.

B) The dividend each year is the firm's earnings per share (EPS) multiplied by its dividend payout rate.

C) There is a tremendous amount of uncertainty associated with any forecast of a firm's future dividends.

D) During periods of high growth, it is not unusual for firms to pay out 100% of their earnings to shareholders in the form of dividends.

12) Nielson Motors has a share price of $25 today. If Nielson Motors is expected to pay a dividend of $0.75 this year, and its stock price is expected to grow to $26.75 at the end of the year, then Nielson's dividend yield and equity cost of capital are:

A) 3.0% and 7.0% respectively.

B) 3.0% and 10.0% respectively.

C) 4.0% and 6.0% respectively.

D) 4.0% and 10.0% respectively.

13) NoGrowth industries presently pays an annual dividend of $1.50 per share and it is expected that these dividend payments will continue indefinitely. If NoGrowth's equity cost of capital is 12%, then the value of a share of NoGrowth's stock is closest to:

A) $10.00

B) $15.00

C) $14.00

D) $12.50

14) Von Bora Corporation (VBC) is expected to pay a $2.00 dividend at the end of this year. If you expect VBC's dividend to grow by 5% per year forever and VBC's equity cost of capital is 13%, then the value of a share of VBS stock is closest to:

A) $25.00

B) $40.00

C) $15.40

D) $11.10

15) Luther Industries has a dividend yield of 4.5% and and a cost of equity capital of 12%. Luther Industries dividends are expected to grow at a constant rate indefinitely. The grow rate of Luther's dividends are closest to:

A) 7.5%

B) 5.5%

C) 16.5%

D) 12%

16) The Sisyphean Company's common stock is currently trading for $25.00 per share. The stock is expected to pay a $2.50 dividend at the end of the year and the Sisyphean Company's equity cost of capital is 14%. If the dividend payout rate is expected to remain constant, then the expected growth rate in the Sisyphean Company's earnings is closest to:

A) 8%

B) 6%

C) 4%

D) 2%

17) You expect KT Industries (KTI) will have earnings per share of $3 this year and expect that they will pay out $1.50 of these earnings to shareholders in the form of a dividend. KTI's return on new investments is 15% and their equity cost of capital is 12%. The expected growth rate for KTI's dividends is closest to:

A) 6.0%

B) 7.5%

C) 4.5%

D) 3.0%

18) You expect KT Industries (KTI) will have earnings per share of $3 this year and expect that they will pay out $1.50 of these earnings to shareholders in the form of a dividend. KTI's return on new investments is 15% and their equity cost of capital is 12%. The value of a share of KTI's stock is closest to:

A) $39.25

B) $20.00

C) $33.35

D) $12.50

19) JRN Enterprises just announced that it plans to cut its dividend from $2.50 to $1.50 per share and use the extra funds to expand its operations. Prior to this announcement, JRN's dividends were expected to grow at 4% per year and JRN's stock was trading at $25.00 per share. With the new expansion, JRN's dividends are expected to grow at 8% per year indefinitely. Assuming that JRN's risk is unchanged by the expansion, the value of a share of JRN after the announcement is closest to:

A) $25.00

B) $15.00

C) $31.25

D) $27.50

9.2 Applying the Dividend-Discount Model

1) Taggart Transcontinental has a divided yield of 2.5%. Taggart's equity cost of capital is 10%, and its dividends are expected to grow at a constant rate. Based on this information, Taggart's constant growth rate in dividends is closest to:

A) 2.5%

B) 5.0%

C) 10.0%

D) 7.5%

2) Wyatt Oil presently pays no dividend. You anticipate Wyatt Oil will pay an annual dividend of $0.56 per share two years from today and you expect dividends to grow by 4% per year thereafter. IF Wyatt Oil's equity cost of capital is 12%, then the value of a share of Wyatt Oil today is:

A) $4.67

B) $5.00

C) $6.25

D) $7.00

3) Kinston Industries just announced that it will cut its dividend from $3.00 to $2.00 per share and use the extra funds to expand its operations. Kinston's dividends were expected to grow at a 2% rate, and its share price was $37.50. With the new expansion, Kinston dividends are expected to grow at a 5% rate. Kinston's share price following this announcement should be:

A) $20.00

B) $30.00

C) $37.50

D) $40.00

4) Rearden Metals expects to have earnings this coming year of $2.50 per share. Rearden plans to retain all of its earnings for the next year. For the subsequent three years, the firm will retain 50% of its earnings. It will ten retain 25% of its earnings from that point onward. Each year, retained earnings will be invested in new projects with an expected return of 20% per year. Any earnings that are not retained will be paid out as dividends. Assume Rearden's shares outstanding remains constant and all earnings growth comes from the investment of retained earnings. If Rearden's equity cost of capital is 10%, then Rearden's stock price is closest to:

A) $40.80

B) $44.60

C) $59.80

D) $63.50

9.3 Total Payout and Free Cash Flow Valuation Models

1) Which of the following statements is FALSE?

A) The total payout model allows us to ignore the firm's choice between dividends and share repurchases.

B) By repurchasing shares, the firm increases its share count, which decreases its earning and dividends on a per-share basis.

C) The total payout model discounts the total payouts that the firm makes to shareholders, which is the total amount spent on both dividends and share repurchases.

D) In the dividend discount model, we implicitly assume that any cash paid out to the shareholders takes the form of a dividend.

2) If you want to value a firm that consistently pays out its earnings as dividends, the simplest model for you to use is the:

A) enterprise value model.

B) total payout model.

C) dividend discount model.

D) discounted free cash flow model.

3) If you want to value a firm that has consistent earnings growth, but varies how it pays out these earnings to shareholders between dividends and repurchases, the simplest model for you to use is the:

A) enterprise value model.

B) dividend discount model.

C) total payout model.

D) discounted free cash flow model.

4) If you want to value a firm but don't want to explicitly forecast its dividends, share repurchases, or its use of debt, what is the simplest model for you to use?

A) Discounted free cash flow model

B) Dividend discount model

C) Enterprise value model

D) Total payout model

5) Which of the following statements is FALSE?

A) In a share repurchase, the firm uses excess cash to buy back its own stock.

B) The discounted free cash flow model begins by determining the value of the firm's equity.

C) The discounted free cash flow model focuses on the cash flows to all of the firm's investors, both debt and equity holders, and allows us to avoid estimating the impact of the firm's borrowing decisions on earnings.

D) In recent years, an increasing number of firms have replaced dividend payouts with share repurchases.

15) The Rufus Corporation has 125 million shares outstanding and analysts expect Rufus to have earnings of $500 million this year. Rufus plans to pay out 40% of its earnings in dividends and they expect to use another 20% of their earnings to repurchase shares. If Rufus' equity cost of capital is 15% and Rufus' earnings are expected to grow at a rate of 3% per year, then the value of a share of Rufus stock is closest to:

A) $13.35

B) $33.50

C) $20.00

D) $16.00

*Use the information for the question(s) below.*

Defenestration Industries plans to pay a $4.00 dividend this year and you expect that the firm's earnings are on track to grow at 5% per year for the foreseeable future. Defenestration's equity cost of capital is 13%.

19) Assuming that Defenestration's dividend payout rate and expected growth rate remain constant, and Defenestration does not issue or repurchase shares, then Defenestration's stock price is closest to:

A) $50.00

B) $32.30

C) $22.25

D) $30.75

20) Suppose that Defenestration decides to pay a dividend of only $2 per share this year and use the remaining $2 per share to repurchase stock. If Defenestration's payout rate remains constant, then Defenestration's stock price is closest to:

A) $50.00

B) $22.25

C) $32.30

D) $30.75

21) Suppose that Defenestration decides to pay a dividend of only $2 per share this year and use the remaining $2 per share to repurchase stock. If Defenestration maintains this dividend and total payout rate, then the rate at which Defenestration's dividends and earnings per share are expected to grow is closest to:

A) 7%

B) 13%

C) 9%

D) 5%

22) A firm's net investment is:

A) its capital expenditures in excess of depreciation.

B) its free cash flow net of increases in working capital.

C) its enterprise value in excess of debt owed.

D) the market value of equity plus debt.

*Use the information for the question(s) below.*

You expect DM Corporation to generate the following free cash flows over the next five years:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Year** | **1** | **2** | **3** | **4** | **5** |
| FCF ($ millions) | 75 | 84 | 96 | 111 | 120 |

Beginning with year six, you estimate that DM's free cash flows will grow at 6% per year and that DM's weighted average cost of capital is 15%.

23) Calculate the enterprise value for DM Corporation.

24) If DM has $500 million of debt and 14 million shares of stock outstanding, then what is the price per share for DM Corporation?

9.4 Valuation Based on Comparable Firms

1) Which of the following statements is FALSE?

A) Even two firms in the same industry selling the same types of products, while similar in many respects, are likely to be of different size or scale.

B) In the method of comparables, we estimate the value of the firm based on the value of other, comparable firms or investments that we expect will generate very similar cash flows in the future.

C) Consider the case of a new firm that is identical to an existing publicly traded company. If these firms will generate identical cash flows, the Law of One Price implies that we can use the value of the existing company to determine the value of the new firm.

D) A valuation multiple is a ratio of some measure of the firm's scale to the value of the firm.

2) Which of the following statements is FALSE?

A) The most common valuation multiple is the price-earnings (P/E) ratio.

B) You should be willing to pay proportionally more for a stock with lower current earnings.

C) A firm's P/E ratio is equal to the share price divided by its earnings per share.

D) The intuition behind the use of the P/E ratio is that when you buy a stock, you are in sense buying the rights to the firm's future earnings and differences in the scale of the firms' earnings are likely to persist.

3) Which of the following statements is FALSE?

A) We can estimate the value of a firm's shares by multiplying its current earnings per share by the average P/E ratio of comparable firms.

B) For valuation purposes, the trailing P/E ratio is generally preferred, since it is based on actual not expected earnings.

C) Forward earnings are the expected earnings over the coming 12 months.

D) Trailing earnings are the earnings over the previous 12 months.

4) Which of the following statements is FALSE?

A) Because the enterprise value represents the entire value of the firm before the firm pays its debt, to form an appropriate multiple, we divide it by a measure of earnings or cash flows after interest payments are made.

B) We can compute a firm's P/E ratio by using either trailing earnings or forward earnings with the resulting ratio called the trailing P/E or forward P/E.

C) It is common practice to use valuation multiples based on the firm's enterprise value.

D) Using a valuation multiple based on comparables is best viewed as a "shortcut" to the discounted cash flow method of valuation.

5) Which of the following statements is FALSE?

A) The fact that a firm has an exceptional management team, has developed an efficient manufacturing process, or has just secured a patient on a new technology is ignored when we apply a valuation multiple.

B) Valuation multiples have the advantage that they allow us to incorporate specific information about the firm's cost of capital or future growth.

C) For firms with substantial tangible assets, the ratio of price to book value of equity per share is sometimes used.

D) Using multiples will not help us determine if an entire industry is overvalued.

6) Which of the following statements is FALSE?

A) Because capital expenditures can vary substantially from period to period, most practitioners rely on enterprise value to free cash flow multiples.

B) Common multiples to consider are enterprise value to EBIT, EBITDA, and free cash flow.

C) If two stocks have the same payout and EPS growth rates as well as equivalent risk, then they should have the same P/E ratio.

D) Looking at enterprise value as a multiple of sales can be useful if it is reasonable to assume that the firms will maintain similar margins in the future.

*Use the following information to answer the question(s) below.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Company | Ticker | Price  per Share | Earnings  per Share | Book Value  per Share |
| Abbott Labs | ABT | 54.35 | 3.69 | 13.79 |
| Bristol-Myers-Squibb | BMY | 25.45 | 1.93 | 7.33 |
| GlaxoSmithKline | GSK | 41.3 | 3.15 | 6.03 |
| Johnson & Johnson | JNJ | 62.6 | 4.58 | 18.27 |
| Merck | MRK | 36.25 | 3.81 | 10.86 |
| Pfizer | PFE | $18.30 | $1.20 | 8.19 |

8) Assuming that Novartis AG (NVS) has an EPS of $3.35, based upon the average P/E ratio for its competitors, Novartis' stock price is closest to:

A) $13.00

B) $31.86

C) $43.47

D) $44.35

9) Assuming that Novartis AG (NVS) has an EPS of $3.35, based upon the average price-to-book ratio for its competitors, Novartis' stock price is closest to:

A) $13.00

B) $22.95

C) $39.70

D) $44.35

10) Assuming that Novartis AG (NVS) has an EPS of $3.35, based upon the P/E ratios for its competitors, the highest expected stock price for Novartis is closest to:

A) $31.86

B) $44.35

C) $51.09

D) $62.60

9.5 Information, Competition, and Stock Prices

1) Which of the following is NOT a situation where a trader is able to identify positive NPV trading opportunities in the securities markets?

A) An investor who has access to information known only to a few investors.

B) An investor who has lower trading costs than other market participants.

C) An investor who gets up really early in the morning so he can be the first to read and act upon the information contained in that day's *Wall Street Journal.*

D) An investor who has expertise in a highly complicated area for which a company has just released information.

2) Which of the following statements is FALSE?

A) Many managers make the mistake of focusing on accounting earnings as opposed to free cash flows.

B) Given accurate information about any two of these variables (a firm's future cash flows, its cost of capital, and its share price) a valuation model allows us to make inferences about the third variable.

C) A valuation model will tell us the most about the variable for which our prior information is the least reliable.

D) The idea that investors are able to identify positive NPV trading opportunities is referred to as the efficient markets hypothesis.

3) Which of the following statements is FALSE?

A) Stock markets aggregate the information and view of many different investors.

B) Only in the relatively rare case in which we have some superior information that other investors lack regarding the firm's cash flows and cost of capital would it make sense to second-guess the market stock price.

C) In most situations, a valuation model is best applied to tell us something about the value of the firm's stock.

D) The efficient market hypothesis implies that securities will be fairly priced, based on their future cash flows, given all information that is available to investors.

4) Which of the following statements is FALSE?

A) If the profit opportunities from having private information are large, other individuals will attempt to gain the expertise and devote the resources needed to acquire it.

B) When private information is relegated to the hands of a relatively small number of investors, these investors may be able to profit by trading on their information.

C) When a buyer seeks to buy a stock, the willingness of other parties to sell the same stock suggests that they value the stock differently.

D) Since stock markets aggregate the information and view of many different investors, we expect the stock price to react slowly to new publicly available information as the investors continue to trade until a consensus is reached as to the new value of the stock.

*Use the following information to answer the question(s) below.*

Nielson Motors has a share price of $50.00. Its dividend was $2.50, and you expect Nielson Motors to raise its dividend by approximately 6% per year in perpetuity.

5) If Nielson's equity cost of capital is 13%, then Nielson's expected share price is closest to:

A) $19.23

B) $37.86

C) $35.71

D) $50.00

6) Given Nielson's current share price, if Nielson's equity cost of capital is 13%, then Nielson's expected growth rate is closest to:

A) 5%

B) 6%

C) 7%

D) 8%

7) Wyatt Oil just reported that a major fire destroyed one of its oil production facilities in Colorado. While the facility was fully insured, the loss of oil production will decrease Wyatt's free cash flow by $120 million at the end of this year and by $80 million at the end of next year. Wyatt has 50 million shares outstanding and has a weighted average cost of capital of 9%. Assuming the value of Wyatt's debt is not affected by this event, the expected decrease in Wyatt's stock price is closest to:

A) $2.00

B) $3.55

C) $3.87

D) $4.00

8) Vacinox is a biotechnology firm that is about to announce the results of its clinical trials of a potential new vaccine. If the trials are successful, Vacinox stock will be worth $80 per share. However, if the trials are not successful, then Vacinox stock will only be worth $12 per share. If on the morning that the announcement is scheduled, Vacinox stock is trading for $60.96, then the probability that investors place on the trials being successful are closest to:

A) 48%

B) 50%

C) 60%

D) 72%

9) Because of a catastrophic plane crash, the FAA announced that it is withdrawing its air worthiness certification for Fly by Night Aviation's (FBNA) new four seat private plane. As a result FBNA's future expected free cash flows will decline by $40 million a year for the next eight years. FBNA has 20 million shares outstanding, no debt, and an equity cost of capital of 12%. If this news is a complete surprise to investors, then the amount that FBNA's stock price should fall upon the announcement is closest to:

A) $2.00

B) $16.00

C) $16.70

D) $9.90

*Use the information for the question(s) below.*

In a surprise announcement, NASA released details of a major contract with Lockheed-Martin (LMT) that would increase LMT's market value by $7.5 billion. It was widely expected by the market that this contract would be awarded to LMT's major competitor Boeing (BA). Assume that Boeing has 800 million shares outstanding and Lockheed Martin has 425 million shares outstanding. Prior to this announcement, the market felt that the probability of Boeing winning the contract was 90% and that Lockheed-Martin's chance was only about 10%.

10) What do you anticipate will happen to Lockheed-Martin and Boeing's stock prices are a result of this surprise announcement?

11) What are the implications of the efficient market hypothesis for corporate managers?

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**Chapter 10 Capital Markets and the Pricing of Risk**

10.1 Risk and Return: Insights from 89 Years of Investor History

1) Which of the following investments offered the lowest overall return over the past eighty years?

A) Small stocks

B) Treasury Bills

C) S&P 500

D) Corporate bonds

2) Which of the following investments offered the highest overall return over the past eighty years?

A) Treasury Bills

B) S&P 500

C) Small stocks

D) Corporate bonds

3) Which of the following investments had the largest fluctuations in overall return over the past eighty years?

A) Small stocks

B) S&P 500

C) Corporate bonds

D) Treasury Bills

4) Which of the following statements is TRUE?

A) Small stocks have outperformed the S&P 500 in every year since 1925.

B) The S&P 500 is more volatile than corporate bonds.

C) Corporate bonds underperformed inflation during most years since 1925.

D) Treasury Bills outperformed inflation during every year since 1925.

10.2 Common Measures of Risk and Return

1) Which of the following statements is FALSE?

A) The variance increases with the magnitude of the deviations from the mean.

B) The variance is the expected squared deviation from the mean.

C) Two common measures of the risk of a probability distribution are its variance and standard deviation.

D) If the return is riskless and never deviates from its mean, the variance is equal to one.

2) Which of the following statements is FALSE?

A) When an investment is risky, there are different returns it may earn.

B) In finance, the variance of a return is also referred to as its volatility.

C) The expected or mean return is calculated as a weighted average of the possible returns, where the weights correspond to the probabilities.

D) The variance is a measure of how "spread out" the distribution of the return is.

3) Which of the following statements is FALSE?

A) The standard deviation is the square root of the variance.

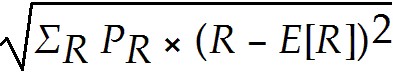
B) Because investors dislike only negative resolutions of uncertainty, alternative measures that focus solely on downside risk have been developed, such as the semi-variance and the expected tail loss.

C) While the variance and the standard deviation are the most common measures of risk, they do not differentiate between upside and downside risk.

D) While the variance and the standard deviation both measure the variability of the returns, the variance is easier to interpret because it is in the same units as the returns themselves.

4) Which of the following equations is INCORRECT?

A) *Var*(*R*) *= *

B) *SD*(*R*) = 

C) *Var*(*R*) =  *PR* × (*R* - *E*[*R*])2

D) *E*[*R*] = * PR* × *R*

*Use the table for the question(s) below.*

Consider the following probability distribution of returns for Alpha Corporation:

|  |  |  |  |
| --- | --- | --- | --- |
| **Current Stock Price ($)** | **Stock Price in One Year ($)** | **Return *R*** | **Probability *PR*** |
|  | $35 | 40% | 25% |
| $25 | $25 | 0% | 50% |
|  | $20 | -20% | 25% |

5) The expected return for Alpha Corporation is closest to:

A) 6.67%

B) 5.00%

C) 10%

D) 0.00%

6) The variance of the return on Alpha Corporation is closest to:

A) 5.00%

B) 4.75%

C) 3.625%

D) 3.75%

7) The standard deviation of the return on Alpha Corporation is closest to:

A) 22.4%

B) 19.0%

C) 21.8%

D) 19.4%

8) Suppose an investment is equally likely to have a 35% return or a -20% return. The expected return for this investment is closest to:

A) 7.5%

B) 15%

C) 5%

D) 10%

9) Suppose an investment is equally likely to have a 35% return or a -20% return. The variance on the return for this investment is closest to:

A) .151

B) .0378

C) 0

D) .075

10) Suppose an investment is equally likely to have a 35% return or a -20% return. The standard deviation on the return for this investment is closest to:

A) 38.9%

B) 0%

C) 19.4%

D) 27.5%

10.3 Historical Returns of Stocks and Bonds

1) Which of the following statements is FALSE?

A) The expected return is the return that actually occurs over a particular time period.

B) If you hold the stock beyond the date of the first dividend, then to compute you return you must specify how you invest any dividends you receive in the interim.

C) The average annual return of an investment during some historical period is simply the average of the realized returns for each year.

D) The realized return is the total return we earn from dividends and capital gains, expressed as a percentage of the initial stock price.

2) Which of the following statements is FALSE?

A) We measure the degree of estimation error statistically through the standard error of the estimate.

B) When focusing on the returns of a single security, its common practice to assume that all dividends are immediately invested at the risk-free rate.

C) We estimate the standard deviation or volatility as the square root of the variance.

D) We estimate the variance by computing the average squared deviation from the average realized return.

3) Which of the following statements is FALSE?

A) The standard error provides an indication of how far the sample average might deviate from the expected return.

B) The 95% confidence interval for the expected return is defined as the Historical Average Return plus or minus three standard errors.

C) We can use a security's historical average return to estimate its actual expected return.

D) The standard error is the standard deviation of the average return.

4) Which of the following statements is FALSE?

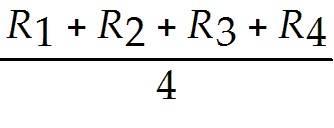
A) The compounded geometric average return is most often used for comparative purposes.

B) We should use the arithmetic average return when we are trying to estimate an investment's expected return over a future horizon based on its past performance.

C) The geometric average return will always be above the arithmetic average return and the difference grows with the volatility of the annual returns.

D) The geometric average return is a better description of the long-run historical performance of an investment.

5) If a stock pays dividends at the end of each quarter, with realized returns of R1, R2, R3, and R4 each quarter, then the annual realized return is calculated as:

A) *R*annual = 

B) *R*annual = (1 + *R*1)(1 + *R*2)(1 + *R*3)(1 + *R*4)

C) *R*annual = (1 + *R*1)(1 + *R*2)(1 + *R*3)(1 + *R*4) - 1

D) *R*annual = *R*1 + *R*2 + *R*3 + *R*4

*Use the table for the question(s) below.*

Consider the following Price and Dividend data for General Electric Company:

|  |  |  |
| --- | --- | --- |
| **Date** | **Price ($)** | **Dividend ($)** |
| December 31, 2008 | $14.64 |  |
| January 26, 2009 | $13.35 | $0.10 |
| April 28, 2009 | $9.14 | $0.10 |
| July 29, 2009 | $10.74 | $0.10 |
| October 28, 2009 | $8.02 | $0.10 |
| December 30, 2009 | $7.72 |  |

6) Assume that you purchased General Electric Company stock at the closing price on December 31, 2008 and sold it after the dividend had been paid at the closing price on January 26, 2009. Your dividend yield for this period is closest to:

A) -8.15%

B) 0.75%

C) 0.70%

D) -8.80%

7) Assume that you purchased General Electric Company stock at the closing price on December 31, 2008 and sold it after the dividend had been paid at the closing price on January 26, 2009. Your capital gains rate (yield) for this period is closest to:

A) 0.75%

B) 0.70%

C) -8.80%

D) -8.15%

8) Assume that you purchased General Electric Company stock at the closing price on December 31, 2008 and sold it after the dividend had been paid at the closing price on January 26, 2009. Your total return rate (yield) for this period is closest to:

A) 0.75%

B) -8.80%

C) 0.70%

D) -8.15%

9) Assume that you purchased Ford Motor Company stock at the closing price on December 31, 2008 and sold it at the closing price on December 30, 2009. Your realized annual return for the year 2009 is closest to:

A) -45.1%

B) -44.5%

C) -48.5%

D) -47.3%

*Use the table for the question(s) below.*

Consider the following realized annual returns:

|  |  |  |
| --- | --- | --- |
| **Year End** | **Index Realized Return** | **Stock A Realized Return** |
| 2000 | 23.6% | 46.3% |
| 2001 | 24.7% | 26.7% |
| 2002 | 30.5% | 86.9% |
| 2003 | 9.0% | 23.1% |
| 2004 | -2.0% | 0.2% |
| 2005 | -17.3% | -3.2% |
| 2006 | -24.3% | -27.0% |
| 2007 | 32.2% | 27.9% |
| 2008 | 4.4% | -5.1% |
| 2009 | 7.4% | -11.3% |

10) The average annual return on the Index from 2000 to 2009 is closest to:

A) 7.10%

B) 4.00%

C) 9.75%

D) 8.75%

10.4 The Historical Trade-off Between Risk and Return

1) The excess return is the difference between the average return on a security and the average return for:

A) Treasury Bonds.

B) a portfolio of securities with similar risk.

C) a broad based market portfolio like the S&P 500 index.

D) Treasury Bills.

2) Which of the following statements is FALSE?

A) Expected return should rise proportionately with volatility.

B) Investors would not choose to hold a portfolio that is more volatile unless they expected to earn a higher return.

C) Smaller stocks have lower volatility than larger stocks.

D) The largest stocks are typically more volatile than a portfolio of large stocks.

3) Which of the following statements is FALSE?

A) Portfolios with higher volatility have historically rewarded investors with higher average returns.

B) Investments with higher volatility should have a higher risk premium and therefore higher returns.

C) Volatility seems to be a reasonable measure of risk when evaluating returns on large portfolios and the returns of individual securities.

D) Riskier investments must offer investors higher average returns to compensate them for the extra risk they are taking on.

4) Which of the following statements is TRUE?

A) Portfolios with lower volatility have historically rewarded investors with higher average returns.

B) Individual stocks with higher volatility have consistently rewarded investors with higher average returns.

C) Volatility seems to be a reasonable measure of risk when evaluating returns on large portfolios.

D) Volatility seems to be a reasonable measure of risk when evaluating returns on individual stocks.

*Use the table for the question(s) below.*

Consider the following average annual returns:

|  |  |
| --- | --- |
| **Investment** | **Average Return** |
| Small Stocks | 23.2% |
| S&P 500 | 13.2% |
| Corporate Bonds | 7.5% |
| Treasury Bonds | 6.2% |
| Treasury Bills | 4.8% |

5) What is the excess return for the portfolio of small stocks?

A) 10.0%

B) 15.7%

C) 18.4%

D) 17.0%

6) What is the excess return for the S&P 500?

A) 5.7%

B) 7.0%

C) 0%

D) 8.4%

7) What is the excess return for corporate bonds?

A) 2.7%

B) 1.3%

C) -5.7%

D) 0%

8) What is the excess return for Treasury Bills?

A) 0%

B) -8.4%

C) -2.7%

D) -1.4%

9) Do expected returns for individual stocks increase proportionately with volatility?

10.5 Common Versus Independent Risk

1) Common risk is also called:

A) diversifiable risk.

B) correlated risk.

C) uncorrelated risk.

D) independent risk.

*Use the following information to answer the problem(s) below.*

Consider two banks. Bank A has 1000 loans outstanding each for $100,000, that it expects to be fully repaid today. Each of Bank A's loans have a 6% probability of default, in which case the bank will receive $0 for each of the defaulting loans. Bank B has 100 loans of $1 million outstanding, which it also expects to be fully repaid today. Each of Bank B's loans have a 5% probability of default, in which case the bank will receive $0 for each of the defaulting loans. The chance of default is independent across all the loans.

2) The expected overall payoff to Bank A is:

A) $5,000,000

B) $6,000,000

C) $94,000,000

D) $95,000,000

3) The expected overall payoff to Bank B is:

A) $5,000,000

B) $6,000,000

C) $94,000,000

D) $95,000,000

4) The standard deviation of the overall payoff to Bank A is closest to:

A) $689,000

B) $751,000

C) $2,179,000

D) $2,375,000

5) The standard deviation of the overall payoff to Bank B is closest to:

A) $751,000

B) $2,179,000

C) $2,375,000

D) $21,794,000

*Use the information for the question(s) below.*

Big Cure and Little Cure are both pharmaceutical companies. Big Cure presently has a potential "blockbuster" drug before the Food and Drug Administration (FDA) waiting for approval. If approved, Big Cure's blockbuster drug will produce $1 billion in net income for Big Cure. Little Cure has 10 separate less important drugs before the FDA waiting for approval. If approved, each of Little Cure's drugs would produce $100 million in net income for Little Cure. The probability of the FDA approving a drug is 50%.

6) What is the expected payoff for Big Cure's Blockbuster drug?

A) $100 million

B) $0

C) $1 billion

D) $500 million

7) What is the expected payoff for Little Cure's ten drugs?

A) $500 million

B) $100 million

C) $1 billion

D) $0

8) What is the standard deviation of Big Cure's average net income for their new blockbuster drug?

A) $0

B) $1 billion

C) $100 million

D) $500 million

9) The standard deviation of Little Cure's average net income for their ten new drugs is closest to:

A) $50 million

B) $25 million

C) $16 million

D) $500 million

10) Which pharmaceutical company faces less risk?

10.6 Diversification in Stock Portfolios

1) Which of the following is NOT a diversifiable risk?

A) The risk that oil prices rise, increasing production costs

B) The risk of a product liability lawsuit

C) The risk that the CEO is killed in a plane crash

D) The risk of a key employee being hired away by a competitor

2) Which of the following is NOT a systematic risk?

A) The risk that oil prices rise, increasing production costs

B) The risk that the Federal Reserve raises interest rates

C) The risk that the economy slows, reducing demand for your firm's products

D) The risk that your new product will not receive regulatory approval

3) Which of the following types of risk doesn't belong?

A) Market risk

B) Unique risk

C) Idiosyncratic risk

D) Unsystematic risk

4) Which of the following types of risk doesn't belong?

A) Idiosyncratic risk

B) Undiversifiable risk

C) Market risk

D) Systematic risk

5) Which of the following statements is FALSE?

A) Firm-specific news is good or bad news about the company itself.

B) Firms are affected by both systematic and firm-specific risk.

C) When firms carry both types of risk, only the firm-specific risk will be diversified when we combine many firms' stocks into a portfolio.

D) The risk premium for a stock is affected by its idiosyncratic risk.

6) Which of the following statements is FALSE?

A) Because investors are risk averse, they will demand a risk premium to hold unsystematic risk.

B) Over any given period, the risk of holding a stock is that the dividends plus the final stock price will be higher or lower than expected, which makes the realized return risky.

C) The risk premium for diversifiable risk is zero, so investors are not compensated for holding firm-specific risk.

D) Because investors can eliminate firm-specific risk "for free" by diversifying their portfolios, they will not require a reward or risk premium for holding it.

7) Which of the following statements is FALSE?

A) Fluctuations of a stock's returns that are due to firm-specific news are common risks.

B) The volatility in a large portfolio will decline until only the systematic risk remains.

C) When we combine many stocks in a large portfolio, the firm-specific risks for each stock will average out and be diversified.

D) The risk premium of a security is determined by its systematic risk and does not depend on its diversifiable risk.

8) Consider a portfolio that consists of an equal investment in 20 firms. For each of these firms, there is a 70% probability that the firms will have a 16% return and a 30% that they will have a -8% return. Each of these firms' returns is independent of all others. The standard deviation of this portfolio is closest to:

A) 2.5%

B) 4.2%

C) 8.8%

D) 11.0%

*Use the information for the question(s) below.*

Consider an economy with two types of firms, S and I. S firms always move together, but I firms move independently of each other. For both types of firm there is a 70% probability that the firm will have a 20% return and a 30% probability that the firm will have a -30% return.

9) What is the expected return for an individual firm?

A) 14%

B) 3%

C) 5%

D) -5%

10) The standard deviation for the return on an individual firm is closest to:

A) 23.0%

B) 5.25%

C) 15.0%

D) 10.0%

11) The standard deviation for the return on a portfolio of 20 type S firms is closest to:

A) 5.10%

B) 23.0%

C) 15.0%

D) 5.25%

12) The standard deviation for the return on an portfolio of 20 type I firms is closest to:

A) 5.25%

B) 5.10%

C) 15.0%

D) 23.0%

10.7 Measuring Systematic Risk

*Use the following information to answer the question(s) below.*

Suppose that the market portfolio is equally likely to increase by 24% or decrease by 8%. Security "X" goes up on average by 29% when the market goes up and goes down by 11% when the market goes down. Security "Y" goes down on average by 16% when the market goes up and goes up by 16% when the market goes down. Security "Z" goes up on average by 4% when the market goes up and goes up by 4% when the market goes down.

1) The beta for security "X" is closest to:

A) 0

B) 0.80

C) 1.00

D) 1.25

2) The beta for security "Y" is closest to:

A) -1.00

B) -0.25

C) 0.00

D) 0.25

3) The beta for security "Z" is closest to:

A) -1.00

B) -0.25

C) 0.00

D) 0.25

4) The risk-free rate is closest to:

A) 0%

B) 4%

C) 8%

D) 16%

5) The expected return on the market portfolio is closest to:

A) 0%

B) 4%

C) 8%

D) 16%

6) The expected return on security "Y" is closest to:

A) 0%

B) 4%

C) 10%

D) 15%

7) The expected return on security with a beta of 0.8 is closest to:

A) 0.0%

B) 3.2%

C) 6.4%

D) 7.2%

8) The expected return on security with a beta of 1.2 is closest to:

A) 4.8%

B) 8.0%

C) 8.8%

D) 9.6%

9) The expected return on security with a beta of 0 is closest to:

A) -4.0%

B) 0.0%

C) 3.2%

D) 4.0%

10) The expected return on security with a beta of 1 is closest to:

A) -4.0%

B) 3.2%

C) 4.0%

D) 8.0%

10.8 Beta and the Cost of Capital

*Use the following information to answer the question(s) below.*

|  |  |  |
| --- | --- | --- |
| Company | Ticker | Beta |
| Ford Motor Company | F | 2.77 |
| International Business Machines | IBM | 0.73 |
| Merck | MRK | 0.90 |

1) If the market risk premium is 6% and the risk-free rate is 4%, then the expected return of investing in Ford Motor Company is closest to:

A) 10.0%

B) 16.2%

C) 17.1%

D) 20.6%

2) If the market risk premium is 6% and the risk-free rate is 4%, then the expected return of investing in Merck is closest to:

A) 5.4%

B) 9.4%

C) 10.0%

D) 10.4%

3) If the expected return on the market is 11% and the risk-free rate is 4%, then the expected return of investing in IBM is closest to:

A) 9.1%

B) 10.3%

C) 11.0%

D) 12.0%

4) If the expected return on the market is 11% and the expected return of investing in Merck is 10.35%, then the risk-free rate must be:

A) 3.0%

B) 4.0%

C) 4.5%

D) 5.0%

5) If the risk-free rate is 5% and the expected return of investing in Merck is 11.3%, then the expected return on the market must be:

A) 8.0%

B) 10.0%

C) 10.4%

D) 12.0%

6) Suppose that Luther's beta is 0.9. If the market risk premium is 8% and the risk-free interest rate is 4%, then then expected return for Luther stock is?

A) 7.6%

B) 11.6%

C) 11.2%

D) 12.9%

7) Suppose that KAN's beta is 1.5. If the market risk premium is 8% and the risk-free interest rate is 4%, then then expected return for KAN stock is?

A) 8.0%

B) 16.0%

C) 13.5%

D) 10.0%

8) Suppose that Gold Digger's beta is -0.8. If the market risk premium is 8% and the risk-free interest rate is 4%, then the expected return for Gold Digger's stock is?

A) -2.4%

B) 4.8%

C) 2.4%

D) 10.4%

9) Which of the following statements is FALSE?

A) The Capital Asset Pricing Model is the most important method for estimating the cost of capital that is used in practice.

B) Because the risk that determines expected returns is unsystematic risk, which is measured by beta, the cost of capital for an investment is the expected return available on securities with the same beta.

C) A common assumption is that the project has the same risk as the firm.

D) To determine a project's cost of capital we need to estimate its beta.

*Use the information for the question(s) below.*

Suppose that in the coming year, you expect Exxon-Mobil stick to have a volatility of 42% and a beta of 0.9, and Merck's stock to have a volatility of 24% and a beta of 1.1. The risk free interest rate is 4% and the market's expected return is 12%.

10) Which stock has the highest total risk?

A) Merck since it has a lower volatility

B) Merck since it has a higher Beta

C) Exxon-Mobil since it has a higher volatility

D) Exxon-Mobil since it has a lower beta

11) Which stock has the highest systematic risk?

A) Merck since it has a higher Beta

B) Exxon-Mobil since it has a lower beta

C) Exxon-Mobil since it has a higher volatility

D) Merck since it has a lower volatility

12) The cost of capital for a project with the same beta as Exxon Mobil's stock is closest to:

A) 11.6%

B) 11.2%

C) 12.8%

D) 7.6%

13) The cost of capital for a project with the same beta as Merck's stock is closest to:

A) 11.2%

B) 12.8%

C) 12.4%

D) 11.6%

14) Which of the following is consistent with the CAPM and efficient capital markets?

A) A security with a beta of 1 has a return last year of 8% when the market has a return of 12%.

B) Small stocks with a beta of 1.5 tend to have higher returns on average than large stocks with a beta of 1.5.

C) A security with only diversifiable risk has an expected return that exceeds the risk-free interest rate.

D) A security with only systematic risk has an expected return that exceeds the risk-free interest rate.

15) Which of the following statements is FALSE?

A) If the market portfolio were not efficient, investors could find strategies that would "beat the market" with higher average returns and lower risk.

B) The CAPM states that the cost of capital depends only on systematic risk.

C) Efficient capital markets is a much stronger hypothesis than the CAPM.

D) The market portfolio is an efficient portfolio.

16) What is the market portfolio?

***Corporate Finance, 4e, Global Edition* (Berk / DeMarzo)**

**Chapter 11 Optimal Portfolio Choice and the Capital Asset Pricing Model**

11.1 The Expected Return of a Portfolio

1) Which of the following statements is FALSE?

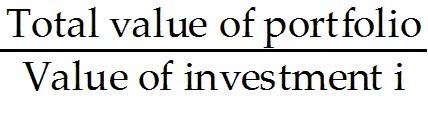
A) Without trading, the portfolio weights will decrease for the stocks in the portfolio whose returns are above the overall portfolio return.

B) The expected return of a portfolio is simply the weighted average of the expected returns of the investments within the portfolio.

C) Portfolio weights add up to 1 so that they represent the way we have divided our money between the different individual investments in the portfolio.

D) A portfolio weight is the fraction of the total investment in the portfolio held in an individual investment in the portfolio.

2) Which of the following equations is INCORRECT?

A) *xi* = 

B) *Rp* = *Σi xiRi*

C) *Rp* = *x*1*R*1 + *x*2*R*2 + ... + *xnRn*

D) *E*[*Rp*] = *E*[*Σi xiRi*]

*Use the information for the question(s) below.*

Suppose you invest $20,000 by purchasing 200 shares of Abbott Labs (ABT) at $50 per share, 200 shares of Lowes (LOW) at $30 per share, and 100 shares of Ball Corporation (BLL) at $40 per share.

3) The weight on Abbott Labs in your portfolio is:

A) 50%

B) 40%

C) 30%

D) 20%

4) The weight on Lowes in your portfolio is:

A) 40%

B) 20%

C) 50%

D) 30%

5) The weight on Ball Corporation in your portfolio is:

A) 50%

B) 40%

C) 20%

D) 30%

6) Suppose over the next year Ball has a return of 12.5%, Lowes has a return of 20%, and Abbott Labs has a return of -10%. The return on your portfolio over the year is:

A) 0%

B) 7.5%

C) 3.5%

D) 5.0%

7) Suppose over the next year Ball has a return of 12.5%, Lowes has a return of 20%, and Abbott Labs has a return of -10%. The value of your portfolio over the year is:

A) $21,000

B) $20,000

C) $20,700

D) $21,500

8) Suppose over the next year Ball has a return of 12.5%, Lowes has a return of 20%, and Abbott Labs has a return of -10%. The weight on Ball Corporation in your portfolio after one year is closest to:

A) 20.0%

B) 12.5%

C) 20.7%

D) 21.7%

9) Suppose over the next year Ball has a return of 12.5%, Lowes has a return of 20%, and Abbott Labs has a return of -10%. The weight on Abbott Labs in your portfolio after one year is closest to:

A) -10.0%

B) 43.5%

C) 45.0%

D) 50.0%

10) Suppose over the next year Ball has a return of 12.5%, Lowes has a return of 20%, and Abbott Labs has a return of -10%. The weight on Lowes in your portfolio after one year is closest to:

A) 20.0%

B) 34.8%

C) 30.0%

D) 36.0%

11) Suppose you invest $15,000 in Merck stock and $25,000 in Home Depot stock. You expect a return of 16% for Merck and 12% for Home Depot. What is the expected return on your portfolio?

A) 13.50%

B) 14.00%

C) 13.75%

D) 14.50%

12) Suppose you invest $15,000 in Merck stock and $25,000 in Home Depot stock. You receive an actual return of -8% for Merck and 12% for Home Depot. What is the actual return on your portfolio?

A) 4.50%

B) 4.00%

C) 10.00%

D) 2.00%

11.2 The Volatility of a Two-Stock Portfolio

1) Which of the following statements is FALSE?

A) The covariance and correlation allow us to measure the co-movement of returns.

B) Correlation is the expected product of the deviations of two returns.

C) Because the prices of the stocks do not move identically, some of the risk is averaged out in a portfolio.

D) The amount of risk that is eliminated in a portfolio depends on the degree to which the stocks face common risks and their prices move together.

2) Which of the following statements is FALSE?

A) While the sign of the correlation is easy to interpret, its magnitude is not.

B) Independent risks are uncorrelated.

C) When the covariance equals 0, the returns are uncorrelated.

D) To find the risk of a portfolio, we need to know more than the risk and return of the component stocks; we need to know the degree to which the stocks' returns move together.

3) Which of the following statements is FALSE?

A) Dividing the covariance by the volatilities ensures that correlation is always between -1 and +1.

B) Volatility is the square root of variance.

C) The closer the correlation is to 0, the more the returns tend to move together as a result of common risk.

D) If two stocks move together, their returns will tend to be above or below average at the same time, and the covariance will be positive.

4) Which of the following statements is FALSE?

A) Stock returns will tend to move together if they are affected similarly by economic events.

B) Stocks in the same industry tend to have more highly correlated returns than stocks in different industries.

C) Almost all of the correlations between stocks are negative, illustrating the general tendency of stocks to move together.

D) With a positive amount invested in each stock, the more the stocks move together and the higher their covariance or correlation, the more variable the portfolio will be.

5) Which of the following statements is FALSE?

A) A stock's return is perfectly positively correlated with itself.

B) When the covariance equals 0, the stocks have no tendency to move either together or in opposition of one another.

C) The closer the correlation is to -1, the more the returns tend to move in opposite directions.

D) The variance of a portfolio depends only on the variance of the individual stocks.

6) Which of the following statements is FALSE?

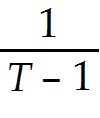
A) If two stocks move in opposite directions, one will tend to be above average when to other is below average, and the covariance will be negative.

B) The correlation between two stocks has the same sign as their covariance, so it has a similar interpretation.

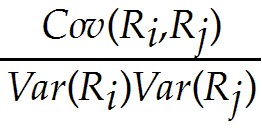
C) The covariance of a stock with itself is simply its variance.

D) The covariance allows us to gauge the strength of the relationship between stocks.

7) Which of the following equations is INCORRECT?

A) *Cov*(*Ri*,*Rj*) = Σ(*Ri* - *Ri*)(*Rj* - *Rj*)

B) *Var*(*Rp*) = *x*12*Var*(*R*1) + *x*22*Var*(*R*2) + 2*X*1*X*2*Cov*(*R*1,*R*2)

C) *Corr*(*Ri*,*Rj*) = 

D) *Cov*(*Ri*,*Rj*) = *E*[(*Ri* - *E*[*Ri*])(*Rj* - *E*[*Rj*])]

*Use the table for the question(s) below.*

Consider the following returns:

|  |  |  |  |
| --- | --- | --- | --- |
| **Year End** | **Stock X**  **Realized Return** | **Stock Y Realized Return** | **Stock Z**  **Realized Return** |
| 2004 | 20.1% | -14.6% | 0.2% |
| 2005 | 72.7% | 4.3% | -3.2% |
| 2006 | -25.7% | -58.1% | -27.0% |
| 2007 | 56.9% | 71.1% | 27.9% |
| 2008 | 6.7% | 17.3% | -5.1% |
| 2009 | 17.9% | 0.9% | -11.3% |

8) The covariance between Stock X's and Stock Y's returns is closest to:

A) 0.10

B) 0.29

C) 0.12

D) 0.69

9) The Volatility on Stock X's returns is closest to:

A) 35%

B) 10%

C) 13%

D) 42%

10) The Volatility on Stock Y's returns is closest to:

A) 35%

B) 31%

C) 42%

D) 18%

11.3 The Volatility of a Large Portfolio

1) Which of the following statements is FALSE?

A) The variance of a portfolio is equal to the weighted average correlation of each stock within the portfolio.

B) The variance of a portfolio is equal to the sum of the covariances of the returns of all pairs of stocks in the portfolio multiplied by each of their portfolio weights.

C) The variance of a portfolio is equal to the weighted average covariances of each stock within the portfolio.

D) The volatility declines as the number of stocks in a portfolio grows.

2) Which of the following statements is FALSE?

A) The volatility declines as the number of stocks in a portfolio grows.

B) An equally weighted portfolio is a portfolio in which the same amount is invested in each stock.

C) As the number of stocks in a portfolio grows large, the variance of the portfolio is determined primarily by the average covariance among the stocks.

D) When combining stocks into a portfolio that puts positive weight on each stock, unless all of the stocks are uncorrelated with the portfolio, the risk of the portfolio will be lower than the weighted average volatility of the individual stocks.

3) Which of the following statements is FALSE?

A) The expected return of a portfolio is equal to the weighted average expected return, but the volatility of a portfolio is less than the weighted average volatility.

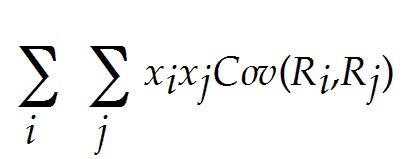
B) Each security contributes to the volatility of the portfolio according to its volatility, scaled by its covariance with the portfolio, which adjusts for the fraction of the total risk that is common to the portfolio.

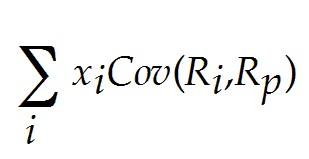
C) Nearly half of the volatility of individual stocks can be eliminated in a large portfolio as a result of diversification.

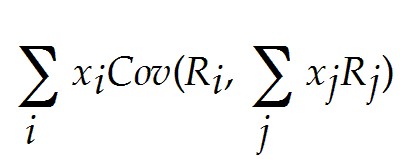
D) The overall variability of the portfolio depends on the total co-movement of the stocks within it.

4) Which of the following formulas is INCORRECT?

A) Variance of an equally Weighted Portfolio = (1 - )(Average Variance of Individual Stocks) + (Average covariance between the stocks)

B) Variance of a portfolio = 

C) Variance of a portfolio = 

D) Variance of a portfolio = 

5) Consider an equally weighted portfolio that contains five stocks. If the average volatility of these stocks is 40% and the average correlation between the stocks is .5, then the volatility of this equally weighted portfolio is closest to:

A) .17

B) .03

C) .41

D) .19

6) Consider an equally weighted portfolio that contains 20 stocks. If the average volatility of these stocks is 35% and the average correlation between the stocks is .4, then the volatility of this equally weighted portfolio is closest to:

A) .17

B) .41

C) .14

D) .37

7) Consider an equally weighted portfolio that contains 100 stocks. If the average volatility of these stocks is 50% and the average correlation between the stocks is .7, then the volatility of this equally weighted portfolio is closest to:

A) .72

B) .63

C) .40

D) .50

*Use the table for the question(s) below.*

Consider the following covariances between securities:

|  |  |  |  |
| --- | --- | --- | --- |
|  | *Duke* | *Microsoft* | *Wal-Mart* |
| Duke | 0.0568 | -0.0193 | 0.0037 |
| Microsoft | -0.0193 | 0.2420 | 0.1277 |
| Wal-Mart | 0.0037 | 0.1277 | 0.1413 |

8) What is the variance on a portfolio that has $2000 invested in Duke Energy, $3000 invested in Microsoft, and $5000 invested in Wal-Mart stock?

9) What is the variance on a portfolio that has $3000 invested in Duke Energy, $4000 invested in Microsoft, and $3000 invested in Wal-Mart stock?

11.4 Risk Versus Return: Choosing an Efficient Portfolio

1) Which of the following statements is FALSE?

A) We say a portfolio is an efficient portfolio whenever it is possible to find another portfolio that is better in terms of both expected return and volatility.

B) We can rule out inefficient portfolios because they represent inferior investment choices.

C) The volatility of the portfolio will differ, depending on the correlation between the securities in the portfolio.

D) Correlation has no effect on the expected return on a portfolio.

2) Which of the following statements is FALSE?

A) When stocks are perfectly positively correlated, the set of portfolios is identified graphically by a straight line between them.

B) An investor seeking high returns and low volatility should only invest in an efficient portfolio.

C) When the correlation between securities is less than 1, the volatility of the portfolio is reduced due to diversification.

D) Efficient portfolios can be easily ranked, because investors will choose from among them those with the highest expected returns.

3) Which of the following statements is FALSE?

A) We say a portfolio is long those stocks that have negative portfolio weights.

B) The efficient portfolios are those portfolios offering the highest possible expected return for a given level of volatility.

C) When two stocks are perfectly negatively correlated, it becomes possible to hold a portfolio that bears absolutely no risk.

D) The lower the correlation of the securities in a portfolio the lower the volatility we can obtain.

4) Which of the following statements is FALSE?

A) A short sale is a transaction in which you buy a stock that you do not own and then agree to sell that stock back in the future.

B) The efficient portfolios are those portfolios offering the lowest possible level of volatility for a given level of expected return.

C) A positive investment in a security can be referred to as a long position in the security.

D) It is possible to invest a negative amount in a stock or security, which is called a negative position.

5) Which of the following statements is FALSE?

A) Graphically, the efficient portfolios are those on the northeast edge of the set of possible portfolios, an area which we call the efficient frontier.

B) To arrive at the best possible set of risk and return opportunities, we should keep adding stocks until all investment opportunities are represented.

C) We say a portfolio is short those stocks that have negative portfolio weights.

D) Adding new investment opportunities allows for greater diversification and improves the efficient frontier.

6) Suppose you have $10,000 in cash to invest. You decide to sell short $5000 worth of Kinston stock and invest the proceeds from your short sale, plus your $10,000 into one-year U.S. treasury bills earning 5%. At the end of the year, you decide to liquidate your portfolio. Kinston Industries has the following realized returns:

|  |  |  |  |
| --- | --- | --- | --- |
|  | **P0** | **Div1** | **P1** |
| Kinston | $25.00 | $1.00 | $29.00 |

The return on your portfolio is closest to:

A) -0.5%

B) 13.5%

C) -2.5%

D) 14.5%

*Use the table for the question(s) below.*

Consider the following expected returns, volatilities, and correlations:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Stock** | **Expected Return** | **Standard Deviation** | **Correlation with Duke Energy** | **Correlation with Microsoft** | **Correlation with Wal-Mart** |
| Duke Energy | 14% | 6% | 1.0 | -1.0 | 0.0 |
| Microsoft | 44% | 24% | -1.0 | 1.0 | 0.7 |
| Wal-Mart | 23% | 14% | 0.0 | 0.7 | 1.0 |

7) Consider a portfolio consisting of only Duke Energy and Microsoft. The percentage of your investment (portfolio weight) that you would place in Duke Energy stock to achieve a risk-free investment would be closest to:

A) 15%

B) 40%

C) 23%

D) 10%

8) The expected return of a portfolio that is equally invested in Duke Energy and Microsoft is closest to:

A) 28%

B) 29%

C) 24%

D) 23%

9) The volatility of a portfolio that is equally invested in Duke Energy and Microsoft is closest to:

A) 8%

B) 9%

C) 11%

D) 6%

10) The expected return of a portfolio that consists of a long position of $10,000 in Wal-Mart and a short position of $2000 in Microsoft is closest to:

A) 21%

B) 12%

C) 27%

D) 18%

11.5 Risk-Free Saving and Borrowing

1) Which of the following statements is FALSE?

A) A portfolio that consists of a long position in the risk-free investment is known as a levered portfolio.

B) The optimal portfolio will not depend on the investor's personal tradeoff between risk and return.

C) The volatility of the risk-free investment is zero.

D) Our total volatility is only a fraction of the volatility of the efficient portfolio, based on the amount we invest in the risk free asset.

2) Which of the following statements is FALSE?

A) Margin investing is a risky investment strategy.

B) Because our return on the risk-free investments is fixed and does not move with (or against) our portfolio, the correlation between the risk-free investment and the portfolio is always equal to one.

C) Short selling the risk free investment is equivalent to borrowing money at the risk-free interest rate through a standard loan.

D) Margin investing can provide higher expected returns than investing in the efficient portfolio using only the funds we have available.

3) Which of the following statements is FALSE?

A) The Sharpe ratio measures the ratio of volatility-to-reward provided by a portfolio.

B) Borrowing money to invest in stocks is referred to as buying stocks on margin.

C) The Sharpe ratio is the number of stand deviations the portfolio's return would have to fall to under-perform the risk-free investment.

D) The slope of the line through a given portfolio is often referred to as the Sharpe ratio of the portfolio.

4) Which of the following statements is FALSE?

A) The tangent portfolio is efficient and that, once we include the risk-free investment, all efficient portfolios are combinations of the risk-free investment and the tangent portfolio.

B) The optimal portfolio of risky investments depends on how conservative or aggressive the investor is.

C) By combining the efficient portfolio with the risk-free investment, an investor will earn the highest possible expected return for any level of volatility her or she is willing to bear.

D) The efficient portfolio is the tangent portfolio, the portfolio with the highest Sharpe ratio in the economy.

5) Which of the following statements is FALSE?

A) If we increase the fraction invested in the efficient portfolio beyond 100% we are short selling the risk-free investment.

B) As we increase the fraction invested in the efficient portfolio, we increase our risk premium but not our risk proportionately.

C) To earn the highest possible expected return for any level of volatility we must find the portfolio that generates the steepest possible line when combined with the risk-free investment.

D) Every investor should invest in the tangent portfolio independent of his or her taste for risk.

6) Which of the following statements is FALSE?

A) An investor's preferences will determine only how much to invest in the tangent or efficient portfolio versus the risk-free investment.

B) Conservative investors will invest a small amount in the tangent or efficient portfolio, choosing a portfolio on the line near the risk-free investment.

C) Only aggressive investors will choose to hold the portfolio of risky assets, the tangent or efficient portfolio.

D) Aggressive investors will invest more in the tangent portfolio choosing a portfolio that is near the tangent portfolio or even beyond it by buying stocks on margin.

7) Which of the following equations is INCORRECT?

A) *E*[*Rxp*] = *rf* + *x*(*E*[*Rp*] - *rf*)

B) *E*[*Rxp*] = (1 - *x*)*rf* + *xE*[*Rp*]

C) Sharpe ratio = 

D) *SD*( *Rxp*) = *xSD*(*Rp*)

*Use the information for the question(s) below.*

Suppose you have $10,000 in cash and you decide to borrow another $10,000 at a 6% interest rate to invest in the stock market. You invest the entire $20,000 in an exchange traded fund (ETF) with a 12% expected return and a 20% volatility.

8) The expected return on your investment is closest to:

A) 18%

B) 20%

C) 12%

D) 24%

9) The volatility of your investment is closest to:

A) 40%

B) 20%

C) 30%

D) 24%

10) Assume that the EFT you invested in returns -10%, then the realized return on your investment is closest to:

A) -20%

B) -10%

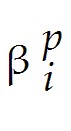
C) -24%

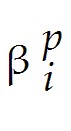
D) -26%

11.6 The Efficient Portfolio and Required Returns

1) Which of the following statements is FALSE?

A) A portfolio is efficient if it has the highest possible Sharpe ratio; that is it is efficient if it provides the largest increase in expected return possible for a given increase in volatility.

B) The required return for an investment is equal to a risk premium that is equal to the risk premium of the investor's current portfolio scaled by .

C) Increasing the investment in investment I will increase the Sharpe ratio of portfolio P if its expected return E[Ri] exceeds the required return ri, which is given by *ri* = *rf* +  × (*E*[*Rp*] - *rf*).

D) If a security *i*'s expected return is less than the required return *ri*, we should reduce our holding of security *i*.

2) Which of the following statements is FALSE?

A) The Sharpe ratio of the portfolio tells us how much our expected return will increase for a given increase in volatility.

B) We should continue to trade securities until the expected return of each security equals its required return.

C) The required return is the expected return that is necessary to compensate for the risk that an investment will contribute to the portfolio.

D) If security *i*'s required return exceeds its expected return, then adding more of it will improve the performance of the portfolio.

3) Which of the following statements is FALSE?

A) Because all other risk is diversifiable, it is an investment's beta with respect to the efficient portfolio that measures its sensitivity to systematic risk, and therefore determines its cost of capital.

B) If a security's expected return exceeds its required return given our current portfolio, then we can improve the performance of our portfolio by adding more of the security.

C) The appropriate risk premium for an investment can be determined from its beta with the efficient portfolio.

D) As we buy shares of a security i, its correlation with our portfolio *P* will increase, ultimately raising its required return until *E*[*Ri*] = *Rp*.

*Use the following information to answer the question(s) below.*

|  |  |  |  |
| --- | --- | --- | --- |
| **Firm** | **Portfolio**  **Weight** | **Volatility** | **Correlation w/**  **Market Portfolio** |
| Taggart Transcontinental | 0.25 | 14% | 0.7 |
| Wyatt Oil | 0.35 | 18% | 0.6 |
| Rearden Metal | 0.40 | 15% | 0.5 |

The volatility of the market portfolio is 10%, the expected return on the market is 12%, and the risk-free rate of interest is 4%.

4) The Sharpe Ratio for the market portfolio is closest to:

A) 0.40

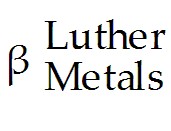
B) 0.48

C) 0.56

D) 0.80

*Use the information for the question(s) below.*

You are presently invested in the Luther Fund, a broad based mutual fund that invests in stocks and other securities. The Luther Fund has an expected return of 14% and a volatility of 20%. Risk-free Treasury bills are currently offering returns of 4%. You are considering adding a precious metals fund to your current portfolio. The metals fund has an expected return of 10%, a volatility of 30%, and a correlation of -.20 with the Luther Fund.

5) The beta of the precious metals fund with the Luther Fund  is closest to:

A) -0.3

B) -0.6

C) 0.3

D) 0.6

6) The expected return on the precious metals fund is closest to:

A) -3%

B) 4%

C) 1%

D) 10%

*Use the information for the question(s) below.*

Sisyphean industries is seeking to raise capital from a large group of investors to fund a new project. Suppose that the efficient portfolio has an expected return of 14% and a volatility of 20%. Sisyphean's new project is expected to have a volatility of 40% and a 70% correlation with the efficient portfolio. The risk-free rate is 4%.

7) The beta for Sisyphean's new project is closest to:

A) 1.25

B) 1.40

C) 0.70

D) 1.75

8) The required return for Sisyphean's new project is closest to:

A) 24%

B) 14%

C) 18%

D) 10%

*Use the information for the question(s) below.*

You are presently invested in the Luther Fund, a broad based mutual fund that invests in stocks and other securities. The Luther Fund has an expected return of 14% and a volatility of 20%. Risk-free Treasury bills are currently offering returns of 4%. You are considering adding a precious metals fund to your current portfolio. The metals fund has an expected return of 10%, a volatility of 30%, and a correlation of -.20 with the Luther Fund.

9) Will adding the precious metals fund improve your portfolio?

*Use the following information to answer the question(s) below.*

Suppose that all stocks can be grouped into two mutually exclusive portfolios (with each stock appearing in only one portfolio): growth stocks and value stocks. Assume that these two portfolios are equal in size (market value), the correlation of their returns is equal to 0.6, and the portfolios have the following characteristics:

|  |  |  |
| --- | --- | --- |
|  | **Expected**  **Return** | **Volatility** |
| Value Stocks | 0.12 | 14% |
| Growth Stocks | 0.15 | 24% |

The risk free rate is 3.5%.

10) The Sharpe ratio for the value stock portfolio is closest to:

A) .53

B) .58

C) .61

D) .79

11.7 The Capital Asset Pricing Model

*Use the following information to answer the question(s) below.*

Your investment portfolio consists of $10,000 worth of Google stock. Suppose that the risk-free rate is 4%, Google stock has an expected return of 14% and a volatility of 35%, and the market portfolio has an expected return of 12% and a volatility of 18%. Assume that the CAPM assumptions hold.

1) What alternative investment has the lowest possible volatility while having the same expected return as Google?

A) -25% in the risk-free asset and +125% in the market portfolio

B) -20% in the risk-free asset and +120% in the market portfolio

C) 0% in the risk-free asset and +100% in the market portfolio

D) 20% in the risk-free asset and +80% in the market portfolio

2) The volatility of the alternative investment that has the lowest possible volatility while having the same expected return as Google is closest to:

A) 18.0%

B) 22.5%

C) 23.4%

D) 35.0%

3) What alternative investment has the highest possible expected return while having the same volatility as Google?

A) -25% in the risk-free asset and +125% in the market portfolio

B) -20% in the risk-free asset and +120% in the market portfolio

C) -94% in the risk-free asset and +194% in the market portfolio

D) 6% in the risk-free asset and +94% in the market portfolio

4) The expected return on the alternative investment having the highest possible expected return while having the same volatility as Google is closest to?

A) 21.6%

B) 19.6%

C) 23.4%

D) 35.0%

*Use the following information to answer the question(s) below.*

Suppose that all stocks can be grouped into two mutually exclusive portfolios (with each stock appearing in only one portfolio): growth stocks and value stocks. Assume that these two portfolios are equal in size (market value), the correlation of their returns is equal to 0.6, and the portfolios have the following characteristics:

|  |  |  |
| --- | --- | --- |
|  | **Expected**  **Return** | **Volatility** |
| Value Stocks | 0.12 | 14% |
| Growth Stocks | 0.15 | 24% |

The risk free rate is 3.5%.

5) The expected return on the market portfolio (which is a 50-50 combination of the value and growth portfolios) is closest to:

A) 12.0%

B) 13.5%

C) 15.0%

D) 19.0%

6) The volatility on the market portfolio (which is a 50-50 combination of the value and growth portfolios) is closest to:

A) 13.5%

B) 15.2%

C) 17.1%

D) 19.0%

7) Which of the following statements is FALSE?

A) Because all investors should hold the risky securities in the same proportions as the efficient portfolio, their combined portfolio will also reflect the same proportions as the efficient portfolio.

B) When the CAPM assumptions hold, choosing an optimal portfolio is relatively straightforward: it is the combination of the risk-free investment and the market portfolio.

C) Graphically, when the tangent line goes through the market portfolio, it is called the security market line (SML).

D) A portfolio's risk premium and volatility are determined by the fraction that is invested in the market.

8) Which of the following is NOT an assumption used in deriving the Capital Asset Pricing Model (CAPM)?

A) Investors have homogeneous expectations regarding the volatilities, correlation, and expected returns of securities.

B) Investors have homogeneous risk adverse preferences toward taking on risk.

C) Investors hold only efficient portfolios of traded securities, that is portfolios that yield the maximum expected return for the given level of volatility.

D) Investors can buy and sell all securities at competitive market prices without incurring taxes or transactions cost and can borrow and lend at the risk-free interest rate.

9) Which of the following statements is FALSE?

A) Short-term margin loans from a broker are often 1% to 2% lower than the rates paid on short-term Treasury securities.

B) In the real world investors have different information and expectations regarding securities.

C) The SML is still valid when interest rates differ.

D) When borrowing and lending occur at different rates there are different tangent portfolios identified.

10) Which of the following statements is FALSE?

A) A combination of portfolios on the efficient frontier of risky investments is also on the efficient frontier of risky investments.

B) The conclusion of the CAPM that investors should hold the market portfolio combined with the risk-free investment depends on the quality of an investor's information.

C) The SML holds with some rate *r*\* between *rs* and *rb* in place of *rf*, where *r*\* depends on the proportion of savers and borrowers in the economy.

D) In reality, investors have different information and spend varying amounts of effort on research for assorted stocks.

11) Which of the following statements is FALSE?

A) When an investor chooses her optimal portfolio, she will do so by finding the tangent line using the risk-free rate that corresponds to her investment horizon.

B) If the market portfolio is not efficient, savvy investors who recognize that the market portfolio is not optimal will push prices and expected returns back into balance.

C) Even though different investors may research different stocks, their information will not impact the market portfolio since there is no way to share this information with other investors.

D) In the real world, borrowers pay higher interest rates than savers receive.

11.8 Determining the Risk Premium

*Use the following information to answer the question(s) below.*

|  |  |  |  |
| --- | --- | --- | --- |
| **Firm** | **Portfolio**  **Weight** | **Volatility** | **Correlation w/**  **Market Portfolio** |
| Taggart Transcontinental | 0.25 | 14% | 0.7 |
| Wyatt Oil | 0.35 | 18% | 0.6 |
| Rearden Metal | 0.40 | 15% | 0.5 |

The volatility of the market portfolio is 10%, the expected return on the market is 12%, and the risk-free rate of interest is 4%.

1) The beta for Taggart Transcontinental is closest to:

A) 0.75

B) 0.80

C) 1.00

D) 1.10

2) The beta for Wyatt Oil is closest to:

A) 0.75

B) 0.80

C) 1.00

D) 1.10

3) The expected return for Wyatt Oil is closest to:

A) 11.4%

B) 11.8%

C) 12.0%

D) 12.6%

4) The expected return for Rearden Metal is closest to:

A) 10.0%

B) 11.4%

C) 11.8%

D) 12.0%

5) The beta for the market is closest to:

A) 0.80

B) 1.00

C) 1.10

D) 1.25

6) The beta for the portfolio of the three stocks is closest to:

A) 0.92

B) 0.94

C) 1.00

D) 1.02

7) The expected return on the portfolio of the three stocks is closest to:

A) 10.0%

B) 11.4%

C) 11.8%

D) 12.0%

8) The Sharpe Ratio for Rearden Metal is closest to:

A) 0.40

B) 0.56

C) 0.80

D) 1.00

9) The Sharpe Ratio for Wyatt Oil is closest to:

A) 0.40

B) 0.48

C) 0.56

D) 0.80

10) Suppose that Google stock has a beta of 1.06 and Boeing stock has a beta of 1.31. The beta on a portfolio that consists of 30% Google stock and 70% Boeing stock is closest to:

A) 1.06

B) 1.14

C) 1.19

D) 1.24

***Corporate Finance, 4e, Global Edition* (Berk / DeMarzo)**

**Chapter 12 Estimating the Cost of Capital**

12.1 The Equity Cost of Capital

*Use the following information to answer the question(s) below.*

|  |  |  |
| --- | --- | --- |
|  | **Beta** | **Volatility** |
| "Eenie" | 0.45 | 20% |
| "Meenie" | 0.75 | 18% |
| "Miney" | 1.05 | 35% |
| "Moe" | 1.20 | 25% |

Assume that the risk-free rate of interest is 3% and you estimate the market's expected return to be 9%.

1) Which firm has the most total risk?

A) Eenie

B) Meenie

C) Miney

D) Moe

2) Which firm has the least market risk?

A) Eenie

B) Meenie

C) Miney

D) Moe

3) Which firm has the highest cost of equity capital?

A) Eenie

B) Meenie

C) Miney

D) Moe

4) The equity cost of capital for "Miney" is closest to:

A) 6.30%

B) 7.50%

C) 9.30%

D) 9.75%

5) The equity cost of capital for "Meenie" is closest to:

A) 4.50%

B) 7.50%

C) 9.30%

D) 9.75%

6) The risk premium for "Meenie" is closest to:

A) 4.50%

B) 7.50%

C) 9.30%

D) 9.75%

12.2 The Market Portfolio

*Use the following information to answer the question(s) below.*

Suppose all possible investment opportunities in the world are limited to the four stocks list in the table below:

|  |  |  |
| --- | --- | --- |
| **Stock** | **Price per**  **Share** | **Number of Shares**  **Outstanding** **(Millions)** |
| Taggart Transcontinental | $15.60 | 25 |
| Rearden Metal | $13.00 | 45 |
| Wyatt Oil | $29.25 | 10 |
| Nielson Motors | $26.25 | 26 |

1) The weight on Taggart Transcontinental stock in the market portfolio is closest to:

A) 15%

B) 20%

C) 25%

D) 30%

2) The weight on Wyatt Oil stock in the market portfolio is closest to:

A) 15%

B) 20%

C) 25%

D) 30%

3) Suppose that you are holding a market portfolio and you have invested $9000 in Rearden Metal. The amount that you have invested in Nielson Motors is closest to:

A) $6000

B) $7715

C) $9000

D) $10,500

4) Suppose that you are holding a market portfolio and you have invested $9000 in Rearden Metal. The amount that you have invested in Taggart Transcontinental is closest to:

A) $4500

B) $6000

C) $7715

D) $9000

5) Suppose that you have invested $30,000 invested in the market portfolio. Then the amount that you have invested in Wyatt Oil is closest to:

A) $4500

B) $6000

C) $7715

D) $9000

6) Suppose that you have invested $30,000 in the market portfolio. Then the number of shares of Rearden Metal that you hold is closest to:

A) 450 shares

B) 700 shares

C) 1400 shares

D) 2300 shares

7) Suppose that you have invested $30,000 in the market portfolio. Then the number of shares of Wyatt Oil that you hold is closest to:

A) 150 shares

B) 300 shares

C) 350 shares

D) 450 shares

8) Suppose that you are holding a market portfolio and you have invested $18,000 in Taggart Transcontinental. The number of shares of Wyatt Oil that you hold is closest to:

A) 90 shares

B) 460 shares

C) 615 shares

D) 770 shares

9) Suppose that you are holding a market portfolio and you have invested $18,000 in Taggart Transcontinental. The number of shares of Rearden Metal that you hold is closest to:

A) 780 shares

B) 925 shares

C) 1730 shares

D) 2075 shares

10) Suppose that you have $100,000 invested in the market portfolio and that the stock price of Taggart Transcontinental suddenly drops to $7.80 per share. Which of the following trades would you need to make in order to maintain your investment in the market portfolio:

1. Buy approximately 1140 shares of Taggart Transcontinental

2. Sell approximately 256 shares of Rearden Metal

3. Sell approximately 57 shares of Wyatt Oil

4. Sell approximately 148 shares of Nielson Motors

A) 1 only

B) 2 only

C) 2, 3, and 4 only

D) 1, 2, 3, and 4

E) None of the above

12.3 Beta Estimation

*Use the following information to answer the question(s) below.*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Year** | **Risk-free**  **Return** | **Market**  **Return** | **Wyatt Oil**  **Return** | **Market**  **Excess**  **Return** | **Wyatt Oil**  **Excess**  **Return** | **Beta** |
| 2007 | 3.0% | 6.0% | 5.5% | 3.0% | 2.5% | 0.833 |
| 2008 | 1.5% | -38.5% | -32.6% | .40% | -34.1% | 0.853 |
| 2009 | 1.0% | 22.5% | 19.6% | 21.5% | 18.6% | 0.865 |

1) Wyatt Oil's average historical return is closest to:

A) -2.50%

B) -3.33%

C) -4.33%

D) -5.17%

2) The Market's average historical return is closest to:

A) -2.50%

B) -3.33%

C) -4.33%

D) -5.17%

3) Wyatt Oil's average historical excess return is closest to:

A) -2.50%

B) -3.33%

C) -4.33%

D) -5.17%

4) The Market's average historical excess return is closest to:

A) -2.50%

B) -3.33%

C) -4.33%

D) -5.17%

5) Wyatt Oil's excess return for 2009 is closest to:

A) 18.6%

B) 19.6%

C) 20.0%

D) 21.5%

6) The Market's excess return for 2008 is closest to:

A) -40.0%

B) -38.5%

C) -37.0%

D) -34.1%

7) Using the average historical excess returns for both Wyatt Oil and the Market portfolio, your estimate of Wyatt Oil's Beta is closest to:

A) 0.75

B) 0.84

C) 1.00

D) 1.19

8) Using the average historical excess returns for both Wyatt Oil and the Market portfolio estimate of Wyatt Oil's Beta. When using this beta, the alpha for Wyatt oil in 2007 is closest to:

A) -0.5000%

B) -0.0250%

C) -0.0125%

D) +0.0250%

9) Using just the return data for 2009, your estimate of Wyatt Oil's Beta is closest to:

A) 0.84

B) 0.87

C) 1.00

D) 1.16

10) Using just the return data for 2008, your estimate of Wyatt Oil's Beta is closest to:

A) 0.85

B) 0.87

C) 1.00

D) 1.17

12.4 The Debt Cost of Capital

*Use the following information to answer the question(s) below.*

Consider the following information regarding corporate bonds:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Rating** | **AAA** | **AA** | **A** | **BBB** | **BB** | **B** | **CCC** |
| Average Default Rate | 0.0% | 0.1% | 0.2% | 0.5% | 2.2% | 5.5% | 12.2% |
| Recession Default Rate | 0.0% | 1.0% | 3.0% | 3.0% | 8.0% | 16.0% | 48.0% |
| Average Beta | 0.05 | 0.05 | 0.05 | 0.10 | 0.17 | 0.26 | 0.31 |

1) Wyatt Oil has a bond issue outstanding with seven years to maturity, a yield to maturity of 7.0%, and a BBB rating. The corresponding risk-free rate is 3% and the market risk premium is 5%. Assuming a normal economy, the expected return on Wyatt Oil's debt is closest to:

A) 3.0%

B) 3.5%

C) 4.9%

D) 5.5%

2) Wyatt Oil has a bond issue outstanding with seven years to maturity, a yield to maturity of 7.0%, and a BBB rating. The bondholders' expected loss rate in the event of default is 70%. Assuming a normal economy the expected return on Wyatt Oil's debt is closest to:

A) 3.0%

B) 3.5%

C) 4.9%

D) 6.7%

3) Wyatt Oil has a bond issue outstanding with seven years to maturity, a yield to maturity of 7.0%, and a BBB rating. The bondholders' expected loss rate in the event of default is 70%. Assuming the economy is in recession, then the expected return on Wyatt Oil's debt is closest to:

A) 3.5%

B) 4.9%

C) 5.5%

D) 7.0%

4) Rearden Metal has a bond issue outstanding with ten years to maturity, a yield to maturity of 8.6%, and a B rating. The corresponding risk-free rate is 3% and the market risk premium is 6%. Assuming a normal economy, the expected return on Rearden Metal's debt is closest to:

A) 0.6%

B) 1.6%

C) 4.6%

D) 6.0%

5) Rearden Metal has a bond issue outstanding with ten years to maturity, a yield to maturity of 8.6%, and a B rating. The bondholders expected loss rate in the event of default is 50%. Assuming a normal economy the expected return on Rearden Metal's debt is closest to:

A) 0.6%

B) 1.6%

C) 4.6%

D) 6.0%

6) Rearden Metal has a bond issue outstanding with ten years to maturity, a yield to maturity of 8.6%, and a B rating. The bondholders expected loss rate in the event of default is 50%. Assuming the economy is in recession, then the expected return on Rearden Metal's debt is closest to:

A) 0.6%

B) 1.6%

C) 4.6%

D) 6.0%

7) Nielson Motors plans to issue 10-year bonds that it believes will have an BBB rating. Suppose AAA bonds with the same maturity have a 3.5% yield. Assume that the market risk premium is 5% and the expected loss rate in the event of default on the bonds is 60%. The yield that these bonds will have to pay during average economic times is closest to:

A) 3.50%

B) 3.75%

C) 4.00%

D) 5.50%

8) Nielson Motors plans to issue 10-year bonds that it believes will have an BBB rating. Suppose AAA bonds with the same maturity have a 3.5% yield. Assume that the market risk premium is 5% and the expected loss rate in the event of default on the bonds is 60%. The yield that these bonds will have to pay during a recession is closest to:

A) 3.50%

B) 3.75%

C) 4.00%

D) 5.50%

12.5 A Project's Cost of Capital

*Use the following information to answer the question(s) below.*

Consider the following information regarding corporate bonds:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Rating** | **AAA** | **AA** | **A** | **BBB** | **BB** | **B** | **CCC** |
| Average Default Rate | 0.0% | 0.1% | 0.2% | 0.45% | 2.2% | 5.5% | 12.2% |
| Recession Default Rate | 0.0% | 1.0% | 3.0% | 3.0% | 8.0% | 16.0% | 48.0% |
| Average Beta | 0.05 | 0.05 | 0.05 | 0.10 | 0.17 | 0.26 | 0.31 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Company** | **Market**  **Capitalization**  **($mm)** | **Total**  **Enterprise**  **Value ($mm)** | **Equity**  **Beta** | **Debt**  **Rating** |
| Taggart Transcontinental | $4500 | 8000 | 1.1 | BBB |
| Rearden Metal | $3800 | 7200 | 1.3 | AAA |
| Wyatt Oil | $2400 | 3800 | 0.9 | A |
| Nielson Motors | $1500 | 4400 | 1.75 | BB |

1) Your estimate of the debt beta for Taggart Transcontinental would be:

A) 0.05

B) 0.10

C) 0.17

D) 1.00

2) Your estimate of the debt beta for Nielson Motors would be:

A) 0.10

B) 0.17

C) 1.00

D) 1.68

3) Your estimate of the asset beta for Taggart Transcontinental is closest to:

A) 0.42

B) 0.59

C) 0.66

D) 0.71

4) Your estimate of the asset beta for Rearden Metal is closest to:

A) 0.42

B) 0.59

C) 0.66

D) 0.71

5) Your estimate of the asset beta for Wyatt Oil is closest to:

A) 0.59

B) 0.66

C) 0.71

D) 0.90

6) Your estimate of the asset beta for Nielson Motors is closest to:

A) 0.59

B) 0.66

C) 0.71

D) 1.75

7) Suppose that because of the large need for steel in building railroad infrastructure, Taggart Transcontinental and Rearden Metal decide to form into one large conglomerate. Your estimate of the asset beta for this new conglomerate is closest to:

A) 0.42

B) 0.59

C) 0.66

D) 0.68

*Use the following information to answer the question(s) below.*

Consider the following information regarding corporate bonds:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Rating** | **AAA** | **AA** | **A** | **BBB** | **BB** | **B** | **CCC** |
| Average Default Rate | 0.0% | 0.1% | 0.2% | 0.5% | 2.2% | 5.5% | 12.2% |
| Recession Default Rate | 0.0% | 1.0% | 3.0% | 3.0% | 8.0% | 16.0% | 48.0% |
| Average Beta | 0.05 | 0.05 | 0.05 | 0.10 | 0.17 | 0.26 | 0.31 |

8) Galt Industries has a market capitalization of $50 billion, $30 billion in BBB rated debt, and $8 billion in cash. If Galt's equity beta is 1.15, then Galt's underlying asset beta is closest to:

A) 0.83

B) 0.92

C) 1.00

D) 1.15

9) Trucks R' Us has a market capitalization of $142 billion, $78 billion in BB rated debt, and $10 billion in cash. If Trucks R' Us' equity beta is 1.68, then their underlying asset beta is closest to:

A) 1.00

B) 1.20

C) 1.32

D) 1.48

10) Luther Industries has a market capitalization of $23 billion, no debt, and $4 billion in cash. If Luther's estimated equity beta is 1.32, then the beta of Luther's underlying business enterprise is closest to:

A) 1.09

B) 1.32

C) 1.48

D) 1.60

12.6 Project Risk Characteristics and Financing

*Use the following information to answer the question(s) below.*

|  |  |  |  |
| --- | --- | --- | --- |
| **Division** | **Asset**  **Beta** | **Next Period's Expected Free Cash**  **Flow ($mm)** | **Expected**  **Growth**  **Rate** |
| Oil Exploration | 1.4 | 450 | 4.0% |
| Oil Refining | 1.1 | 525 | 2.5% |
| Gas & Convenience Stores | 0.8 | 600 | 3.0% |

The risk-free rate of interest is 3% and the market risk premium is 5%.

1) The cost of capital for the oil exploration division is closest to:

A) 6.0%

B) 7.0%

C) 8.5%

D) 10.0%

2) The cost of capital for the oil refining division is closest to:

A) 6.5%

B) 7.0%

C) 8.5%

D) 10.0%

3) The value of the oil exploration division is closest to:

A) $4500

B) $7500

C) $8750

D) $10,000

4) The value of the gas and convenience store division is closest to:

A) $4500

B) $6000

C) $8600

D) $15,000

5) The overall value of Wyatt Oil (in $ millions) is closest to:

A) $25,000

B) $18,846

C) $31,250

D) $15,000

6) The overall asset beta for Wyatt Oil is closest to:

A) 0.95

B) 1.05

C) 1.15

D) 1.25

7) The overall cost of capital for Wyatt Oil is closest to:

A) 8.1%

B) 8.5%

C) 8.8%

D) 9.3%

8) Firms should adjust for execution risk by:

A) assigning a higher cost of capital to new projects.

B) ignoring execution risk since it is diversifiable.

C) capturing this risk in the expected cash flows generated by the project.

D) noticing missteps in the firm's execution of new projects.

9) One factor that can affect the market risk of a project is its degree of operating leverage, which is:

A) the relative proportion of operating assets versus non-operating assets.

B) the relative proportion of operating assets versus equity.

C) the relative proportion of operating expenses versus non-operating expenses.

D) the relative proportion of fixed versus variable costs.

10) If a project has a higher proportion of fixed to variable costs, holding the risk of its revenues constant:

A) its beta will be lower, hence its cost of capital will be lower.

B) its beta will be higher, hence its cost of capital will be higher.

C) its beta will be unaffected, since beta does not measure the sensitivity of the project's cash flows to market risk.

D) its financial leverage will be higher.

12.7 Final Thoughts on Using the CAPM

1) Which of the following is NOT considered a difficulty with regards to the CAPM?

A) Betas are not observed.

B) Expected returns are not observed.

C) The market proxy is not correct.

D) Investors risk preferences are not observed.

2) Which of the following is NOT considered to be an important choice when estimating beta?

A) The choice of the time horizon to use for estimation

B) The choice of method used to extrapolate beta

C) The choice between weekly and monthly returns

D) The choice of index used as the market portfolio

3) Which of the following statements is FALSE?

A) Many practitioners prefer to use average industry betas rather than individual stock betas.

B) When estimating beta by using past returns it is best to use the longest time horizon of returns available.

C) The CAPM predicts that a security's expected return depends on its beta with regard to the market portfolio of all risky investments available to investors.

D) If we use too short a time horizon when estimating beta, our estimate of beta will be unreliable.

4) Which of the following statements is FALSE?

A) We should be suspicious of beta estimates that are extreme relative to industry norms.

B) When using historical data, there is always the possibility of estimation error.

C) Evidence suggests that betas tend to revert toward zero over time.

D) For stocks, common practice is to use at least two years of weekly return data or five years of monthly return data when estimating beta.

5) Which of the following statements is FALSE?

A) There may be reasons to exclude certain historical data as anomalous when estimating beta.

B) Many practitioners use adjusted betas, which are calculated by averaging the estimated beta with 1.0.

C) The beta estimated from linear regression can be very sensitive to outliers, which are returns of unusually small magnitude.

D) If we use very old data to when estimating beta, they data may be unrepresentative of the current market risk of the security.

6) Which of the following statements is FALSE?

A) Many practitioners analyze other financial characteristics of a firm, when they forecast betas.

B) U.S. Treasuries are never subject to interest rate risk unless we select a maturity equal to our investment horizon.

C) If a firm where to change industries, using its historical beta would be inferior to using the beta of other firms in the new industry.

D) When using historical returns to forecast future betas, we must be mindful of changes in the environment that might cause the future to differ from the past.

7) Which of the following statements is FALSE?

A) The CAPM states that we should use the risk-free interest rate corresponding to the investment horizon of the firm's investors.

B) To determine the risk premium for a stock using the security market line, we need an estimate of the market risk premium.

C) When surveyed, the vast majority of large firms and financial analysts reported using the yields of Treasury Bills to determine the risk-free rate.

D) The risk-free interest rate is generally determined using the yields of U.S. Treasury securities, which are free from default risk.

8) Which of the following statements is FALSE?

A) The CAPM remains the predominant model used in practice to determine the equity cost of capital.

B) Low beta stocks have tended to perform somewhat better than the CAPM predicts.

C) The empirically estimated security market line is somewhat steeper than that predicted by the CAPM.

D) Some evidence suggests that the market risk premium has declined over time.

9) Which of the following statements is FALSE?

A) The imperfections in the CAPM may be critical in the context of capital budgeting and corporate finance, where errors in estimating the cost of capital are likely to be far more important than small discrepancies in the project cash flows.

B) To estimate the expected market risk premium we can look at the historical average excess return of the market over the risk free interest rate.

C) The highest beta stocks have tended to under perform what the CAPM predicts.

D) Given an assessment of an index's future cash flows, we can estimate the expected return of the market by solving for the discount rate that is consistent with the current level of the index.

10) Assume that the S&P 500 currently has a dividend yield of 3% and that on average, the dividends of S&P 500 firms have increased by about 5% per year. If the risk-free interest rate is 4%, then your estimate for the future market risk premium is:

A) 7%

B) 8%

C) 6%

D) 4%

11) Assume that the Wilshire 5000 currently has a dividend yield of 2% and that on average, the dividends of Wilshire 5000 firms have increased by about 7% per year. If the risk-free interest rate is 4%, then your estimate for the future market risk premium is:

A) 4%

B) 7%

C) 8%

D) 5%