Question 1
L2CF-ITEMSET-PQ2909-1411
LOS: LOS-7950
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium

Use the following information to answer the next 2 questions:

Altin Corporation is considering investment in the hotel business. Altin has a D/E ratio of 1.8, a before-tax cost of debt of 6.5%, and a marginal tax rate of 40%.

Paramount Corporation is a publicly-traded company that operates only in the hotel industry and has a D/E ratio of 2.2, an equity beta of 0.8 and marginal tax rate of 35%.

The risk-free rate is 5% and the expected return on the market is 12.3%.

i.
The appropriate cost of equity that Altin should use to evaluate the risk of entering the hotel business is *closest* to:

- 10.84%
- 7.40%
- 9.99%

Rationale
This Answer is Correct

$\beta_{Asset} = \beta_{Equity}/[1+(1 - t)(D/E)]$

$\beta_{Asset} = 0.8/[1+(1 - 0.35)(2.2)] = 0.3292$

$\beta_{Project} = \beta_{Asset} \times 1/1+[(1 - t)\ D/E]$

$\beta_{Project} = 0.3292 \times \{1+[(1 - 0.4) \times 1.8]\} = 0.6847$

Cost of equity = $0.05 + [0.6847 \times (0.123 - 0.05)] = 9.9983\%$

ii.
The appropriate weighted average cost of capital (WACC) that Altin should use to evaluate the risk of entering the hotel business is *closest* to:

- 6.08%
- 6.38%
- 5.15%

Rationale

This Answer is Correct

WACC = $[w_d \times r_d \times (1 - t)] + (w_e \times r_e)$

D/E ratio of 1.8 implies that:

The weight of debt in the capital structure = 1.8 / 2.8 = 0.6429

The weight of equity in the capital structure = 1 / 2.8 = 0.3571

WACC = [0.6429 × 0.065 × (1 - 0.4)] + (0.3571 × 0.1) = 6.08%

Question 2
L2R30TB-AC028-1512
LOS: LOS-7970
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium
One way to estimate an equity risk premium for an emerging market country is to estimate a premium specific to that country and add it to:

- ○ the country spread.
- ● an equity risk premium for a developed market.
- ○ the yield-to-maturity of a developed market's debt instrument.

Rationale
✗ **the country spread.**
The country spread model for estimating equity risk premiums for emerging markets is the addition of a country premium to an equity risk premium for a developed market.

Rationale
✓ **an equity risk premium for a developed market.**
The country spread model for estimating equity risk premiums for emerging markets is the addition of a country premium to an equity risk premium for a developed market.

Rationale
✗ **the yield-to-maturity of a developed market's debt instrument.**
The country spread model for estimating equity risk premiums for emerging markets is the addition of a country premium to an equity risk premium for a developed market.

Question 3
L2R30TB-AC012-1512
LOS: LOS-7950
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium
Analyst Ruby Mole has derived a beta of 1.4 from a least squares regression to use in the capital asset pricing model, but she believes this figure is too high. She is *most likely* justified in adjusting the raw beta downwards because:

- valuation is a future-looking effort so the adjustment makes the beta a more accurate prediction.
- she had too few observations in the least squares regression.
- the regression data did not cover a sufficient length of time.

Rationale
valuation is a future-looking effort so the adjustment makes the beta a more accurate prediction.
Because valuation is a future-looking effort, raw betas may be adjusted so they more accurately predict future betas. Research shows that the future beta estimates have on average most often been found to be 1.0.

Rationale
she had too few observations in the least squares regression.
Because valuation is a future-looking effort, raw betas may be adjusted so they more accurately predict future betas. Research shows that the future beta estimates have on average most often been found to be 1.0.

Rationale
the regression data did not cover a sufficient length of time.
Because valuation is a future-looking effort, raw betas may be adjusted so they more accurately predict future betas. Research shows that the future beta estimates have on average most often been found to be 1.0.

Question 4
L2CF-PQ2908-1411
LOS: LOS-7950
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium

Juan Castano wants to estimate the return on the stock of Alpha Corporation and gathers the following information:

Risk-free rate of return = 4.5%

Equity market risk premium = 7.8%

Beta = 1.15

The required return on the stock based on beta adjusted for beta drift is *closest to*:

- 13.47%
- 13.08%
- 8.13%

Rationale

This Answer is Correct

Adjusted beta = (2/3 × 1.15) + (1/3 × 1.0) = 1.10

Required return = 0.045 + (1.10 × 0.078) = 13.08%

Question 5

L2EQ-TBB203-1412

LOS: LOS-7940

Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection

Difficulty: medium

An analyst calculates the raw beta of a security to be 0.637 on a weekly basis over the last four years. The risk-free rate is estimated to be 2.6%, and the market risk premium is estimated to be 5%. Using an adjusted forward estimate beta based on mean reversion to a value of 1, the required return on equity for this security according to the CAPM is closest to:

- 4.13%.
- 5.79%.
- 6.39%.

Rationale

This Answer is Correct

The adjusted beta is given by (2 / 3)(0.637) + (1 / 3)(1) = 0.758.

Using the CAPM, the required return on equity is then 2.6% + (0.758)(5%) = 6.39%.

Question 6
L2R30TB-AC019-1512
LOS: LOS-7920
Lesson Reference: Lesson 1: Return Concepts and the Equity Risk Premium
Difficulty: medium
An investor purchases shares of Zitsos Corp. for $50 a share. Zitsos pays a dividend of 50 cents per quarter and based on the capital asset pricing model (CAPM), the required return is 10 percent. At the end of one year, the investor sells his shares of Zitsos for $55 per share and has received the quarterly dividends of $0.50. The investor's realized holding period return is *closest* to:

- 1 percent.
- 4 percent.
- 14 percent.

Rationale
1 percent.
One way of thinking about realized holding return is in two components, dividend yield and price appreciation. The annual dividend on Zitsos is $2.00 ($0.50 × 4) and the annual dividend yield is $2/$50 = 4 percent. The one-year price appreciation from $50 to $55 is 10 percent. Thus, the investor's realized holding period return is 14 percent. In reality, the true return is higher than 14 percent, because the investor has the ability to invest the quarterly dividends and earn a return on them.

Rationale
4 percent.
One way of thinking about realized holding return is in two components, dividend yield and price appreciation. The annual dividend on Zitsos is $2.00 ($0.50 × 4) and the annual dividend yield is $2/$50 = 4 percent. The one-year price appreciation from $50 to $55 is 10 percent. Thus, the investor's realized holding period return is 14 percent. In reality, the true return is higher than 14 percent, because the investor has the ability to invest the quarterly dividends and earn a return on them.

Rationale
14 percent.
One way of thinking about realized holding return is in two components, dividend yield and price appreciation. The annual dividend on Zitsos is $2.00 ($0.50 × 4) and the annual dividend yield is $2/$50 = 4 percent. The one-year price appreciation from $50 to $55 is 10 percent. Thus, the investor's realized holding period return is 14 percent. In reality, the true return is higher than 14 percent, because the investor has the ability to invest the quarterly dividends and earn a return on them.

Question 7
L2R30TB-AC016-1512
LOS: LOS-7940
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium
The Minnesota Health and Retirement Benefits Board (MHRBB) is the manager of the state employees' retirement assets. Its portfolio managers are contemplating an investment in the Coca Cola Company and need an equity risk premium estimate. The MHRBB analyst recommending Coca Cola knows that the average yield to maturity on Coca Cola's outstanding bonds is 5.7 percent. Assuming a risk premium of 4.7 percent and a stock beta of 0.7, the cost of equity is *closest* to:

- 7.3 percent.
- 9.0 percent.
- 10.4 percent.

Rationale
7.3 percent.

The data provided only allows using the bond yield plus risk premium approach:

$$\text{Cost of equity} = 0.057 + 0.047 = 10.4 \text{ percent}$$

The beta provided is not used in this calculation at all.

Rationale
9.0 percent.

The data provided only allows using the bond yield plus risk premium approach:

$$\text{Cost of equity} = 0.057 + 0.047 = 10.4 \text{ percent}$$

The beta provided is not used in this calculation at all.

Rationale
10.4 percent.

The data provided only allows using the bond yield plus risk premium approach:

$$\text{Cost of equity} = 0.057 + 0.047 = 10.4 \text{ percent}$$

The beta provided is not used in this calculation at all.

Question 8
L2R30TB-AC015-1512
LOS: LOS-7960
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium
Assume a risk-free rate of 3 percent. Given the following data, which of the following *most* accurately portrays the Fama-French model required return?

	Beta	Factor Premium
Equity market	1.1	6.2 percent
Liquidity	0.9	1.7 percent
Size	1.3	2.6 percent
Value	0.7	5.3 percent

- 18.4 percent.
- 16.9 percent.
- 13.9 percent.

Rationale
18.4 percent.

Using the Fama-French model, the required return estimate is calculated as follows:

$$r_i = R_F + \beta_i^{mkt}\text{RMFR} + \beta_i^{size}\text{SMB} + \beta_i^{value}\text{HML}$$
$$= 0.03 + 1.1(0.062) + 1.3(0.026) + 0.7(0.053) = 0.1691 = 16.91 \text{ percent}$$

The liquidity data is ignored in the FFM. The Pastor-Stambaugh model (covered next) includes liquidity.

Rationale
16.9 percent.

Using the Fama-French model, the required return estimate is calculated as follows:

$$r_i = R_F + \beta_i^{mkt}\text{RMFR} + \beta_i^{size}\text{SMB} + \beta_i^{value}\text{HML}$$
$$= 0.03 + 1.1(0.062) + 1.3(0.026) + 0.7(0.053) = 0.1691 = 16.91 \text{ percent}$$

The liquidity data is ignored in the FFM. The Pastor-Stambaugh model (covered next) includes liquidity.

Rationale

13.9 percent.

Using the Fama-French model, the required return estimate is calculated as follows:

$$r_i = R_F + \beta_i^{mkt}\text{RMFR} + \beta_i^{size}\text{SMB} + \beta_i^{value}\text{HML}$$
$$= 0.03 + 1.1(0.062) + 1.3(0.026) + 0.7(0.053) = 0.1691 = 16.91 \text{ percent}$$

The liquidity data is ignored in the FFM. The Pastor-Stambaugh model (covered next) includes liquidity.

Question 9
L2R30TB-AC023-1512
LOS: LOS-7980
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium
The debt and equity weights employed in a weighted average cost of capital calculation should be:

- (●) target weights.
- ( ) current weights.
- ( ) estimated weights.

Rationale
✔ **target weights.**
A company's capital structure will vary over time and may be aberrational in the short run; therefore, target weights should be used if possible in the WACC calculation.

Rationale
✘ **current weights.**
A company's capital structure will vary over time and may be aberrational in the short run; therefore, target weights should be used if possible in the WACC calculation.

Rationale
✘ **estimated weights.**
A company's capital structure will vary over time and may be aberrational in the short run; therefore, target weights should be used if possible in the WACC calculation.

Question 10
L2R30TB-AC032-1512
LOS: LOS-7960
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium
Constant growth dividend discount models are not appropriate when a company is likely to have phases where the dividend growth rate will vary. If an analyst has predicted levels of cash flow and appropriate dividend growth rates for various phases of a company's growth, she will *most likely* also require:

- a predicted equity risk premium.
- an internal rate of return calculation.
- forecasts of the company's market value.

Rationale
a predicted equity risk premium.
An IRR function on a computer or calculator is needed in a multistage model to calculate a required return. Such stages might be first, a fast growing stage, second, a transition growth rate (growth slows) and lastly, a mature growth rate (lower, but sustainable), as shown:

$$\text{Equity price} = \text{PV fast growth}(r) + \text{PV transition}(r) + \text{PV mature growth}(r)$$

Rationale
an internal rate of return calculation.
An IRR function on a computer or calculator is needed in a multistage model to calculate a required return. Such stages might be first, a fast growing stage, second, a transition growth rate (growth slows) and lastly, a mature growth rate (lower, but sustainable), as shown:

$$\text{Equity price} = \text{PV fast growth}(r) + \text{PV transition}(r) + \text{PV mature growth}(r)$$

Rationale
forecasts of the company's market value.
An IRR function on a computer or calculator is needed in a multistage model to calculate a required return. Such stages might be first, a fast growing stage, second, a transition growth rate (growth slows) and lastly, a mature growth rate (lower, but sustainable), as shown:

$$\text{Equity price} = \text{PV fast growth}(r) + \text{PV transition}(r) + \text{PV mature growth}(r)$$

Question 11
L2EQ-TB0005-1412
LOS: LOS-7930
Lesson Reference: Lesson 1: Return Concepts and the Equity Risk Premium
Difficulty: medium
Louise Black, CFA, is an investment analyst attending an equity valuation conference. Between seminars, she overhears comments from other analysts regarding the best way to estimate the equity risk premium in valuation models. One of the analysts mentions the forward-looking macroeconomic model of Ibbotson and Chen and makes the following statement: “The model has three factors that are used to estimate the equity risk premium—namely the expected growth rate in real earnings per share, expected growth rate in PE and expected income component.” The analyst's comment is:

- Correct.
- Incorrect since the income component is not a factor in the model.
- Incorrect since the analyst has omitted inflation as a factor in the model.

Rationale

This Answer is Correct

The Ibbotson and Chen macroeconomic model to estimate the equity risk premium has four factors: expected inflation, expected real earnings growth, expected growth rate in PE, and expected income component.

Question 12
L2R30TB-AC036-1512
LOS: LOS-7940
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium
One example of a build-up model is:

- a macroeconomic model.
- bond yield plus risk premium.
- the Pastor-Stambaugh model.

Rationale
a macroeconomic model.
The bond yield plus risk premium method is an example of a build-up model. Macroeconomic models and the Pastor-Stambaugh model are examples of multifactor models.

Rationale
bond yield plus risk premium.
The bond yield plus risk premium method is an example of a build-up model. Macroeconomic models and the Pastor-Stambaugh model are examples of multifactor models.

Rationale
the Pastor-Stambaugh model.
The bond yield plus risk premium method is an example of a build-up model. Macroeconomic models and the Pastor-Stambaugh model are examples of multifactor models.

Question 13
L2EQ-TBX102-1502
LOS: LOS-7950
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: easy

An analyst is estimating the beta of PrivateSoft LLC, a nonpublic software company, by adjusting the observable beta of PublicSoft Corp., a quoted software company. The analyst collects the following data:

Observed beta of PublicSoft Corp.	1.13
Debt of PublicSoft Corp ($ million)	1,554
Equity of PublicSoft Corp ($ million)	8,585
Debt of PrivateSoft LLC ($ million)	142
Equity of PrivateSoft LLC ($ million)	285

Ignoring taxes, the estimated beta of PrivateSoft is closest to:

- 0.96.
- 1.13.
- 1.43.

Rationale
This Answer is Correct

Unlevered beta of PublicSoft = 1.13 / (1 + (1554/8585)) = 0.957

Levered beta of PrivateSoft = 0.957 x (1 + (142/285)) = 1.43

Question 14
L2R30TB-ITEMSET-AC001-1512
LOS: LOS-7980
LOS: LOS-7940
LOS: LOS-7930
Lesson Reference: Lesson 1: Return Concepts and the Equity Risk Premium
Difficulty: medium

Use the following information to answer the next 3 questions:

Paul Randolph is taking an advanced finance class as part of his MBA school education. Following is a sample of three topics covered in this course over the semester.

At the beginning of the term, some basics of finance that students should have already learned are reviewed. As part of the homework for the review assignment, Randolph is given the following data for Alpha Graphics Company (AGC) and asked to compute the company's weighted average cost of capital (WACC).

Required return on debt capital	6 percent
Required return on equity capital	10 percent
AGC's average tax rate	22 percent
AGC's marginal tax rate	38 percent
Current capital structure	30 percent debt and 70 percent equity

Early in the semester, the class begins to learn techniques for valuing non-public companies. They undertake a case study of Better Bedding, a small company selling a very expensive line of sheets and blankets. The class is presented the following data in order to calculate a required return for Better Bedding.

Risk-free rate	4.0 percent
Equity risk premium for the broad market index	6.0 percent
Small-cap premium	2.5 percent
Company-specific factor premium	2.0 percent
Beta for comparable company (benchmark)	0.7

Eventually, the curriculum turns to international financial issues, and the class studies how to assess risk premiums for emerging market countries. The country of Sri Lanka, an island country off the southern coast of India, is chosen for a case study. The class is informed that Sri Lanka's country premium is 8.5 percent, Sri Lankan bonds have a 10 percent yield to maturity, and the United States' equity risk premium is 4 percent. The students are asked to derive an equity risk premium for Sri Lanka using the country spread model.

i.
The weighted average cost of capital for Alpha Graphics Company is *closest to*:
○ 5.5 percent.

- (●) 8.1 percent.
- ( ) 8.4 percent.

Rationale

This Answer is Correct

The weighted average cost of capital formula is:

$$\begin{aligned} \text{WACC} &= \frac{\text{MVD}}{\text{MVD+MVCE}} r_d \left(1 - \text{Tax rate}\right) + \frac{\text{MVCE}}{\text{MVD+MVCE}} \\ r &= 0.3(0.06)(1 - 0.38) + 0.7(0.10) = 0.081 \end{aligned}$$

Rationale

This Answer is Correct

The weighted average cost of capital formula is:

$$\begin{aligned} \text{WACC} &= \frac{\text{MVD}}{\text{MVD+MVCE}} r_d \left(1 - \text{Tax rate}\right) + \frac{\text{MVCE}}{\text{MVD+MVCE}} \\ r &= 0.3(0.06)(1 - 0.38) + 0.7(0.10) = 0.081 \end{aligned}$$

Rationale

This Answer is Correct

The weighted average cost of capital formula is:

$$\begin{aligned} \text{WACC} &= \frac{\text{MVD}}{\text{MVD+MVCE}} r_d \left(1 - \text{Tax rate}\right) + \frac{\text{MVCE}}{\text{MVD+MVCE}} \\ r &= 0.3(0.06)(1 - 0.38) + 0.7(0.10) = 0.081 \end{aligned}$$

ii.

Using a build-up model appropriate for small, non-public companies, an estimated required return for Better Beddings is *closest to*:

- ( ) 8.2 percent.
- ( ) 12.7 percent.
- (●) 14.5 percent.

Rationale

This Answer is Incorrect

Although we have a comparable company (benchmark), we do not have any information of the leverage of the benchmark or for Better Beddings. Therefore, we cannot unlever the benchmark beta and re-lever it for Better Beddings. As a result, the capital asset pricing

model cannot be used. But we do have the information required to use a build-up model. The required return is calculated as follows:

r_j = Risk-free rate + Equity risk premium + Size premium$_j$ + Company-specific premium$_j$

$r_{\text{Better Beddings}}$ = 0.04 + 0.06 + 0.025 + 0.02 = 14.5 percent

Rationale

This Answer is Incorrect

Although we have a comparable company (benchmark), we do not have any information of the leverage of the benchmark or for Better Beddings. Therefore, we cannot unlever the benchmark beta and re-lever it for Better Beddings. As a result, the capital asset pricing model cannot be used. But we do have the information required to use a build-up model. The required return is calculated as follows:

r_j = Risk-free rate + Equity risk premium + Size premium$_j$ + Company-specific premium$_j$

$r_{\text{Better Beddings}}$ = 0.04 + 0.06 + 0.025 + 0.02 = 14.5 percent

Rationale

This Answer is Incorrect

Although we have a comparable company (benchmark), we do not have any information of the leverage of the benchmark or for Better Beddings. Therefore, we cannot unlever the benchmark beta and re-lever it for Better Beddings. As a result, the capital asset pricing model cannot be used. But we do have the information required to use a build-up model. The required return is calculated as follows:

r_j = Risk-free rate + Equity risk premium + Size premium$_j$ + Company-specific premium$_j$

$r_{\text{Better Beddings}}$ = 0.04 + 0.06 + 0.025 + 0.02 = 14.5 percent

iii.

The equity risk premium for Sri Lanka, calculated using the country spread model is *closest to*:

- (●) 12.5 percent.
- ( ) 18.5 percent.
- ( ) 22.5 percent.

Rationale

This Answer is Incorrect

The country premium should capture the higher expected level of risk inherent in that emerging market compared to a typical (benchmark) mature market. The country spread model is:

Equity risk premium estimate = Equity risk premium for a developed market + Country premium

Using the country spread model to estimate Sri Lanka's equity risk premium:

Equity risk premium estimate = 0.04 + 0.085 = 0.125 = 12.5 percent

Rationale

This Answer is Incorrect

The country premium should capture the higher expected level of risk inherent in that emerging market compared to a typical (benchmark) mature market. The country spread model is:

Equity risk premium estimate = Equity risk premium for a developed market + Country premium

Using the country spread model to estimate Sri Lanka's equity risk premium:

Equity risk premium estimate = 0.04 + 0.085 = 0.125 = 12.5 percent

Rationale

This Answer is Incorrect

The country premium should capture the higher expected level of risk inherent in that emerging market compared to a typical (benchmark) mature market. The country spread model is:

Equity risk premium estimate = Equity risk premium for a developed market + Country premium

Using the country spread model to estimate Sri Lanka's equity risk premium:

Equity risk premium estimate = 0.04 + 0.085 = 0.125 = 12.5 percent

Question 15
L2R30TB-AC022-1512
LOS: LOS-7940
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium

Assume that the risk-free rate is 2.8 percent. A company has the following factor sensitivities and risk premiums:

	Factor Sensitivity	Risk Premium
Market	1.15	3.7 percent
Size	–0.80	4.2 percent
Value	1.32	5.2 percent

The required return derived from the Fama-French model is *closest to*:

- 7.8 percent.
- 10.6 percent.
- 17.3 percent.

Rationale
7.8 percent.
The Fama-French model required return estimate is:

$$r_i = R_F + \beta_i^{mkt}\text{RMFR} + \beta_i^{size}\text{SMB} + \beta_i^{value}\text{HML}$$
$$= 0.028 + 1.15(0.037) - 0.8(0.042) + 1.32(0.052) = 0.106 = 10.6 \text{ percent}$$

Rationale
10.6 percent.
The Fama-French model required return estimate is:

$$r_i = R_F + \beta_i^{mkt}\text{RMFR} + \beta_i^{size}\text{SMB} + \beta_i^{value}\text{HML}$$
$$= 0.028 + 1.15(0.037) - 0.8(0.042) + 1.32(0.052) = 0.106 = 10.6 \text{ percent}$$

Rationale
17.3 percent.
The Fama-French model required return estimate is:

$$r_i = R_F + \beta_i^{mkt}\text{RMFR} + \beta_i^{size}\text{SMB} + \beta_i^{value}\text{HML}$$
$$= 0.028 + 1.15(0.037) - 0.8(0.042) + 1.32(0.052) = 0.106 = 10.6\,\text{percent}$$

Question 16
L2R30TB-AC038-1512
LOS: LOS-7950
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium
Using the Blume method, an analyst has estimated the forward-looking beta for a company to be 1.42. The risk-free rate of interest is 3.2 percent and the equity risk premium is 5.3 percent. The underlying unadjusted (raw) beta that the analyst used in her calculations is *closest* to:

- 1.28
- 1.56
- 1.63

Rationale
1.28
We can solve for the unadjusted beta using the formula for finding the adjusted beta:

$$\text{Adjusted beta} = (2/3)(\text{Unadjusted beta}) + (1/3)(1.0)$$
$$1.42 = (2/3)(\text{Unadjusted beta}) + (1/3)(1.0)$$
$$\text{Unadjusted beta} = 1.63$$

Rationale
1.56
We can solve for the unadjusted beta using the formula for finding the adjusted beta:

$$\text{Adjusted beta} = (2/3)(\text{Unadjusted beta}) + (1/3)(1.0)$$
$$1.42 = (2/3)(\text{Unadjusted beta}) + (1/3)(1.0)$$
$$\text{Unadjusted beta} = 1.63$$

Rationale
1.63
We can solve for the unadjusted beta using the formula for finding the adjusted beta:

$$\text{Adjusted beta} = (2/3)(\text{Unadjusted beta}) + (1/3)(1.0)$$
$$1.42 = (2/3)(\text{Unadjusted beta}) + (1/3)(1.0)$$
$$\text{Unadjusted beta} = 1.63$$

Question 17
L2R30TB-AC007-1512
LOS: LOS-7920
Lesson Reference: Lesson 1: Return Concepts and the Equity Risk Premium
Difficulty: medium
An investor purchased shares of Christenbery Company at a price of $52 per share. He received two quarterly dividends of $3 each. After six months, the Christenbery shares were sold for $60 per share. The price appreciation portion of the holding period return is *closest* to:

- 13.3 percent.
- 15.4 percent.
- 40.0 percent.

Rationale
13.3 percent.

Holding period returns have two components, as shown in the formula:

$$r = \frac{D_H}{P_0} + \frac{P_H - P_0}{P_0}$$

The price appreciation is the latter term in the equation (the change in the price as a percentage of the initial price). The price appreciation return on the Christenbery shares is:

$$\text{Price appreciation} = \frac{P_H - P_0}{P_0} = \frac{\$60 - 52}{\$52} = 15.4 \text{ percent}$$

Rationale
15.4 percent.

Holding period returns have two components, as shown in the formula:

$$r = \frac{D_H}{P_0} + \frac{P_H - P_0}{P_0}$$

The price appreciation is the latter term in the equation (the change in the price as a percentage of the initial price). The price appreciation return on the Christenbery shares is:

$$\text{Price appreciation} = \frac{P_H - P_0}{P_0} = \frac{\$60 - 52}{\$52} = 15.4 \text{ percent}$$

Rationale
40.0 percent.

Holding period returns have two components, as shown in the formula:

$$r = \frac{D_H}{P_0} + \frac{P_H - P_0}{P_0}$$

The price appreciation is the latter term in the equation (the change in the price as a percentage of the initial price). The price appreciation return on the Christenbery shares is:

$$\text{Price appreciation} = \frac{P_H - P_0}{P_0} = \frac{\$60 - 52}{\$52} = 15.4 \text{ percent}$$

Question 18
L2R30TB-ITEMSET-AC004-1512
LOS: LOS-7940
LOS: LOS-7930
Lesson Reference: Lesson 1: Return Concepts and the Equity Risk Premium
Difficulty: N/A

Use the following information to answer the next 3 questions:

A new group of analysts has recently been hired by an investment bank. Henry Carmichael, who has been with the firm for two years, has been asked to draw up some training materials for the group of new hires. He decides to focus the content of his training on derivations of required returns, and chooses to study Adventure Junkets Inc. (AJI), a newly public company offering vacations in exotic locations.

Carmichael creates some problems for the new hires, and gives them the data needed. He asks them to derive a required return using various methods. One question instructs the new hires to find a required return using both the capital asset pricing model (CAPM) and a build-up method.

Adventure Junkets

Current price	$75
Beta	1.25
Yield-to-maturity (YTM) on company debt	8.2 percent
Equity risk premium over debt	3.2 percent

Carmichael also informs them that the risk-free rate to use in the CAPM is 4 percent and that the historical equity risk premium for the Dow Jones Industrial Average is 5 percent.

In order to determine their understanding of a different model, Carmichael provides the following data for Adventure Junkets:

	Factor Sensitivity	Risk Premium
Market factor	1.05	5.0 percent
Size factor	0.60	3.5 percent
Value factor	–1.20	4.0 percent
Liquidity factor	1.15	2.5 percent

Carmichael asks the new hires to calculate a required return for Adventure Junkets using the Pastor-Stambaugh model. In addition to calculating the required return for Adventure Junkets using this formula, Carmichael encourages the new hires to be sure they fully understand the characteristics of Adventure Junkets, given the factors provided.

i.
The required returns calculated using the CAPM and build-up method are *closest to*:
○ 8.0 percent and 13.2 percent, respectively.

- [x] 10.3 percent and 11.4 percent, respectively.
- [ ] 10.3 percent and 13.2 percent, respectively.

Rationale

This Answer is Correct

The calculations are as follows:

CAPM required return on share *i* = Current expected risk-free return + β_i (Equity risk premium)

r_i = 0.04 + (1.25)(0.05) = 0.04 + 0.063 = 0.103 = 10.3 percent

Bond yield plus risk premium = YTM on long-term debt + Risk premium over YTM

r_i = 0.082 + 0.032 = 0.114 = 11.4 percent

Rationale

This Answer is Correct

The calculations are as follows:

CAPM required return on share *i* = Current expected risk-free return + β_i (Equity risk premium)

r_i = 0.04 + (1.25)(0.05) = 0.04 + 0.063 = 0.103 = 10.3 percent

Bond yield plus risk premium = YTM on long-term debt + Risk premium over YTM

r_i = 0.082 + 0.032 = 0.114 = 11.4 percent

Rationale

This Answer is Correct

The calculations are as follows:

CAPM required return on share *i* = Current expected risk-free return + β_i (Equity risk premium)

r_i = 0.04 + (1.25)(0.05) = 0.04 + 0.063 = 0.103 = 10.3 percent

Bond yield plus risk premium = YTM on long-term debt + Risk premium over YTM

r_i = 0.082 + 0.032 = 0.114 = 11.4 percent

ii.

Because the equity risk premiums were derived using historical data, a problem with Carmichael's data is *most likely* that the:

- risk-free being used does not match the duration of the asset being valued.
- calculation utilized an arithmetic mean rather than geometric mean.
- representative equity index used is too narrow.

Rationale

This Answer is Incorrect

The historical data used to derive equity risk premiums should include a representative equity index that is both broad and preferably market-value weighted. The Dow Jones Industrial Average is neither broad nor market value weighted. There is no data provided in the item set to indicate that the either of the other two answer choices might be true.

Rationale

This Answer is Incorrect

The historical data used to derive equity risk premiums should include a representative equity index that is both broad and preferably market-value weighted. The Dow Jones Industrial Average is neither broad nor market value weighted. There is no data provided in the item set to indicate that the either of the other two answer choices might be true.

Rationale

This Answer is Incorrect

The historical data used to derive equity risk premiums should include a representative equity index that is both broad and preferably market-value weighted. The Dow Jones Industrial Average is neither broad nor market value weighted. There is no data provided in the item set to indicate that the either of the other two answer choices might be true.

iii.

Based on the data provided for the Pastor-Stambaugh model, an analyst would *most likely* conclude that Adventure Junkets relative to the average company in the market is:

- smaller in market capitalization.
- more value oriented.
- more liquid.

Rationale

This Answer is Incorrect

The characteristics of Adventure Junkets are:

- Slightly above market risk (market beta of 1.05)
- Smaller capitalization (positive size beta) than the average company
- Growth oriented (the negative value beta indicates a price-to-book value that is larger than the average company, which is an indication of a growth oriented stock)
- Below average liquidity (a positive liquidity beta indicates below average liquidity)

Note that value, size, and liquidity all have neutral factor values of zero.

Although not required for this answer, the required return using the Pastor-Stambaugh model is:

$r_i = R_F + \beta_i^{mkt}$ RMFR + β_i^{size} SMB + β_i^{value} HML + β_i^{liq} LIQ

$r_{Adventure\ Junkets}$ = 0.04 + 1.05(0.05) + 0.6(0.035) – 1.2(0.04) + 1.15(0.025) = 0.094 = 9.4 percent

Rationale

This Answer is Incorrect

The characteristics of Adventure Junkets are:

- Slightly above market risk (market beta of 1.05)
- Smaller capitalization (positive size beta) than the average company
- Growth oriented (the negative value beta indicates a price-to-book value that is larger than the average company, which is an indication of a growth oriented stock)
- Below average liquidity (a positive liquidity beta indicates below average liquidity)

Note that value, size, and liquidity all have neutral factor values of zero.

Although not required for this answer, the required return using the Pastor-Stambaugh model is:

$r_i = R_F + \beta_i^{mkt}$ RMFR + β_i^{size} SMB + β_i^{value} HML + β_i^{liq} LIQ

$r_{Adventure\ Junkets}$ = 0.04 + 1.05(0.05) + 0.6(0.035) – 1.2(0.04) + 1.15(0.025) = 0.094 = 9.4 percent

Rationale

This Answer is Incorrect

The characteristics of Adventure Junkets are:

- Slightly above market risk (market beta of 1.05)

- Smaller capitalization (positive size beta) than the average company
- Growth oriented (the negative value beta indicates a price-to-book value that is larger than the average company, which is an indication of a growth oriented stock)
- Below average liquidity (a positive liquidity beta indicates below average liquidity)

Note that value, size, and liquidity all have neutral factor values of zero.

Although not required for this answer, the required return using the Pastor-Stambaugh model is:

$r_i = R_F + \beta_i^{\text{mkt}}$ RMFR + β_i^{size} SMB + β_i^{value} HML + β_i^{liq} LIQ

$r_{\text{Adventure Junkets}} = 0.04 + 1.05(0.05) + 0.6(0.035) - 1.2(0.04) + 1.15(0.025) = 0.094 = 9.4$ percent

Question 19
L2R30TB-AC018-1512
LOS: LOS-7920
Lesson Reference: Lesson 1: Return Concepts and the Equity Risk Premium
Difficulty: medium
An investor, Mr. Buie, purchases shares of Acme Inc. at $20 per share. At the time of purchase, he estimates Acme's shares to be worth $40 per share. Based on market consensus, the required return on Acme's shares is below the return that Buie expects based on his target intrinsic value of $40. Acme's price does, in fact, rise to $40, and Buie sells his shares. The excess return above the required return is *most likely* attributable to:

- ○ equity risk premium.
- ○ expected holding period return.
- ◉ convergence of price to intrinsic value.

Rationale
✗ **equity risk premium.**
When an investor's estimated value of a stock is more accurate than the market's, the investor's estimated return is comprised of two parts: the required return and the return earned as price converges on expected value.

Rationale
✗ **expected holding period return.**
When an investor's estimated value of a stock is more accurate than the market's, the investor's estimated return is comprised of two parts: the required return and the return earned as price converges on expected value.

Rationale
✓ **convergence of price to intrinsic value.**
When an investor's estimated value of a stock is more accurate than the market's, the investor's estimated return is comprised of two parts: the required return and the return earned as price converges on expected value.

Question 20
L2R30TB-AC027-1512
LOS: LOS-7940
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium
Regarding the yield-to-maturity (YTM) component of a bond yield plus risk premium estimation of the cost of equity, the YTM on a company's debt includes a real interest rate, a reflection of anticipated inflation, and a(n):

- (●) default risk premium.
- ( ) equity risk premium.
- ( ) tax adjustment.

Rationale
✔ **default risk premium.**
In addition to a real interest rate and an inflation expectation, the yield to maturity on debt also includes a default risk premium, which contains information on profitability, sensitivity to the business cycle, and leverage.

Rationale
✘ **equity risk premium.**
In addition to a real interest rate and an inflation expectation, the yield to maturity on debt also includes a default risk premium, which contains information on profitability, sensitivity to the business cycle, and leverage.

Rationale
✘ **tax adjustment.**
In addition to a real interest rate and an inflation expectation, the yield to maturity on debt also includes a default risk premium, which contains information on profitability, sensitivity to the business cycle, and leverage.

Question 21
L2R30TB-AC017-1512
LOS: LOS-7970
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium
Estimating required returns for international companies involves two additional considerations. One consideration is exchange rates and it the other is:

- inability to quantify risk premiums.
- emerging markets data considerations.
- problems determining sovereign bond yields.

Rationale
✗ **inability to quantify risk premiums.**
In addition to adding complications due to exchange rates, emerging markets also present data and model problems. While it is more difficult to quantify risk premiums, it can be done. Two tools for arriving at an equity risk premium are the country spread model and the country risk rating model.

Rationale
✓ **emerging markets data considerations.**
In addition to adding complications due to exchange rates, emerging markets also present data and model problems. While it is more difficult to quantify risk premiums, it can be done. Two tools for arriving at an equity risk premium are the country spread model and the country risk rating model.

Rationale
✗ **problems determining sovereign bond yields.**
In addition to adding complications due to exchange rates, emerging markets also present data and model problems. While it is more difficult to quantify risk premiums, it can be done. Two tools for arriving at an equity risk premium are the country spread model and the country risk rating model.

Question 22

L2CF-PQ2907-1411

LOS: LOS-7940

Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection

Difficulty: medium

James Dugarty wants to estimate the return on the stock of Beta Company. He finds out that the company has recently issued a 10-year bond with a YTM of 6.8%. He further estimates that the return on the equity market is 11.3%. In order to account for the risk associated with the company's equity, he applies a risk premium of 2.7% in the bond yield plus risk premium approach. Given a risk-free rate of 5.5%, and the stock's beta of 1.02, which of the following estimates of the cost of equity under the approaches is *most accurate*?

	Bond Yield Plus Risk Premium	CAPM
A	8.20%	11.42%
B	9.50%	11.42%
C	14.00%	11.39%

- ○ Row A
- ◉ Row B
- ○ Row C

Rationale

This Answer is Correct

Required return on the bond yield plus risk premium approach = 6.8% + 2.7% = 9.50%

Required return based on the CAPM = 0.055 + [1.02 × (0.113 − 0.055)] = 11.416%

Question 23
L2R30TB-AC026-1512
LOS: LOS-7930
Lesson Reference: Lesson 1: Return Concepts and the Equity Risk Premium
Difficulty: medium
In order to calculate an equity risk premium for a broad market index using the Gordon growth model, three pieces of data are required. In addition to a consensus long-term earnings growth rate and a current government bond yield, such a calculation would also require a dividend yield based on the:

- sum of last four quarters of dividends, with this sum then being divided by the index's average market value over the same four quarters.
- most recent quarterly dividend, which is annualized (multiplied by 4) and then divided by the index's current market value.
- year-ahead forecasted dividends, which are then divided by the index's current market value.

Rationale
✗ **sum of last four quarters of dividends, with this sum then being divided by the index's average market value over the same four quarters.**
The year-ahead dividends are forecast and used in finding the dividend yield (forecast dividends ÷ current price of the index) to be used in the Gordon growth model approach.

Rationale
✗ **most recent quarterly dividend, which is annualized (multiplied by 4) and then divided by the index's current market value.**
The year-ahead dividends are forecast and used in finding the dividend yield (forecast dividends ÷ current price of the index) to be used in the Gordon growth model approach.

Rationale
✓ **year-ahead forecasted dividends, which are then divided by the index's current market value.**
The year-ahead dividends are forecast and used in finding the dividend yield (forecast dividends ÷ current price of the index) to be used in the Gordon growth model approach.

Question 24
L2R30TB-AC030-1512
LOS: LOS-7920
Lesson Reference: Lesson 1: Return Concepts and the Equity Risk Premium
Difficulty: medium
An investor is considering a one-year investment in a $30.00 stock that has a required return of 8.0 percent. This 8.0 percent required return is based on consensus estimates of an expected 3.0 percent dividend yield and an expected appreciation of 5.0 percent. The investor believes the dividend for the next year will be $1.00 and that the shares will rise to $35. One year later, the actual dividend was $1.00 and the price had risen to $30.60. Investments of similar risk generated returns of 10 percent for the year. The investor's *ex ante* alpha is *closest* to:

- –7 percent.
- 12 percent.
- 20 percent.

Rationale

–7 percent.

At the beginning of the year, the investor is expecting a dividend of $1.00 and capital appreciation of $5.00 ($35.00 target price – $30 current price). These total to $6.00 on a $30.00 investment, which is a 20 percent expected return. The *ex ante* (before the fact) alpha for the investor is the difference between his expected return and the required return of 8.0 percent. Thus, the *ex ante* alpha is 20 percent – 8 percent or 12 percent.

Note that the data concerning the actual outcome is not used. We are only considering the expected alpha at the time he was investigating the shares.

Rationale

12 percent.

At the beginning of the year, the investor is expecting a dividend of $1.00 and capital appreciation of $5.00 ($35.00 target price – $30 current price). These total to $6.00 on a $30.00 investment, which is a 20 percent expected return. The *ex ante* (before the fact) alpha for the investor is the difference between his expected return and the required return of 8.0 percent. Thus, the *ex ante* alpha is 20 percent – 8 percent or 12 percent.

Note that the data concerning the actual outcome is not used. We are only considering the expected alpha at the time he was investigating the shares.

Rationale

20 percent.

At the beginning of the year, the investor is expecting a dividend of $1.00 and capital appreciation of $5.00 ($35.00 target price – $30 current price). These total to $6.00 on a $30.00 investment, which is a 20 percent expected return. The *ex ante* (before the fact) alpha for the investor is the difference between his expected return and the required return of 8.0 percent. Thus, the *ex ante* alpha is 20 percent – 8 percent or 12 percent.

Note that the data concerning the actual outcome is not used. We are only considering the expected alpha at the time he was investigating the shares.

Question 25
L2R30TB-AC013-1512
LOS: LOS-7950
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium
Using a least squares regression, an analyst has derived a beta of 0.7 for HDT Inc. The estimated risk-free rate is 2.3 percent and the equity risk premium is 5.2 percent. Based on using an adjusted beta (Blume method used) in the CAPM, the estimated required return for HDT's shares is *closest* to:

- 4.62 percent.
- 5.94 percent.
- 6.46 percent.

Rationale
4.62 percent.

The first step is to find the adjusted beta using the Blume method:

$$\text{Adjusted beta} = (2/3)(\text{Unadjusted beta}) + (1/3)(1.0) = (2/3)(0.7) + (1/3)(1.0) = 0.8$$

Next, the CAPM is used:

$$\text{Required return on HDTs shares} = r_f + \beta_i(\text{ERP}) = 0.023 + 0.8(0.052) = 0.0646$$

Rationale
5.94 percent.

The first step is to find the adjusted beta using the Blume method:

$$\text{Adjusted beta} = (2/3)(\text{Unadjusted beta}) + (1/3)(1.0) = (2/3)(0.7) + (1/3)(1.0) = 0.8$$

Next, the CAPM is used:

$$\text{Required return on HDTs shares} = r_f + \beta_i(\text{ERP}) = 0.023 + 0.8(0.052) = 0.0646$$

Rationale
6.46 percent.

The first step is to find the adjusted beta using the Blume method:

$$\text{Adjusted beta} = (2/3)(\text{Unadjusted beta}) + (1/3)(1.0) = (2/3)(0.7) + (1/3)(1.0) = 0.8$$

Next, the CAPM is used:

$$\text{Required return on HDTs shares} = r_f + \beta_i(\text{ERP}) = 0.023 + 0.8(0.052) = 0.0646$$

Question 26

L2EQ-TB0004-1412

LOS: LOS-7920

Lesson Reference: Lesson 1: Return Concepts and the Equity Risk Premium

Difficulty: medium

Home Warehouse Corp. has shares outstanding currently trading at $45.60 per share. An estimate for the required return on equity is 7% per year. A research report has estimated the company's intrinsic value at $65 per share. Which of the following rates of return is closest to the return to investors if the price converged to fair value in exactly nine months' time?

- 42.5%.
- 47.7%.
- 49.5%.

Rationale

This Answer is Correct

The shares will approximately return the required return plus the return from convergence of price to intrinsic value. The required return earned over nine months will be (1.07)^(9/12) – 1 = 5.2%. The return from convergence will be (65 – 45.60) / 45.60 = 42.5%. Hence, the total return will be 5.2% + 42.5% = 47.7%.

Question 27
L2R30TB-AC009-1512
LOS: LOS-7930
Lesson Reference: Lesson 1: Return Concepts and the Equity Risk Premium
Difficulty: medium
When estimating an equity risk premium from historical data, the data utilized will *most likely* include:

- the longest time period of data available and the calculation of an arithmetic mean.
- long-term government bonds and a geometric mean calculation.
- a market-value weighted equity index and government bonds.

Rationale

the longest time period of data available and the calculation of an arithmetic mean.

Inputs selected to estimate the equity risk premium from historical data should include four components: a broad equity index (preferably market-value-weighted), a time period that is long enough to be reliable but not so long as to violate stationarity, either a geometric or arithmetic mean, and a risk-free rate surrogate (e.g., short- or long-term government bond). It cannot be said categorically that the mean calculation should be either arithmetic or geometric, and similarly, different situations will call for either short-term or long-term bonds.

Rationale

long-term government bonds and a geometric mean calculation.

Inputs selected to estimate the equity risk premium from historical data should include four components: a broad equity index (preferably market-value-weighted), a time period that is long enough to be reliable but not so long as to violate stationarity, either a geometric or arithmetic mean, and a risk-free rate surrogate (e.g., short- or long-term government bond). It cannot be said categorically that the mean calculation should be either arithmetic or geometric, and similarly, different situations will call for either short-term or long-term bonds.

Rationale

a market-value weighted equity index and government bonds.

Inputs selected to estimate the equity risk premium from historical data should include four components: a broad equity index (preferably market-value-weighted), a time period that is long enough to be reliable but not so long as to violate stationarity, either a geometric or arithmetic mean, and a risk-free rate surrogate (e.g., short- or long-term government bond). It cannot be said categorically that the mean calculation should be either arithmetic or geometric, and similarly, different situations will call for either short-term or long-term bonds.

Question 28
L2R30TB-AC021-1512
LOS: LOS-7930
Lesson Reference: Lesson 1: Return Concepts and the Equity Risk Premium
Difficulty: medium
Assume a risk-free rate of 4 percent and an equity risk premium of 7 percent. Company A has a beta of 1.1, Company B has a beta of 0.7, and Company C has a beta equal to that of the overall market. According to the capital asset pricing model, which of the companies is *most likely* the riskiest?

- (●) Company A
- ( ) Company B
- ( ) Company C

Rationale
Company A

The capital asset pricing model holds that:

$$\text{Required return on share}i = \text{Current expected risk} - \text{free return} + \beta_i\,(\text{Equity risk premium})$$

Since Company A has the greatest beta, it is the most risky, as the risk-free rate and equity risk premiums are equal in all calculations. Company C's beta is 1.0, that of the overall market.

Rationale
Company B

The capital asset pricing model holds that:

$$\text{Required return on share}i = \text{Current expected risk} - \text{free return} + \beta_i\,(\text{Equity risk premium})$$

Since Company A has the greatest beta, it is the most risky, as the risk-free rate and equity risk premiums are equal in all calculations. Company C's beta is 1.0, that of the overall market.

Rationale
Company C

The capital asset pricing model holds that:

$$\text{Required return on share} i = \text{Current expected risk} - \text{free return} + \beta_i \left(\text{Equity risk premium}\right)$$

Since Company A has the greatest beta, it is the most risky, as the risk-free rate and equity risk premiums are equal in all calculations. Company C's beta is 1.0, that of the overall market.

Question 29
L2CF-PQ2912-1411
LOS: LOS-7920
Lesson Reference: Lesson 1: Return Concepts and the Equity Risk Premium
Difficulty: medium
Samantha purchased 1,000 shares of Eagle Corporation for $48.25 per share. She wanted to hold the stock for one year, at the end of which the stock was expected to sell for $56.80. However, after 4 months, the stock's value had gone down to $44.60, at which time Samantha sold all her shares. Given a monthly required rate of return on the stock of 0.9864%, Samantha's realized alpha is *closest* to:

- 13.72%
- –11.57%
- –7.56%

Rationale

This Answer is Correct

Actual holding period return (HPR) = ($44.60 − $48.25)/$48.25 = −7.5648%

Required rate of return over a 4-month holding period = $(1 + 0.009864)^4 - 1 = 4.0044\%$

Realized alpha = Actual HPR − Required return for the period

Realized alpha = −0.075648 − 0.040044 = −11.5692%

Question 30
L2R30TB-AC010-1512
LOS: LOS-7930
Lesson Reference: Lesson 1: Return Concepts and the Equity Risk Premium
Difficulty: medium

An analyst has forecasted the following inputs for estimating a stock market's equity risk premium:

Estimated inflation rate	2.0 percent
Estimate real growth in earnings	2.5 percent
Expected increase in the P/E ratio	0
Expected near-term dividend yield	1.8 percent

If the expected risk-free rate is 1.5 percent, then the analyst's estimated equity risk premium is *closest* to:

- 1.50 percent.
- 4.85 percent.
- 6.35 percent.

Rationale
1.50 percent.
The calculation is as follows:

$$\text{Equity risk premium} = \{(1+\text{EINFL})(1+\text{EGREPS})(1+\text{EGPE}) - 1.0 + \text{EINC}\} - \text{Expect}$$
$$\{[(1+0.02)(1+0.025)(1+0.0) - 1.0] + 0.018\} - -0.015 = 0.0485$$

Rationale
4.85 percent.
The calculation is as follows:

$$\text{Equity risk premium} = \{(1+\text{EINFL})(1+\text{EGREPS})(1+\text{EGPE}) - 1.0 + \text{EINC}\} - \text{Expect}$$
$$\{[(1+0.02)(1+0.025)(1+0.0) - 1.0] + 0.018\} - -0.015 = 0.0485$$

Rationale
6.35 percent.
The calculation is as follows:

$$\begin{aligned}\text{Equity risk premium} &= \{(1+\text{EINFL})(1+\text{EGREPS})(1+\text{EGPE})-1.0+\text{EINC}\}-\text{Expect} \\ &\{[(1+0.02)(1+0.025)(1+0.0)-1.0]+0.018\}--0.015=0.0485\end{aligned}$$

Question 31
L2R30TB-AC029-1512
LOS: LOS-7940
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium
A company has a beta of –0.3 and an analyst using the capital asset pricing model (CAPM) has estimated that the required return on the company's shares is 4.2 percent. If the equity risk premium is 4.0 percent, then the risk-free rate used by the analyst in her CAPM calculations is *closest* to:

- 3.0 percent.
- 5.4 percent.
- 7.7 percent.

Rationale
3.0 percent.
By inputting the data provided, we can solve for the risk-free rate that the analyst must have used in the CAPM:

$$\text{Required return on share}i(r_i) = \text{Current expected risk-free return}(r_f) + \beta_i(\text{Equity risk premium or ERP})$$
$$0.042 = r_f + (-0.3)(0.04)$$
$$r_f = 0.054 \text{ or } 5.4 \text{ percent}$$

Rationale
5.4 percent.
By inputting the data provided, we can solve for the risk-free rate that the analyst must have used in the CAPM:

$$\text{Required return on share}i(r_i) = \text{Current expected risk-free return}(r_f) + \beta_i(\text{Equity risk premium or ERP})$$
$$0.042 = r_f + (-0.3)(0.04)$$
$$r_f = 0.054 \text{ or } 5.4 \text{ percent}$$

Rationale
7.7 percent.
By inputting the data provided, we can solve for the risk-free rate that the analyst must have used in the CAPM:

$$\text{Required return on share} i(r_i) = \text{Current expected risk-free return}(r_f)$$
$$+\beta_i(\text{Equity risk premium or ERP})$$
$$0.042 = r_f + (-0.3)(0.04)$$
$$r_f = 0.054 \text{ or } 5.4 \text{ percent}$$

Question 32
L2R30TB-AC037-1512
LOS: LOS-7930
Lesson Reference: Lesson 1: Return Concepts and the Equity Risk Premium
Difficulty: medium
An analyst wants to calculate a forward-looking equity risk premium for U.S. equities. She has determined that the S&P 500 index has a current dividend yield of 1.5 percent and that the year-ahead dividend yield based on forecasted dividends is 2.1 percent. For the last two years, earnings growth for the stocks comprising the S&P has been 8.5 percent. The consensus long-term earnings growth is 3.5 percent and the current 20-year U.S. government bond yield is 2.0 percent. The forward-looking equity risk premium for U.S. equities is *closest* to:

- 3.0 percent.
- 3.6 percent.
- 8.6 percent.

Rationale
3.0 percent.
Given the information provided, the Gordon growth model should be used:

$$\begin{aligned}\text{GGM Equity risk premium estimate} &= \text{Dividend yield on the index(total year-ahead foreca}\\ &+ \begin{matrix}\text{Consensus long-term earnings growth rateCurrent long-term governm}\\ -\end{matrix}\\ &\text{GGM Equity risk premium estimate} = 0.021 + 0.035 - 0.02 = 0.036\end{aligned}$$

Rationale
3.6 percent.
Given the information provided, the Gordon growth model should be used:

$$\begin{aligned}\text{GGM Equity risk premium estimate} &= \text{Dividend yield on the index(total year-ahead foreca}\\ &+ \begin{matrix}\text{Consensus long-term earnings growth rateCurrent long-term governm}\\ -\end{matrix}\\ &\text{GGM Equity risk premium estimate} = 0.021 + 0.035 - 0.02 = 0.036\end{aligned}$$

Rationale
8.6 percent.
Given the information provided, the Gordon growth model should be used:

$$\begin{aligned}\text{GGM Equity risk premium estimate} &= \text{Dividend yield on the index(total year-ahead foreca}\\ &+ \begin{matrix}\text{Consensus long-term earnings growth rateCurrent long-term governm}\\ -\end{matrix}\\ &\text{GGM Equity risk premium estimate} = 0.021 + 0.035 - 0.02 = 0.036\end{aligned}$$

Question 33
L2R30TB-AC020-1512
LOS: LOS-7920
Lesson Reference: Lesson 1: Return Concepts and the Equity Risk Premium
Difficulty: medium
A required return can be derived by adding a generally agreed upon forward-looking dividend yield to a growth rate in dividends. This approach *most likely* assumes:

- (●) market efficiency.
- ( ) a beta equal to 1.
- ( ) abnormal alpha.

Rationale
✔ **market efficiency.**
If market price equals intrinsic value, i.e., the market is efficient, then one can solve for a required return. This can also be thought of as an internal rate of return implied by the market price.

Rationale
✘ **a beta equal to 1.**
If market price equals intrinsic value, i.e., the market is efficient, then one can solve for a required return. This can also be thought of as an internal rate of return implied by the market price.

Rationale
✘ **abnormal alpha.**
If market price equals intrinsic value, i.e., the market is efficient, then one can solve for a required return. This can also be thought of as an internal rate of return implied by the market price.

Question 34
L2R30TB-AC034-1512
LOS: LOS-7990
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium
Practical application of discounting cash flows to present value utilizes nominal discount rates to discount nominal flows *most likely* because:

- (●) corporate tax rates and earnings are stated in nominal terms.
- ( ) dividends and interest payments are stated in real terms.
- ( ) this best reflects anticipated changes in purchasing power.

Rationale
✔ **corporate tax rates and earnings are stated in nominal terms.**
The corporate tax rate and the pre-tax earnings on which they are levied are all stated in nominal terms. Note that cash flows stated in real terms reflect anticipated changes in purchasing power.

Rationale
✘ **dividends and interest payments are stated in real terms.**
The corporate tax rate and the pre-tax earnings on which they are levied are all stated in nominal terms. Note that cash flows stated in real terms reflect anticipated changes in purchasing power.

Rationale
✘ **this best reflects anticipated changes in purchasing power.**
The corporate tax rate and the pre-tax earnings on which they are levied are all stated in nominal terms. Note that cash flows stated in real terms reflect anticipated changes in purchasing power.

Question 35
L2CF-PQ2918-1411
LOS: LOS-7930
Lesson Reference: Lesson 1: Return Concepts and the Equity Risk Premium
Difficulty: medium
Which of the following is *most likely* during a recession?

- Dividend yields tend to be low, growth expectations tend to be low, and government bond yields also tend to be low.
- Dividend yields tend to be high, growth expectations tend to be low, and government bond yields tend to be low.
- Dividend yields tend to be high, growth expectations tend to be low, and government bond yields tend to be high.

Rationale

This Answer is Correct

Generally speaking, during a recession, dividend yields tend to be high (due to low equity market prices), growth expectations tend to be low (due to a weak economy), and government bond yields tend to be low.

Question 36
L2R30TB-AC033-1512
LOS: LOS-7930
Lesson Reference: Lesson 1: Return Concepts and the Equity Risk Premium
Difficulty: medium

Assume a company has the following factor sensitivities and risk premiums:

	Factor Sensitivity	Risk Premium
Market	0.85	4.1 percent
Size	1.30	3.4 percent
Value	–0.75	2.7 percent

The shares of this company can *most likely* be described as being:

- (●) small-cap with a high price-to-book value ratio.
- ( ) large-cap with a high price-to-book value ratio.
- ( ) large-cap with a low price-to-book value ratio.

Rationale
small-cap with a high price-to-book value ratio.

The Fama-French model required return estimate is:

$$r_i = R_F + \beta_i^{mkt}\text{RMFR} + \beta_i^{size}\text{SMB} + \beta_i^{value}\text{HML}$$

The company has a positive size factor, which means it is smaller than average, and the negative value beta means the company's price-to-book value is larger than the average company. A higher price-to-book value than average represents a growth bias.

Rationale
large-cap with a high price-to-book value ratio.

The Fama-French model required return estimate is:

$$r_i = R_F + \beta_i^{mkt}\text{RMFR} + \beta_i^{size}\text{SMB} + \beta_i^{value}\text{HML}$$

The company has a positive size factor, which means it is smaller than average, and the negative value beta means the company's price-to-book value is larger than the average company. A higher price-to-book value than average represents a growth bias.

Rationale

large-cap with a low price-to-book value ratio.

The Fama-French model required return estimate is:

$$r_i = R_F + \beta_i^{mkt}\text{RMFR} + \beta_i^{size}\text{SMB} + \beta_i^{value}\text{HML}$$

The company has a positive size factor, which means it is smaller than average, and the negative value beta means the company's price-to-book value is larger than the average company. A higher price-to-book value than average represents a growth bias.

Question 37
L2R30TB-AC031-1512
LOS: LOS-7940
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium
Andrea Barbee seeks a required return estimate that takes into consideration liquidity, market capitalization, and value. She would *most likely* select the:

- statistical model.
- Fama-French model.
- Pastor-Stambaugh model.

Rationale
statistical model.

The Pastor-Stambaugh model is:

$$r_i = R_F + \beta_i^{mkt}\text{RMFR} + \beta_i^{size}\text{SMB} + \beta_i^{value}\text{HML} + \beta_i^{liq}\text{LIQ}$$

It takes into consideration the three sensitivities listed in the question, as well size.

Rationale
Fama-French model.

The Pastor-Stambaugh model is:

$$r_i = R_F + \beta_i^{mkt}\text{RMFR} + \beta_i^{size}\text{SMB} + \beta_i^{value}\text{HML} + \beta_i^{liq}\text{LIQ}$$

It takes into consideration the three sensitivities listed in the question, as well size.

Rationale
Pastor-Stambaugh model.

The Pastor-Stambaugh model is:

$$r_i = R_F + \beta_i^{mkt}\text{RMFR} + \beta_i^{size}\text{SMB} + \beta_i^{value}\text{HML} + \beta_i^{liq}\text{LIQ}$$

It takes into consideration the three sensitivities listed in the question, as well size.

Question 38
L2R30TB-AC039-1512
LOS: LOS-7950
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium
A company's shares are less liquid than the average liquidity for all stocks. In using the Pastor-Stambaugh model to find the required return for the company's shares, the liquidity beta will *most likely* be:

- ○ zero.
- ○ less than zero.
- ● greater than zero.

Rationale
✗ **zero.**
A less liquid stock will have a positive liquidity beta. This positive liquidity premium reflects that the required return should include a premium (additional return) to take into account the additional risk from lower liquidity.

Rationale
✗ **less than zero.**
A less liquid stock will have a positive liquidity beta. This positive liquidity premium reflects that the required return should include a premium (additional return) to take into account the additional risk from lower liquidity.

Rationale
✓ **greater than zero.**
A less liquid stock will have a positive liquidity beta. This positive liquidity premium reflects that the required return should include a premium (additional return) to take into account the additional risk from lower liquidity.

Question 39
L2CF-PQ2921-1411
LOS: LOS-7940
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium
In macroeconomic models, stocks are *least likely* to have negative sensitivities to which of the following risks?

- Time horizon risk
- Confidence risk
- Inflation risk

Rationale

This Answer is Correct
Stocks generally have negative sensitivities to time horizon risk and inflation risk.

- Higher-than-expected inflation is a negative for stocks.
- An increase in the difference between long-term and short-term government bonds reduces the equity market risk premium and is a negative for stock prices.

Question 40
L2CF-PQ2917-1411
LOS: LOS-7930
Lesson Reference: Lesson 1: Return Concepts and the Equity Risk Premium
Difficulty: medium
Forward-looking estimates of the equity risk premium are *least likely* to be exposed to:

- Modeling errors.
- Behavioral biases.
- Nonstationarity.

Rationale

This Answer is Correct

Historical estimates of the equity risk premium are exposed to the possibility that the mean and variance of returns over the relevant sample period were not constant. Forward-looking estimates are free from data biases and issues such as nonstationarity.

Question 41
L2R30TB-AC014-1512
LOS: LOS-7960
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium
Assume that the 30-year U.S. Treasury rate is 4 percent, the dividend yield on the S&P 500 is expected to be 2.8 percent next year, and corporate earnings are expected to grow 5 percent. The projected equity risk premium derived from this data is *closest* to:

- 11.8 percent.
- 7.8 percent.
- 3.8 percent.

Rationale
11.8 percent.
Given the available data, we must use the Gordon growth model approach. A Gordon growth model equity risk premium estimate is equal to the dividend yield on the index + consensus long-term earnings growth rate – current long-term government bond yield:

$$\text{Equity risk premium} = 2.8 + 5.0 - 4.0 = 3.8 \text{ percent}$$

Rationale
7.8 percent.
Given the available data, we must use the Gordon growth model approach. A Gordon growth model equity risk premium estimate is equal to the dividend yield on the index + consensus long-term earnings growth rate – current long-term government bond yield:

$$\text{Equity risk premium} = 2.8 + 5.0 - 4.0 = 3.8 \text{ percent}$$

Rationale
3.8 percent.
Given the available data, we must use the Gordon growth model approach. A Gordon growth model equity risk premium estimate is equal to the dividend yield on the index + consensus long-term earnings growth rate – current long-term government bond yield:

$$\text{Equity risk premium} = 2.8 + 5.0 - 4.0 = 3.8 \text{ percent}$$

Question 42

L2CF-PQ2920-1411

LOS: LOS-7940

Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection

Difficulty: medium

Which of the following factors is included in the Pastor-Stambaugh model, but not in the Fama-French model?

- ○ Size factor
- ○ Value factor
- ◉ Liquidity factor

Rationale

This Answer is Correct

The Pastor-Stambaugh model adds a liquidity factor on top of the factors included in the Fama-French model.

Question 43
L2R30TB-AC035-1512
LOS: LOS-7960
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium
The primary difference between the capital asset pricing model (CAPM) and arbitrage pricing theory (APT) is that APT's calculations:

- result in an equity risk premium while CAPM yields a required return.
- involve more than one sensitivity factor.
- do not require a beta.

Rationale
result in an equity risk premium while CAPM yields a required return.
Both APT and CAPM are used to estimate a stock's required return on equity, and both include betas. Whereas CAPM only includes one equity risk premium, APT is a multifactor model.

Rationale
involve more than one sensitivity factor.
Both APT and CAPM are used to estimate a stock's required return on equity, and both include betas. Whereas CAPM only includes one equity risk premium, APT is a multifactor model.

Rationale
do not require a beta.
Both APT and CAPM are used to estimate a stock's required return on equity, and both include betas. Whereas CAPM only includes one equity risk premium, APT is a multifactor model.

Question 44
L2CF-PQ2916-1411
LOS: LOS-7930
Lesson Reference: Lesson 1: Return Concepts and the Equity Risk Premium
Difficulty: medium

Consider the following statements:

Statement 1: Analysts prefer using the arithmetic mean over using the geometric mean to compute the historical equity market risk premium.

Statement 2: Analysts prefer using the long-term government bond yield over the short-term government bond yield as the risk-free rate when computing the historical equity market risk premium.

Which of the following is *most likely*?

- Only Statement 1 is correct.
- Only Statement 2 is correct.
- Both statements are incorrect.

Rationale

This Answer is Correct

Analysts prefer using the geometric mean over using the arithmetic mean to compute the historical equity market risk premium.

Question 45
L2EQ-TBB204-1412
LOS: LOS-7940
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium
All of the following risk factors are present in the Fama-French fundamental three-factor model *except:*

- (●) Liquidity.
- ( ) Market.
- ( ) Valuation.

Rationale

This Answer is Correct
The three factors of the Fama-French model are the market, size, and valuation. A liquidity risk factor is included in the Pastor-Stambaugh model, which is a four-factor extension of the Fama-French model.

Question 46
L2R30TB-AC024-1512
LOS: LOS-7980
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium
Rosemary Corp. has equity and debt in equal proportion. Its cost of equity is 12 percent and the yield-to-maturity on its debt is 7 percent. Rosemary Corp.'s tax rate is 25 percent. The company's weighted average cost of capital is *closest* to:

- 7.1 percent.
- 8.6 percent.
- 9.5 percent.

Rationale
7.1 percent.
Equal portions of debt and equity means that the capital structure weight for each is 0.5. The WACC is calculated as follows:

$$\begin{aligned}\text{WACC} &= \frac{\text{MVD}}{\text{MVD}+\text{MVCE}} r_d(1-\text{Tax rate}) + \frac{\text{MVCE}}{\text{MVD}+\text{MVCE}} r \\ &= 0.5(0.07)(1-0.25) + 0.5(0.12) = 0.086\end{aligned}$$

Rationale
8.6 percent.
Equal portions of debt and equity means that the capital structure weight for each is 0.5. The WACC is calculated as follows:

$$\begin{aligned}\text{WACC} &= \frac{\text{MVD}}{\text{MVD}+\text{MVCE}} r_d(1-\text{Tax rate}) + \frac{\text{MVCE}}{\text{MVD}+\text{MVCE}} r \\ &= 0.5(0.07)(1-0.25) + 0.5(0.12) = 0.086\end{aligned}$$

Rationale
9.5 percent.
Equal portions of debt and equity means that the capital structure weight for each is 0.5. The WACC is calculated as follows:

$$\begin{aligned}\text{WACC} &= \frac{\text{MVD}}{\text{MVD}+\text{MVCE}} r_d(1-\text{Tax rate}) + \frac{\text{MVCE}}{\text{MVD}+\text{MVCE}} r \\ &= 0.5(0.07)(1-0.25) + 0.5(0.12) = 0.086\end{aligned}$$

Question 47
L2EQ-TBX119-1502
LOS: LOS-7950
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: easy
The historical raw beta of a company is observed to be 1.69 using daily regression over the past five years. The adjusted beta according to the Blume method is *closest* to:

- (●) 1.46.
- ( ) 1.69.
- ( ) 1.92.

Rationale

This Answer is Correct

The Blume method assumes that betas mean revert to a value of 1 over time. Hence, when estimating betas, the Blume method forecasts an adjusted beta of:

$$(2/3) \times \text{Raw beta} + (1/3) \times 1 = (2/3) \times 1.69 + (1/3) = 1.46.$$

Question 48
L2R30TB-AC025-1512
LOS: LOS-7990
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium
When estimating required returns for a privately-held company, one special consideration is:

- (●) disproportionate ownership stakes.
- ( ) insufficient data.
- ( ) illiquidity.

Rationale
✔ **disproportionate ownership stakes.**
Two special considerations in dealing with privately-held companies are (1) controlling interests versus minority interests and (2) lack of marketability. Note that marketability and liquidity are not the same thing.

Rationale
✘ **insufficient data.**
Two special considerations in dealing with privately-held companies are (1) controlling interests versus minority interests and (2) lack of marketability. Note that marketability and liquidity are not the same thing.

Rationale
✘ **illiquidity.**
Two special considerations in dealing with privately-held companies are (1) controlling interests versus minority interests and (2) lack of marketability. Note that marketability and liquidity are not the same thing.

Question 49
L2R30TB-AC011-1512
LOS: LOS-7940
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium
Analyst Jack Pentes has calculated a 9.1 percent required return on a share of Cox Cars, assuming a beta of 1.1 and a risk-free rate of 3.0 percent. If Pentes is employing the capital asset pricing model, the equity risk premium he is assuming is *closest* to:

- (●) 5.5 percent.
- ( ) 6.1 percent.
- ( ) 11.0 percent.

Rationale
5.5 percent.
The required return on shares of Cox Cars is equal to the current expected risk-free return + beta multiplied by an equity risk premium. Given all other inputs, we can solve for the equity risk premium (ERP):

$$0.091 = 0.03 + 1.1\,(\text{ERP})$$
$$\text{ERP} = 5.5 \text{ percent}$$

Rationale
6.1 percent.
The required return on shares of Cox Cars is equal to the current expected risk-free return + beta multiplied by an equity risk premium. Given all other inputs, we can solve for the equity risk premium (ERP):

$$0.091 = 0.03 + 1.1\,(\text{ERP})$$
$$\text{ERP} = 5.5 \text{ percent}$$

Rationale
11.0 percent.
The required return on shares of Cox Cars is equal to the current expected risk-free return + beta multiplied by an equity risk premium. Given all other inputs, we can solve for the equity risk premium (ERP):

$$0.091 = 0.03 + 1.1\,(\text{ERP})$$
$$\text{ERP} = 5.5 \text{ percent}$$

Question 50
L2CF-PQ2915-1411
LOS: LOS-7930
Lesson Reference: Lesson 1: Return Concepts and the Equity Risk Premium
Difficulty: medium
Which of the following types of equity market indices are *most likely* used to represent equity market returns when using historical estimates to compute the equity risk premium?

- (●) Market-value-weighted indices.
- ( ) Price-weighted indices.
- ( ) Equal-weighted indices.

Rationale

This Answer is Correct
Typically, broad-based market-value-weighted indices are used to represent equity market returns.

Question 51
L2CF-PQ2911-1411
LOS: LOS-7980
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium

Laura Wilkins gathered the following information regarding Dux Co.:

Number of common shares outstanding = 1.5 million

Book value of the company's common stock = $12 million

Market price per share = $22

Book value of the company's debt = $44 million

Market value of the company's debt = $49.5 million

Risk-free rate = 5.5%

Equity market risk premium = 6.9%

Beta = 1.18

Before-tax cost of debt = 7%

Marginal tax rate = 40%

The company's weighted average cost of capital (WACC) is *closest* to:

- (•) 7.98%
- ( ) 6.22%
- ( ) 7.11%

Rationale

This Answer is Correct

Market value of the company's common stock = $22 × 1.5m = $33

Weight of equity in the capital structure = $33m/($33m + $49.5m) = 40%

Weight of debt in the capital structure = $49.5m/($33m + $49.5m) = 60%

Required return on equity = 0.055 + 1.18(0.069) = 13.642%

WACC = $[w_d \times r_d \times (1 - t)] + (w_e \times r_e)$

$$WACC = [0.6 \times 0.07 \times (1 - 0.4)] + (0.4 \times 0.13642) = 7.98\%$$

Question 52
L2CF-PQ2906-1411
LOS: LOS-7940
Lesson Reference: Lesson 2: The Required Return on Equity, the Weighted Average Cost of Capital, and Discount Rate Selection
Difficulty: medium

Sofia gathered the following information regarding the stock of Sentura Ltd:

Confidence risk = 3.18%

Time horizon risk = 0.82%

Inflation risk = 5.43%

Business cycle risk = 2.25%

Market timing risk = 3.42%

Sensitivity to confidence risk = 0.28

Sensitivity to time horizon risk = -0.41

Sensitivity to inflation risk = -0.19

Sensitivity to business cycle risk = 0.23

Sensitivity to market timing risk = 0.14

Given a risk-free rate of 3.5%, the required return on the stock based on the BIRR model is *closest* to:

- 0.52%
- 6.28%
- 4.02%

Rationale

This Answer is Correct

Required return = 0.035 + (0.0318 × 0.28) + [0.0082 × (−0.41)] + [0.0543 × (−0.19)] + (0.0225 × 0.23) + (0.0342 × 0.14)

Required return = 4.0188%

Question 53
L2EQ-TB0006-1412
LOS: LOS-7930
Lesson Reference: Lesson 1: Return Concepts and the Equity Risk Premium
Difficulty: medium
Rungfop Ltd. is a publicly quoted company with a historical equity beta of 1.35 relative to the FTSE All-Share index over the past 5 years. The 10-year UK government bond yield is 2.5%, and an estimate of the equity market risk premium in the United Kingdom is 3.5%. Which of the following is closest to the estimate of the required return on Rungfop shares using the Capital Asset Pricing Model with an adjusted beta?

- 3.7%.
- 6.8%.
- 7.2%.

Rationale

This Answer is Correct

The adjusted beta is (2/3)(1.35) + (1/3)(1.0) = 1.233.

The required return according to CAPM is, therefore, 2.5% + 1.233(3.5%) = 6.8%.

Question 54
L2R30TB-AC008-1512
LOS: LOS-7920
Lesson Reference: Lesson 1: Return Concepts and the Equity Risk Premium
Difficulty: medium
An investor realized a gain on the sale of a non-dividend paying common stock. The difference between the realized return and the contemporaneous required return is *best* described as:

- (●) ex post alpha.
- ( ) *ex ante* alpha.
- ( ) realized beta.

Rationale
✔ **ex post alpha.**
The difference between the realized holding period return and the contemporaneous (period) required return is the realized ex post alpha (the abnormal return that actually occurred).

Rationale
✘ ***ex ante* alpha.**
The difference between the realized holding period return and the contemporaneous (period) required return is the realized ex post alpha (the abnormal return that actually occurred).

Rationale
✘ **realized beta.**
The difference between the realized holding period return and the contemporaneous (period) required return is the realized ex post alpha (the abnormal return that actually occurred).