Question 1
L2R24TB-AC012-1512
LOS: LOS-7410
Lesson Reference: Lesson 1: The Capital Structure Decision Part I: Capital Structure and the MM Propositions with No Taxes
Difficulty: medium
Pomona Enterprises has a weighted average cost of capital of 12.1 percent. After it paid off one of its bond issues, its weighted average cost of capital (WACC) dropped to 11.6 percent. This outcome is *most likely* due to Pomona Enterprises having:

- too little debt both before and after the debt issue's retirement.
- paid off debt that was floating-rate debt, which leaves only fixed-rate debt in its financing.
- a debt-to-equity ratio before the debt issue's retirement that was higher than the optimal debt-to-equity ratio.

Rationale

too little debt both before and after the debt issue's retirement.

The WACC dropped by 0.5 percent after the bond issue payoff. This suggests that Pomona was operating at a WACC that was greater than the minimum WACC. The WACC is minimized at the point where the marginal benefits and costs of debt are exactly in balance. If too much debt is held, the WACC starts rising because the costs of financial distress are rising faster than the savings from using more debt that has an after-tax cost that is lower than the cost of equity. Reducing the WACC is consistent with attempting to maximize the firm's market value. There is no way to know if the floating-rate debt had higher or lower interest rates than the fixed- rate debt.

Rationale

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Rationale

a debt-to-equity ratio before the debt issue's retirement that was higher than the optimal debt-to-equity ratio.

The WACC dropped by 0.5 percent after the bond issue payoff. This suggests that Pomona was operating at a WACC that was greater than the minimum WACC. The WACC is minimized at the point where the marginal benefits and costs of debt are exactly in balance. If too much debt is held, the WACC starts rising because the costs of financial distress are rising faster than the savings from using more debt that has an after-tax cost that is lower than the cost of equity. Reducing the WACC is consistent with attempting to maximize the firm's market value. There is no way to know if the floating-rate debt had higher or lower interest rates than the fixed- rate debt.

Question 2

L200-PQ0018-1412

LOS: LOS-7410

Lesson Reference: Lesson 2: The Capital Structure Decision Part II: MM Propositions with Taxes, the Costs of Financial Distress, Agency Costs

Difficulty: medium

What is the primary thesis of Modigliani–Miller propositions regarding companies changing their capital structure and the value of their firms?

- It adds value.
- It subtracts value.
- It does not change value.

Rationale

This Answer is Correct

The primary thesis of Modigliani–Miller propositions is that changes in capital structure do not affect company value.

Question 3
L2R24TB-AC024-1512
LOS: LOS-7430
Lesson Reference: Lesson 3: The Target Capital Structure and Practical Issues in Capital Structure Policy
Difficulty: medium
A company has set a goal of maintaining its current credit rating on its debt of A. This is *most likely* being done to:

- achieve the lowest debt cost possible.
- ensure that there is no risk of default on its debt.
- avoid having to incur higher debt costs if the company's credit rating falls.

Rationale
achieve the lowest debt cost possible.
Firms will attempt to maintain a credit rating at a certain level in order to avoid paying higher debt costs if the rating falls. The company could achieve lower debt costs by engaging in actions to raise its credit rating to AA/Aa or AAA/Aaa. Also, there is no way to absolutely ensure that there is no risk of default.

Rationale
ensure that there is no risk of default on its debt.
Firms will attempt to maintain a credit rating at a certain level in order to avoid paying higher debt costs if the rating falls. The company could achieve lower debt costs by engaging in actions to raise its credit rating to AA/Aa or AAA/Aaa. Also, there is no way to absolutely ensure that there is no risk of default.

Rationale
avoid having to incur higher debt costs if the company's credit rating falls.
Firms will attempt to maintain a credit rating at a certain level in order to avoid paying higher debt costs if the rating falls. The company could achieve lower debt costs by engaging in actions to raise its credit rating to AA/Aa or AAA/Aaa. Also, there is no way to absolutely ensure that there is no risk of default.

Question 4
L2R24TB-AC022-1512
LOS: LOS-7420
Lesson Reference: Lesson 3: The Target Capital Structure and Practical Issues in Capital Structure Policy
Difficulty: medium
The CFO of a company informs the company's president that the value of the firm will be maximized when the weighted average cost of capital (WACC) is minimized and that this minimization occurs when the company's debt-to-equity ratio is at a level where the marginal benefits of debt financing are exactly offset by the marginal costs of debt financing. The CFO *most likely* believes in the:

- (●) static tradeoff theory.
- ( ) pecking order theory.
- ( ) arbitrage pricing theory.

Rationale
static tradeoff theory.
The CFO is using the static tradeoff theory as the basis for his statement. Under this theory, the optimal capital structure is the debt-to-equity ratio where the marginal benefits of debt financing are exactly offset by the marginal costs of debt financing. Furthermore, there is a point where the marginal benefits and costs of debt are exactly in balance, and, at this point, the company's weighted average cost of capital (WACC) is minimized.

Rationale
pecking order theory.
The CFO is using the static tradeoff theory as the basis for his statement. Under this theory, the optimal capital structure is the debt-to-equity ratio where the marginal benefits of debt financing are exactly offset by the marginal costs of debt financing. Furthermore, there is a point where the marginal benefits and costs of debt are exactly in balance, and, at this point, the company's weighted average cost of capital (WACC) is minimized.

Rationale
arbitrage pricing theory.
The CFO is using the static tradeoff theory as the basis for his statement. Under this theory, the optimal capital structure is the debt-to-equity ratio where the marginal benefits of debt financing are exactly offset by the marginal costs of debt financing. Furthermore, there is a point where the marginal benefits and costs of debt are exactly in balance, and, at this point, the company's weighted average cost of capital (WACC) is minimized.

Question 5

L2FR-PQ2314-1410

LOS: LOS-7420

Lesson Reference: Lesson 3: The Target Capital Structure and Practical Issues in Capital Structure Policy

Difficulty: medium

Which of the following is *least likely* an explanation for companies deviating from their target capital structures?

- Management using book values of debt and equity for balance sheet purposes rather than market values.
- It may sometimes make sense for the company to exploit short-term opportunities in a particular source of financing.
- Flotation costs may make it prohibitively expensive for the company to issue securities to maintain the target capital structure.

Rationale

This Answer is Correct

A company's capital structure depends on the market values of debt and equity, regardless of which measurement base is used to report these items on the balance sheet.

Question 6
L2FR-PQ2302-1410
LOS: LOS-7410
Lesson Reference: Lesson 2: The Capital Structure Decision Part II: MM Propositions with Taxes, the Costs of Financial Distress, Agency Costs
Difficulty: medium
Which of the following is *least likely* an assumption for MM Proposition I—without taxes?

- There are no transaction costs and no bankruptcy costs.
- Financing and investment decisions are interdependent.
- Investors can borrow and lend at the risk-free rate.

Rationale

This Answer is Correct

MM Proposition I—without taxes assumes that:

- Investors have homogeneous expectations regarding cash flows from an investment in bonds or stocks.
- Capital markets are perfect, that is, there are no taxes, no transaction costs, and no bankruptcy costs. Further, all market participants have the same information, so investments with identical cash flow streams and risk must trade at the same price.
- Investors can borrow and lend at the risk-free rate.
- There are no agency costs.
- The financing and investment decisions are **independent** of each other.

Question 7

L2FR-PQ2301-1410

LOS: LOS-7410

Lesson Reference: Lesson 2: The Capital Structure Decision Part II: MM Propositions with Taxes, the Costs of Financial Distress, Agency Costs

Difficulty: medium

Aroma Chemicals has a debt-to-equity ratio of 0.7. The company's weighted average cost of capital (WACC) is 8%, while its cost of equity is 12%. Given a marginal tax rate of 30%, the company's after-tax cost of debt is *closest to*:

- 3.27%
- 2.29%
- 4.35%

Rationale

This Answer is Correct

WACC = [(D / V) × Before-tax cost of debt × (1 – t)] + [(E / V) × Cost of equity]

0.08 = [(0.7 / 1.7) × Before-tax cost of debt × (1 – 0.3)] + [(1 / 1.7) × 0.12]

Before-tax cost of debt = 0.03265 = 3.265%

After-tax cost of debt = 3.265% × (1 – 0.3) = 0.02286 = 2.286%

Question 8
L2CF-TB0005-1412
LOS: LOS-7410
Lesson Reference: Lesson 1: The Capital Structure Decision Part I: Capital Structure and the MM Propositions with No Taxes
Difficulty: medium
Black Inc. is a manufacturing company with a cost of debt of 6.5%. The company is financed equally by equity and debt and is subject to a tax rate of 20%. An analyst investigating the optimal capital structure for the firm has estimated that the cost of equity of the company if it had no debt would be 8%. According to Modigliani and Miller proposition II with taxes, the cost of equity of the company is closest to:

- 6.6%.
- 7.3%.
- 9.2%.

Rationale

This Answer is Correct

According to M&M proposition II with taxes, the cost of equity will be

$$r_e = r_0 + (r_1 0 - r_1 d)(1 - t)(D/E)$$

where r_0 is the cost of equity of the company if it were financed with 100% equity.

In this case, $r_e = 8 + (8 - 6.5)(1 - 0.2)(0.5 / 0.5) = 9.2\%$.

Question 9
L2R24TB-AC026-1512
LOS: LOS-7450
Lesson Reference: Lesson 3: The Target Capital Structure and Practical Issues in Capital Structure Policy
Difficulty: medium
An analyst is comparing two companies from the same industry that are based in different countries. Company A's home country has a strong legal system, while company B's home country has a weak legal system. Based only on this information and all else being equal, the analyst will *most likely* expect to find that company A has a:

- (●) lower debt-to-equity ratio and longer maturity debt.
- ( ) higher debt-to-equity ratio and longer maturity debt.
- ( ) higher debt-to-equity ratio and shorter maturity debt.

Rationale

✔ **lower debt-to-equity ratio and longer maturity debt.**

Studies have shown that companies operating in countries where the legal system is weak tend to have higher debt-to-equity ratios, while companies operating in countries where the legal system is strong have lower relative debt-to-equity ratios. In addition, long-term debt is more widely used than short-term debt in countries with more efficient legal systems. Thus, company A is more likely to have a lower debt-to-equity ratio than company B, and company A's debt is more likely to have a longer maturity than company B's debt.

Rationale

✘ **higher debt-to-equity ratio and longer maturity debt.**

Studies have shown that companies operating in countries where the legal system is weak tend to have higher debt-to-equity ratios, while companies operating in countries where the legal system is strong have lower relative debt-to-equity ratios. In addition, long-term debt is more widely used than short-term debt in countries with more efficient legal systems. Thus, company A is more likely to have a lower debt-to-equity ratio than company B, and company A's debt is more likely to have a longer maturity than company B's debt.

Rationale

✘ **higher debt-to-equity ratio and shorter maturity debt.**

Studies have shown that companies operating in countries where the legal system is weak tend to have higher debt-to-equity ratios, while companies operating in countries where the legal system is strong have lower relative debt-to-equity ratios. In addition, long-term debt is more widely used than short-term debt in countries with more efficient legal systems. Thus, company A is more likely to have a lower debt-to-equity ratio than company B, and company A's debt is more likely to have a longer maturity than company B's debt.

Question 10
L2R24TB-AC023-1512
LOS: LOS-7420
Lesson Reference: Lesson 3: The Target Capital Structure and Practical Issues in Capital Structure Policy
Difficulty: medium
A firm's actual capital structure does not match its target capital structure. This outcome is *least likely* to be justified by:

- market-value fluctuations in its debt and equity securities it has issued to finance itself.
- not being practical because market conditions may make it extremely difficult to raise capital.
- the target capital structure not being the optimal capital structure according to the static tradeoff theory.

Rationale
market-value fluctuations in its debt and equity securities it has issued to finance itself.
Under the static tradeoff theory, the target capital structure is the optimal capital structure. It is the capital structure where the company's weighted average cost of capital (WACC) is minimized.

Rationale
not being practical because market conditions may make it extremely difficult to raise capital.
Under the static tradeoff theory, the target capital structure is the optimal capital structure. It is the capital structure where the company's weighted average cost of capital (WACC) is minimized.

Rationale
the target capital structure not being the optimal capital structure according to the static tradeoff theory.
Under the static tradeoff theory, the target capital structure is the optimal capital structure. It is the capital structure where the company's weighted average cost of capital (WACC) is minimized.

Question 11
L2R24TB-AC015-1512
LOS: LOS-7410
Lesson Reference: Lesson 1: The Capital Structure Decision Part I: Capital Structure and the MM Propositions with No Taxes
Difficulty: medium
Ned's Decorations Inc. (NDI) operates in a country that has no corporate taxes and it has an annual operating income (EBIT) of $600,000 in perpetuity. The company is currently 100 percent equity financed and its shareholders have a current required rate of return of 10 percent. NDI is considering a major financial restructuring where it will issue $2 million of 6.0 percent debt at par value and use the proceeds to buy back stock. Assuming Modigliani and Miller's Proposition II applies, the value of NDI before the restructuring is *closest to*:

- (●) $6,000,000
- ( ) $7,500,000
- ( ) $10,000,000

Rationale
$6,000,000
The company's WACC equals its 10 percent cost of equity because the company is currently 100 percent equity financed. With no taxes, the value of the all-equity financed NDI is as follows:

$$\text{V} = \frac{\text{EBIT}}{r_w} = \frac{\$600{,}000}{0.10} = \$6{,}000{,}000$$

Rationale
$7,500,000
The company's WACC equals its 10 percent cost of equity because the company is currently 100 percent equity financed. With no taxes, the value of the all-equity financed NDI is as follows:

$$\text{V} = \frac{\text{EBIT}}{r_w} = \frac{\$600{,}000}{0.10} = \$6{,}000{,}000$$

Rationale
$10,000,000
The company's WACC equals its 10 percent cost of equity because the company is currently 100 percent equity financed. With no taxes, the value of the all-equity financed NDI is as follows:

$$\text{V} = \frac{\text{EBIT}}{r_w} = \frac{\$600{,}000}{0.10} = \$6{,}000{,}000$$

Question 12
L2R24TB-AC010-1512
LOS: LOS-7410
Lesson Reference: Lesson 1: The Capital Structure Decision Part I: Capital Structure and the MM Propositions with No Taxes
Difficulty: medium
A country is raising its corporate tax rates. At the point in time when the tax rate is increased, the weighted average cost of capital (WACC) for a levered company operating in that country will *most likely*:

- rise.
- fall.
- not change.

Rationale
rise.
The after-tax cost of debt declines as the tax rate rises. With a lower after-tax cost of debt, the WACC falls.

Rationale
fall.
The after-tax cost of debt declines as the tax rate rises. With a lower after-tax cost of debt, the WACC falls.

Rationale
not change.
The after-tax cost of debt declines as the tax rate rises. With a lower after-tax cost of debt, the WACC falls.

Question 13
L2FR-PQ2320-1410
LOS: LOS-7450
Lesson Reference: Lesson 3: The Target Capital Structure and Practical Issues in Capital Structure Policy
Difficulty: medium
Companies operating in countries with relatively weak legal systems, generally tend to:

- (●) Have higher financial leverage and rely more on short-term debt than long-term debt.
- ( ) Have lower financial leverage and rely more on short-term debt than long-term debt.
- ( ) Have higher financial leverage and rely more on long-term debt than short-term debt.

Rationale

This Answer is Correct
Companies operating in countries with relatively weak legal systems tend to have higher financial leverage. Further, they make relatively more use of short-term debt than long-term debt.

Question 14
L2R24TB-AC007-1512
LOS: LOS-7410
Lesson Reference: Lesson 1: The Capital Structure Decision Part I: Capital Structure and the MM Propositions with No Taxes
Difficulty: medium
In accordance with Modigliani and Miller Proposition I and assuming no taxes, the value of the firm *most likely*:

- increases as the leverage ratio increases.
- decreases as the leverage ratio increases.
- remains unchanged as the leverage ratio increases.

Rationale
increases as the leverage ratio increases.
According to M&M's Proposition I, the value of the firm is independent of its capital structure (i.e., the firm's value does not change with a change in leverage ratios).

Rationale
decreases as the leverage ratio increases.
According to M&M's Proposition I, the value of the firm is independent of its capital structure (i.e., the firm's value does not change with a change in leverage ratios).

Rationale
remains unchanged as the leverage ratio increases.
According to M&M's Proposition I, the value of the firm is independent of its capital structure (i.e., the firm's value does not change with a change in leverage ratios).

Question 15
L2FR-PQ2316-1410
LOS: LOS-7410
Lesson Reference: Lesson 2: The Capital Structure Decision Part II: MM Propositions with Taxes, the Costs of Financial Distress, Agency Costs
Difficulty: medium
Given that there are taxes but no costs of financial distress, as the proportion of debt in a company's capital structure increases, the value of the company:

- (●) Increases.
- ( ) Decreases.
- ( ) Remains the same.

Rationale

This Answer is Correct

A higher proportion of debt in the capital structure results in a higher cost of equity.

However, the higher cost of equity is more than offset by the lower **after-tax** cost of debt, so the WACC falls. Therefore, the value of the company increases.

Question 16
L2R24TB-AC018-1512
LOS: LOS-7410
Lesson Reference: Lesson 1: The Capital Structure Decision Part I: Capital Structure and the MM Propositions with No Taxes
Difficulty: medium
Perez & Perez (P&P), based in a country currently without any taxes, has an annual operating income (EBIT) of €3 million in perpetuity. The company is currently 100 percent equity financed and, based on its current capital structure, its shareholders have a required rate of return of 12 percent. P&P is considering issuing €10 million in debt and using the proceeds to repurchase common shares. The debt will be issued at par and will have an 8.0 percent coupon. If the country implements a 30 percent corporate tax rate and Modigliani and Miller's Propositions I and II with taxes apply, the value of the firm *before* the debt issuance and share repurchase is *closest to*:

- ○ €35.7 million.
- ○ €25.0 million.
- ● €17.5 million.

Rationale
✗ **€35.7 million.**
The initial cost of equity is 12 percent and the WACC is also 12 percent because the company is financed with all equity prior to the debt issuance. The only key is to find the after-tax operating income. The value of the firm prior to doing the debt issuance is:

$$\mathrm{V} = \frac{\mathrm{EBIT}(1-t)}{r_w} = \frac{€3 \text{ million } (1-03)}{0.12} = €17.5 \text{ million}$$

Rationale
✗ **€25.0 million.**
The initial cost of equity is 12 percent and the WACC is also 12 percent because the company is financed with all equity prior to the debt issuance. The only key is to find the after-tax operating income. The value of the firm prior to doing the debt issuance is:

$$\mathrm{V} = \frac{\mathrm{EBIT}(1-t)}{r_w} = \frac{€3 \text{ million } (1-03)}{0.12} = €17.5 \text{ million}$$

Rationale
✓ **€17.5 million.**
The initial cost of equity is 12 percent and the WACC is also 12 percent because the company is financed with all equity prior to the debt issuance. The only key is to find the after-tax operating income. The value of the firm prior to doing the debt issuance is:

$$\mathrm{V} = \frac{\mathrm{EBIT}(1-t)}{r_w} = \frac{€3 \text{ million } (1-03)}{0.12} = €17.5 \text{ million}$$

Question 17
L2R24TB-AC020-1512
LOS: LOS-7410
Lesson Reference: Lesson 1: The Capital Structure Decision Part I: Capital Structure and the MM Propositions with No Taxes
Difficulty: medium
Foote Industrial Supply (FIS) has an annual operating income (EBIT) of £1.5 million in perpetuity and it pays a 40 percent corporate tax rate. The company is currently 100 percent equity financed and, based on its current capital structure, its shareholders have a required rate of return of 18 percent. FIS is considering issuing £1.0 million in debt and using the proceeds to repurchase common shares. The debt will be issued at par and will have a 10.0 percent coupon. If Modigliani and Miller's Propositions I and II with taxes apply, the cost of equity *after* the debt issuance and share repurchase is *closest to*:

- (●) 19.1 percent.
- ( ) 18.6 percent.
- ( ) 18.0 percent.

Rationale

19.1 percent.

The first step is to calculate the value of the firm before the issuance in order to determine the value of the equity at that point. The cost of equity is 18 percent and the WACC is also 18 percent because the company is financed with all equity prior to the debt issuance. The value of the firm prior to doing the debt issuance is:

$$\mathrm{V} = \frac{\mathrm{EBIT}(1-t)}{r_w} = \frac{£1.5\text{ million}(1-0.4)}{0.18} = £5\text{ million}$$

According to M&M Proposition I after taxes, the firm's value after the debt issuance and stock repurchase is calculated as follows:

$$\mathrm{V}_L = \mathrm{V}_U + t\mathrm{D} = £5\text{ million} + (0.40)(£1\text{ million}) = £5.4\text{ million}$$

Since debt is £1.0 million and the total firm value is £5.4 million, the equity value is the remaining £4.4 million. Using the value of the firm formula and the new £5.4 million total firm value, we can solve for the WACC:

$$\mathrm{V} = \frac{\mathrm{EBIT}(1-t)}{r_w}$$

$$£5.4\text{ million} = \frac{£1.5\text{ million}(1-0.4)}{r_w}$$

$$r_w = 16.6667\text{ percent}$$

The debt is being issued at par, so the coupon of 10.0 percent equals the yield to maturity (pre-tax cost of debt = after-tax cost of debt in a no tax environment). Because we have the WACC and the cost of debt, we can use the WACC formula to solve for the cost of equity:

$$r_w = \left(\frac{\mathrm{D}}{\mathrm{V}}\right) r_d(1-t) + \left(\frac{\mathrm{E}}{\mathrm{V}}\right) r_e$$

$$0.16667 = \left(\frac{£1.0}{£5.4}\right) 0.10(1-0.40) + \left(\frac{£4.4}{£5.4}\right) r_e$$

$$r_e = 0.191 = 19.1\text{ percent}$$

Rationale

18.6 percent.

The first step is to calculate the value of the firm before the issuance in order to determine the value of the equity at that point. The cost of equity is 18 percent and the WACC is also 18 percent because the company is financed with all equity prior to the debt issuance. The value of the firm prior to doing the debt issuance is:

$$\text{V} = \frac{\text{EBIT}(1-t)}{r_w} = \frac{\text{£}1.5 \text{ million}(1-0.4)}{0.18} = \text{£}5 \text{ million}$$

According to M&M Proposition I after taxes, the firm's value after the debt issuance and stock repurchase is calculated as follows:

$$\text{V}_L = \text{V}_U + t\text{D} = \text{£}5 \text{ million} + (0.40)(\text{£}1 \text{ million}) = \text{£}5.4 \text{ million}$$

Since debt is £1.0 million and the total firm value is £5.4 million, the equity value is the remaining £4.4 million. Using the value of the firm formula and the new £5.4 million total firm value, we can solve for the WACC:

$$\text{V} = \frac{\text{EBIT}(1-t)}{r_w}$$

$$\text{£}5.4 \text{ million} = \frac{\text{£}1.5 \text{ million}(1-0.4)}{r_w}$$

$$r_w = 16.6667 \text{ percent}$$

The debt is being issued at par, so the coupon of 10.0 percent equals the yield to maturity (pre-tax cost of debt = after-tax cost of debt in a no tax environment). Because we have the WACC and the cost of debt, we can use the WACC formula to solve for the cost of equity:

$$r_w = \left(\frac{\text{D}}{\text{V}}\right) r_d(1-t) + \left(\frac{\text{E}}{\text{V}}\right) r_e$$

$$0.16667 = \left(\frac{\text{£}1.0}{\text{£}5.4}\right) 0.10(1-0.40) + \left(\frac{\text{£}4.4}{\text{£}5.4}\right) r_e$$

$$r_e = 0.191 = 19.1 \text{ percent}$$

Rationale

18.0 percent.

The first step is to calculate the value of the firm before the issuance in order to determine the value of the equity at that point. The cost of equity is 18 percent and the WACC is also 18 percent because the company is financed with all equity prior to the debt issuance. The value of the firm prior to doing the debt issuance is:

$$\text{V} = \frac{\text{EBIT}(1-t)}{r_w} = \frac{\text{£}1.5 \text{ million}(1-0.4)}{0.18} = \text{£}5 \text{ million}$$

According to M&M Proposition I after taxes, the firm's value after the debt issuance and stock repurchase is calculated as follows:

$$\text{V}_L = \text{V}_U + t\text{D} = \text{£}5 \text{ million} + (0.40)(\text{£}1 \text{ million}) = \text{£}5.4 \text{ million}$$

Since debt is £1.0 million and the total firm value is £5.4 million, the equity value is the remaining £4.4 million. Using the value of the firm formula and the new £5.4 million total firm value, we can solve for the WACC:

$$\mathrm{V} = \frac{\mathrm{EBIT}(1-t)}{r_w}$$

$$\text{£}5.4\text{ million} = \frac{\text{£}1.5\text{ million}(1-0.4)}{r_w}$$

$$r_w = 16.6667\text{ percent}$$

The debt is being issued at par, so the coupon of 10.0 percent equals the yield to maturity (pre-tax cost of debt = after-tax cost of debt in a no tax environment). Because we have the WACC and the cost of debt, we can use the WACC formula to solve for the cost of equity:

$$r_w = \left(\frac{\mathrm{D}}{\mathrm{V}}\right) r_d(1-t) + \left(\frac{\mathrm{E}}{\mathrm{V}}\right) r_e$$

$$0.16667 = \left(\frac{\text{£}1.0}{\text{£}5.4}\right) 0.10(1-0.40) + \left(\frac{\text{£}4.4}{\text{£}5.4}\right) r_e$$

$$r_e = 0.191 = 19.1\text{ percent}$$

Question 18
L2R24TB-AC009-1512
LOS: LOS-7410
Lesson Reference: Lesson 1: The Capital Structure Decision Part I: Capital Structure and the MM Propositions with No Taxes
Difficulty: medium
An agency cost that occurs even when there is adequate monitoring and bonding present is *most likely*:

- environmental regulation costs.
- government corruption costs.
- residual loss.

Rationale
environmental regulation costs.
Residual loss is comprised of the costs that are incurred even in the presence of adequate monitoring and bonding because the process is imperfect.

Rationale
government corruption costs.
Residual loss is comprised of the costs that are incurred even in the presence of adequate monitoring and bonding because the process is imperfect.

Rationale
residual loss.
Residual loss is comprised of the costs that are incurred even in the presence of adequate monitoring and bonding because the process is imperfect.

Question 19

L2FR-PQ2303-1410

LOS: LOS-7410

Lesson Reference: Lesson 2: The Capital Structure Decision Part II: MM Propositions with Taxes, the Costs of Financial Distress, Agency Costs

Difficulty: medium

MM Proposition II—without taxes *most likely* asserts that:

- As the proportion of debt in a company's capital structure increases, its weighted average cost of capital decreases.
- As the proportion of debt in a company's capital structure increases, its cost of equity also increases.
- A company's capital structure has no impact on its market value.

Rationale

This Answer is Correct

MM Proposition II—without taxes states that the cost of equity is a linear function of the company's debt-to-equity ratio.

MM Proposition I—without taxes states that a company's capital structure has no impact on its market value.

As the proportion of debt in a company's capital structure increases, its weighted average cost of capital remains unchanged.

Question 20

L2FR-PQ2318-1410

LOS: LOS-7410

Lesson Reference: Lesson 2: The Capital Structure Decision Part II: MM Propositions with Taxes, the Costs of Financial Distress, Agency Costs

Difficulty: medium

According to the static trade-off theory, as the proportion of debt in the capital structure increases, which of the following is *least likely*?

- (●) The after-tax cost of debt initially falls and then rises.
- ( ) The value of the firm initially rises, but then falls.
- ( ) The cost of equity rises.

Rationale

This Answer is Correct

As the proportion of debt in the capital structure increases, when there are taxes and there are costs of financial distress, the after-tax costs of debt rises. It is the WACC that initially declines and then rises, resulting in an initial increase in the value of the leveraged firm, followed by an eventual decline.

Question 21
L2CF-TB0006-1412
LOS: LOS-7420
Lesson Reference: Lesson 3: The Target Capital Structure and Practical Issues in Capital Structure Policy
Difficulty: medium
According to the static trade-off theory of capital structure, the optimal capital structure of the firm will contain:

- Less debt than equity.
- Debt of less than 100% of a company's capital structure.
- Debt equal to 100% of capital structure.

Rationale

This Answer is Correct
Static trade-off theory says that debt should be raised until the marginal benefit of the tax shield of debt is equal to the marginal cost of financial distress. This will mean the company will have some debt in its capital structure, not necessarily less than that of equity, and certainly less than 100%.

Question 22
L2FR-ITEMSET-PQ2309-1411
LOS: LOS-7410
Lesson Reference: Lesson 2: The Capital Structure Decision Part II: MM Propositions with Taxes, the Costs of Financial Distress, Agency Costs
Difficulty: medium

Use the following information to answer the next three questions:

Carla Simone, CFA is evaluating the capital structure of Delta Capital. She learns that the company is currently financed only with equity and has a cost of equity of 10%. The company has recently announced that it will issue $2 million worth of perpetual debt and use the proceeds to purchase an equivalent amount of equity. The company's before-tax cost of debt will be 5%. Carla also learns that the company's EBIT of $800,000 is expected to remain constant for the foreseeable future.

Given that the company's marginal tax rate is 40%, answer the following questions.

i.
Based on MM propositions—with taxes, the current value of the company is *closest to*:

- (•) $4.8 million
- ( ) $8 million
- ( ) $5.6 million

Rationale
This Answer is Correct

$V_U = EBIT (1 – t) / r_E$

$V_U = 800{,}000 \times (1 – 0.4) / 0.1 = \$4{,}800{,}000$

ii.
Based on MM propositions—with taxes, the value of the company after the issuance of debt is *closest to*:

- ( ) $8.8 million
- ( ) $4.8 million
- (•) $5.6 million

Rationale
This Answer is Correct

$V_L = V_U + tD$

$V_L = \$4{,}800{,}000 + (0.4 \times \$2{,}000{,}000)$

$V_L = \$5{,}600{,}000$

iii.
Based on MM propositions—with taxes, the company's weighted average cost of capital after the issuance of debt is *closest to*:

- ( ) 11.67%

- 10.34%
- 8.57%

Rationale

This Answer is Correct

Value of equity after the issuance of debt = V_L – Value of debt

= $5,600,000 – $2,000,000 = $3,600,000

Therefore, cost of equity (r_E) is calculated as:

$r_E = r_0 + (r_0 - r_D) \times (1 - t) \times D/E$

= 0.1 + (0.1 – 0.05) × (1 – 0.4) × $2m / $3.6m = 11.667%

WACC = [(D/V) × Before-tax cost of debt × (1 – t)] + [(E/V) × Cost of equity]

= [$2m / $5.6m × 0.05 × (1 − 0.4)] + [$3.6m / $5.6m × 0.11667] = 8.57%

Question 23
L2R24TB-AC019-1512
LOS: LOS-7410
Lesson Reference: Lesson 1: The Capital Structure Decision Part I: Capital Structure and the MM Propositions with No Taxes
Difficulty: medium
Perez & Perez (P&P), based in a country currently without any taxes, has an annual operating income (EBIT) of €3 million in perpetuity. The company is currently 100 percent equity financed and, based on its current capital structure, its shareholders have a required rate of return of 12 percent. P&P is considering issuing €10 million in debt and using the proceeds to repurchase common shares. The debt will be issued at par and will have an 8.0 percent coupon. If the country implements a 30 percent corporate tax rate and Modigliani and Miller's Propositions I and II with taxes apply, the value of the firm *after* the debt issuance and share repurchase is *closest to*:

- €28.0 million.
- €20.5 million.
- €17.5 million.

Rationale
€28.0 million.

The first step is to calculate the value of the firm before the issuance in order to determine the value of the equity at that point. The cost of equity is 12 percent and the WACC is also 12 percent because the company is financed with all equity prior to the debt issuance. The value of the firm prior to doing the debt issuance is:

$$\mathrm{V} = \frac{\mathrm{EBIT}(1-t)}{r_w} = \frac{€3 \text{ million } (1-03)}{0.12} = €17.5 \text{ million}$$

According to M&M Proposition I after taxes, the firm's value after the debt issuance and stock repurchase is calculated as follows:

$$\mathrm{V}_L = \mathrm{V}_U + t\mathrm{D} = €17.5 \text{ million} + 30\% \times \left(€10 \text{ million}\right) = €20.5 \text{ million}$$

Rationale
€20.5 million.

The first step is to calculate the value of the firm before the issuance in order to determine the value of the equity at that point. The cost of equity is 12 percent and the WACC is also 12 percent because the company is financed with all equity prior to the debt issuance. The value of the firm prior to doing the debt issuance is:

$$\mathrm{V} = \frac{\mathrm{EBIT}(1-t)}{r_w} = \frac{€3 \text{ million } (1-03)}{0.12} = €17.5 \text{ million}$$

According to M&M Proposition I after taxes, the firm's value after the debt issuance and stock repurchase is calculated as follows:

$$\mathrm{V}_L = \mathrm{V}_U + t\mathrm{D} = €17.5 \text{ million} + 30\% \times \left(€10 \text{ million}\right) = €20.5 \text{ million}$$

Rationale

€17.5 million.

The first step is to calculate the value of the firm before the issuance in order to determine the value of the equity at that point. The cost of equity is 12 percent and the WACC is also 12 percent because the company is financed with all equity prior to the debt issuance. The value of the firm prior to doing the debt issuance is:

$$\mathrm{V} = \frac{\mathrm{EBIT}(1-t)}{r_w} = \frac{€3 \text{ million } (1-03)}{0.12} = €17.5 \text{ million}$$

According to M&M Proposition I after taxes, the firm's value after the debt issuance and stock repurchase is calculated as follows:

$$\mathrm{V}_L = \mathrm{V}_U + t\mathrm{D} = €17.5 \text{ million} + 30\% \times \big(€10 \text{ million}\big) = €20.5 \text{ million}$$

Question 24

L2R24TB-AC013-1512

LOS: LOS-7410

Lesson Reference: Lesson 1: The Capital Structure Decision Part I: Capital Structure and the MM Propositions with No Taxes

Difficulty: medium

According to Modigliani and Miller Proposition II and assuming no corporate taxes, the optimal capital structure is *most likely* achieved:

- (●) at any mix of equity and debt financing.
- ( ) only when debt approaches 100 percent of the total capital structure.
- ( ) at the sole point where the rising cost of equity exactly offsets the benefit of using cheaper debt.

Rationale

✔ **at any mix of equity and debt financing.**

According to Modigliani and Miller Proposition II and assuming no taxes, there is no optimal capital structure. The cost of equity increases linearly with the debt-to-equity ratio and the company has a constant weighted average cost of capital (WACC) because the rising cost of equity exactly offsets the benefit of using cheaper debt. With a constant WACC, there is no optimal capital structure and any mix of debt and equity will result in the exact same WACC.

Rationale

✘ **only when debt approaches 100 percent of the total capital structure.**

According to Modigliani and Miller Proposition II and assuming no taxes, there is no optimal capital structure. The cost of equity increases linearly with the debt-to-equity ratio and the company has a constant weighted average cost of capital (WACC) because the rising cost of equity exactly offsets the benefit of using cheaper debt. With a constant WACC, there is no optimal capital structure and any mix of debt and equity will result in the exact same WACC.

Rationale

✘ **at the sole point where the rising cost of equity exactly offsets the benefit of using cheaper debt.**

According to Modigliani and Miller Proposition II and assuming no taxes, there is no optimal capital structure. The cost of equity increases linearly with the debt-to-equity ratio and the company has a constant weighted average cost of capital (WACC) because the rising cost of equity exactly offsets the benefit of using cheaper debt. With a constant WACC, there is no optimal capital structure and any mix of debt and equity will result in the exact same WACC.

Question 25
L2R24TB-AC011-1512
LOS: LOS-7410
Lesson Reference: Lesson 1: The Capital Structure Decision Part I: Capital Structure and the MM Propositions with No Taxes
Difficulty: medium
According to the pecking order theory, the *most likely* first source of financing that a company's management opts to access is:

- debt issuance.
- retained earnings.
- common stock issuance.

Rationale
debt issuance.
According to pecking order, a company resorts to internally generated funds and then, if necessary, resorts to external sources of capital. Retained earnings are internally generated funds.

Rationale
retained earnings.
According to pecking order, a company resorts to internally generated funds and then, if necessary, resorts to external sources of capital. Retained earnings are internally generated funds.

Rationale
common stock issuance.
According to pecking order, a company resorts to internally generated funds and then, if necessary, resorts to external sources of capital. Retained earnings are internally generated funds.

Question 26
L2R24TB-ITEMSET-AC004-1512
LOS: LOS-7410
LOS: LOS-7430
Lesson Reference: Lesson 1: The Capital Structure Decision Part I: Capital Structure and the MM Propositions with No Taxes
Difficulty: medium

Use the following information to answer the next 3 questions:

Sarah Watkins is a CFA Level 2 candidate who was recently hired as an analyst at Chester Business Consulting. Her first assignment is to research the most important variables that determine the value of a business and the most crucial considerations in capital structure decisions. Watkins remembers from a graduate school class that the most important variables affecting the value of the business are:

- The firm's borrowing rate and the degree to which this rate exceeds the risk-free rate;
- Corporate financing decisions; and
- Total company cash flows.

Watkins also believes that credit ratings have a significant practical relevance to capital structure decisions. She expresses this belief to her supervisor, who replies that he generally disagrees. He states his belief that credit ratings are of limited value to corporate managers because they are based on publicly-available information and, hence, are already discounted in the prices of the securities of the issuing companies. The supervisor adds that credit spreads are not sensitive to the business cycle conditions, but does note that there can be a large rise in a bond's yield when the bond's credit rating drops from investment grade to speculative grade.

Finally, Watkins discusses financial distress and bankruptcy risk with her supervisor. The supervisor notes that the firm operates under the assumption that the market is efficient. As a result, financial distress and bankruptcy risks are not relevant.

i.
According to the Modigliani and Miller's Propositions I and II, the determinant of firm value from Watkins list that is *most likely* relevant is:

- (●) total company cash flows.
- ( ) corporate financing decisions.
- ( ) the firm's borrowing rate and the degree to which this rate exceeds the risk-free rate.

Rationale
This Answer is Correct
Under M&M"s Propositions I and II, the most important implications are that the value of the firm is determined by its cash flows and that this value is independent of its capital structure (financing) decisions.

Rationale
This Answer is Correct
Under M&M"s Propositions I and II, the most important implications are that the value of the firm is determined by its cash flows and that this value is independent of its capital structure (financing) decisions.

Rationale
This Answer is Correct

Under M&M"s Propositions I and II, the most important implications are that the value of the firm is determined by its cash flows and that this value is independent of its capital structure (financing) decisions.

ii.

When discussing credit ratings, the supervisor is *most likely* correct when he states that:

- credit ratings are of limited value.
- credit spreads are not sensitive to the business cycle.
- there can be a large rise in a bond's yield when the bond's credit rating drops from investment grade to speculative grade.

Rationale

This Answer is Incorrect

When a bond issue is downgraded from investment grade to speculative grade, its yield often rises significantly. This is because many institutional investors are not allowed to own speculative-grade rated bonds, and therefore, they would sell bonds that are downgraded to speculative grade. This selling pressure often causes the yields on these downgraded bonds to rise quickly.

Rationale

This Answer is Incorrect

When a bond issue is downgraded from investment grade to speculative grade, its yield often rises significantly. This is because many institutional investors are not allowed to own speculative-grade rated bonds, and therefore, they would sell bonds that are downgraded to speculative grade. This selling pressure often causes the yields on these downgraded bonds to rise quickly.

Rationale

This Answer is Incorrect

When a bond issue is downgraded from investment grade to speculative grade, its yield often rises significantly. This is because many institutional investors are not allowed to own speculative-grade rated bonds, and therefore, they would sell bonds that are downgraded to speculative grade. This selling pressure often causes the yields on these downgraded bonds to rise quickly.

iii.

The supervisor's comments with respect to financial distress and bankruptcy are *most likely* appropriate under:

- the pecking order theory.
- the static trade-off theory.
- Modigliani and Miller's Propositions I and II.

Rationale

This Answer is Incorrect

Modigliani and Miller's Propositions I and II assume that debt is riskless. Therefore, the risk-free rate is accessible to all borrowers and lenders. In essence, M&M are assuming away any risk of financial distress and/or bankruptcy.

Rationale

This Answer is Incorrect
Modigliani and Miller's Propositions I and II assume that debt is riskless. Therefore, the risk-free rate is accessible to all borrowers and lenders. In essence, M&M are assuming away any risk of financial distress and/or bankruptcy.

Rationale

This Answer is Incorrect
Modigliani and Miller's Propositions I and II assume that debt is riskless. Therefore, the risk-free rate is accessible to all borrowers and lenders. In essence, M&M are assuming away any risk of financial distress and/or bankruptcy.

Question 27
L2R24TB-AC025-1512
LOS: LOS-7440
Lesson Reference: Lesson 3: The Target Capital Structure and Practical Issues in Capital Structure Policy
Difficulty: medium
Agency costs of equity are *most likely* to be higher for a company relative to its peers if it has:

- (●) a lower debt-to-equity ratio.
- ( ) better corporate governance.
- ( ) higher accounting transparency.

Rationale
✔ **a lower debt-to-equity ratio.**
Theory states that agency costs are expected to decrease with higher levels of debt financing. This is because research shows that higher levels of debt limit the ability of the management of the company to inefficiently allocate its cash. Thus, having a lower debt-to-equity ratio is likely to be associated with higher agency costs. Good corporate governance and strong accounting transparency reduce agency costs.

Rationale
✘ **better corporate governance.**
Theory states that agency costs are expected to decrease with higher levels of debt financing. This is because research shows that higher levels of debt limit the ability of the management of the company to inefficiently allocate its cash. Thus, having a lower debt-to-equity ratio is likely to be associated with higher agency costs. Good corporate governance and strong accounting transparency reduce agency costs.

Rationale
✘ **higher accounting transparency.**
Theory states that agency costs are expected to decrease with higher levels of debt financing. This is because research shows that higher levels of debt limit the ability of the management of the company to inefficiently allocate its cash. Thus, having a lower debt-to-equity ratio is likely to be associated with higher agency costs. Good corporate governance and strong accounting transparency reduce agency costs.

Question 28
L2R24TB-AC017-1512
LOS: LOS-7410
Lesson Reference: Lesson 1: The Capital Structure Decision Part I: Capital Structure and the MM Propositions with No Taxes
Difficulty: medium
Perez & Perez (P&P), based in a country currently without any taxes, has an annual operating income (EBIT) of €3 million in perpetuity. The company is currently 100 percent equity financed and, based on its current capital structure, its shareholders have a required rate of return of 12 percent. P&P is considering issuing €10 million in debt and using the proceeds to repurchase common shares. The debt will be issued at par and will have an 8.0 percent coupon. Assuming Modigliani and Miller's Proposition II applies, P&P's cost of equity after the company issues debt and repurchases shares will be *closest to*:

- 10.4 percent.
- 12.0 percent.
- 14.7 percent.

Rationale

10.4 percent.

The initial cost of equity is 12 percent and the WACC is also 12 percent because the company is financed with all equity prior to the debt issuance. The value of the firm prior to doing the debt issuance is:

$$\mathrm{V} = \frac{\mathrm{EBIT}}{r_w} = \frac{€3 \text{ million}}{0.12} = €25 \text{ million}$$

Under M&M's Proposition II with no taxes, the cost of equity rises linearly as the debt-to-equity ratio rises. As a result, the weighted average cost of capital is constant across all debt-to-equity ratios (all mixes of debt and equity) because the rising cost of equity exactly offsets the benefit of adding lower cost debt. Therefore, we know that the WACC is 12 percent after the debt issuance and share repurchase. In addition, after issuing debt and repurchasing shares, the total value of the firm is unchanged at €25 million because the operating income and WACC are unchanged. Of this €25 million, equity value is €15 million and debt value is the €10 million issued.

The debt is being issued at par, so the coupon of 8.0 percent equals the yield to maturity (pre-tax cost of debt = after-tax cost of debt in a no tax environment). Because we have the WACC and the cost of debt, we can use the WACC formula to solve for the cost of equity:

$$r_w = \left(\frac{\mathrm{D}}{\mathrm{V}}\right) r_d + \left(\frac{\mathrm{E}}{\mathrm{V}}\right) r_e$$
$$0.12 = \left(\frac{€10}{€25}\right) 0.08 + \left(\frac{€15}{€25}\right) r_e$$
$$r_e = 0.1467 \approx 14.7 \text{ percent}$$

Rationale

12.0 percent.

The initial cost of equity is 12 percent and the WACC is also 12 percent because the company is financed with all equity prior to the debt issuance. The value of the firm prior to doing the debt issuance is:

$$\mathrm{V} = \frac{\mathrm{EBIT}}{r_w} = \frac{€3 \text{ million}}{0.12} = €25 \text{ million}$$

Under M&M's Proposition II with no taxes, the cost of equity rises linearly as the debt-to-equity ratio rises. As a result, the weighted average cost of capital is constant across all debt-to-equity ratios (all mixes of debt and equity) because the rising cost of equity exactly offsets the benefit of adding lower cost debt. Therefore, we know that the WACC is 12 percent after the debt issuance and share repurchase. In addition, after issuing debt and repurchasing shares, the total value of the firm is unchanged at €25 million because the operating income and WACC are unchanged. Of this €25 million, equity value is €15 million and debt value is the €10 million issued.

The debt is being issued at par, so the coupon of 8.0 percent equals the yield to maturity (pre-tax cost of debt = after-tax cost of debt in a no tax environment). Because we have the WACC and the cost of debt, we can use the WACC formula to solve for the cost of equity:

$$\begin{aligned} r_w &= \left(\frac{\mathrm{D}}{\mathrm{V}}\right) r_d + \left(\frac{\mathrm{E}}{\mathrm{V}}\right) r_e \\ 0.12 &= \left(\frac{€10}{€25}\right) 0.08 + \left(\frac{€15}{€25}\right) r_e \\ r_e &= 0.1467 \approx 14.7 \text{ percent} \end{aligned}$$

Rationale

14.7 percent.

The initial cost of equity is 12 percent and the WACC is also 12 percent because the company is financed with all equity prior to the debt issuance. The value of the firm prior to doing the debt issuance is:

$$\mathrm{V} = \frac{\mathrm{EBIT}}{r_w} = \frac{€3 \text{ million}}{0.12} = €25 \text{ million}$$

Under M&M's Proposition II with no taxes, the cost of equity rises linearly as the debt-to-equity ratio rises. As a result, the weighted average cost of capital is constant across all debt-to-equity ratios (all mixes of debt and equity) because the rising cost of equity exactly offsets the benefit of adding lower cost debt. Therefore, we know that the WACC is 12 percent after the debt issuance and share repurchase. In addition, after issuing debt and repurchasing shares, the total value of the firm is unchanged at €25 million because the operating income and WACC are unchanged. Of this €25 million, equity value is €15 million and debt value is the €10 million issued.

The debt is being issued at par, so the coupon of 8.0 percent equals the yield to maturity (pre-tax cost of debt = after-tax cost of debt in a no tax environment). Because we have the WACC and the cost of debt, we can use the WACC formula to solve for the cost of equity:

$$\begin{aligned} r_w &= \left(\frac{\mathrm{D}}{\mathrm{V}}\right) r_d + \left(\frac{\mathrm{E}}{\mathrm{V}}\right) r_e \\ 0.12 &= \left(\frac{€10}{€25}\right) 0.08 + \left(\frac{€15}{€25}\right) r_e \\ r_e &= 0.1467 \approx 14.7 \text{ percent} \end{aligned}$$

Question 29
L2R24TB-AC014-1512
LOS: LOS-7410
Lesson Reference: Lesson 1: The Capital Structure Decision Part I: Capital Structure and the MM Propositions with No Taxes
Difficulty: medium
According to Modigliani and Miller Proposition II with corporate taxes and assuming that interest paid on debt is tax deductible, the optimal capital structure is *most likely* achieved:

- at any mix of equity and debt financing.
- only when debt approaches 100 percent of the total capital structure.
- at the point where the benefits of using cheaper after-tax debt are exactly offset by the costs of financial distress.

Rationale

at any mix of equity and debt financing.

According to Modigliani and Miller Proposition II with corporate taxes and assuming that interest paid on debt is tax deductible, the optimal capital structure occurs at the point where debt approaches 100 percent of the total capital structure. This is because the interest on debt is tax deductible, which makes the after-tax cost of debt much lower than the cost of equity. Remember, M&M Proposition II with taxes still assumes that there are no costs of financial distress.

Rationale

only when debt approaches 100 percent of the total capital structure.

According to Modigliani and Miller Proposition II with corporate taxes and assuming that interest paid on debt is tax deductible, the optimal capital structure occurs at the point where debt approaches 100 percent of the total capital structure. This is because the interest on debt is tax deductible, which makes the after-tax cost of debt much lower than the cost of equity. Remember, M&M Proposition II with taxes still assumes that there are no costs of financial distress.

Rationale

at the point where the benefits of using cheaper after-tax debt are exactly offset by the costs of financial distress.

According to Modigliani and Miller Proposition II with corporate taxes and assuming that interest paid on debt is tax deductible, the optimal capital structure occurs at the point where debt approaches 100 percent of the total capital structure. This is because the interest on debt is tax deductible, which makes the after-tax cost of debt much lower than the cost of equity. Remember, M&M Proposition II with taxes still assumes that there are no costs of financial distress.

Question 30
L2R24TB-AC008-1512
LOS: LOS-7410
Lesson Reference: Lesson 1: The Capital Structure Decision Part I: Capital Structure and the MM Propositions with No Taxes
Difficulty: medium
In accordance with Modigliani and Miller Proposition II and assuming no taxes, it is *most likely* that the cost of:

- debt rises with higher leverage.
- equity rises with higher leverage.
- total capital declines with higher leverage.

Rationale
debt rises with higher leverage.
As the company issues more debt, the cost of equity increases linearly with the debt-to-equity ratio. Thus, the reduction in cost of capital because of the use of lower cost debt is offset by the higher cost of equity.

Rationale
equity rises with higher leverage.
As the company issues more debt, the cost of equity increases linearly with the debt-to-equity ratio. Thus, the reduction in cost of capital because of the use of lower cost debt is offset by the higher cost of equity.

Rationale
total capital declines with higher leverage.
As the company issues more debt, the cost of equity increases linearly with the debt-to-equity ratio. Thus, the reduction in cost of capital because of the use of lower cost debt is offset by the higher cost of equity.

Question 31
L2FR-PQ2313-1410
LOS: LOS-7410
Lesson Reference: Lesson 2: The Capital Structure Decision Part II: MM Propositions with Taxes, the Costs of Financial Distress, Agency Costs
Difficulty: medium

Consider the following statements:

Statement 1: The pecking order theory implies that issuance of debt usually sends a positive signal about the company to the market.

Statement 2: The pecking order theory implies that managers tend to issue equity when they believe that the company's stock is undervalued.

Which of the following is *most likely*?

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

Rationale

This Answer is Correct

The pecking order theory implies that managers tend to issue equity when they believe that the company's stock is **overvalued**.

The issuance of debt sends a positive signal regarding the company, as it indicates that management has confidence in the company's cash-generating ability going forward.

Question 32
L2R24TB-ITEMSET-AC001-1512
LOS: LOS-7410
LOS: LOS-7420
LOS: LOS-7450
Lesson Reference: Lesson 1: The Capital Structure Decision Part I: Capital Structure and the MM Propositions with No Taxes
Difficulty: medium

Use the following information to answer the next 3 questions:

John Tarek is an employee of Oceanside Global Consultants and he has been assigned to the small island country of Salam. The assignment is for him to offer an opinion on the impact on companies based in Salam of a change in the tax law in the country and investigate the factors that greatly affect the capital structure decisions of these companies. The parliament of Salam has decided to revolutionize its capital markets and raise the corporate income tax rate from 0 percent to 30 percent. The personal income tax rate was unchanged at 0 percent. Salam, because of its small size, uses the U.S. dollar as its currency.

Tarek started by researching Amman Treasures Corp. (ATC), which has an annual operating income of $1,000,000, which he assumes is in perpetuity. The company is currently 100 percent equity financed, and shareholders currently expect a rate of return of 10 percent. In light of the new law that raised the corporate tax rate, ATC is considering issuing $6,000,000 in new bonds at par value in order to buy back $6,000,000 in stock. Companies of similar credit standing to that of ATC are issuing bonds at a yield to maturity of 6.0 percent. ATC's management believes that the $6,000,000 bond issue is consistent with its target capital structure under the changed tax laws.

One year later, Tarek was asked to follow up on ATC. He found out that ATC rarely adhered to its target capital structure. Tarek could not get a satisfactory response from ATC's chief financial officer as to why ATC did not maintain its target capital structure.

Two years after his initial analysis, Tarek observes that Salam has implemented new legislation that imposes a tax rate of 30 percent on interest income and tax rate of 15 percent on dividend income.

i.
If Modigliani and Miller's Propositions I and II with taxes apply, ATC's cost of equity after the debt issuance and share repurchase is *closest to*:

- 11.9 percent.
- 12.9 percent.
- 16.0 percent.

Rationale

This Answer is Correct

The first step is to calculate the value of the firm before the issuance in order to determine the value of the equity at that point. The cost of equity is 10 percent and the WACC is also 10 percent because the company is financed with all equity prior to the debt issuance. Remember, the new tax law has been implemented. Thus, the after-tax operating income is used in determined the firm's value:

$$\mathrm{V} = \frac{\mathrm{EBIT}(1-t)}{r_{\mathrm{W}}} = \frac{\$1.0\,\text{million}(1-0.3)}{0.10} = \$7.0\,\text{million}$$

According to M&M Proposition 1 after taxes, the firm's value after the debt issuance and stock repurchase is calculated as follows:

$$\mathrm{V_L} = \mathrm{V_U} + \mathrm{tD} = \$7.0\,\text{million} + (0.30)\,(\$6.0\,\text{million}) = \$8.8\,\text{million}$$

Since debt is $6.0 million and the total firm value is $8.8 million, the equity value is the remaining $2.8 million.

Using the value of the firm formula and the new $8.8 million firm value, we can solve for the WACC:

$$\begin{aligned} \mathrm{V} &= \frac{\mathrm{EBIT}(1-t)}{r_{\mathrm{W}}} \\ \$8.8\,\text{million} &= \frac{\$1.0\,\text{million}(1-0.3)}{r_W} \\ r_W &= 7.955\,\text{percent} \end{aligned}$$

The debt is being issued at par, so the coupon must match the 6.0 yield to maturity (pretax cost of debt = after-tax cost of debt in a no-tax environment) that is found for companies of similar credit standing. Because we have the WACC and the cost of debt, we can use the WACC formula to solve for the cost of equity:

$$r_{\mathrm{W}} = \left(\frac{\mathrm{D}}{\mathrm{V}}\right) r_d\,(1-t) + \left(\frac{\mathrm{E}}{\mathrm{V}}\right) r_e$$

$$0.07955 = \left(\frac{\$6.0}{\$8.8}\right) 0.06\,(1-0.30) + \left(\frac{\$2.8}{\$8.8}\right) r_e$$

$$r_e = 0.16 = 16.0\,\text{percent}$$

Rationale

This Answer is Correct

The first step is to calculate the value of the firm before the issuance in order to determine the value of the equity at that point. The cost of equity is 10 percent and the WACC is also 10 percent because the company is financed with all equity prior to the debt issuance. Remember, the new tax law has been implemented. Thus, the after-tax operating income is used in determined the firm's value:

$$\mathrm{V} = \frac{\mathrm{EBIT}(1-t)}{r_{\mathrm{W}}} = \frac{\$1.0\,\text{million}(1-0.3)}{0.10} = \$7.0\,\text{million}$$

According to M&M Proposition 1 after taxes, the firm's value after the debt issuance and stock repurchase is calculated as follows:

$$\mathrm{V_L} = \mathrm{V_U} + \mathrm{tD} = \$7.0\,\text{million} + (0.30)\,(\$6.0\,\text{million}) = \$8.8\,\text{million}$$

Since debt is $6.0 million and the total firm value is $8.8 million, the equity value is the remaining $2.8 million.

Using the value of the firm formula and the new $8.8 million firm value, we can solve for the WACC:

$$\begin{aligned} \mathrm{V} &= \frac{\mathrm{EBIT}(1-t)}{r_{\mathrm{W}}} \\ \$8.8\,\text{million} &= \frac{\$1.0\,\text{million}(1-0.3)}{r_W} \\ r_W &= 7.955\,\text{percent} \end{aligned}$$

The debt is being issued at par, so the coupon must match the 6.0 yield to maturity (pretax cost of debt = after-tax cost of debt in a no-tax environment) that is found for companies of similar credit standing.

Because we have the WACC and the cost of debt, we can use the WACC formula to solve for the cost of equity:

$$r_{\mathrm{W}} = \left(\frac{\mathrm{D}}{\mathrm{V}}\right) r_d\,(1-t) + \left(\frac{\mathrm{E}}{\mathrm{V}}\right) r_e$$

$$0.07955 = \left(\frac{\$6.0}{\$8.8}\right) 0.06\,(1-0.30) + \left(\frac{\$2.8}{\$8.8}\right) r_e$$

$$r_e = 0.16 = 16.0 \text{ percent}$$

Rationale

This Answer is Correct

The first step is to calculate the value of the firm before the issuance in order to determine the value of the equity at that point. The cost of equity is 10 percent and the WACC is also 10 percent because the company is financed with all equity prior to the debt issuance. Remember, the new tax law has been implemented. Thus, the after-tax operating income is used in determined the firm's value:

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Since debt is $6.0 million and the total firm value is $8.8 million, the equity value is the remaining $2.8 million.

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$$\begin{aligned} \mathrm{V} &= \frac{\mathrm{EBIT}(1-t)}{r_{\mathrm{W}}} \\ \$8.8 \text{ million} &= \frac{\$1.0 \text{ million}(1-0.3)}{r_W} \\ r_W &= 7.955 \text{ percent} \end{aligned}$$

The debt is being issued at par, so the coupon must match the 6.0 yield to maturity (pretax cost of debt = after-tax cost of debt in a no-tax environment) that is found for companies of similar credit standing. Because we have the WACC and the cost of debt, we can use the WACC formula to solve for the cost of equity:

$$r_{\mathrm{W}} = \left(\frac{\mathrm{D}}{\mathrm{V}}\right) r_d\,(1-t) + \left(\frac{\mathrm{E}}{\mathrm{V}}\right) r_e$$

$$0.07955 = \left(\frac{\$6.0}{\$8.8}\right) 0.06\,(1-0.30) + \left(\frac{\$2.8}{\$8.8}\right) r_e$$

$$r_e = 0.16 = 16.0 \text{ percent}$$

ii.

A *most likely* legitimate reason for ATC to not adhere to its target capital structure is that:

- management has been taking advantage of financing opportunities.

- the new tax law restricts the management's ability to maintain its target capital structure.
- management realized that target capital structure is not consistent with the minimum cost of capital.

Rationale

This Answer is Incorrect

A company may not adhere to its target capital structure for several reasons, including taking advantage of short-term and/or long-term financing opportunities, changing securities prices, and the impracticality of continuously raising capital or buying back securities due to flotation costs.

Rationale

This Answer is Incorrect

A company may not adhere to its target capital structure for several reasons, including taking advantage of short-term and/or long-term financing opportunities, changing securities prices, and the impracticality of continuously raising capital or buying back securities due to flotation costs.

Rationale

This Answer is Incorrect

A company may not adhere to its target capital structure for several reasons, including taking advantage of short-term and/or long-term financing opportunities, changing securities prices, and the impracticality of continuously raising capital or buying back securities due to flotation costs.

iii.

If Tarek updates his analysis several years after Salam implements the tax rates on interest income and dividend income, he will *most likely* find that, compared to companies based in countries that use the same tax rate on interest and dividends received, the leverage ratios for companies based in Salam are:

- lower.
- higher.
- generally the same.

Rationale

This Answer is Incorrect

Salam's new law favors dividends (equity income) received over interest received. Studies have shown that companies based in countries whose tax laws favor equity income over interest income generally have lower leverage ratios than those found for companies based in countries that do not favor equity income.

Rationale

This Answer is Incorrect

Salam's new law favors dividends (equity income) received over interest received. Studies have shown that companies based in countries whose tax laws favor equity income over interest income generally have lower leverage ratios than those found for companies based in countries that do not favor equity income.

Rationale

This Answer is Incorrect

Salam's new law favors dividends (equity income) received over interest received. Studies have shown that companies based in countries whose tax laws favor equity income over interest income generally have lower leverage ratios than those found for companies based in countries that do not favor equity income.

Question 33

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LOS: LOS-7450

Lesson Reference: Lesson 3: The Target Capital Structure and Practical Issues in Capital Structure Policy

Difficulty: easy

Which of the following factors is *least likely* to lead to higher financial leverage in the capital structure of companies?

- (●) Stronger legal systems.
- ( ) High levels of information asymmetry.
- ( ) Higher personal tax rates on dividends.

Rationale

This Answer is Correct

The factors that tend to lead to companies using more debt in their capital structure include weaker legal systems, high levels of information asymmetry, and higher personal tax rates on dividends.