GOODMAN SCHOOL OF BUSINESS
BROCK UNIVERSITY
FNCE 3P93, Corporate Finance II
Fall 2013 Quiz #1

Name:_____

Student Number:_____ Section:_____

Answer all questions on the quiz paper and hand it in at the completion of the quiz. No aids other than those specified are permitted. Use or possession of unauthorized materials will automatically result in the award of a zero grade for this quiz.

Question 1 (3 Marks)

Circle the correct answer for each of the following questions.

A. A public offering of securities where existing shareholders of the firm have the first opportunity to buy the new securities, exclusive from the general public, is called a:

(a) best efforts offer.
(b) firm commitment offer.
(c) general cash offer.
(d) rights offer.
(e) red herring offer.

B. The proposition that a firm borrows up to the point where the marginal benefit of the interest tax shield derived from increased debt is just equal to the marginal expense of the resulting increase in financial distress costs is called the:

(a) Static Theory of Capital Structure.
(b) M&M Proposition I.
(c) M&M Proposition II.
(d) Capital Asset Pricing Model.
(e) Open Markets Theorem.

C. Which one of the following statements is correct concerning the relationship between a capital structure with debt and one without debt? Assume there are no taxes.

(a) When a firm is operating at a point where the actual earnings before interest and taxes (EBIT) exceed the break-even level, then adding debt to the capital structure will increase the earnings per share (EPS).
(b) The earnings per share will equal zero when EBIT is zero for a levered firm.
(c) The advantages of leverage primarily occur when EBIT is just barely positive.
(d) The firm's EPS will always be higher if the firm uses leverage.
(e) EPS are more sensitive to changes in EBIT when a firm is unlevered.

Answer the following questions in the space provided. Show all your work. No credit will be given for answers obtained using a financial calculator without the supporting formula and steps leading to the final answer.

Question 2 (4 Marks)

You own 500 shares of stock in an all equity firm. The stock price is $2 per share. You want to use homemade leverage to create your preferred D/E ratio of 1.5.

(a) What amount will you borrow or lend? (2 marks)

$$Amount\ to\ Borrow = (500)(2)(1.5) = \$1{,}500$$
$$or$$
$$Amount\ to\ Borrow = 2(750) = \$1{,}500$$

(b) How many shares will you buy or sell? (2 marks)

$$Number\ of\ Shares\ to\ Buy = \frac{1{,}500}{2} = 750$$
$$or$$
$$Number\ of\ Shares\ to\ Buy = 1.5(500) = 750$$

Question 3 (3 Marks)

A company is considering a project with a net present value of $600,000. The project is expected to increase net income by 15%. The $900,000 cost of the project will be financed with a new equity issue. The company's stock sells for $30 per share and the book value per share is $10.

(a) Does accounting dilution occur? Why? (2 marks)

$$Market - to - Book = \frac{30}{10} = 3$$

$No, acccounting\ dilution\ does\ not\ occur\ because\ new\ shares\ were\ issued\ when\ the\ market - to - book\ ratio\ was\ greater\ than\ one.$

(b) Does market value dilution occur? Why? (1 mark)

$No, market\ value\ diltuion\ does\ not\ occur\ because\ the\ company\ financed\ a\ positive\ NPV\ project.$

Question 4 (5 Marks)

An all-equity firm has 80,000 shares of stock outstanding with a market price of $42 a share. The firm's current cost of equity is 12% and its tax rate is 34%. The company is considering adding $1 million of debt with a coupon rate of 8% to its capital structure. If the company adds the debt to its capital structure, what will be its value of equity?

$$V_U = 42(80{,}000) = \$3{,}360{,}000$$

$$V_L = 3{,}360{,}000 + .34(1{,}000{,}000) = \$3{,}700{,}000$$

$$E_L = 3{,}700{,}000 - 1{,}000{,}000 = \$2{,}700{,}000$$

Question 5 (2 Marks)

A company with a D/E ratio of .60 has a cost of debt of 9% and unlevered cost of capital of 14%. What is the company's cost of equity if the tax rate is 34%?

$$R_E = .14 + (.14 - .09)(.6)(1 - .34)$$

$$R_E = 15.98\%$$

Question 6 (3 Marks)

A firm has 800,000 shares outstanding at a market price of $120 a share. The firm wants to raise $10 million via a rights offering with a subscription price of $100 per share. How many rights are required to purchase one of the new shares?

$$New\ Shares = \frac{10{,}000{,}000}{100} = 100{,}000$$

$$N = \frac{800{,}000}{100{,}000} = 8$$

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Question 1 (3 Marks)

Circle the correct answer for each of the following questions.

A. A capital restructuring occurs when a firm:

(a) increases its debt-equity ratio while maintaining a constant debt-to-asset ratio.
(b) changes its debt-equity ratio without changing its total assets.
(c) reduces both its debt and its equity while maintaining a constant debt-equity ratio.
(d) changes its level of debt without changing its total equity.
(e) refinances its debt at a lower rate of interest.

B. The beginning of the period when stock trades in the market without a recently declared right is called the:

(a) pre-issue date.
(b) aftermarket.
(c) declaration date.
(d) holder-of-record date.
(e) ex-rights date.

C. You have computed the break-even point between a capital structure that has no debt and one that has debt. Assume there are no taxes. At the break-even level, the:

(a) firm is just earning enough to pay for the cost of the debt.
(b) firm's earnings before interest and taxes are equal to zero.
(c) earnings per share for the levered option are exactly double those of the unlevered option.
(d) advantages of leverage exceed the disadvantages of leverage.
(e) firm has a debt-equity ratio of .50.

Answer the following questions in the space provided. Show all your work. No credit will be given for answers obtained using a financial calculator without the supporting formula and steps leading to the final answer.

Question 2 (4 Marks)

You own 1,000 shares of stock in an all equity firm. The stock price is $20 per share. You want to use homemade leverage to create your preferred D/E ratio of 1.

(a) What amount will you borrow or lend? (2 marks)

$$Amount\ to\ Borrow = (1{,}000)(20)(1) = \$20{,}000$$
$$or$$
$$Amount\ to\ Borrow = 20(1{,}000) = \$20{,}000$$

(b) How many shares will you buy or sell? (2 marks)

$$Number\ of\ Shares\ to\ Buy = \frac{20{,}000}{20} = 1{,}000$$
$$or$$
$$Number\ of\ Shares\ to\ Buy = 1(1{,}000) = 1{,}000$$

Question 3 (1 Mark)

A company is considering a project with a net present value of -$600,000. The project is expected to increase net income by 15%. The $900,000 cost of the project will be financed with a new equity issue. The market-to-book ratio is .3. Does accounting dilution occur? Why?

$$Yes, acccounting\ dilution\ occurs\ because\ new\ shares\ were\ issued\ when\ the\ market - to - book\ ratio\ was\ less\ than\ one.$$

Question 4 (4 Marks)

A company expects its EBIT to be $8,100 every year forever. The company has bonds outstanding with both a book value and market value of $12,000 that pay an annual 8% coupon. The company's unlevered cost of capital is 11% and its tax rate is 34%. What is the value of the firm?

$$V_U = \frac{8{,}100(1-.34)}{.11} = \$48{,}600$$

$$V_L = 48{,}600 + .34(12{,}000) = \$52{,}680$$

Question 5 (3 Marks)

A firm has a cost of debt of 7% and an unlevered cost of capital of 13%. The firm's cost of equity is 15.26% and its tax rate is 35%. What is the firm's D/E ratio?

$$.1526 = .13 + (.13 - .07)\left(\frac{D}{E}\right)(1 - .35)$$

$$\frac{D}{E} = .58$$

Question 6 (5 Marks)

A firm with 800,000 shares outstanding at a market price of $120 per share wants to raise $16 million via a rights offering. The subscription price is $100 per share. What is the value of a right?

$$New\ Shares = \frac{16{,}000{,}000}{100} = 160{,}000$$

$$R = \frac{800{,}000}{160{,}000} = 5$$

$Alternative\ \#1$

$$R_o = \frac{120 - 100}{5 + 1} = \$3.33$$

$Alternative\ \#2$

$$M_e = \frac{5(120) + 100}{5 + 1} = \$116.67$$

$$R_o = \frac{116.67 - 100}{5} = \$3.33$$

$Alternative\ \#3$

$$M_e = \frac{5(120) + 100}{5 + 1} = \$116.67$$

$$R_o = 120 - 116.67 = \$3.33$$

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Question 1 (3 Marks)

Circle the correct answer for each of the following questions.

A. A group of underwriters formed to share the risk in marketing and distributing a sale of securities to the investing public is called a(n):

(a) cartel.
(b) syndicate.
(c) cooperative venture capital system.
(d) oligopoly.
(e) insider consortium.

B. A corporation's first sale of equity made available to the public is called a(n):

(a) share repurchase program.
(b) shelf registration filing.
(c) private placement.
(d) seasoned equity offering (SEO).
(e) initial public offering (IPO).

C. The proposition that a firm borrows up to the point where the marginal benefit of the interest tax shield derived from increased debt is just equal to the marginal expense of the resulting increase in financial distress costs is called the:

(a) Static Theory of Capital Structure.
(b) M&M Proposition I.
(c) M&M Proposition II.
(d) Capital Asset Pricing Model.
(e) Open Markets Theorem.

Answer the following questions in the space provided. Show all your work. No credit will be given for answers obtained using a financial calculator without the supporting formula and steps leading to the final answer.

Question 2 (4 Marks)

You own 1,000 shares of stock in a firm with a capital structure that is 30% debt. The stock price is $20 per share. You prefer an all-equity capital structure and want to unlever your shares of stock.

(a) What amount will you borrow or lend? (2 marks)

$$Amount\ to\ Lend = .3(1{,}000)(20) = \$6{,}000$$
$$or$$
$$Amount\ to\ Lend = 20(300) = \$6{,}000$$

(b) How many shares will you buy or sell? (2 marks)

$$Number\ of\ Shares\ Sell = \frac{6{,}000}{20} = 300$$
$$or$$
$$Number\ of\ Shares\ to\ Sell = 3.(1{,}000) = 300$$

Question 3 (1 Mark)

A company is considering a project with a net present value of -$600,000. The project is expected to increase net income by 15%. The $900,000 cost of the project will be financed with a new equity issue. The company's stock sells for $30 per share and the book value per share is $10. Does market value dilution occur? Why?

$$Yes, market\ value\ diltuion\ occurs\ because\ the\ company\ financed\ a\ negative\ NPV\ project.$$

Question 4 (3 Marks)

An all-equity firm with a cost of capital of 10% expects its EBIT to be $150,000 every year forever. There are no taxes. If the firm converts its capital structure to one that is 40% debt, what would be the value of this firm?

$$V_U = \frac{150{,}000}{.10} = \$1{,}500{,}000 = V_L$$

Question 5 (4 Marks)

A firm has debt of $18,000, equity of $42,000, a cost of debt of 7.5%, a cost of equity of 11.6%, and a tax rate of 34%. What is the firm's weighted average cost of capital?

$$V = 42{,}000 + 18{,}000 = \$60{,}000$$

$$WACC = \left(\frac{42{,}000}{60{,}000}\right)(.116) + \left(\frac{18{,}000}{60{,}000}\right)(.075)(1 - .34) = 9.61\%$$

Question 6 (5 Marks)

A firm with 800,000 shares outstanding at a market price of $120 per share wants to raise $16 million via a rights offering. The subscription price is $100 per share. What is the ex-rights price?

$$New\ Shares = \frac{16{,}000{,}000}{100} = 160{,}000$$

$$R = \frac{800{,}000}{160{,}000} = 5$$

$Alternative\ \#1$

$$R_o = \frac{120 - 100}{5 + 1} = \$3.33$$

$$M_e = 120 - \$3.33 = \$116.67$$

$Alternative\ \#2$

$$M_e = \frac{5(120) + 100}{5 + 1} = \$116.67$$

$Alternative\ \#3$

$$M_e = \frac{5(120) + 100}{5 + 1} = \$116.67$$

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Question 1 (3 Marks)

Circle the correct answer for each of the following questions.

A. The tax savings of the firm derived from the deductibility of interest expense is called the:

(a) interest tax shield.
(b) depreciable basis.
(c) financing umbrella.
(d) current yield.
(e) tax-loss carry-forward savings.

B. Below the break-even EBIT, increased financial leverage will _____ EPS, all else the same. Assume there are no taxes.

(a) increase
(b) decrease
(c) not affect
(d) either increase or decrease
(e) increase EBIT but decrease

C. The difference between the underwriters' buying price and the offering price of the securities to the public is called the:

(a) spread.
(b) underpricing.
(c) filing fee.
(d) new issue premium.
(e) extortion premium.

Answer the following questions in the space provided. Show all your work. No credit will be given for answers obtained using a financial calculator without the supporting formula and steps leading to the final answer.

Question 2 (4 Marks)

You own 500 shares of stock in a firm with a D/E ratio of 1.0. The stock price is $2 per share. You prefer an all-equity capital structure and want to unlever your shares of stock.

(a) What amount will you borrow or lend? (2 marks)

$$Amount\ to\ Lend = .5(500)(2) = \$500$$
$$or$$
$$Amount\ to\ Lend = 2(250) = \$500$$

(b) How many shares will you buy or sell? (2 marks)

$$Number\ of\ Shares\ Sell = \frac{500}{2} = 250$$
$$or$$
$$Number\ of\ Shares\ to\ Sell = .5(500) = 250$$

Question 3 (3 Marks)

A company is considering a project with a net present value of $600,000. The project is expected to increase net income by 15%. The $900,000 cost of the project will be financed with a new equity issue. The company's stock sells for $10 per share and the book value per share is $30.

(a) Does accounting dilution occur? Why? (2 marks)

$$Market - to - Book = \frac{10}{30} = .30$$

$$Yes, acccounting\ dilution\ occurs\ because\ new\ shares\ were\ issued\ when\ the\ market - to - book\ ratio\ was\ less\ than\ one.$$

(b) Does market value dilution occur? Why? (1 mark)

$$No, market\ value\ diltuion\ does\ not\ occur\ because\ the\ company\ financed\ a\ positive\ NPV\ project.$$

Question 4 (4 Marks)

Company A is an unlevered firm with a cost of capital of 12% and EBIT of $150,000. Company B is identical to Company A in all respects except it has both a book value and market value of debt of $700,000. Company B's cost of debt is 7% and its tax rate is 35%. What is the value of Company B?

$$V_A = \frac{150{,}000(1 - .35)}{.12} = \$812{,}500$$

$$V_B = 812{,}500 + .35(700{,}000) = \$1{,}057{,}500$$

Question 5 (3 Marks)

A company has a cost of equity of 13.8% and cost of debt of 8.5%. The company's D/E ratio is .60 and its tax rate is 34%. What is the company's unlevered cost of capital?

$$.138 = R_A + (R_A - .085)(.6)(1 - .34)$$

$$R_A = 12.30\%$$

Question 6 (3 Marks)

A company with 1,750,000 shares outstanding wants to raise $35 million through a rights offering with a subscription price of $50 per share. The current stock price is $47 per share. How many rights are required to purchase one of the new shares?

$$New\ Shares = \frac{35{,}000{,}000}{50} = 700{,}000$$

$$N = \frac{1{,}750{,}000}{700{,}000} = 2.50$$