Quiz 1: Spring 1998

1. You have run a regression of returns of Devonex, a machine tool manufacturer, against the S&P 500 Index using monthly returns over the last 5 years and arrived at the following regression:

$\text{Return}_{\text{Devonex}} = -\ 0.20\% + \ 1.50\ \text{Return}_{\text{S\&P 500}}$

If the stock had a Jensen's alpha of +0.10% (on a monthly basis) over this period, estimate the monthly riskfree rate during the last 5 years.

2. You have been asked to analyze GenCorp, a corporation with food and tobacco subsidiaries. The tobacco subsidiary is estimated to be worth \$ 15 billion and the food subsidiary is estimated to have a value of \$ 10 billion. The firm has a debt to equity ratio of 1.00. You are provided with the following information on comparable firms:

Business	*Average Beta*	*Average D/E Ratio*
Food	0.92	25%
Tobacco	1.17	50%

All firms are assumed to have a tax rate of 40%. If the current long-term bond rate is 6%, estimate the current cost of equity of GenCorp.

3. Assume now that GenCorp divests itself of the food division for its estimated value of \$ 10 billion.

a. Estimate the beta for GenCorp if the cash is used to pay down debt.

b. Estimate the beta for GenCorp if the cash is retained in the firm and invested in Government Securities.

Quiz 1: Spring 1999

Answer all questions and show necessary work. Please be brief. This is an open books, open notes exam.

1. In any firm, the balance of power between stockholders and managers is a function of a number of factors – internal as well as external. Events can cause the power to shift towards managers or towards stockholders or leave the balance unchanged. Evaluate how each of the following events would alter the balance of power. (1/2 point each)

a. The firm decides to expand its board of directors from 11 members to 22 members and allows the CEO to pick the additional directors.

- ❑ Management Power increases
- ❑ Stockholder Power increases
- ❑ No Effect

b. An activist investor manages to get three of his nominees elected to the board of directors at the expense of management nominees.

- ❑ Management Power increases
- ❑ Stockholder Power increases
- ❑ No Effect

c. A closely held firm (insiders hold 40% of the 100,000 shares) issues 500,000 new non-voting shares to the public to raise fresh capital.

- ❑ Management Power increases
- ❑ Stockholder Power increases
- ❑ No Effect

d. The state passes a law restricting hostile takeovers.

- ❑ Management Power increases
- ❑ Stockholder Power increases
- ❑ No Effect

2. You are told that Land's End, a catalog retailer, earned an excess return (Jensen's alpha), in annualized terms, of 32% over the last 5 years and that it had a beta of 1.50 during the same period. Assuming that this estimate came from a quarterly regression of stock returns against a market return, and that the average annualized riskfree rate during the period was 4.8%, estimate the intercept on the regression. (3 points)

3. You subscribe to a beta estimation service. The service provides you with an adjusted beta estimate of 1.70 for Service.com, the firm that you are interested in. Assuming that the service uses weights of 0.70 (for the raw beta estimate) and 0.30 (for the market average of 1.00), and that the standard error in the beta estimate is 0.35, provide a range for the raw beta estimate, with a 67% confidence interval. (2 points)

4. Acopalypse Now Inc. is a company that manufactures products for the New Age market (Crystal balls, Nostradum predictors, Tarot cards etc.). The firm has 10 million shares outstanding trading at $ 10 per share, no debt outstanding and a <u>cash balance</u> of $ 25 million. The stock's current beta is 1.20. The firm decides that it should prepare for the millennium by borrowing $ 15 million, using its cash balance of $ 25 million, and buying $ 40 million of its own stock. Estimate the beta after the transaction. (The corporate tax rate is 40%) (3 points)

Quiz 1A: Spring 1999

Answer all questions and show necessary work. Please be brief. This is an open books, open notes exam.

1. In any firm, the balance of power between stockholders and managers is a function of a number of factors – internal as well as external. Events can cause the power to shift towards managers or towards stockholders or leave the balance unchanged. Evaluate how each of the following events would alter the balance of power. (1/2 point each)

a. Three inside directors on the board are replaced with outside directors, chosen by the CEO.

- ❑ Management Power increases
- ❑ Stockholder Power increases
- ❑ No Effect

b. The holdings of institutional investors in the firm increases at the expense of small individual investors.

- ❑ Management Power increases
- ❑ Stockholder Power increases
- ❑ No Effect

c. A lender to the firm (a bank) is given a large equity position in the firm to compensate for missed interest payments.

- ❑ Management Power increases
- ❑ Stockholder Power increases
- ❑ No Effect

d. The CEO of another firm in the same industry is replaced because of poor stock price and earnings performance.

- ❑ Management Power increases
- ❑ Stockholder Power increases
- ❑ No

2. You have run a regression of stock returns against market returns, using monthly data over the last three years for Golden Books. The regression equation is reproduced below:

$$\text{Returns}_{\text{Golden Books}} = -\ 1.31\% + 0.85\ (\text{Returns}_{\text{S\&P 500}})$$

Assuming that the average riskfree rate during the period was 5.4%, estimate the Jensen's alpha for this stock, in annualized terms. (2 points)

3. Now consider the Golden Books beta estimate in problem 2. Assume that the firm had an average debt to equity ratio of 50% during the three years of the regression, and that it was in only one business – publishing. The firm's current debt to equity ratio is 150%, and the firm <u>expects that half its future revenues and earnings will come from videos</u>. The average beta of firms specializing in children's videos is 1.10, and these firms have an average debt to equity ratio of 25%; they face an average tax rate of 40%. Estimate the beta for Golden Books, looking forward. (You can assume that Golden Books will also face a tax rate of 40%)

Quiz 1: Spring 2000

Answer all questions and show necessary work. Please be brief. This is an open books, open notes exam.

1. In any firm, the balance of power between stockholders and managers is a function of a number of factors – internal as well as external. Events can cause the power to shift towards managers or towards stockholders or leave the balance unchanged. Evaluate how each of the following events would alter the balance of power. (1/2 point each)

a. CalPers, the California Employees Pension fund with a history of activism, buys 5% of the outstanding stock in the firm.

- ❑ Management Power increases
- ❑ Stockholder Power increases
- ❑ No Effect

b. The corporate charter is changed so that only one-third of the board of directors gets replaced each year, instead of the entire board.

- ❑ Management Power increases
- ❑ Stockholder Power increases
- ❑ No Effect

c. The firm's stock, which is currently followed by no analysts, is added to the list of followed companies at four investment banks.

- ❑ Management Power increases
- ❑ Stockholder Power increases
- ❑ No Effect

d. The CEO exercises her right to convert 10 million options she was granted as part of compensation packages in prior years.

- ❑ Management Power increases
- ❑ Stockholder Power increases
- ❑ No

2. You have run two regressions of Daimler Chrysler's (DCX) returns. In the first, you regressed DCX monthly returns against returns on the DAX – both in DM terms:

$\text{Returns}_{DCX} = 0.04\% + 1.1\ (\text{Returns}_{DAX})$ $R^2 = 58\%$

You also regressed the returns on DCX ADRs against the Morgan Stanley Capital Index that includes global equities – both returns are dollar returns:

$\text{Returns}_{DCX} = -0.02\% + 0.8\ (\text{Returns}_{MSCI})$ $R^2 = 14\%$

Assume that the seven of the top ten investors in Daimler Chrysler are international mutual funds. Estimate Daimler Chrysler's cost of equity is DM terms (The German long term bond rate is 4.5%, the US long term bond rate is 6.5% and the equity risk premium in both markets is 6%) (2 points)

3. General Systems, a computer manufacturer, announces that it will be acquiring FastWorks Software. You know the following –

- General Systems had a beta of 1.20 prior to the merger. The firm has a market value of equity of $ 10 billion and $ 4 billion in debt outstanding.
- FastWorks Software had a beta of 1.40 prior to the merger. The firm has a market value of equity of $ 8 billion and $ 1 billion in debt outstanding.

Both firms have a 40% tax rate.

a. Estimate the unlevered beta of the combined firm. (2 points)

b. If you were told that the combined firm's levered beta will be 1.52, after the acquisition, how much debt did General Systems use to acquire FastWorks? [You can assume that General Systems will assume Fastworks' existing debt] (4 points)

Quiz 1: Spring 2001

Answer all questions and show necessary work. Please be brief. This is an open books, open notes exam.

1. You have run a regression of weekly returns over the last 5 years for Steel Products Inc., a small manufacturing firm, against the S&P 500 and arrived at the following result:

$\text{Returns}_{\text{Steel Products}} = 0.06\% + 1.80\ \text{Returns}_{\text{S\&P 500}}$ $R^2 = 28\%$

a. Estimate the <u>annualized Jensen's alph</u>a on this stock over the last 5 years, if the average annualized riskfree rate was 5.2% over that period. (You can use the simpler non-compound version of the annualized rates) (1 point)

b. If the range on the beta estimate, with 67% confidence, is 1.46 – 2.14, estimate the standard error on the estimate. (1 point)

c. The current treasury bill rate is 4.8% and the current 10-year treasury bond rate is 5.4%. You are also given the following table of average returns over the last 50 years:

	Stocks		T.Bills		T.Bonds	
	Arith	Geom	Arith	Geom	Arith	Geom
Average	11.6%	10.9%	4.1%	4.0%	6.4%	6.2%

If you were asked to compute the cost of equity for Steel Products, using historical risk premiums, what would your best estimate be? (Its projects are typically long term)

(2 points)

d. The largest investor in Steel Products is the owner/founder who owns 20% of the stock. Is she also the marginal investor in this stock? (1 point)

- ❑ Yes
- ❑ No

Why or why not?

2. Vivant Chemicals is a firm that has been <u>unlevered</u> and operated only in the chemical business for the last 5 years. A regression yields a beta estimate of 0.90 for that period and

the firm currently has 12 million shares outstanding, trading at $ 25 per share. The firm is considering issuing 3 million more shares at the current market price, borrowing $ 125 million and using the entire proceeds to buy a Sapient Technologies, a software firm. Sapient currently has no debt outstanding and has been publicly traded for only 3 months. While a regression beta is not available, the average beta for software firms is 1.40 and the average debt to equity ratio for these firms is 20%. Estimate the beta for Vivant Chemicals after the transaction. (You can assume a 40% tax rate for all firms) (5 points)

Spring 2002: Quiz 1: Corporate Finance

Answer all questions and show necessary work. Please be brief. This is an open books, open notes exam.

1. Answer true or false to each of the following statements (1/2 point each)

a. Boards with fewer directors are generally more effective at corporate governance than boards with more directors.

True False

b. Boards with more insiders are generally more effective at corporate governance than boards with fewer insiders.

True False

c. Financial markets tend to react negatively to investment announcements (R&D, new project) made by firms.

True False

d. The marginal investor in a stock is the investor who holds the most stock in the company.

True False

2. You are analyzing a regression of DePaolo Foods, a manufacturer of sphagetti and olive oil, against the S&P 500, using monthly returns over 5 years.

$\text{Return}_{\text{DePaolo}} = -0.10\% \quad + 1.20\ \text{Returns}_{\text{S\&P 500}} \qquad R^2 = 35\%$

a. You do not have the riskfree rate for the five-year period. Based upon the intercept, which of the following could you draw as a conclusion? (1 point)

1. The stock did worse than expected during the period of the regression because the intercept is negative.
2. The stock did better than expected because stocks with betas greater than 1 should have negative intercepts.

3. You cannot draw a conclusion on stock price performance without knowing what the average riskfree rate was over the last 5 years.

b. Now assume that your have been asked to be market neutral (assume that the market is correctly priced today). You have computed a historical risk premium of 5.17% by looking at returns on stocks and bonds from 1928 to 2001 and an implied equity premium of 3.62% based upon the S&P 500 today. If the current treasury bill rate is 2.2% and the treasury bond rate is 4.9%, estimate the cost of equity for this firm. (2 points)

3. You are trying to estimate a beta for Delta Trucking. The regression beta over the last 5 years is 0.848, but the firm operated just in the trucking business and had an average debt to equity ratio of 10% over the period. The stock price is currently $ 10 per share and there are 35 million shares outstanding, and the current market value of debt is $ 50 million. Delta is planning on borrowing $ 150 million and using $ 100 million to buy InfoPad Software, a small software firm with no debt and a beta of 1.30. It is also planning on using the remaining $ 50 million to pay a dividend to its stockholders. (Tax rate is 40%)

a. Estimate the unlevered beta for Delta Trucking, based upon the regression beta and the average debt to equity ratio over the last 5 years. (1 point)

b. Estimate the new unlevered beta for Delta, if it acquires InfoPad Software. (2 points)

c. Estimate a new levered beta for Delta assuming that it goes through with its plan to buy InfoPad and buy back stock. (2 points)

Spring 2003: Quiz 1: Corporate Finance

Answer all questions and show necessary work. Please be brief. This is an open books, open notes exam.

1. You have been hired as corporate governance advisor by the Polish government and have been asked to review whether the following actions will increase or decrease stockholder power over managers. You can give a very short rationale for each answer (1/2 point each)

a. <u>Require</u> stockholders to own stock for more than a year before they can vote at stockholder meetings.

Increase stockholder power Decrease stockholder power

Rationale:

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b. <u>Not allow</u> companies to buy and hold their own stock for extended periods (i.e., hold treasury stock)

Increase stockholder power Decrease stockholder power

Rationale:

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c. <u>Require</u> hostile acquirers to pay stockholders at least a 30% premium over the current stock price in an acquisition.

Increase stockholder power Decrease stockholder power

Rationale:

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d. Not allow foreign investors to own stock in Polish companies.

Increase stockholder power Decrease stockholder power

Rationale:

2. You have run a regression of monthly stock returns for Gym Place Holdings, a small play-set manufacturing company against the S&P 500 over the last 5 years. The results are summarized below:

   $\text{Returns}_{\text{Gym Place}} = 0.05\% + 2.00 \text{ Returns}_{\text{S\&P 500}}$ $\qquad R^2 = 30\%$

   (0.32)

   a. If you know that this stock had a monthly Jensen's alpha of 0.30% during the period of the regression, what was the annualized riskfree rate during the last 5 years? (1.5 points)
   b. Assume now that you have been asked to estimate a Euro cost of equity for Gym Place Holdings for its European holdings, primarily in France and Germany. The 10-year U.S. treasury bond rate is 3.9%, the German government Euro bond rate is 4.4% and Gym Place can borrow money at 6% (in Euros). The risk premium (Equity over riskfree rate) over the last 10 years in European markets is only 2% but the historical risk premium over the last 75 years in the United States is 4.53%. Estimate a Euro cost of equity for Gym Place Holdings. (1.5 points)

3. You have been asked to estimate a beta for LaPlace Steel, a mid-sized steel company. The company has 30 million shares outstanding trading at $ 20 a share and $ 400 million in debt outstanding; the firm also has $ 400 million in cash and marketable securities (treasury bills and commercial paper). The average beta across steel companies is 1.32; the average debt to equity ratio for these companies is 20% and the corporate tax rate is 40%.

   a. Estimate the bottom-up unlevered beta for LaPlace Steel (including the cash). (2 points)
   b. Estimate the bottom-up levered beta for LaPlace Steel. (1 point)

c. Now assume that LaPlace Steel announces that it will pay a special cash dividend of $ 200 million to its stockholders and use the remaining cash to enter the chemical business. If the unlevered beta for chemical companies is 0.70, estimate the new levered beta for LaPlace Steel. (2 points)

Spring 2004 Name:

Quiz 1: Corporate Finance

Answer all questions and show necessary work. Please be brief. This is an open books, open notes exam.

1. Respond to the following questions. (Each question is worth 1/2 a point)

   a. Which of the following objectives makes the most sense in an inefficient market where lenders are not fully protected from stockholder expropriation?
      i. Maximize stockholder wealth
      ii. Maximize stock prices
      iii. Maximize bondholder wealth
      iv. Maximize firm value

   b. The marginal investor in a company has a large stockholding and trades a lot. Traditional risk and return models in finance (like the CAPM) work best for companies where the marginal investor is
      i. The founder/owner of the company
      ii. A small individual investor
      iii. The employee pension fund
      iv. The Government
      v. An institutional investor

   c. The conflict between managerial and stockholder interests is at the heart of the corporate governance problems. In which of the following firms is the conflict between the two likely to be greatest?
      i. A publicly traded firm which is widely held by institutions and managers hold little stock in the firm
      ii. A publicly traded firm with widely dispersed but activist institutional stockholders
      iii. A privately owned business where the owner is the manager.
      iv. A publicly traded firm that is widely held by institutions but where the largest stockholder is also the CEO.

d. Poorly managed firms with stock that has under performed the competition are more likely to be targets of hostile acquisitions than well-managed firms.
   i. True
   ii. False

2. You have run a regression of quarterly stock returns for the last 10 years on Jonas Gold Mining Corporation against the S&P 500 and arrived at the following results:

   $\text{Return}_{\text{Jonas}} = -0.55\% - 0.20 \text{ Return}_{\text{S\&P 500}}$ $R^2 = 15\%$

   The treasury bond rate today is 4.25% and the average annualized treasury bill rate over the last 10 years was 2%.
   a. On an annualized basis, estimate Jensen's alpha for Jonas Gold over the last 10 years. (1 point)
   b. What is the expected return on Jonas Gold for the future, if you assume that stocks will continue to earn their historical risk premium (over treasury bonds) of 4.82% each year? (1 point)
   c. How would you respond to a friend who suggests to you that your expected return calculation is wrong because it is less than the riskfree rate? (1 point)
      i. Gold is not a risky investment. Therefore, the expected return is low.
      ii. The demand for gold is non-discretionary
      iii. Your friend is right. The expected return on a risky investment should never be less than the riskless rate.
      iv. You are buying insurance against inflation with this stock. You have to settle for less than the riskree rate.

3. Greider Media is a company that owns television and radio stations around the country. The firm has \$ 200 million in debt and \$ 400 million in equity currently and its current levered beta (which reflects it's current debt to equity ratio) is 1.30. The firm has an ambitious CEO who plans a major expansion of the firm. He wants to acquire Motown Movies, a Detroit-based movie company; Motown has 10 million shares outstanding, trading at \$ 10 a share, \$ 300 million in debt and a levered beta of 1.40. The tax rate for both firms is 40%.

a. If Greider plans to assume Motown's debt and borrow money to cover the cost of the acquisition, estimate the beta for Greider after the transaction. (3 points)

b. How would your answer change if you were told that Greider plans to issue shares to cover the cost of the transaction and that it plans to retire Motown's debt right after the transaction? (2 points)

Spring 2005 Name:

Quiz 1: Corporate Finance

Answer all questions and show necessary work. Please be brief. This is an open books, open notes exam.

1. Respond to the following questions. (Each question is worth 1/2 a point)
   a. Which of the following is a clear and unambiguous example of managers putting their interests over stockholder interests? (Pick only one)
      i. Negotiating for a large compensation contract
      ii. Focusing on increasing the market share of the company
      iii. Paying greenmail to a bidder to avoid being taken over (in a hostile bid)
      iv. Acquiring another company
      v. Paying a large dividend

   b. If you were a bondholder lending to a firm and you were worried that stockholders would take advantage of you, which of the following actions would concern you the most? (Pick only one)
      i. A cut in the dividends paid to stockholders
      ii. A reduction in debt
      iii. Expansion into a risky new business
      iv. A new stock issue
      v. Accumulation of cash in the company

   c. The stock prices of companies often jump when they report their earnings. In an efficient market, you would expect stock prices to increase when companies report an increase in earnings and to drop when they report lower earnings.
      i. True
      ii. False

   d. If we choose firm value maximization as our objective in decision making, we do not need to assume that markets are efficient.
      i. True
      ii. False

2. You have been asked to estimate the cost of equity of TeleSoft Inc., an Israeli software firm that gets all of its revenues in the United States. The company is listed on both the Tel Aviv Exchange and has an ADR[1] listed on the NASDAQ. While the largest investor in the company is its Israeli founder/CEO, the next 14 largest investors are all diversified mutual funds in the United States. You have run four regressions, using the last 5 years of returns for each:

   $\text{Return}_{\text{Telesoft}} = 0.15\% + 0.80\ \text{Return}_{\text{Tel Aviv Exchange}}$

   $\text{Return}_{\text{Telesoft ADR}} = -0.12\% + 1.20\ \text{Return}_{\text{NASDAQ}}$

   $\text{Return}_{\text{Telesoft ADR}} = -0.06\% + 1.60\ \text{Return}_{\text{S\&P 500}}$

   $\text{Return}_{\text{Telesoft ADR}} = 0.04\% + 1.00\ \text{Return}_{\text{Computer software index}}$

   The current U.S. treasury bond rate is 4.25% and the Israeli Government has ten-year shekel denominated bonds with an interest rate of 8%. Over the last 5 years, stocks have earned 8% more than bonds in Israel and 3% more than bonds in the United States. Over the last 80 years, the equity risk premium has been 4.75% in the United States and is unavailable for Israel. Estimate the U.S. $ cost of equity for Telesoft. (2 points)

3. Arios Software is a small software company with 60 million shares outstanding, trading at $ 10 a share, and $ 400 million in debt. You have estimated a regression beta of 1.82 for the firm using the last 5 years of data, during which period the firm had an average debt to equity ratio of 50%. The tax rate for the company is 40%.
   a. Assuming that the regression beta is correct, estimate the correct levered beta today, given the firm's current debt to equity ratio. (2 points)
   b. Now assume that Arios Software is awarded a court judgment of $ 1 billion from Microsoft for violation of software copyrights. Arios plans to use this money to pay a dividend of $250 million, pay off $ 250 million of debt and use the balance to invest in the computer hardware business. If the unlevered beta for computer hardware companies is 1.10, estimate the levered beta for Arios after these transactions. (4 points)

[1] An ADR is a foreign stock that trades on a US exchange. Its price is denominated in dollars and investors in the US can buy and sell the stock like any other US stock.

Spring 2007 Name:

Quiz 1: Corporate Finance

Answer all questions and show necessary work. Please be brief. This is an open books, open notes exam.

1. Please answer the following questions (picking <u>only one</u> of the offered choices for each one). (1/2 point for each question)

   a. In a publicly traded firm, there is often a conflict of interest between managers and stockholders and compensation contracts are designed to reduce this conflict. Which of the following contracts is <u>most likely</u> to induce to managers <u>behave in the best interests of stockholders</u>?
      i. A fixed salary
      ii. A bonus tied to a company's revenue growth
      iii. A bonus tied to a company's accounting profits
      iv. A stock option grant
      v. Restricted stock in the company (restrictions are on trading)
      vi. A bonus tied to a company's bond rating

   b. One of the arguments made for stronger corporate governance is that it will lead to better managed companies. Which of the following links between corporate governance and management quality do you think is closest to the truth?
      i. Firms with better corporate governance are better managed than firms with weak corporate governance
      ii. Firms with better corporate governance are worse managed than firms with weak corporate governance
      iii. Firms with better corporate governance are more likely to change managers when they are badly managed
      iv. Firms with better corporate governance are less likely to change managers when they are badly managed
      v. There is no relationship between corporate governance and how a firm is managed

   c. In an efficient market, maximizing the stock price will lead to
      a. Maximization of stockholder wealth
      b. Maximization of firm value
      c. Maximization of social welfare
      d. Maximization of bond prices
      e. None of the above

   d. Most decisions made by corporations create costs to society. Which of the following is the <u>most efficient way to reduce these social costs</u>? (Efficiency implies that the costs created for the non-guilty are minimized.)
      i. Make managers take ethics classes
      ii. Make it illegal to create social costs
      iii. Convince customers to stop buying the firm's products and investors to sell it's stock
      iv. Sue companies that create costs for society

2. You are reviewing a five-year monthly return regression of returns for Jamesway Corp, a U.S.-based consumer product company, against the S&P 500.
   $\text{Return}_{\text{Jamesway}} = 0.25\% + 0.80\ \text{Return}_{\text{S\&P 500}}$ $R^2 = 25\%$
   The U.S. treasury bond rate is currently 4.75%, the treasury bill rate today is 4.25% and the historical equity risk premium is 4.91%.
   a. After a recent statistics class, you are concerned about the low R-squared in this regression. You also find that Jamesway is a NASDAQ stock and that the R-squared improves significantly (to 50%) if the returns are regressed against the NASDAQ, In estimating a beta for a stock for use with the CAPM, which of the following indices should you use? (1 point)
      i. The index which your stock is part of (NASDAQ).
      ii. The index for the sector to which your firm belongs (Consumer products).
      iii. The index that gives you the highest R-squared.
      iv. The broadest index in terms of risky assets represented
      v. An index reflecting your own stock holdings (you are a potential investor)

   b. Based upon this regression, estimate the long-term cost of equity in $ terms for this company. (1 point)
   c. Assume that the stock will continue to earn the annualized Jensen's alpha, computed from the regression, for next year. If the stock price today is $40 and there are no dividends paid, estimate the expected stock price a year from today. (The monthly riskfree rate during the regression period was 0.2%) (2 points)

3. You are assessing the effects of and acquisition of SpecTec, a highly levered specialty retailer, by Vail Inc., a consumer product company, and have collected the following information on the two companies:

Company	Market value of Equity	Debt	Beta
Vail Inc.	$ 1000 million	$ 500 mil	1.04
SpecTec Inc.	$ 200 million	$ 800 mil	3.40

You can assume a 40% tax rate for all firms.
a. Estimate the unlevered beta of the combined company after the merger. (2 points)
b. Vail is planning to issue shares to buy out SpecTec's equity, but it also wants to issue additional shares to retire some of SpecTec's debt. If Vail would like to have a levered beta of 1.144 after the transaction, how much of SpecTec's debt will it have to retire? (2 points)

Spring 2008 Name:

Quiz 1: Corporate Finance

Answer all questions and show necessary work. Please be brief. This is an open books, open notes exam.

1. Conflicts of interest and corporate governance issues come to the forefront when one publicly traded firm acquires another one. The following questions relate to some of these issues. Please pick only one of the answers for each question. (1/2 point each)

a. You are a stockholder in a firm that is planning to make a significant acquisition. Which of the following compositions for the board of directors for your firm (the acquirer) is most likely to protect you against overpayment?

i. Large board, with many insiders and the CEO as chairman
ii. Small board, with many insiders and the CEO as chairman
iii. Large board, composed mostly of outsiders, with an independent chairman
iv. Small board, composed mostly of outsiders, with an independent chairman
v. Large board, with many insiders, with an independent chairman
vi. Small board, with many insiders, with an independent chairman

b. In a hostile acquisition, the managers of the target firm often adopt tactics designed to fight off the takeover. As a <u>stockholder in the target firm</u>, which of the following tactics is <u>least likely</u> to hurt you?

i. Greenmail, where the hostile acquirer is bought off by paying him/her a premium.
ii. Poison pills, where you create securities that blow up in the event of a hostile acquisition.
iii. Anti-takeover amendments that make it more difficult to take over the company.
iv. Looking for a friendly bidder (white knight) who will compete with the hostile acquirer.
v. Golden parachutes, requiring that incumbent managers get large severance payments.

c. If markets are efficient, you should see the acquiring firm's stock price drop if it pays a <u>premium over the market price</u> to acquire a target firm.

i. True
ii. False

d. Many countries/states pass laws restricting or preventing hostile takeovers. When such laws are passed, which of the following groups is likely to be most negatively affected?

i. Stockholders in all firms
ii. Bondholders in all firms
iii. Stockholders in potential acquirers
iv. Stockholders in potential targets
v. Bondholders in potential acquirers
vi. Bondholders in potential targets

2, You are analyzing Siderar, an Argentine steel company, with ADRs listed on the New York Stock Exchange and have uncovered four regressions for the stock:

$\text{Return}_{\text{Siderar}}$ = 0.05% + 1.30 Merval $R^2 = 65\%$
$\text{Return}_{\text{Siderar}}$ = -0,03% + 0.70 S&P 500 $R^2 = 23\%$
$\text{Return}_{\text{Siderar}}$ = -0,08% + 0.90 MSCI $R^2 = 20\%$
$\text{Return}_{\text{Siderar}}$ = 0.15% + 1.20 GlSTL $R^2 = 70\%$

(Merval: Argentine equity index; MSCI: Global Equity Index; GISTL: Index of steel companies globally)

The Argentine government has ten-year dollar denominated bonds, trading at 6.5% and ten-year peso denominated bonds, trading at 11%; both bonds are rated BB+ by S&P. The ten-year U.S. treasury bond rate is 4%. An analysis of the top investors in Siderar indicates that 12 of the top 17 investors are global mutual funds. Finally, an assessment of the last two years of returns yields a standard deviation of 27% for the Merval (the Argentine equity index) and 18% for the ten-year dollar denominated Argentine bond. Estimate a nominal peso cost of equity for Siderar. (4 points)

3. You have been asked to assess the impact of Microsoft's attempted acquisition of Yahoo! and have collected the following information (in billions) on the two companies:

Company	Market value of Equity	Market value of debt	Cash	Regression beta	Business
Microsoft	300	0	60	1.2	Software
Yahoo!	40	0	0	2.8	Internet services

While you believe that the regression beta is a reasonable estimate of the beta for Microsoft as a company, you do not trust the regression beta for Yahoo! The average unlevered beta for the internet service business is 2.00 and the marginal tax rate for all firms is 40%.

a. Assuming that cash as a percent of Microsoft's value has remained unchanged over the last two years (the regression period) and that the firm has never used debt, estimate the unlevered beta of just being in the software business. (1 point)

b. Assume that Microsoft plans to use $ 20 billion of its cash balance and $20 billion of new debt to buy Yahoo! Estimate the levered beta for Microsoft after the transaction. (3 points)

Spring 2009 Name:

Quiz 1: Corporate Finance

Answer all questions and show necessary work. Please be brief. This is an open books, open notes exam.

1, You are a candidate to head the Securities Exchange Commission, with a mission of improving corporate governance and market efficiency. The following multiple-choice questions (with one choice allowed per question) will be used to assess your fit.

a. If you have an effective and good corporate governance system, which of the following consequences would you expect?
   i. All companies will be well managed.
   ii. Top managers will be fired more frequently at all firms.
   iii. Top managers will never be fired.
   iv. Top managers at badly managed companies will be fired more frequently.
   v. Top managers at well-managed companies will be fired more frequently.

b. One long-standing issue in corporate governance is that many stockholders at publicly traded companies never return their filled-in proxies and that incumbent managers get these unreturned proxy votes. Which of the following actions would you take to remedy this problem (and improved corporate accountability)?
   i. Ban all proxy voting. Only shareholders present at meetings can cast votes.
   ii. Count all unreturned proxies as votes against management.
   iii. Count all unreturned proxies as votes for management.
   iv. Count only returned proxies as votes and not count unreturned proxies.
   v. Require all shareholders, by law, to return their proxies.

c. There have been several problems associated with management compensation at publicly traded companies being uncorrelated with management performance. Which of the following proposals on compensation offers the most promise in dealing with this problem?
   i. Put a cap on management compensation at all companies; annual compensation for a manager cannot exceed $ 5 million.
   ii. Require that all top management compensation contracts be put to shareholder vote (rather than be approved by the board of directors)
   iii. Ban all "equity" based compensation (options, restricted stock etc.)
   iv. Require that at least 50% of compensation be in the form of equity options.
   v. Require that compensation be explicitly tied to current profits.

d. Markets have been volatile in the last six months. Many commentators have argued that the market volatility is a clear indication of an inefficient market. Do you agree?
   i. Yes. In an efficient market, stock prices should be stable.
   ii. No. Even if markets are efficient, stock prices can be volatile.

2. You are comparing the regression output across two publicly traded companies. Both regressions were run using monthly data for 5 years, and against the S&P 500.

	Nero Cannery	Rand Foods
Intercept	0.15%	0.30%
R-Squared	20%	35%
Slope	1.20	0.90

a. Assume that both companies delivered the same risk-adjusted, market-adjusted performance against the CAPM (same Jensen's alpha) over the 5-year period. Estimate the average monthly risk free rate over the period. (1 point)

b. Now assume that you are told that Nero Cannery has 100% of its operations in the United States. If the 3-month US T.Bill rate is 1.5%, the 10-year US T.Bond rate is 3% and the equity risk premium for mature markets (like the US) is 6%, estimate the US dollar cost of equity for Nero Cannery. (Projects are long term) (1 point)

c. Rand Foods gets 100% of its revenues from Mexico. If the Mexican government has 10-year dollar denominated bonds with a 6% interest rate and 10-year peso denominated bonds with an 8% interest rate, estimate the US dollar cost of equity for Rand Foods. (You can assume that Mexican equities are twice as volatile as Mexican government bonds) (2 points)

3. Liddell Enterprises is a publicly traded firm in two businesses: the casino business, with an estimated value of \$ 500 million, and the catering business, with an estimated value of \$ 500 million as well. There are 60 million shares trading at \$ 10 a share and \$ 400 million in debt outstanding. The marginal tax rate is 40%.

a. You have estimated a regression beta of 1.20 over the last 5 years that you think gives you a good measure of the equity risk over the period. If the average debt to equity ratio over the 5-year period was 50%, estimate the unlevered beta for Liddell Enterprises. (1 point)

b. You are told that the unlevered beta of firms just in the casino business is 1.20. If the weights on the two businesses have not changed over the last 5 years, estimate the unlevered beta for the catering business. (1 point)

c. The firm plans to sell 50% of the catering business (at the fair value provided on the last page) and use the proceeds from the sale to pay down debt. Estimate the new equity (levered) beta after this transaction. (2 points)

Spring 2010 Name:

Quiz 1: Corporate Finance

Answer all questions and show necessary work. Please be brief. This is an open books, open notes exam.

1. The following are multiple-choice questions, with each one being worth ½ a point.

a. Managers of firms that are held mostly by institutional investors are more responsive to stockholders than managers of firms that are held primarily by individuals.

i. True
ii. False

b. When managers over reach and put their interests over stockholder interests, they risk a backlash from stockholders. Which of the following is the best example of this backlash?

i. Fewer stockholders return their proxies to vote at annual meetings.
ii. The stock price goes up.
iii. Managers are granted more stock options (to make them act like stockholders)
iv. Activist investors (like KKR and Blackstone) target the company
v. None of the above

c. For stock price maximization to be the right objective, we have to assume that markets are efficient. After watching the price of his company's stock drop 20% after reporting higher earnings, the CEO points to the big price drop as evidence that markets are not efficient. Is this statement true?

i. Yes.
ii. No

d. You are provided with a breakdown of stockholders and trading volume in a company:

Group	*% of stock held*	*% of trading volume*
Government	30%	5%
Insiders (Managers)	20%	5%
Domestic Institutions	15%	15%
Foreign Institutions	15%	60%
Individuals	20%	15%

The marginal investor in this company is most likely to be:

i. The Government
ii. Insiders
iii. Domestic institutions
iv. Foreign institutions
v. Individuals

2. Western Mining is a gold mining company with operations in South Africa and the United States. In the most recent year, it derived about half its revenues from each country and you have collected the following data:

- The 10-year US treasury bond rate is 3.5%. The South African government has 10-year US $ denominated bonds with an interest rate of 6% and a 10-year South African Rand denominated bond with an interest rate of 10%.
- You have run three separate regressions:
  $\text{Return}_{\text{Western Mining}} = 0.08\% + 0.75\ \text{Return}_{\text{S\&P 500}}$
  $\text{Return}_{\text{Western Mining}} = -0.16\% + 1.50\ \text{Return}_{\text{JSE (South African Index)}}$
  $\text{Return}_{\text{Western Mining}} = -0.04\% + 1.20\ \text{Return}_{\text{MSCI (Global Index)}}$
  Fifteen of the top seventeen investors in the firm are global institutional investors.
- The equity risk premium for mature markets (like the United States) is 4.5%. The volatility in the Johannesburg Stock Index is 1.6 times the volatility in the South African government bond.

a. Estimate the cost of equity, in US dollar terms, for Western Mining's US operations. (1 point)

b. Estimate the cost of equity, in US dollar terms, for Western Mining's South African operations. (2 points)

3. You have been asked to estimate the beta for Rollins Inc., a firm that operates in two businesses – software and technology consulting. The firm currently has 80 million shares trading at $ 20/share and $ 400 million in debt outstanding and it derives 60% of its overall value from software and 40% from technology consulting. The unlevered beta is 1.2 for the software business and 0.9 for the technology consulting business. (The marginal tax rate is 40% for all firms.)

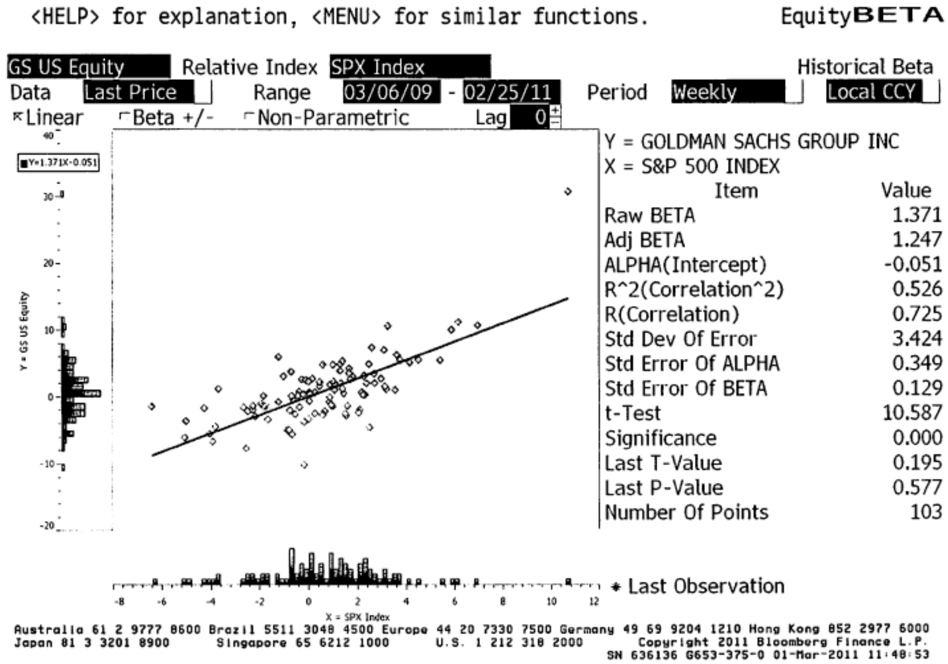
   a. Estimate the current levered beta for the firm. (2 points)

   b. Assume that you are considering a plan to sell half the software business and use the proceeds to do the following:
      - Invest one-third of the proceeds in the technology consulting business
      - Use the remaining proceeds to buy back stock

      Estimate the levered beta for the firm, if you go through with this transaction.
      (3 points)

Quiz 1: Corporate Finance

Answer all questions and show necessary work. Please be brief. This is an open books, open notes exam.



1a. If the average (annualized) riskfree rate between 3/09 and 2/11 was 2.60%, estimate the annualized Jensen's alpha for Goldman Sachs during this period. (2 points)

1b. Which of the following statements best describes what the R—squared in this regression is telling you about risk in Goldman Sachs? (1 point)

i. 52.6% of the total risk in the firm is firm specific risk
ii. 52.6% of the beta can be attributed to market risk
iii. 52.6% of the total risk in the firm is market risk
iv. 52.6% of the total risk in the firm can be diversified away
v. None of the above

2. Midland Oil is a US-based oil drilling company that is publicly traded and has estimated a dollar cost of equity of 8% for itself. (The ten-year treasury bond rate is 3.5% and the equity risk premium used by the company is 8%) The company is considering acquiring ColOil, a Colombia-based oil company and wants to estimate a cost of equity in Colombian pesos. It has collected the following information:

- The Colombian government has 10-year peso denominated bonds, trading at an interest rate of 7% and 10-year US$ denominated bonds trading at an interest rate of 5.0%. Colombia's local currency rating matches its foreign currency rating.
- The standard deviation of Colombian equities is 25%, whereas the standard deviation in Colombian government bond (both peso and $) is 20%.

Assuming that the dollar cost of equity that Midland Oil has computed for itself is right (it reflects an appropriate beta for an oil drilling company), estimate the Colombian peso cost of equity for ColOil. (3 points)

3. Melia Coffee is a company that operates espresso bars and produces coffee pods and espresso machines for sale. The following table summarizes the revenues that the company generated from each business and relevant statistics from publicly traded companies in each business.

		Industry average		
Business	*Melia's Sales (in millions)*	*EV/Sales*[a]	*Regression Beta*	*Unlevered Beta*[b]
Espresso bars	$50	1.00	1.50	1.20
Coffee/Espresso Machines	$50	3.00	1.00	0.80

[a] EV =Enterprise value = Market value of equity + Debt – Cash
[b] Unlevered betas are already corrected for cash holdings at companies

Melia Coffee had debt outstanding of $ 50 million at the end of the most recent year and the marginal tax rate for all companies is 40%.

a. Estimate the levered beta for Melia Coffee today. (2 points)

b. The CEO of Melia Coffee is planning to do a leveraged buyout of the firm, where he intends to borrow $ 100 million and raise private equity (from KKR) to buy out the publicly traded stock in the firm. However, he plans to sell off the espresso bar business (at fair value) and retire debt right after the LBO, with the proceeds from the sale. Assuming that he can pull this off, estimate the levered beta for the firm after these transactions. (2 points)