Second Examination – Finance 3321

Fall 2016 (Moore)

Section Time: ____________________ Printed Name: ____________________

Ethical conduct is an important component of any profession. The Texas Tech University Code of Student Conduct is in force during this exam. Students providing or accepting unauthorized assistance will be assigned a score of zero (0) for this piece of assessment. Using unauthorized materials during the exam will result in the same penalty. Ours' should be a self-monitoring profession. It is the obligation of all students to report violations of the honor code in this course. By signing below, you are acknowledging that you have read the above statement and agree to abide by the stipulated terms.

Student's Signature: ______________________________

Use the Financial Statements for Applied Materials at the end of the exam booklet to answer the following 10 questions (no partial credit) – clearly show all inputs to be eligible for credit. Numerical answers must be taken to 2 decimal places (e.g. 25.42) and percentage based answers must be taken to the tenth of a percent (e.g. 36.4%).

Multiple Choice Problems are worth 4 Points Each.

1. Compute the **Days Supply of Inventory** at the end **2014**.
   a. 56.85 days
   b. 59.21 days
   c. 114.15 days
   d. 109.38 days
   e. 117.23 days

2. Compute the **Quick Asset Ratio** for **2015**.
   a. 2.44
   b. 1.71
   c. 2.47
   d. 1.77
   e. 1.96

3. Compute the **Working Capital Turnover** for **2014**.
   a. 1.26
   b. 1.77
   c. 2.19
   d. 2.35

4. Compute the **<u>Times Interest Earned</u>** for **<u>2015</u>**.
    a. 4.55
    b. 15.30
    c. 16.00
    d. 16.44

5. Compute the **<u>Operating Profit Margin</u>** for **<u>2014</u>**.
    a. 5.8%
    b. 11.8%
    c. 14.3%
    d. 16.8%
    e. 17.5%

6. Compute the **<u>Asset Turnover Ratio</u>** for **<u>2014</u>**.
    a. 0.73
    b. 0.75
    c. 1.77
    d. 2.19
    e. 2.35

7. Compute the **<u>Debt Service Margin</u>** for **<u>2015</u>**.
    a. 16.00
    b. 16.44
    c. 0.97
    d. 0.00
    e. Infinity

8. Compute the **<u>Sustainable Growth Rate</u>** for **<u>2015</u>**.
    a. 4.9%
    b. 6.8%
    c. 8.3%
    d. 11.3%
    e. 20.8%

9. Within the context of forecasting, which of the following ratios best links the income statement to the balance sheet?
   a. Net profit margin
   b. Current Ratio
   c. Return on Equity
   d. Asset Turnover
   e. Day's Sales outstanding

10. Assume that AMAT has a financial year end of September 31 each year. Today is November 2, 2016. It requires 50 days for a 10-K to be released after the year end and 21 days for the 10-Q to be released after the end of the quarter. How many quarters of financial information must you forecast in order to estimate annual sales for the NEXT 10-K to be published?
    a. 1
    b. 2
    c. 3
    d. 4
    e. 5

11. Which of the following statements is correct regarding forecasting and forecast errors.
    a. A $1,000 forecast error in 12 years is **more** expensive in terms of valuation error, today, when compared to a $300 error in 3 years. (assume a 15% discount rate)
    b. Raw (undiscounted) forecasts errors are expected to diminish in time
    c. A $1,000 forecast error in 10 years is **less** expensive in terms of valuation error, today, when compared to an $400 error in 5 years. (assume a 15% discount rate).
    d. When forecasting balance sheets in an equity valuation project, one is more concerned with the accuracy of forecast total equity than forecast total liabilities.

12. You have just restated a set of financial statements to reflect **capitalizing operating leases** for the past 5 years. Now you are going to perform the financial analysis. Which of the following statements is absolutely correct when comparing the as-stated and re-stated financials?
    a. The debt service margin will be higher on the second year of the restated ratios than as stated.
    b. The current ratio will decrease in the first year of the restatements as compared to as-stated.
    c. Operating profit margin must always be smaller for the restated ratios.
    d. Times interest earned will be smaller on a restated basis
    e. Altman's Z-score will increase on a restated basis.

13. You have just restated a set of financial statements to reflect **impairing goodwill** for a company that has no impairment charges in the last 10 years. Now you are going to perform the financial analysis. Which of the following statements is absolutely correct when comparing the as-stated and re-stated financials?
    a. The Asset Turnover ratio will increase on a restated basis for all relevant years.
    b. The Current Ratio will decrease in the first year of the restatements as compared to as-stated.
    c. The Gross profit margin must always be smaller for the restated ratios.
    d. The Debt Service Margin be smaller on a restated basis

14. Consider a company with the following: Value of debt is 400 with k_d of 8%. Further, assume k_e is 18%; r_f = 5%; T = 35% and $WACC_{AT}$ = 12.88%. Computed $WACC_{BT}$ is:

    a. 5.00%
    b. 10.20%
    c. 12.88%
    d. 14.00%
    e. 14.96%

15. Assume the market return and risk-free rate remain unchanged. Which of the following must be true if the firm's Beta suddenly changes from 0.9 to 1.8?
    a. The firms cost of equity increases by 50%
    b. The firm's cost of debt decreases in direct proportion to the increase in the cost of equity because the WACC must remain constant
    c. The WACC of the firm increases
    d. The market value of the equity increases
    e. The share price will increase

16. You have just computed the Beta of a stock to be 2.5 and the estimate of the relevant risk-free rate is 5%. The expected market return next period is 12% and your estimate of K_e is 23%. What is the appropriate long-run market risk premium?
    a. 7.0%
    b. 7.2%
    c. 7.5%
    d. 8.0%
    e. 9.0%

Use the following information (assumptions) to provide forecasts for Applied Materials (AMAT) in problems 17-20. **(3 Points Each)**

Assume a forecast **asset turnover ratio** of 0.75 in 2016 that will grow by .05 turns in each of the following 4 years and then will stabilize after that. The projected **sales growth** is 12.2% in 2016, 12.9% in 2017, 10.2% in 2018, 9.2% in 2019 and then 6.5% thereafter for AMAT. The forecast 2016 **gross profit margin** is 40.5% and it is budgeted to drop by 0.5% per year until it reaches at target 39% level. Finally, assume that net profit margin is forecast to be 10% for the next 5 years. Assume a stable net profit margin of 13% and a dividend payout ratio of 35%

17. Compute the forecast total assets at the end of 2017 for AMAT.

18. Compute the forecast gross profit in 2016.

19. Assume that AMAT maintains a 65 day collection period policy. Forecast the 2016 receivables.

20. Compute the 2016 forecast Retained Earnings Balance

Cost of Capital Estimation Problem (12 Points)

<u>Show all work to receive any credit</u>

Use the financial statement information provided for AMAT.
Assume the Market Value of Equity is $31.24 Billion and that Beta is 1.84.
The size premium for AMAT is 0.8% and the Market Risk Premium is 8%
Assume the appropriate risk-free rate for CAPM is 3.75%
AMAT's short-term (current) interest bearing debt has an effective rate of 2.5%
AMAT's long-term (non-current) interest bearing debt has an effective rate of 6.0%

Part A: Compute the cost of Equity using the two-factor CAPM (Show all work)

Part B: Compute the before tax Weighted Average cost of Debt

Part C: Compute the after-tax WACC assuming a 30% corporate tax rate

Back-Door of Cost of Equity Problem (6 Points)

Show all work to receive any credit

Assume the long-run equilibrium accounting return on equity is forecast to be 18%.
Assume a long-run annual growth rate of 8%.

Estimate the Back-door cost of equity using this information and any pertinent information found on AMAT's Financial Statements. Recall, this is a total risk and not systematic risk measure.

Regression output and cost of equity Problem (6 Points)

Show all work to receive any credit

Below are the results from 2 regressions used to estimate AMAT's Beta with Monthly return data.

The size premium for AMAT is 0.8% and the Market Risk Premium is 8%
Assume the appropriate risk-free rate for CAPM is 3.75%

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.7365
R Square	0.5424
Adjusted R Square	0.5216
Standard Error	0.1234
Observations	24

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0.00	0.03	-0.05	0.96	-0.05	0.05
X Variable 1	1.95	0.38	5.11	0.00	1.16	2.74

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.6713
R Square	0.4507
Adjusted R Square	0.4412
Standard Error	0.1039
Observations	60

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	0.01	0.01	1.03	0.31	-0.01	0.04
X Variable 1	2.01	0.29	6.90	0.00	1.43	2.59

Estimate the 95% Confidence Interval for the Size Adjusted Cost of Equity

Income Statement for AMAT (presented in Thousands of Dollars)

	31-Oct 2013	31-Oct 2014	31-Oct 2015
Total Revenue	7,509,000	9,072,000	9,659,000
Cost of Goods Sold	4,518,000	5,229,000	5,707,000
Gross Profit	2,991,000	3,843,000	3,952,000
Operating Expenses			
Research Development	1,320,000	1,428,000	1,451,000
Selling General and Administrative	898,000	890,000	794,000
Non Recurring	341,000	5,000	14,000
Total Operating Expenses	2,559,000	2,323,000	2,259,000
Operating Income or Loss	432,000	1,520,000	1,693,000
Income from Continuing Operations			
Total Other Income (Expenses) Net	13,000	23,000	8,000
Earnings Before Interest and Taxes	445,000	1,543,000	1,701,000
Interest Expense	95,000	95,000	103,000
Income Before Tax	350,000	1,448,000	1,598,000
Income Tax Expense	94,000	376,000	221,000
Net Income	256,000	1,072,000	1,377,000

Supplemental DATA for AMAT

Market Cap (Billions) - 10/31/2016	31.24
MVE/BVE on (10/31/2016)	4.58
Beta at the end of October 2016	1.84

Balance Sheets for AMAT (presented in Thousands of Dollars)

	2013	2014	2015
Current Assets			
Cash And Cash Equivalents	1,711,000	3,002,000	4,797,000
Short Term Investments	180,000	160,000	168,000
Net Receivables	1,633,000	1,670,000	1,739,000
Inventory	1,413,000	1,567,000	1,833,000
Other Current Assets	705,000	568,000	724,000
Total Current Assets	5,642,000	6,967,000	9,261,000
Non-Current Assets			
Long Term Investments	1,005,000	935,000	946,000
Property Plant and Equipment	850,000	861,000	892,000
Goodwill	3,294,000	3,304,000	3,302,000
Intangible Assets	1,103,000	951,000	762,000
Deferred Long Term Asset Charges	149,000	156,000	145,000
Total Non-Current Assets	6,401,000	6,207,000	6,047,000
Total Assets	12,043,000	13,174,000	15,308,000

	2013	2014	2015
Current Liabilities			
Accounts Payable	1,649,000	1,883,000	1,833,000
Short/Current Long Term Debt			1,200,000
Other Current Liabilities	794,000	940,000	765,000
Total Current Liabilities	2,443,000	2,823,000	3,798,000
Non-Current Liabilities			
Long Term Debt	1,946,000	1,947,000	3,342,000
Other Liabilities	566,000	536,000	555,000
Total Non-Current Liabilities	2,512,000	2,483,000	3,897,000
Total Liabilities	4,955,000	5,306,000	7,695,000

	2013	2014	2015
Stockholders' Equity			
Common Stock	12,000	12,000	11,000
Retained Earnings	12,487,000	13,072,000	13,967,000
Treasury Stock	(11,524,000)	(11,524,000)	(12,848,000)
Capital Surplus	6,151,000	6,384,000	6,575,000
Other Stockholder Equity	(38,000)	(76,000)	(92,000)
Total Stockholder Equity	7,088,000	7,868,000	7,613,000
Total Liabilities and Stockholder Equity	12,043,000	13,174,000	15,308,000

Measured in Thousands of Dollars	2013	2014	2015
Cash Flow Provided by Operating Activities			
Net Income	256,000	1,072,000	1,377,000
Depreciation	410,000	375,000	371,000
Adjustments To Net Income	412,000	218,000	50,000
Changes In Accounts Receivables	(404,000)	(21,000)	(61,000)
Changes In Liabilities	153,000	284,000	(334,000)
Changes In Inventories	(141,000)	(154,000)	(266,000)
Changes In Other Operating Activities	(63,000)	26,000	26,000
Total Cash Flow From Operating Activities	623,000	1,800,000	1,163,000
Cash Flow Provide by Investing Activities			
Capital Expenditures	(197,000)	(241,000)	(215,000)
Investments	406,000	67,000	(62,000)
Other Cash flows from Investing Activities	6,000	13,000	(4,000)
Total Cash Flows From Investing Activities	215,000	(161,000)	(281,000)
Cash Flow Provided by Financing Activities			
Dividends Paid	(456,000)	(485,000)	(487,000)
Sale Purchase of Stock	(86,000)	107,000	(1,237,000)
Net Borrowings			2,581,000
Other Cash Flows from Financing Activities	23,000	30,000	56,000
Total Cash Flows From Financing Activities	(519,000)	(348,000)	913,000