

Second Examination – Finance 3321 Spring 2016 (Moore) – Version 1

Printed Name: _____

Registered Section Time: _____

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Student's Signature: _____

Where indicated, use the financial statements for Alamo Distributing (a small electrical components distributor that sells in both the wholesale and retail markets).

Clearly Circle the **BEST** response for each Multiple Choice questions and work the short answer problems: **4 Points Each in this section – No Partial Credit**

Use the attached financial statements for Alamo to answer questions 1-8

1. Compute Alamo's current ratio for the year ended 20X1

2. Compute Alamo's Day's Supply of Inventory for 20X1.

3. Compute Alamo's Debt Service Margin for the year ended 20X2

4. Compute Alamo's IGR for 20X2

5. Compute Alamo's ROE for 20X2

6. Assume Alamo has a market value of equity = \$800,000 at the end of 20X2. Compute Alamo's Z-Score for the year ended 20X2.

$$\begin{aligned} Z\text{-score} = & 1.2 \left[\frac{\text{Working Capital}}{\text{Total Assets}} \right] + 1.4 \left[\frac{\text{Retained Earnings}}{\text{Total Assets}} \right] \\ & + 3.3 \left[\frac{\text{Earnings Before Interest and Taxes}}{\text{Total Assets}} \right] \\ & + 0.6 \left[\frac{\text{Market Value of Equity}}{\text{Book Value of Liabilities}} \right] \\ & + 1.0 \left[\frac{\text{Sales}}{\text{Total Assets}} \right] \end{aligned}$$

7. Compute Alamo's Times Interest Earned for 20X1
8. Compute Alamo's Asset Turnover for 20X2
9. Which of the following will result in increasing operating efficiency?
- Increasing Days Supply of inventory.
 - Increasing Working Capital Turnover.
 - Extending more generous credit terms from 30 days to 60 days
 - Decreasing Accounts Receivable Turnover
 - Increasing the Cash to Cash Cycle
10. You have estimated K_e is 15% using the CAPM. The estimated relevant risk-free rate is 5%. The expected market return next period is 8% and the appropriate market risk premium is 7% and the tax rate is 40%. What Beta did you use?
- .024
 - 0.56
 - 1.00
 - 1.43
 - 3.33
11. What is the main disadvantage of using daily returns to estimate the firm's Beta?
- The data is not available to the public
 - Daily returns are inconsistent with the theoretical model
 - Daily returns are computed only on a Monday through Friday basis, and weekends (when markets are closed) renders the model useless
 - Daily returns are "noisy" and provide less explanatory power than longer-term measures.
 - The true value of a firm's Beta changes on a daily basis.
12. Within the context of forecasting, which of the following ratios best links the income statement to the balance sheet?
- Net profit margin
 - Current Ratio
 - Return on Equity
 - Asset Turnover
 - Day's Sales outstanding

13. Within the context of forecasting, which is the foundation of the forecast financial statements? (i.e. drives most other forecast elements)
- Sales forecast.
 - Net profit margin
 - Cash to cash cycle
 - Current ratio
 - Asset Turnover
14. In terms of confidence and degree of accuracy, which financial statement is the most difficult to forecast?
- Income Statement.
 - Balance Sheet.
 - Statement of Cash Flows
 - Cash flow from operating activities
 - Cash flow from financing activities
15. In terms of sequence of forecasting financial statements, which is the first to be done?
- Income Statement.
 - Balance Sheet.
 - Statement of Cash Flows
 - Cash flow from operating activities
 - Cash flow from financing activities
16. Which statistic measures the percent variation of the dependent variable that is explained by the variation in the independent variable?
- Beta
 - Published Beta
 - The estimation period
 - R-squared
 - Correlation coefficient
17. Which of the following stock return series has the least of amount of noise and is best suited to beta estimation when using a sample size of 60 observations?
- Daily returns
 - Weekly returns
 - Monthly returns
 - Annual returns
 - Decade returns

18. You are valuing a company that has a December 31 financial year end. It is now June 2007. Assuming your company publishes its 10-Q within 2 weeks of the end of the quarter, how many quarters of activity must you forecast when estimating the end of 2007 net income?
- a. 1
 - b. 2
 - c. 3
 - d. 4
 - e. 5
19. You are valuing a company that has a June 30 financial year end. It is now April 5, 2016. Assuming your company publishes its 10-Q no earlier than 2 weeks of the end of the quarter, how many quarters of activity must you forecast when estimating the annual net income for the year that will end June 30, 2016?
- a. 1
 - b. 2
 - c. 3
 - d. 4
 - e. 5
20. Which of the following statements is correct regarding forecast errors.
- a. A \$1,000 forecast error in 10 years is more expensive in terms of valuation error, today, when compared to an \$800 error in 3 years. (assume a 15% discount rate)
 - b. Raw (undiscounted) forecast errors are expected to grow in time.
 - c. When forecasting balance sheets in an equity valuation project, one is more concerned with the accuracy of forecast total liabilities than forecast total equity.
 - d. It is normal to expect undiscounted forecast errors in a long-run horizon (more than 10 years out) are relatively lower than intermediate term forecasts (5-7 years out).

Problem 1 (Interpreting Regression Results) – 20 Points

On the next page, you will find two sets of regressions for estimating Beta in the CAPM model. Both are based upon the result using the 20 Year Treasury Bill as the relevant risk free rate and the S&P500 as the proxy for the market return. Based on the best regression, below, identify the estimated Beta and the appropriate degree of explanatory power. Assume the Market Risk Premium is 7% and the appropriate Risk-Free Rate is 3.2%

1. What is the appropriate Beta Estimate to use for CAPM-based Cost of equity estimates? Next, identify how much of the firm's return volatility is explained by the systematic risk component. Base your results on the best performing appropriate regression model.

Beta Estimate: _____

Systematic Risk as percentage of Total Return Risk: _____

2. Compute the estimated cost of equity using the Single-Factor CAPM model.
3. Assume the Market Capitalization of the firm is \$1.8 Billion Dollars. Use the Size Decile-Based Risk Premium information provided in the following table (page after regression results) to estimate the cost of equity using our "two factor" model.

SUMMARY OUTPUT - 72 Month Data Beta Estimate

| <i>Regression Statistics</i> | |
|------------------------------|-------|
| Multiple R | 0.570 |
| R Square | 0.325 |
| Adjusted R Square | 0.316 |
| Standard Error | 0.081 |
| Observations | 72 |

ANOVA

| | <i>df</i> | <i>SS</i> | <i>MS</i> | <i>F</i> | <i>Significance F</i> |
|------------|-----------|-----------|-----------|----------|-----------------------|
| Regression | 1 | 0.2221 | 0.22 | 33.728 | 1.70647E-07 |
| Residual | 70 | 0.4610 | 0.01 | | |
| Total | 71 | 0.6831 | | | |

| | <i>Coefficients</i> | <i>Standard Error</i> | <i>t Stat</i> | <i>P-value</i> | <i>Lower 95%</i> |
|--------------|---------------------|-----------------------|---------------|----------------|------------------|
| Intercept | 0.03 | 0.0096 | 2.97 | 0.004092482 | 0.0093 |
| X Variable 1 | 1.40 | 0.2419 | 5.81 | 1.70647E-07 | 0.9224 |

SUMMARY OUTPUT - 36 Month Regression for Beta Estimate

| <i>Regression Statistics</i> | |
|------------------------------|-------|
| Multiple R | 0.459 |
| R Square | 0.211 |
| Adjusted R Square | 0.187 |
| Standard Error | 0.057 |
| Observations | 36 |

ANOVA

| | <i>df</i> | <i>SS</i> | <i>MS</i> | <i>F</i> | <i>Significance F</i> |
|------------|-----------|-----------|-----------|----------|-----------------------|
| Regression | 1 | 0.030 | 0.030 | 9.071 | 0.005 |
| Residual | 34 | 0.111 | 0.003 | | |
| Total | 35 | 0.140 | | | |

| | <i>Coefficients</i> | <i>Standard Error</i> | <i>t Stat</i> | <i>P-value</i> | <i>Lower 95%</i> |
|--------------|---------------------|-----------------------|---------------|----------------|------------------|
| Intercept | 0.03 | 0.01 | 3.51 | 0.001 | 0.01 |
| X Variable 1 | 1.48 | 0.49 | 3.01 | 0.005 | 0.48 |

ALAMO DISTRIBUTING COMPANY
BALANCE SHEETS
December 31, 20X1 and 20X2

| <u>ASSETS</u> | <u>20X1</u> | <u>20X2</u> |
|--|---------------------------|---------------------------|
| Current Assets: | | |
| Cash | \$ 70,000 | \$ 38,000 |
| Accounts Receivable (net) | 65,000 | 105,000 |
| Inventories (at FIFO Cost) | 31,000 | 52,000 |
| Prepaid Expenses | <u>6,000</u> | <u>4,500</u> |
| Total Current Assets | \$172,000 | \$199,500 |
| Non-current Assets (at cost): | | |
| Land | \$208,000 | \$237,000 |
| Buildings | 150,000 | 150,000 |
| Equipment | 460,000 | 681,000 |
| Less: Accumulated Depreciation | <u>(240,000)</u> | <u>(338,000)</u> |
| Total Non-current Assets | <u>\$578,000</u> | <u>\$730,000</u> |
| Total Assets | \$750,000 ===== | \$929,500 ===== |

LIABILITIES AND STOCKHOLDERS' EQUITY

| | | |
|---|---------------------------|---------------------------|
| Current Liabilities: | | |
| Accounts Payable | \$ 22,000 | \$ 47,000 |
| Notes Payable | 60,000 | 32,000 |
| Current Maturities on LT Debt | <u>18,000</u> | <u>24,000</u> |
| Total Current Liabilities | \$100,000 | \$103,000 |
| Notes Payable and Debt - Long Term | <u>312,000</u> | <u>400,500</u> |
| Total Liabilities | \$412,000 | \$503,500 |
| Stockholders' Equity: | | |
| Common Stock (no par value) | \$200,000 | \$220,000 |
| Retained Earnings | <u>138,000</u> | <u>206,000</u> |
| Total Stockholders' Equity | <u>\$338,000</u> | <u>\$426,000</u> |
| Total Liabilities & Stockholder Equity | \$750,000 ===== | \$929,500 ===== |

ALAMO DISTRIBUTING COMPANY
INCOME STATEMENTS
For Years Ending December 31, 20X1 and 20X2

| | <u>20X1</u> | <u>20X2</u> |
|--|--------------------|---------------------|
| Sales | \$900,000 | \$1,200,000 |
| Cost of Goods Sold | <u>(350,000)</u> | <u>(580,000)</u> |
| Gross Profit on Sales | \$550,000 | \$ 620,000 |
| Selling Expenses | (110,000) | (133,500) |
| Administrative Expenses | <u>(238,000)</u> | <u>(250,000)</u> |
| Income from Operations | \$202,000 | \$ 236,500 |
| Interest Expense | <u>(52,000)</u> | <u>(65,000)</u> |
| Income before Taxes | \$150,000 | \$ 171,500 |
| Income Tax Expense | <u>(60,000)</u> | <u>(63,500)</u> |
| Net Income | \$ 90,000 ===== | \$ 108,000 ===== |
| Earnings per Common Share* | <u>\$1.80</u> | <u>\$1.96</u> |
| Total Depreciation Expense included above | \$ 82,000 | \$ 98,000 |

* Based on 50,000 and 55,000 average common shares outstanding in 20X1 and 20X2, respectively.

Summary of Cash Flow Statements

| | 20X1 | 20X2 |
|-------------------------------------|-------------|-------------|
| Cash Flow from Operating Activities | \$150,000 | \$180,000 |
| Cash Flow from Investing Activities | -\$ 90,000 | -\$130,000 |
| Cash Flow from Financing Activities | \$ 20,000 | \$10,000 |
| Dividends Paid | \$30,000 | \$40,000 |