

# Bread Crumbs to Financial Statement Analysis: Writing Assignments to Enhance Students' Interpretation

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*Introductory financial accounting and financial management texts focus on the construction of financial statements and the calculation of financial ratios with less attention to the interpretation of and connections among the ratios, except for brief presentations of DuPont Analysis. Seeking to enhance student understanding of financial ratios and to provide them opportunities to write and think critically outside class, I created six assignments that lead students through simple questions and explanations to analytical conclusions. Assignments are spaced throughout the semester to include related topics. For example, the leverage assignment is due after we cover bonds and risk and includes credit ratings and beta. In the first assignment, each student chooses a firm and writes an introduction to the firm to provide context for later analysis. The second assignment directs them to Morningstar for common-sized statements and asks them to respond to questions related to their firms' financing, investments and expenses. The third through sixth assignments use firm and industry data from Reuters and focus on financial ratios: leverage and coverage, liquidity and turnover, profitability, and market value. The assignments model an approach to critical thinking that progresses from data description and comparison through analysis and synthesis to evaluation.*

## INTRODUCTION

Introductory financial accounting and financial management texts focus on the construction of financial statements and the calculation of financial ratios while devoting less attention to the interpretation of these ratios. In the discussion of interpretation that is provided, ratios are considered individually with little consideration of the connections among ratios, except for brief presentations of the DuPont breakdown of Return on Assets into Profit Margin and Total Asset Turnover and Return on Equity into Profit Margin, Total Asset Turnover, and the Equity Multiplier. Seeking to enhance my students' understanding of financial ratios and to provide them with opportunities to exercise their critical thinking skills without spending more lecture time on the topic, I created a series of brief writing assignments that lead students through simple questions and explanations to an analytical conclusion, just as Hansel and Gretel's bread crumbs lead them through the forest to their home.

I organize the assignments as six discussion board posts due at different times throughout the semester. To the extent possible, due dates are chosen to correspond with lecture topics. For example, the first substantive post, which addresses common-sized statements is due shortly after we cover financial statements, and the leverage and coverage ratios post is due shortly after we cover risk, return and beta. At the beginning of the semester, I create several industry groups on Blackboard and ask students to enroll in a group. A maximum of five students are allowed in each group. Once enrolled in an industry group, each student chooses a firm from that industry to analyze. In a class of 35 students, there would be 35 different companies being analyzed from 7 different industries. All work is completed by the students individually, not in groups. I establish the groups for two reasons. The first reason is to impose some order on which firms are chosen. I take care not to repeat industries until a few semesters have passed to reduce the likelihood of current students using former students' work. Second, to promote

meaningful comparisons. One requirement of each post is that students compare their firms to at least one other firm using the information in other students' posts. I do this to encourage them to read the other posts and to reinforce a point I make in lectures: that what is typical in one industry may not be in other industries. Therefore, I try to choose industries that will offer interesting comparisons. If I include an industry like Software that tends to hold a lot of cash, I also include an industry that holds very little cash, like Groceries. Other attributes I consider include reliance on current or fixed assets, whether profits are generated more by margin or volume, and expected growth rates.

In the students' first post, they introduce their companies to provide context for the later analysis. The second post directs them to Morningstar for common-sized statements and asks them to respond to questions related to their firms' financing, investments and expenses. My students have access to Morningstar through a subscription provided by the university library. However, as of March 2019, five years of common-sized statements are accessible for free from Morningstar.com. The third through sixth posts use publicly available data on Reuters.com and focus on financial ratios: leverage and coverage, liquidity and turnover, profitability, and market value.

Student response to the assignments is generally good. For example, one student wrote in an email to me, "I just completed my last discussion board posting for Market Value. Just wanted to tell you that I have found this exercise very valuable throughout the semester. Using the same firm for each posting helped me gain a better understanding of the different types of ratios and the dynamics affecting my firm."

The remainder of this paper proceeds as follows. I first discuss the learning objectives for the discussion board posts. Then, I present the discussion board prompts and instructions. Finally, I conclude the paper and provide two exhibits. Exhibit 1 is an example of a student's response to the Liquidity and Turnover ratios prompt. Exhibit 2 is a simple rubric I created on Blackboard to facilitate grading. The rubric

was designed to enable me or my graduate assistant to quickly grade the posts. Although there is space for comments, I have tried to design the prompts with enough explanation that major conceptual errors and the need for comments to address them are rare.

### LEARNING OBJECTIVES

I created the assignments to extend the instruction provided by corporate finance texts, which teach students to calculate common-sized statements and financial ratios and introduce ratio analysis but generally limit interpretation to one ratio at a time (e.g., Breal, Myers, and Marcus, 2018; Brigham and Daves, 2016; Brigham and Houston, 2017; Brooks, 2019; Ross, Westerfield, Jaffe, and Jordan, 2018; Ross, Westerfield, and Jordan, 2013). In the assignments, which I deploy as discussion board posts, my aim is to deepen students' ability to use common-sized statements and financial ratios to analyze and draw conclusions about a firm's financial standing. Common-sized statements enable comparisons of firms of different sizes. But they are also useful when one is trying to understand the cost structure of a firm, how the firm invests, and how the firm is financed. In some industries, firms are able to sustain high profit margins, while in others, firms compete away most of the margin and must rely on turnover to drive profits. Some industries require large investments in current assets, others fixed assets, while some need nearly equal investments in both. Investment needs affect leverage, liquidity, turnover, and profitability.

Appropriate levels of leverage often vary by industry but are determined by the firm's income and risk exposure. Firms in the same industry will make similar investments, and industries that require more fixed assets will often use more debt because fixed assets increase financing needs and provide collateral. Furthermore, firms in the same industry have similar levels of business risk, and industries that face lower levels of business risk will often use more debt. However, even in high debt industries, some firms are better able to use leverage than others.

Use of leverage constitutes a trade-off between risk and return. Leverage increases a firm's beta or market risk and the likelihood of bankruptcy, but also increases a firm's return on equity. Firms that have high interest coverage face lower risk of bankruptcy and earn higher credit ratings, which reduces the cost of debt. Firms with interest coverage, also known as the times interest earned ratio, of at least 10 times usually have high credit ratings. Therefore, firms with high, steady income are best able to take advantage of the benefits of debt. Firms with volatile income should avoid debt. Generally, moderate debt ratios with high coverage ratios are preferred.

While leverage ratios focus on total and long-term liabilities, liquidity ratios focus on the management of current assets and current liabilities. High liquidity may look good and feel safe but may also indicate an over-investment in current assets. Firms with very high liquidity may be holding too much cash or having trouble collecting accounts receivable or selling inventory. Though underinvestment in

current assets can impede the firm's ability to pay obligations on time, overinvestment in current assets may negatively affect turnover ratios.

Turnover ratios are also known as efficiency ratios because they show sales produced per dollar invested in assets. Firms should strive to be efficient but must also consider how efforts to increase turnover affect liquidity and profit margins. Current asset turnover and liquidity have an inverse relationship because current assets are in the numerators of the liquidity ratios but in the denominators of the turnover ratios. Turnover ratios and profit margins also tend to have an inverse relationship because reducing price, and thus margin, is often necessary to increase sales and thus turnover.

The product of total asset turnover and net profit margin is return on assets and return on assets times the equity multiplier is return on equity. Therefore, profitability is determined by our profit margin on each sale, our sales volume relative to the investment needed to produce sales, and how we finance investments. Ideally, we want to control costs in order to preserve profit margins, invest efficiently so that we produce higher sales per dollar of assets, and use debt wisely to take advantage of leverage and tax breaks without making the firm too risky. Thus, moderate liquidity with a combination of total asset turnover and net profit margin that produces high return on assets relative to the firm's peers and moderate levels of debt with high interest coverage are preferred.

Market value ratios are influenced by all other ratios but are perhaps most related to the firm's growth expectations and risk. Firms with high expected growth rates and relatively low betas tend to have the highest market values. However, a firm's price-earnings ratio may be distorted in periods of abnormally high or low earnings. Similarly, a firm's market to book ratio, also known as price to book, may be inflated if the firm uses significantly more leverage than other firms do.

### DISCUSSION BOARD PROMPTS

#### Intro to Financial Statement Analysis Discussion Board Post – Choose your company

After you have enrolled in an industry group (using the Groups link to the left), choose a firm to analyze from within that industry. Post the name of the company in your industry that you would like to analyze here. Be sure that no one has already posted that company name in the discussion board. After you have chosen a firm and posted your choice, you should do a bit of research on your company and add to the post a description of what your firm does, including the key products or services it provides and its general position in the industry (leader, follower, relative newcomer, etc.). All of this must be posted by the due date, but it does not have to be done all at once. You can make unlimited edits to the post until the due date.

**Common-sized Statements Discussion Board Post**

Please see the instructions in the Week 3 folder: "How to get common-sized statements from Morningstar" to get the statements for the firm you selected in the previous DB. Use those common-sized statements to answer the following questions in your DB post:

1. **EXPENSES:** What is the average common-sized cost of goods sold or cost of sales for your firm over the past five years? Firms in highly competitive industries tend to have CGS above 60% of revenues (Gross Profit Margins less than 40%), while those in fiercely competitive industries have CGS above 80% (GPM < 20%). How would you categorize your industry? Has CGS been generally rising or falling as a percentage of revenues for your firm? Do you know why? If CGS is not the largest expense as a percentage of revenues for your firm, what is? Try to explain why the general business model of your industry requires relatively high expenses in that area.
2. **INVESTMENTS:** Does your firm have more money invested in current assets, in fixed assets or roughly equal investments in both? (Note: look at common-sized total current assets to answer this question.) In which asset classes does your firm have the highest investment (cash, inventory, PPE, intangibles, etc.)? Discuss how your firm's business model determines the current and fixed assets investments you see. For example, big box retailers (like Walmart) must invest in significant amounts of both current assets (all the inventory they sell) and fixed assets (their retail locations and warehouses). Smaller retailers might have high current assets, but low fixed assets because they don't own their locations. Service firms are likely to have little or no inventory, and business-to-business firms may have high accounts receivable. Firms that make a lot of acquisitions may have significant levels of goodwill, an intangible asset.
3. **FINANCING:** Does your firm hold a lot of cash and short-term investments (10% of total assets or more)? Does your firm use a lot of liabilities (40% of total assets or more)? Most firms do one or the other, though a few do both.
  - a. If it tends to hold a lot of cash and short-term investments, why do you think your firm might need ready access to large amounts of cash? Why might it not be able to rely on borrowing to get cash when needed? Firms in fast-moving industries, those that rely heavily on research and development and/or acquisitions, and those whose cash flows are volatile are among those that tend to hold a lot of cash.
  - b. If your firm has a lot of liabilities, are they mostly current liabilities or mostly long-term? Why do you think your firm needs and is able to get access to a lot of that type of debt? (Note that the need for debt

and the ability to access debt are two very different things. Just because I need a loan to buy a house doesn't mean I can easily find a lender willing to lend me money at an affordable interest rate.) Generally current liabilities are used to finance current assets and day-to-day operations, while long-term liabilities are used to finance purchases of fixed assets. Does that seem to be true for your firm? Justify your answer.

4. Read your classmates' posts and find a firm that differs from yours regarding either financing, investments or operations. (Choose only one of these three areas.) Describe how they differ and try to explain why they differ. For example, if your firm is in retail and has high cost of goods sold, you might compare your firm to a service firm that has low cost of goods sold but high labor expense. These firms differ because retail is the reselling of items, whereas service firms do not resell items, they offer a service, generally performed by employees. You can do this either in your first post for this DB or in a follow up post.

To get full credit (10 points) be sure to do the following:

1. Fully address all numbered items. (8 points)
2. Write complete sentences with minimal typos and other errors. (1 pt)
3. Use data to support your answers. For example, don't just say, "My firm holds a lot of cash." Say, "At 20% of total assets, my firm's cash holdings are relatively large." (1 pt)

**Leverage and Coverage Discussion Board Post**

To begin your analysis of your firm's debt usage, you must first gather the data described below. Be sure to see the Week 8 folder for instructions and other resources that will help you with this post.

1. Using the instructions posted in the Week 8 folder, use Morningstar to find your firm's credit rating. Then select Key Ratios, Financial Health, and scroll down to Debt/Equity. Make note of whether the DE ratio has been increasing, decreasing or steady for the past 5 years to answer question 1 below. Morningstar usually defaults to descending years, so check the dates in the column headings. If Morningstar does not have a credit rating for your firm, it could be...
  - a. That it is rated but not by Morningstar. Perhaps Moody's or Standard and Poor's have rated it instead. You can try doing a Google search on your firm, such as Dillard's credit rating. If the rating has been updated in the last few years, there will be a press release of some sort that will come up.

- b. That your firm does not have a credit rating. Ratings are on the bonds a firm has issued rather than on the firm itself. If your firm has no bonds, it will not have a rating. If you have checked Morningstar and done a Google search and found no credit rating, make note of that in your post. In this case, your interest expense and long-term debt on the income statement and balance sheet will be minimal.
2. Using the instructions or video lecture posted in the Week 8, Leverage and Coverage Discussion Board Post folder, use Reuters.com to find financial ratios for your firm and industry average benchmark ratios. For this post, you will need the debt-equity ratio, the interest coverage ratio (same as times interest earned), the return on equity, and the beta for your firm and the industry. You may be able to copy and paste the data into an Excel spreadsheet or you might want to use print screen or some other method of recording the data for future use, or you can just plan to come back to this site later in the semester for remaining DB posts.
3. Go to our Common-sized statements discussion board and reread what you wrote about your firm's investments to help answer question 1. Then answer the following questions:
- Is your firm's debt usage higher, lower, or similar to that of the industry? Has it been increasing, decreasing or maintaining its debt levels over the past 5 years? What does that suggest about the firm's debt policy? What do you think your firm uses most of its debt for, current assets or fixed assets?
  - Is your firm's credit rating high or low? Explain that rating by comparing its debt level and interest coverage to the benchmarks. Generally large firms (market capitalization > \$5 billion) with interest coverage of at least 9 times and smaller firms with interest coverage of at least 12 times will have AA or AAA ratings. Firms with interest coverage of at least 4 times will usually be considered investment grade (BBB-/Baa3 or higher). Does it appear that your firm easily afford its debt?
  - One disadvantage of using debt, other than the possibility of bankruptcy, is that debt adds volatility to a firm's stock returns, which increases the beta. Compare your firm's beta to the industry average beta. Are both your debt-equity ratio and beta either higher or lower than industry average? If not, some other factor (business risk or operating leverage) may have a greater impact on your beta than financial leverage.
  - One advantage of using debt (or leverage) is that it increases the firm's return on equity (ROE). Does your firm seem to be benefiting from leverage?
  - Please fill in the blanks with high, low or average: My firm has \_\_\_\_\_ leverage, \_\_\_\_\_

coverage, a \_\_\_\_\_ beta and a \_\_\_\_\_ return on equity. Together these indicate that my firm's approach to debt is \_\_\_\_\_ (too risky, too conservative, or just right).

To get all 10 points for this post, you must do the following:

- Fully answer all five questions. (6 points)
- Write using complete sentences with minimal typos and other errors. (1 pt)
- Use data to support your answers. For example, don't just say, "My firm holds a lot of cash." Say, "At 20% of total assets, my firm's cash holdings are relatively large." (2 pts)
- Refer to at least one other post either in your first post for this DB or in a follow up post to this DB before the due date. For example, "At 20% of total assets, my firm's cash holdings are relatively large. However, John Smith's firm Acme Inc. in the same industry appears to hold even more cash, at 30% of assets. Perhaps Acme is preparing for an acquisition. (1 pt)

#### Liquidity and Turnover Discussion Board Post

To begin your analysis of your firm's liquidity and turnover, you must first gather data. Using the written instructions or video lecture posted in the Week 10 folder, use Reuters.com to find the following ratios for your firm along with industry averages: The Current and Quick Ratios; Receivables, Inventory and Total Asset Turnover; Net Profit Margin and Return on Assets. If your firm did not have accounts receivables or inventory turnover, be sure to mention that in the post with an explanation, such as "my firm is a service firm, therefore it holds little (or no) inventory." Then answer the following questions:

- Liquidity is an indication of how easily a firm can pay its short-term bills. How does your firm's liquidity compare to that of firms in its industry and sector?
- Turnover ratios are also known as Efficiency ratios because firms invest in assets to produce sales. Low turnover ratios may indicate overinvestment. How does your firm's turnover compare to that of firms in its industry and sector? Industries that rely heavily on fixed assets (aka asset intensive industries) will often have relatively low turnover ratios. Does seem true of your industry?
- Generally, we see a trade-off between liquidity and turnover. Mathematically it is true because current assets are in the numerator of liquidity ratios and in the denominator of the turnover ratios. Intuitively it is true because holding more current assets, particularly cash, reduces risk but may do little to increase sales. Do you

see evidence of that here? Do you see it in all the turnover ratios or just some?

4. Generally, we see a trade-off between profit margin and turnover, as high margin products often have lower sales volume than low margin products. (Note that there is no direct relationship between liquidity and profit margin.) Do you see evidence of that trade-off here?
5. Return on Assets (ROA) is one measure of the effectiveness of a firm's investment policy. ROA is equal to net profit margin times total asset turnover. How does your firm's ROA compare to that of firms in its industry?
6. Complete the following sentence, filling in the blanks: (Enter your firm's name) has relatively \_\_\_\_\_ liquidity and \_\_\_\_\_ turnover. Turnover directly affects a firm's ROA, but so does profit margin. Increases in margin tend to decrease turnover and vice versa. Therefore, firms with low turnover might still generate high ROA if margins are large enough, while firms with high turnover might still generate low ROA if margins are too low. (Enter your firm's name) ROA is relatively \_\_\_\_\_ because \_\_\_\_\_ (margins or turnover) is \_\_\_\_\_.

To get all 10 points for this post, you must do the following:

1. Fully answer all six questions. (6 points)
2. Write complete sentences with minimal typos and other errors. (1 point)
3. Use data to support your answers. For example, don't just say, "My firm holds a lot of cash." Say, "At 20% of total assets, my firm's cash holdings are relatively large." (2 points)
4. Make a comparison between your firm and at least one other firm posted either in your first post for this DB or in a follow up post to this DB before the due date. For example, "At 20% of total assets, my firm's cash holdings are relatively large. However, John Smith's firm Acme Inc. in the same industry appears to hold even more cash, at 30% of assets. Perhaps Acme is preparing for an acquisition." The reference should be a meaningful comparison. Here for example, I don't just compare, I offer a possible explanation for the difference. (1 point)

### Profitability Ratios and DuPont Analysis Discussion Board Post

To begin your analysis of your firm's profitability, you must first use the instructions or video lecture posted in the Week 12 folder and Reuters.com to find the following ratios for your firm and its industry averages: Total Debt to Equity, Interest Coverage, Net Profit Margin, Total Asset Turnover,

Return on Assets and Return on Equity. Please note that Reuters displays these ratios as whole numbers, but all except Interest Coverage and Total Asset Turnover should be followed by a % sign. For example, if ROA (TTM) is shown as 16.17, it should be read as 16.17%. Interest Coverage and Asset Turnover are shown in times per year, so turnover of 0.59 indicates that the firm's assets turn over less than once per year while interest coverage of 23 indicates its operating income is 23 times larger than its interest expense. Then answer the following questions:

1. Compare your firm's profit margin to that of firms in its industry.
2. Compare your firm's asset turnover to that of firms in its industry.
3. Generally, we see a trade-off between profit margin and turnover, as high margin products often have lower sales volume than low margin products. Which describes your firm's ratios best: high margin or high turnover? Does that seem to be consistent with what you know about the firm's strategy? (Ex. We know Wal-Mart positions itself as having the lowest prices, so we expect them to have low margins and high turnover.) Is this an industry-wide approach in your industry or are some firms the "low price leaders" while others are the "luxury" brands?
4. Return on Assets (ROA) is one measure of the effectiveness of a firm's investment policy. Using DuPont Analysis, ROA is equal to Net Profit Margin times Total Asset Turnover. How does your firm's ROA compare to that of firms in its industry? Would you say your firm's approach to the trade-off between margin and turnover is successful? (Ex. A firm may lower margins to increase turnover, but the resulting increase might not be enough to make the firm's ROA as good as or better than its competitors. That would be unsuccessful.)
5. Return on Equity (ROE) measures the effectiveness of a firm's investment policy and its financing or capital structure policy. Using DuPont Analysis, ROE equals ROA (the investment results) times Equity Multiplier (the effect of financing); therefore, larger differences between ROA and ROE indicate more leverage. Does your firm appear to use a lot of debt to "lever up" ROE? Does your firm's use of debt seem risky (interest coverage < 4)?
6. Complete or reword the following sentence, filling in the blanks: (Enter your firm's name) has relatively \_\_\_\_\_ margins and \_\_\_\_\_ turnover. Net profit margin times total asset turnover equals ROA, which is a measure of the effectiveness of a firm's investment policy. ROA times the equity multiplier equals ROE. Firms can therefore boost their return to

stockholders by using debt to finance investments. The more debt used, the greater the boost but also the greater the risk of bankruptcy. (Enter your firm's name) ROE is relatively \_\_\_\_\_ because \_\_\_\_\_ (enter margin, turnover, and/or leverage) is \_\_\_\_\_. My firm \_\_\_\_\_ (should or should not) consider using more debt because\_\_\_\_\_.

To get all 10 points for this post, you must do the following:

1. Fully answer all six questions. (6 points)
2. Write using complete sentences with minimal typos and other errors. (1 pt)
3. Use data to support your answers. For example, don't just say, "My firm holds a lot of cash." Say, "At 20% of total assets, my firm's cash holdings are relatively large." (2 pts)
4. Make a comparison between your firm and at least one other firm posted either in your first post for this DB or in a follow up post to this DB before the due date. For example, "At 20% of total assets, my firm's cash holdings are relatively large. However, John Smith's firm Acme Inc. in the same industry appears to hold even more cash, at 30% of assets. Perhaps Acme is preparing for an acquisition." The reference should be a meaningful comparison. Here for example, I don't just compare, I offer a possible explanation for the difference. (1 pt)

### Market Value Ratios Discussion Board Post

To begin your analysis of your firm's market value, you must do the following:

1. Using the instructions or video lecture posted below in the Week 14 folder, use Reuters.com to find the following for your firm and its industry:
  - a. Under Revenues and Earnings per Share, take note of the recent trend in EPS. Is it generally increasing, decreasing or going up and down? Does the most recent EPS seem particularly high or low compared to the past or typical? You will use this information to answer Question 3.
  - b. Under Consensus Estimates Analysis, the LT Growth Rate (%) Mean – this is the average of analysts' growth rate estimates for your firm for the next 5 years. Under Growth Rates, the EPS -5-year Growth Rate for your firm and industry – this is the average rate at which Earnings per Share has grown over the past five years. Also, under Growth Rates, the EPS (TTM) vs 1 year ago (TTM) – this is the difference between the current EPS and last year's.
  - c. Under Valuation ratios, your firm's and the industry's P/E ratio (TTM), Beta, and Price to Book (MRQ).

- d. From Reuters or your previous posts, gather your firm's and industry's Total Debt to Equity, Interest Coverage, Net Profit Margin, Total Asset Turnover, Return on Assets and Return on Equity. Please note that Reuters displays these rates and ratios as whole numbers, but most should be followed by a % sign. For example, if ROA (TTM) is shown as 16.17, it should be read as 16.17%. Beta, PE, Price to Book, Interest Coverage and Asset Turnover are shown as they should be read, so turnover of .59 indicates that the firm's assets turn over less than once per year while interest coverage of 23 indicates the firm's operating income is 23 times larger than its interest expense, and a PE ratio of 14.48 indicates that its price per share is 14.48 times higher than its earnings per share.
2. Review your previous posts on Liquidity and Turnover, Leverage and Coverage, and Profitability. Then answer the following questions:
    - a. Please summarize the strengths and weaknesses of your firm that you identified in previous posts.
    - b. How does your firm's PE ratio and Price to Book ratio compare to those of firms in its industry?
    - c. Sometimes a firm's PE will be relatively high while its Price to Book is relatively low or vice-versa. If your firm's market value ratios disagree in this fashion, the cause is likely to be mathematical. Do your firm's market value ratios agree or disagree? If they disagree, which of the two reasons listed below do you think is the most likely reason? Explain. For the remainder of the post, focus on the ratio that seems to better reflect the value of your firm.
      - i. Firms that have very high or very low debt will tend have abnormally low or high (respectively) book values of equity because  $\text{Assets} = \text{Liabilities} + \text{Equity}$ . Since book value of equity is the denominator of the Price to Book ratio, a low book value from high debt will make the Price to Book look higher than it would be otherwise and vice versa.
      - ii. Firms that experience an unusually high or low earnings year may have abnormally low or high (respectively) PE ratios. If the market does not believe that this year's earnings will be repeated, the stock price is unlikely to change much, so a bad earnings year can cause PE ratio to skyrocket, while a good earnings year may cause PE to fall – ironically - because earnings is in the denominator. Did the EPS results shown on Reuters suggest that the current EPS is unusually high or low?
    - d. Market value ratios have stock price as the numerator and use some accounting measure to control for the effect of size, and we often read them as what the market is willing to pay for \$1 of earnings (PE ratio), book value of equity (MB),

sales (price to sales), or cash flow. The stock price should be the present value of the firm's cash flows as summarized by the dividend growth model. This suggests that three factors determine a given firm's stock price: 1) current cash flows, 2) the expected growth rate, and 3) the firm's risk and therefore its investors' required return. The profitability ratios give us an indication of the strength of current cash flows from investments. The growth rates indicate past and expected future growth. The firm's beta and its leverage and coverage ratios indicate how risky the firm is. If your firm's market value ratios are relatively high, it is likely that your firm has relatively high profitability and expected growth with relatively low risk. If your market value ratios are relatively low, one or more of those three factors is probably a weakness for your firm. Complete or reword the following sentence, filling in the blanks: (Enter your firm's name) has a relatively \_\_\_\_\_ market value. The factors that best explain its relative valuation are \_\_\_\_\_. To improve its market value the firm should focus on improving \_\_\_\_\_.

To get all 10 points for this post, you must do the following:

1. Fully answer all four questions. (6 points)
2. Write using complete sentences with minimal typos and other errors. (1 pt)
3. Use data to support your answers. For example, don't just say, "My firm holds a lot of cash." Say, "At 20% of total assets, my firm's cash holdings are relatively large." (2 pts)
4. Make a comparison between your firm and at least one other firm posted either in your first post for this DB or in a follow up post to this DB before the due date. For example, "At 20% of total assets, my firm's cash holdings are relatively large. However, John Smith's firm Acme Inc. in the same industry appears to hold even more cash, at 30% of assets. Perhaps Acme is preparing for an acquisition." The reference should be a meaningful comparison. Here for example, I don't just compare, I offer a possible explanation for the difference. (1 pt)

### CONCLUSION

Introductory finance texts teach students to calculate financial ratios and provide brief discussions of how to interpret these ratios, mostly focusing one ratio at a time. To supplement this instruction, I created a series of discussion board prompts that lead students through a series of questions and explanations that help them draw conclusions about a firm's financial position. The first prompt directs each student

to choose one firm, abiding by parameters I set, that he/she will analyze throughout the semester. Subsequent posts address common-sized statements, leverage and coverage ratios, liquidity and turnover ratios, profitability ratios and DuPont analysis, and market value ratios. Using the same firm for each post enables a student to see the effect of a firm's industry and strategy on its financial results. Each post models an approach to critical thinking and writing that progresses from examination and description of data and comparison to industry benchmarks through analysis and synthesis of the data to an evaluation of a firm. Students post their responses on a Blackboard discussion board and are required to compare their findings to one other student's. Although the prompts could be adapted to other assignment formats, using the discussion board format serves two main purposes. First, it enables students to learn from each other by providing data and analysis of many different US firms across several industries and allowing them to see how their peers approach the writing assignments. Second, the fact that posts are not made anonymously and are visible to all class members is an added incentive to present one's best work. By the end of the semester, each student has completed a thorough analysis of a firm's financial statements and has a model of how to approach such analyses in later classes, such as upper division finance courses or Strategic Management.

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EXHIBIT 1: EXAMPLE OF STUDENT RESPONSE TO THE LIQUIDITY AND TURNOVER RATIOS PROMPT

1. The quick ratio of Polaris is .46 while the quick ratio for the industry is 4.48 and the sector is 1.15. This seems to imply that Polaris may have more liabilities than cash and that the company may have issues paying bills. The current ratio of Polaris is 1.24 while the current ratio for the industry is 5.64 and the sector is 1.44.

2. The asset turnover of Polaris is 1.65 while the asset turnover for the industry is .79 and the sector is .70. The inventory turnover of Polaris is 4.68 while the inventory turnover for the industry is 3.12 and the sector is 9.99. The receivable turnover of Polaris is 27.74 while the receivable turnover for the industry is 8.36 and the sector is 10.78. All of the turnover rates of Polaris are greater than those of the industry and inventory turnover rate is larger for the sector than the industry and Polaris.

3. This does seem to be true for my company compared to the industry. While the quick ratio is .46, the inventory turnover rate is 4.68 for Polaris. For the industry, the quick ratio is 4.48 and the asset turnover is 3.12. Polaris has probably spent more money than other companies in the industry on updating equipment.





4. In the case of Polaris, its gross margin (24.46) as well as its net profit margin (4.71) are much less than that of the industry with 40.88 for the gross margin and 12.81 for the net profit margin. The inventory turnover is only slightly higher for Polaris with 4.68 compared to the industry with 3.12. So it does seem that this trade-off is present for Polaris.

5. The ROA of Polaris is 7.76. This is slightly lower than the industry's 9.69, but slightly higher than the sector's 6.4.

6. Polaris Industries Inc. has relatively low liquidity and high turnover. Turnover directly affects a firm's ROA, but so does profit margin and increases in margin tend to decrease turnover and vice versa. Therefore, firms with low turnover might still generate high ROA if margins are large enough, while firms with high turnover might still generate low ROA if margins are too low. Polaris Industries Inc's ROA is relatively low because the net profit margin is low. This lower net profit margin could be directly related to the purchases of newer equipment in the form of increased depreciation expenses.

Many things are similar when comparing Polaris Industries Inc. to Cedar Fair, another company in the Recreation industry. Cedar Fair also has a low quick ratio of .70 and a low current ratio of .81. A major difference is the ROA. Cedar Fair's profit margin of 13.79 and asset turnover of .65 results in a much higher ROA than that of Polaris.

EXHIBIT 2: DISCUSSION BOARD POST RUBRIC CREATED AND DEPLOYED IN BLACKBOARD

Name: DB post rubric			
Description			
Rubric Detail			
Criteria	Levels of Achievement		
	No	Somewhat	Yes
Fully answered questions 	<b>2 Points</b> Omitted two questions	<b>4 Points</b> Omitted one question or provided weak answers for all three	<b>6 Points</b>
Well-written 	<b>0 Points</b> More than three errors	<b>0 Points</b>	<b>1 Points</b> Less than three errors
Use of Data 	<b>0 Points</b>	<b>1 Points</b> Provided data for some answers.	<b>2 Points</b> Provided data in all three answers.
Referred to previous post 	<b>0 Points</b>	<b>0 Points</b>	<b>1 Points</b>