

CHAPTER 3 – ANALYZING FINANCIAL STATEMENTS**Questions**

- LG1-LG5 1. Classify each of the following ratios according to a ratio category (liquidity ratio, asset management ratio, debt management ratio, profitability ratio, or market value ratio).
- a. Current ratio – liquidity ratio
 - b. Inventory turnover ratio – asset management ratio
 - c. Return on assets – profitability ratio
 - d. Accounts payable period – asset management ratio
 - e. Times interest earned – debt management ratio
 - f. Capital intensity ratio – asset management ratio
 - g. Equity multiplier – debt management ratio
 - h. Basic earnings power ratio – profitability ratio
- LG1 2. For each of the actions listed below, determine what would happen to the current ratio. Assume nothing else on the balance sheet changes and that net working capital is positive.
- a. Accounts receivable are paid in cash – Current ratio does not change
 - b. Notes payable are paid off with cash – Current ratio increases
 - c. Inventory is sold on account – Current ratio does not change
 - d. Inventory is purchased on account – Current ratio decreases
 - e. Accrued wages and taxes increase – Current ratio decrease
 - f. Long-term debt is paid with cash – Current ratio decreases
 - g. Cash from a short-term bank loan is received – Current ratio decreases
- LG1-LG5 3. Explain the meaning and significance of the following ratios
- a. Quick ratio - Inventories are generally the least liquid of a firm's current assets. Further, inventory is the current asset for which book values are the least reliable measures of market value. In practical terms, what this means is that if the firm must sell inventory to pay upcoming bills, the firm is most likely to have to discount inventory items in order to liquidate them, and so therefore they are the assets on which losses are most likely to occur. Therefore, the quick (or acid-test) ratio measures a firm's ability to pay off short-term obligations without relying on inventory sales. The quick ratio measures the dollars of more liquid assets (cash and marketable securities and accounts receivable) available to pay each dollar of current liabilities.
 - b. Average collection period - The average collection period (ACP) measures the number of days accounts receivable are held before the firm collects cash from the sale. In general, a firm wants to produce a high level of sales per dollar of accounts receivable, i.e., it wants to collect its accounts receivable as quickly as possible to reduce any cost of financing inventories and accounts receivable, including interest expense on liabilities used to finance inventories and accounts receivable, and defaults associated with accounts receivable.

c. Return on equity - Return on equity (ROE) measures the return on the common stockholders' investment in the assets of the firm. ROE is the net income earned per dollar of common stockholders' equity. The value of a firm's ROE is affected not only by net income, but also by the amount of financial leverage or debt that firm uses.

d. Days' sales in inventory - . The **days' sales in inventory** ratio measures the number of days that inventory is held before the final product is sold. In general, a firm wants to produce a high level of sales per dollar of inventory, that is, it wants to turn inventory over (from raw materials to finished goods to sold goods) as quickly as possible. A high level of sales per dollar of inventory implies reduced warehousing, monitoring, insurance, and any other costs of servicing the inventory. So, a high inventory turnover ratio or a low days' sales in inventory is a sign of good management.

e. Debt ratio - The debt ratio measures the percentage of total assets financed with debt. The debt-to-equity ratio measures the dollars of debt financing used for every dollar of equity financing. The equity multiplier ratio measures the dollars of assets on the balance sheet for every dollar of equity financing. As you might suspect, all three measures are related. So, the lower the debt, debt-to-equity, or equity multiplier ratios, the less debt and more equity the firm uses to finance its assets (i.e., the bigger the firm's equity cushion).

f. Profit margin - The profit margin is the percent of sales left after all firm expenses are paid.

g. Accounts payable turnover - The accounts payable turnover ratio measures the dollar cost of goods sold per dollar of accounts payable. In general, a firm wants to pay for its purchases as slowly as possible. The more slowly it can pay for its supply purchases, the less the firm will need other costly sources of financing such as notes payable or long-term debt. Thus, a high APP or a low accounts payable turnover ratio is generally a sign of good management.

h. Market-to-book ratio - The market-to-book ratio compares the market (current) value of the firm's equity to their historical costs. In general, the higher the market-to-book ratio, the better the firm.

LG2 4. A firm has an average collection period of 10 days. The industry average ACP is 25 days. Is this a good or poor sign about the management of the firm's accounts receivable?

If the ACP is extremely low, the firm's accounts receivable policy may be so strict that customers prefer to do business with competing firms. Firms offer accounts receivable terms as an incentive to get customers to buy products from their firm rather than a competing firm. By offering firm customers the accounts receivable privilege, management allows customers to buy (more) now and pay later. Without this incentive, that is, if managers require customers to pay for their purchases very quickly, customers may chose to buy the goods from the firm's competitors who offer better credit terms. So extremely low ACP levels may be a sign of bad firm management.

LG3 5. A firm has a debt ratio of 20%. The industry average debt ratio is 65%. Is this a good or poor sign about the management of the firm's financial leverage?

When a firm issues debt to finance its assets, it gives the debtholders first claim to a fixed amount of its cash flows. Stockholders are entitled to any residual cash flows—those left after

debtholders are paid. When a firm does well, financial leverage increases the reward to shareholders since the amount of cash flows promised to debtholders is constant and capped. So when firms do well, financial leverage creates more cash flows to share with stockholders—it magnifies the return to the stockholders of the firm. This magnification is one reason that firm stockholders encourage the use of debt financing. However, financial leverage also increases the firm's potential for financial distress and even failure. If the firm has a bad year and can not make promised debt payments, debtholders can force the firm into bankruptcy. Thus, a firm's current and potential debtholders (and even stockholders) look at equity financing as a safety cushion that can absorb fluctuations in the firm's earnings and asset values and guarantee debt service payments. Clearly, the larger the fluctuations or variability of a firm's cash flows, the greater the need for an equity cushion. Managers' choice of capital structure—the amount of debt versus equity to issue—affects the firm's viability as a long-term entity. In deciding the level of debt versus equity financing to hold on the balance sheet, managers must consider the trade-off between maximizing cash flows to the firm's stockholders versus the risk of being unable to make promised debt payments.

- LG4 6. A firm has an ROE of 20%. The industry average ROE is 12%. Is this a good or poor sign about the management of the firm?

Generally, a high ROE is considered to be a positive sign of firm performance. However, if performance comes from a high degree of financial leverage, a high ROE can indicate a firm with an unacceptably high level of bankruptcy risk as well.

- LG6 7. Why is the DuPont system of analysis an important tool when evaluating firm performance?

Many of the ratios discussed in the chapter are interrelated. So a change in one ratio may well affect the value of several ratios. Often these interrelations can help evaluate firm performance. Managers and investors often perform a detailed analysis of ROA (Return on Assets) and ROE (Return on Equity) using the DuPont analysis system. Popularized by the DuPont Corporation, the DuPont analysis system uses the balance sheet and income statement to break the ROA and ROE ratios into component pieces.

- LG6 8. A firm has an ROE of 10%. The industry average ROE is 15%. How can the DuPont system of analysis help the firm's managers identify the reasons for this difference?

The basic DuPont equation looks at the firm's overall profitability as a function of the profit the firm earns per dollar of sales (operating efficiency) and the dollar of sales produced per dollar of assets on the balance sheet (efficiency in asset use). With this tool, managers can see the reason for any changes in ROA in more detail. For example, if ROA increases, the DuPont equation may show that the net profit margin was constant, but the total asset turnover (efficiency in using assets) increased, or that total asset turnover remained constant, but profit margins (operating efficiency) increased. Managers can then break down operating efficiency and efficiency in asset use further using the ratios described above to more specifically identify the reasons for an ROA change.

- LG6 9. What is the difference between the internal growth rate and the sustainable growth rate?