



ACCOUNTING RATIOS



VERTICAL AND HORIZONTAL ANALYSIS

❖ Vertical Analysis

❖ Amount of concern/ “largest” number on financial statement

- ❖ For Income Statement, divide by sales
- ❖ For Balance Sheet, divide by total assets

❖ Examples for 2018:

- ❖ Gross Profit/Sales – 48%
- ❖ Total Liabilities/Total Assets = 16%

❖ Horizontal Analysis

❖ Change over time

- ❖ $(\text{Most recent year} - \text{Prior Year}) / \text{Prior Year}$

❖ Examples for 2018:

- ❖ Sales change = $(250,000 - 200,000) / 200,000$
- ❖ A/P change = $(15,000 - 10,000) / 10,000$

| | 2018 | 2017 | Vertical | Horizontal |
|-------------------|------------------|------------------|---------------|------------|
| Sales | 250,000 | 200,000 | 100.0% | 25.0% |
| COGS | <u>(130,000)</u> | <u>(110,000)</u> | <u>-52.0%</u> | 18.2% |
| Gross Profit | 120,000 | 90,000 | 48.0% | 33.3% |
| Operating Exp. | <u>(25,000)</u> | <u>(20,000)</u> | <u>-10.0%</u> | 25.0% |
| Net Income | 95,000 | 70,000 | 38.0% | 35.7% |
| | | | | |
| Cash | 55,000 | 30,000 | 13.6% | 83.3% |
| Accts. Recv. | 26,000 | 20,000 | 6.4% | 30.0% |
| PPE | <u>324,000</u> | <u>270,000</u> | <u>80.0%</u> | 20.0% |
| Total Assets | <u>405,000</u> | <u>320,000</u> | <u>100%</u> | 26.6% |
| Accounts Payable | 15,000 | 10,000 | 3.7% | 50.0% |
| Bonds Payable | <u>50,000</u> | <u>50,000</u> | 12.3% | 0.0% |
| Total Liabilities | 65,000 | 60,000 | 16.0% | 8.3% |
| Common Stock | 140,000 | 140,000 | 34.6% | 0.0% |
| R/E | <u>200,000</u> | <u>120,000</u> | <u>49.4%</u> | 66.7% |
| Total Liab + S/E | <u>405,000</u> | <u>320,000</u> | <u>100%</u> | |



LIQUIDITY

- ❖ Current Ratio

- ❖ $\text{Current Assets} / \text{Current Liabilities}$

- ❖ Somewhere around 2



- ❖ Quick (Acid Test) Ratio

- ❖ $(\text{Cash} + \text{Investments} + \text{Accounts Receivables}) / \text{Current Liabilities}$



- ❖ What's not here that's in the current ratio?

- ❖ Somewhere around 1

- ❖ Working Capital

- ❖ $\text{Current Assets} - \text{Current Liabilities}$



TURNOVER RATIOS +

- ❖ All Turnover Ratios



- ❖ Divide by the name of the ratio
- ❖ Numerator is the income statement most related to the name of the ratio

- ❖ Asset Turnover

- ❖ Sales/Total Assets

- ❖ Accounts Receivables Turnover

- ❖ Sales/Accounts Receivables

- ❖ Inventory Turnover

- ❖ Cost of Goods Sold/Inventory

- ❖ Accounts Payables Turnover

- ❖ Cost of Goods Sold/Accounts Payable

- ❖ Number of Days in Accounts Receivable/Inventory/Accounts Payable

- ❖ 365/Turnover Ratio



LEVERAGE

- ❖ Debt Ratio
 - ❖ $\text{Total Liabilities} / \text{Total Assets}$, or
 - ❖ $\text{Long-Term Liabilities} / \text{Total Assets}$
- ❖ Debt/Equity Ratio
 - ❖ $\text{Liabilities} / \text{Stockholder's Equity}$
- ❖ Leverage Ratio
 - ❖ $\text{Total Assets} / \text{Stockholder's Equity}$
- ❖ Times Interest Earned
 - ❖ $\text{Operating Income} / \text{Interest Expense}$



PROFITABILITY

❖ Common-Sized Income Statement



- ❖ Take anything on the income statement divided by sales

- ❖ Gross Margin Percentage

 - ❖ $\text{Gross Margin/Sales}$

- ❖ Profit Percentage

 - ❖ Net Income/Sales

❖ Return on anything



- ❖ Income/name of ratio

 - ❖ Sometimes subtract preferred dividends from income

- ❖ Return on Assets

 - ❖ Net Income/Assets

- ❖ Return on Sales

 - ❖ Net Income/Sales



DUPONT ANALYSIS

❖ Return on Sales

❖ Net Income/Total Sales

❖ Asset Turnover

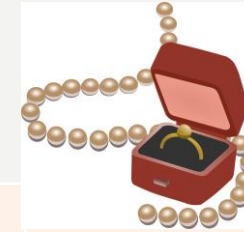
❖ Sales/Assets

❖ Leverage ratio

❖ Total Assets/Stockholder's Equity

❖ Return on Equity

❖ Net Income/Stockholders' Equity



| | Jewelry Store | Supermarket |
|----------------|---------------|-------------|
| Net Income | 100,000 | 100,000 |
| S/E | 900,000 | 900,000 |
| Assets | 5,000,000 | 4,000,000 |
| Sales | 250,000 | 800,000 |
| RO Equity | 11% | 11% |
| RO Sales | 40% | 13% |
| Asset Turnover | 5% | 20% |
| Leverage | 5.56 | 4.44 |

$$\frac{\text{Net Income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Assets}} \times \frac{\text{Assets}}{\text{Stockholders' Equity}} = \frac{\text{Net Income}}{\text{Stockholders' Equity}}$$



MARKET ANALYSIS

- ❖ EBITDA

- ❖ Earnings before Interest, Taxes, Depreciation and Amortization



- ❖ Free Cash Flow

- ❖ Operating Cash Flows – Capital Expenditures

- ❖ Book Value Per Share

- ❖ Total “Common” Equity/Common Shares Outstanding

- ❖ Earnings Per Share

- ❖ Net Income/Common Shares Outstanding



- ❖ Price Earnings Ratio

- ❖ Stock Price Per Share/Earnings Per Share



- ❖ Dividends Yield

- ❖ Dividend Per Share/Stock Price Per Share



**TOO MANY
MY HEAD
HURTS!!!**

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