FIRM

FINANCIALS **Analysts rarely descend into the depths of the accounting database without first using some more simple means for determining what problem has arisen, which yields clues regarding where in the database to search.**

So begin with common sizing your financial statements and completing trend analysis. What is changing, why? Review the footnotes and discuss with management whether accounting principles used are being consistently applied. Is there reason to question Management's judgment? Complete your Ratio analytics (below). More importantly review NON FINANCIAL information; Industry/Organization, Relationships with Others, and Management.

INDUSTRY **Benchmarking; compare your organization with others in the same industry. Compare competitive position. Is the overall market expanding or contracting. Is there a reason the company's performance would be different than others in the same market?**

RELATIONSHIPS WITH OTHERS **Self Interest, collusion, compromise, round tripping, off balance sheet loans. Investigate relations with vendors, suppliers, bankers, auditors, lawyers, subsidiaries, off shore companies for special "arrangements" or less than "arms length" transactions.**

MANAGEMENT **Background checks; where have these people been before and what is their track record? Can they be trusted? What drives their "<u>self-interest</u>?" All business is PEOPLE business. Understanding management's motivations, opportunities, and rationalizations (MOR) will allow you to identify where you can start looking. Use this knowledge to target your work. Things are not always what they seem (the "Emperor's New Clothes").**

RATIO ANALYSIS

LIQUIDITY: Generally the higher the ratio the better.

    SHORT RUN SOLVENCY

        1) **Current Ratio**: used by lenders to determine whether a company has sufficient liquidity to pay its liabilities: a current ratio of 1:1 is the absolute minimum, 2:1 is preferred. Divide all current assets by all current liabilities. Caution: Ratio can be misleading if company's current assets are heavily weighted in favor of inventories (inventories might be difficult to liquidate in the short term),

2) **Quick Ratio**: excludes inventories to avoid above problem. This measures companies very-short term ability to generate cash. Add cash, marketable securities and accounts receivable; divide the result by current liabilities. If most of the receivables are not currently due and the payables are, then use the

3) **Cash Flow Liquidity Ratio**: Operating cash flow can gauge a company's liquidity in the short term. Using cash flow is a better indication of liquidity than using net income simply because cash is how bills are paid! Divide cash flow from operations by current liabilities. Do I have enough cash to pay next month's bills?

LIQUIDITY OF CURRENT ASSETS

1) **Average Collection Period (DSO)**: Divide annual credit sales by 365 and divide the result into average accounts receivable (if you want an end of period DSO, use end of period receivables. If sales are seasonable it might be better to annualize sales for the period covered by the bulk of the existing accounts receivable.

2) **Days Inventory on Hand**: Divide 365 days by inventory turnover; or divide inventory by (cost of goods sold divided by 365). Use either ending or average inventory and analyze components of cost of goods sold and inventories (i.e. remove applied overhead and labor when comparing to raw materials vs. finished goods inventories)

3) **Days Payable Outstanding**: Can I pay my bills on time? If payables days are to long I might be having trouble paying my bills. Divide annualized purchases by 365 days and then divide the result into ending accounts payable. Annualized purchases should not include payroll, depreciation or amortization.

4) **Cash Conversion Cycle** (Liquidity Index): Measures the number of days it takes to convert receivables and inventory into cash. Multiply the accounts receivable balance by the average number of days to collect. Then multiply the inventory balance by the average number of days required to liquidate it. Then add these two items together and divide by the sum of all accounts receivable and inventory. If the accounts receivable or inventory balances tend to fluctuate significantly, use an average for both.

LEVERAGE: Is debt good? Is there life after debt? Do you like to have monthly payments?

AMOUNT OF DEBT

1) **Debt/Assets**: Divide total debt by total assets. For a true picture of the amount of debt that a company has the debt figure should include all operating an capital lease payments.

2) **Debt/Equity**: Divide total debt by total equity. Reveals the extent to which company management is willing to fund operations with debt. Lenders are particularly concerned about this ratio. An excessively high ratio will put their loans at risk of not being repaid.

3) **Long Term Debt/Total Capital**: A more restrictive view is to include only long term debt in the numerator. This however, excludes situations where short term debt such as revolving credit lines cannot be paid off and must eventually be converted to term debt.

DEBT <u>COVERAGE</u>

1) **Times Interest Earned**: Reveals the amount of excess funding capacity a company may still have available after it has paid off its interest expense. If this is close to one, then the company has a high risk of defaulting on its debt. Divide the average interest expense by the average "Cash flow". Calculate "Cash flow" as net income plus all non-cash expenses (such as depreciation and amortization). This ratio should be run on a monthly basis rather than annually. Short term changes can have a dramatic impact.

2) **Cash Interest Coverage**: Similar to above but use net income before interest and taxes (and non-cash expenses). You might want to consider subtracting non-cash sales from net income depending on the company.

3) **Fixed Charge Coverage**: A company may have such a high level of fixed costs that it cannot survive a sudden downturn in sales (i.e. General Motors?). The number of times operating income exceeds fixed payments. Measures your ability to meet your contractually obligated fixed expenses. Expenses usually include interest, lease payments, principal payments on debt and perhaps preferred dividends.

4) **Cash Flow Adequacy**: Similar to fixed charge coverage but focuses attention on the ability of your cash flow to cover all nonexpense items, which include payments for the principal on debt, dividends and capital expenditures. This is of particular importance to companies with heavy debt repayment or companies that are rapidly expanding their fixed assets.

FINANCIAL LEVERAGE INDEX

The financial leverage index measures how well a company is using debt. Compare your return on equity to your return on total assets. If the index is greater than 1 than the borrowing the company took on was beneficial (meaning you are earning more than the cost of debt). BUT remember fixed costs can be a problem if the economy turns South. Divide your Net Earnings plus your interest expense times (1-tax rate) by total assets.

OPERATING EFFICIENCY

ASSET MANAGEMENT

1) **Accounts Receivable Turnover**: the speed with which a company can obtain payment from customers. Higher turnover is good because it indicates company's collection function is avoiding potentially delinquent customers. Divide annualized credit sales by the sum of average accounts receivable and notes due from customers.

2) **Inventory Turnover**: If inventory is not being used up by operations, a large amount of the company's cash may be difficult to liquidate. Divide annualized cost of sales by period end inventory (you can also use average inventory which would avoid sudden changes in inventory levels). Check your inventory to see what portion is raw material, labor and applied overhead and make appropriate adjustments.

3) **Accounts Payable Turnover**: A slightly less sophisticated version of days payables outstanding. Calculates the number of times per year purchases are being paid off (12 times per year is the equivalent of 30 days). Formula is: total purchases divided by ending accounts payable.

4) **Fixed Asset Turnover**: The amount of sales generated for every dollar of fixed assets. How much sales do you generate for each dollar of fixed assets. Divide sales by average net fixed assets. Is your business capital intensive? What does this mean?

5) **Total Asset Turnover**: The amount of sales generated for every dollar of total assets. Divide sales by dollars by average total assets. Measures the firm's efficiency at using its assets in generating sales. The higher the number the better. Also indicates pricing strategy, low margin businesses have high asset turnover, while those with high profit margins have low asset turnover.

6) **Return on Total Assets**: An indicator of how profitable a company is relative to its total assets. ROA or ROTA indicates how effective management is in using its assets to generate earnings. Divide a company's annual earnings by its total assets. ROA is displayed as a percentage. Some investors add interest expense back into net income when performing this calculation because they would like to use operating returns before the cost of borrowing.

PROFITABILITY

MARGINS

1) **Gross Profit Margin**: A company's total sales revenue less its cost of goods sold, divided by the total sales revenue. The gross margin represents the total revenue a company retains after direct variable costs associated with producing the goods and services.

2) **Operating Profit Margin**: A ratio used to measure a company's pricing strategy and operating efficiency. Calculate by dividing operating income by net sales. Operating margin is a measurement of how much a company makes (before interest and taxes) on each dollar of sales. It is best to look at the change in operating margin over time and compare it to competitors.

3) **Net Profit Margin**: After tax net profit divided by sales. Low margins can represent a pricing strategy, a price war, inefficient operations, or a dying industry.

4) **Cash Flow Margin**: The cash flow margin measures cash flow from operating in relation to net sales; divide cash flow from operating activities by net sales. It is cash that a company needs to pay its expenses and purchase assets. How well a company con convert sales into cash is crucial. You may have heard the term "burn-rate" which is often used to describe a company operating with negative cash flows – "burning" through its cash reserves.

RETURNS

1) **Return on Total Assets**: An indicator of how profitable a company is relative to its total assets. ROA or ROTA indicates how effective management is in using its assets to generate earnings. Divide a company's annual earnings by its total assets. ROA is displayed as a percentage. Some investors add interest expense back into net income when performing

this calculation because they would like to use operating returns before the cost of borrowing.

2) **Return on Equity**: Often shortened to "ROE" the return on equity measures next earning in relation to total stockholder's equity. Divide net earnings by total stockholder's equity. It shows how many dollars of earnings were generated for every dollar of stockholder equity provided.

3) **Cash Return on Assets**: Indicates internal cash generation available to pay creditors. It contains no provision for replacing assets or for future commitments. Divide cash flow from operations by total assets.

MARKET MEASURES

EARNINGS PER SHARE

1) **Price/Earnings**: A valuation ratio of a company's share price compared to its per-share earnings. Divide market value per share by earnings per share. Sometimes known as the "price multiple" or "earnings multiple." A high P/E indicates investor's are expecting higher earnings growth in the future. Useful to compare P/E ratios of one company to other companies in the <u>same</u> industry. High growth industries will have different P/E's than low growth industries.

2) **Dividend Payout**: The percentage of earnings paid to shareholders in dividends. Divide yearly dividends per share by earnings per share. It provides an idea of how well earnings support dividend payments. Mature companies tend to have a higher payout ratio.

3) **Dividend Yield**: Shows how much a company pays out in dividends each year relative to share price. Divide annual dividends per share by price per share. It's a way to measure how much cash flow you are getting for each dollar invested in an equity – how much "bang for your buck."

MEASURING THE "FISCAL-FITNESS" OF YOUR COMPANY

The Z-Score bankruptcy predictor combines five common business ratios, using a weighting system that was statistically calculated by Dr. Edward Altman to determine the likelihood of a company going bankrupt at some point in the future. It was derived from data from manufacturing companies but has since proven to be highly effective in determining risk that a service company will go bankrupt.

If the calculation results in a score above 2.99, a company is probably in safe financial condition.

A score between 3.0 and 2.7 is a gray area, acceptable at the moment but difficulty in the future.

A score between 2.7 and 1.8 indicates bankruptcy within the next two years.

A score below 1.8 indicates bankruptcy in the near future.

FORMULA FOR PUBLIC COMPANIES:

Add together the following five ratios, multiplied by the indicated weighting factors:

1) Return on total assets x 3.3 weighting factor (operating income/total assets)
2) Sales to total assets x .999 weighting factor (sales/total assets)
3) Equity to debt x .6 weighting factor (market value of common and preferred stock/total liabilities)
4) Working capital to total assets x 1.2 weighting factor (working capital/total assets)
5) Retained earnings to total assets x 1.4 weighting factor (retained earnings/total assets)

FORMULA FOR PRIVATE COMPANIES:

Add together the following five ratios, multiplied by the indicated weighting factors:

6) Return on total assets x 3.1 weighting factor (operating income/total assets)
7) Sales to total assets x .998 weighting factor (sales/total assets)
8) Equity to debt x .42 weighting factor (market value of common and preferred stock/total liabilities)
9) Working capital to total assets x 71 weighting factor (working capital/total assets)
10) Retained earnings to total assets x .84 weighting factor (retained earnings/total assets)

CAUTION:

The results of the Z-score are reliable only if there is no **fraudulent financial reporting** by the company that results in a higher Z-score! Also, a sudden downturn in the economy or a price war can cause a company to spiral downward. This would be called **"stress" testing**. So why won't the FED allow the Banks to disclose their "stress test" results??