DEFINITIONS OF RATIOS

Liquidity

Liquidity ratios show the ability of a business to meet current obligations and sustain its operations by using cash or converting current assets to cash. No rule determines an acceptable level of liquidity for a business, but depends on other risks such as the degree of financial leverage.

Current ratio (x): *Current assets ÷ Current liabilities*

The current ratio is used to analyze the financial stability of a business. This ratio does not tell the business banker the quality of the current assets or the timing of the current liabilities.

Quick ratio (x): *(Cash + Marketable securities + Accounts receivable) ÷ Current liabilities*

Also known as the acid-test ratio, the quick ratio is a more precise measure of liquidity because it counts only those current assets that can be converted to cash quickly. A quick ratio of 1.0x has been accepted as a sign that a business has a good liquid condition.

Working capital ($): *Current assets – Current liabilities*

Although working capital is not stated as a ratio, it is a measure of liquidity. The ability to meet current obligations or to take advantage of business opportunities depends on having an adequate supply of working capital. From a business banker's viewpoint, working capital represents a cushion a business has to work with in repaying debt.

Leverage

Leverage ratios, also known as financial leverage ratios, measure the degree of risk borne by the owners of the business versus its creditors. Assets are financed by either owner's equity (net worth) or debt (liabilities). The risk to the creditors increases as the proportion of debt to equity (financial leverage) increases.

Debt to net worth ["leverage"] ratio (x): *Total liabilities ÷ Net worth*

The basic leverage or debt to net worth ratio is a measure of the share of business funding from creditors compared to the share provided by the owners of the business. When this ratio exceeds 1.0x, then the claims of the creditors are greater than that of the owners. This ratio varies greatly by industry.

Tangible leverage ratio (x): *Total liabilities ÷ (Net worth – Intangible assets)*

The tangible leverage ratio adjusts net worth for various assets that may have little value, such as intangible assets (goodwill, patents, trademarks, copyrights, operating rights and customer lists), due from officers and employees, receivables from affiliated businesses, and leasehold improvements. As with the basic leverage ratio, tangible leverage measures the proportion of tangible assets funded by creditors versus the share funded by the owners of the business.

Tangible effective leverage ratio (x): *(Total liabilities – Subordinated debt) ÷ Net worth – Intangible assets + Subordinated debt)*

The tangible effective leverage ratio takes the tangible leverage ratio and further adjusts both total liabilities and tangible net worth by subordinated debt in cases where the debt is subordinated to the bank making the analysis. The amount of subordinated debt is subtracted from total liabilities to obtain *unsubordinated liabilities*, and then subordinated debt is added to tangible net worth to obtain *tangible capital funds*.

Profitability

Profitability ratios, also called operating ratios, evaluate a company's ability to realize its operational objectives. Whether the objective is to maintain a certain percent share of the market or to expand as rapidly as possible, the yardstick by which all businesses ultimately are measured is the "bottom line" or net profit. The most commonly used profitability ratios look at the relationship between net profit and sales, net profit and assets, or net profit and equity. Taken together, these ratios give the business banker a good indication of the ability of a business to grow, remain solvent, and repay debt.

Gross profit margin (%): *Gross profit ÷ Net sales*

The gross profit margin shows the gross profit earned on each dollar of sales. It primarily reflects management's decisions on product pricing, plant efficiency and costs related to inventory and production.

Operating profit margin (%): *Operating profit ÷ Net sales*

The operating profit margin shows the operating profit earned on each dollar of sales, and reflects management's decisions on product pricing, plant efficiency and cost related to inventory and production, plus overhead or fixed expenses not directly related to inventory and production.

Pretax profit margin (%): *Pretax profit ÷ Net sales*

The pretax profit margin shows the pretax profit earned on each dollar of sales and it encompasses all the costs and expenses of the business, except for income taxes. It reflects management's decisions on product pricing, plant efficiency, ability to control expenses, and attitude toward earnings retention.

Net profit margin (%): *Net Profit ÷ Net Sales*

The net profit margin shows the net profit earned on each dollar of sales and is the most quoted measure of a business's overall efficiency. It reflects management's decisions on product pricing, plant efficiency, ability to control expenses, and attitude toward income taxes (if applicable) and earnings retention.

Return on assets ratio (%): *Pretax profit ÷ Total assets*

The return on assets ratio measures the profitability of a business in relation to its efficiency in using its assets. It reflects management's decisions on credit policies, inventory controls, fixed asset efficiency, and profit.

Return on equity ratio (%): *Pretax profit ÷ Net worth*

The return on equity ratio shows the efficiency with which owners' equity is being used to generate profit. The higher the leverage, the higher the return on equity ratio for a given level of profits. What constitutes an adequate return to investors depends on the risk of the capital structure of the business. The return on equity ratio provides some insight into management's strategy regarding profit retention and financial leverage.

Efficiency

Efficiency ratios, also called turnover ratios, show how quickly receivables are collected, how quickly inventory is sold as well as how many dollars of sales are generated by fixed assets and total assets. These ratios measure management of the utilization of the assets of the business and can vary among different business types.

Accounts receivable turnover (d): *(Accounts receivable x 365) ÷ Net sales*

Accounts receivable turnover gives the average number of days it takes for a business to collect credit sales made to its customers. It does not tell the business banker the mix of the accounts and overall quality and relative sizes, which can come from an aged listing of accounts receivable.

Inventory turnover (d): *(Inventory x 365) ÷ Cost of goods sold*

The inventory turnover ratio measures the average length of time required to sell inventory. To provide an accurate picture of the actual physical turnover of inventory, cost of goods sold is used in the formula rather than sales, thus excluding profit and overhead expense. This ratio does not tell the business banker what comprises the inventory or the mix or salability of the inventory. It tells the average selling time only. If the business has a few categories of inventory only, separate ratios by type are helpful in order to make a complete analysis.

Accounts payable turnover (d): *(Accounts payable x 365) ÷ Cost of goods sold*

Accounts payable turnover measures how quickly a business pays its trade creditors. A significant increase in this ratio over time may indicate a cash flow problem, or it may mean an easing of credit terms. A decrease in this ratio may indicate that trade credit is being paid early and discounts are being taken, or it may be a reflection that suppliers are withdrawing credit. The ratio does not tell the business banker if a business owes money to twenty or only two trade creditors, nor does it clarify whether a business is within terms with all trade creditors.

Sales to total assets (x): *Net sales ÷ Total assets*

The ratio of sales to total assets measures how efficiently a business uses its entire base of assets. In this calculation, net sales is divided by total assets. The resulting ratio measures the dollars of net sales that each dollar of assets produces.

Coverage

Debt coverage ratios measure the extent to which the fixed charges from debt obligations of a business are met or exceeded by the cash flow from operations. The ability of a business to "cover" principal and interest payments is a key indicator of financial health and important to the business banker considering a new loan request or monitoring an existing lending arrangement.

Traditional cash flow coverage (x): *(Net profit + Depreciation + Noncash expenses) ÷ Current maturities of long-term debt*

The traditional cash flow coverage ratio shows the proportion of a firm's net profit and noncash expenses needed to pay the principle due on long-term debt in the coming year (current maturities of long-term debt, or CMLTD). The lower the ratio, the smaller the margin of safety to repay debt. This ratio may be a fairly reliable indicator of the future performance of a business in a "steady state" (that is not growing or shrinking rapidly), provided profitability and non-cash expenses are expected to remain the same or increase.

Interest coverage ratio (x): *(Pretax profit + Interest expense) ÷ Interest expense*

The interest coverage ratio shows the proportion of the earnings of a business needed to pay interest on its debt. Public bond rating agencies and regional banks that make revolving lines of credit to large companies use this ratio. Although this ratio has its drawbacks, it provides a valuable picture of the potential impact of an increase in interest rates on the company's cash flow and the extent to which earnings are penalized to pay the financing costs of the company. A ratio greater than 1 is almost mandatory, because a lower ratio indicates a company's earnings are insufficient to cover the interest on its debt.

Fixed charge coverage ratio (x): *(Net profit + interest expense + depreciation) ÷ (CMLTD + interest expense)*

The fixed charge coverage ratio shows the proportion of a firm's cash flow available to cover various fixed charges. The numerator of this ratio serves as the lender's definition of cash flow available for debt service and other fixed obligations. It is sometimes referred to as *earnings before interest, depreciation and amortization* (EBIDA). Some lenders prefer to start with pretax profit and call the cash flow figure and call it *earnings before interest, taxes, depreciation and amortization* (EBITDA). Some formulas further subtract distributions and dividends from the numerator. Even other variations treat rent expense as a fixed obligation added to both the numerator and denominator, and the numerator becomes *earnings before interest, taxes, depreciation, amortization and rent* (EBITDAR). As one final variation, some bankers take loans that have no stated amortization and impute some level of principal payments for purposes of calculating this ratio. Despite all of these possible variations in the basic formula, fixed charge coverage is perhaps the most frequently used ratio for debt service coverage.

Dividend payout ratio: *Cash dividend paid × 100 Net profit after tax*

The dividend payout ratio does not show a coverage, but shows the percentage of net profit a business pays to owners as dividends. These funds are not available for paying fixed obligations, so this ratio usually is calculated along with the coverage ratios, as well as dividends or distributions sometimes serving as an adjustment to the fixed charge coverage ratio. One reason to separately calculate this ratio is to understand that the funds paid as dividends or distributions also are not available to support growth in accounts receivable, inventory or fixed assets.