Financial Statement Analysis For Small Businesses

A Resource Guide

Provided By

Virginia Small Business Development Center Network

(Revised for the VSBDC by Henry Reeves 3/22/2011)

Contents

Introduction

Financial statements provide small business owners with the basic tools for determining how well their operations perform at all times. Many entrepreneurs do not realize that financial statements have a value that goes beyond their use as supporting documents to loan applications and tax returns.

These statements are concise reports designed to summarize financial activities for specific periods. Owners and managers can use financial statement analysis to evaluate the past and current financial condition of their business, diagnose any existing financial problems, and forecast future trends in the firm's financial position.

Evaluation pinpoints, in financial terms, where the firm has been and where it is today. Diagnosis determines the causes of the financial problems that statement analysis uncovers and suggests solutions for them.

Forecasts are valuable in statement analysis for two reasons: You can prepare forecasts that assume that the basic financial facts about a company will remain the same for a specified period in the future. These forecasts will illustrate where you're likely to stand if the status quo is maintained. Or, you can gain insights into the impact of certain business decisions by calculating the answers to "what if" questions. When you test the consequences of changes you're contemplating, or that may occur because of changing market conditions or customer tastes, for example, you achieve a greater understanding about the financial interrelationships at work in a business.

The two key reports for all sizes and categories of business are the Balance Sheet and the Income Statement. The Balance Sheet is an itemized statement that lists the total assets and the total liabilities of a business, and gives its net worth on a certain date (such as the end of a month, quarter, or year). The Income Statement records revenue versus expenses for a given period of time.

Regular preparation and analysis of financial statement information helps business managers and owners detect the problems that experts continue to see as the chief causes of small business failure -- such as high, operating expenses, sluggish sales, poor cash management, excessive fixed assets, and inventory mismanagement. By comparing statements from different periods, you can more easily spot trends and make necessary management decisions and budget revisions before small problems become large ones.

This Resource Guide is intended to provide you with a basic understanding of the components and purposes of financial statements. The Balance Sheet and Income Statement formats are designed as general models and are not complete for every business operation. Computation of income for financial accounting purposes is done according to the rules of Generally Accepted Accounting Principles (known as GAAP). Be aware that income and losses computed using GAAP rules will not necessarily be the same as those calculated to comply with the Internal Revenue Code.

In addition to this Resource Guide, business owners and managers should take advantage of the other free or low cost sources of marketing information.

- Free business counseling services provided by Certified Business Analysts and many low-cost seminars and workshops are offered by the Virginia Small Business Development Centers throughout the state. For the location of the Small Business Development Center nearest to you call visit www.virginiasbdc.org.

- Universities, community colleges, and public libraries have other books and publications on this topic.

- A tremendous amount of information is available on the Internet, using a search tool such as Google.

Importance of Financial Statements

Many business experts and accountants recommend that you prepare financial statements monthly; quarterly at a minimum. Some companies prepare them at least once a week, sometimes daily, to stay abreast of results. The more frequently a company prepares their financial statements, the sooner timely decisions can be made.

There are four types of financial statements; compiled, reviewed, audited, and unaudited:

- A compiled statement contains financial data from a company reported in a financial statement format by a certified public accountant (CPA); it does not include any analysis of the statement.
- The reviewed statement includes an analysis of the statement by a CPA in which unusual items or trends in the financial statement are explained.
- An audited statement (also prepared by a CPA) contains any analysis which includes confirmation with outside parties, physical inspection and observation, and transactions traced to supporting documents. An audited statement offers the highest level of accuracy.
- An unaudited statement applies to a financial statement prepared by the company which has not been compiled, reviewed, or audited by a outside CPA..

Small business owners must be aware that they may be required to submit financial statements in nine circumstances:

1. Virtually all suppliers of capital, such as banks, finance companies, and venture capitalists, require these reports with each loan request, regardless of previous successful loan history. Banks may need CPA compiled or reviewed statements and, in some cases, audited statements. They may not accept company or individually prepared financial statements, unless they are backed by personal or corporate income. Typically, as a condition of granting a loan, a creditor may request periodic financial statements in order to monitor the success of the business and spot any possible repayment problems.

2. Information from financial statements is necessary to prepare federal and state income tax returns. Statements themselves need not be filed.

3. Prospective buyers of a business will ask to inspect financial statements and the financial/operational trends they reveal before they will negotiate a sale price and commit to the purchase.

4. In the event that claims for losses are submitted to insurance companies, accounting records (particularly the Balance Sheet) are necessary to substantiate the original value of fixed assets.

5. If business disputes develop, financial statements may be valuable to prove the nature and extent of any loss. Should litigation occur, lack of such statements may hamper preparation of the case.

6. Whenever an audit is required--for example by owners or creditors--four statements must be prepared: a *Balance Sheet (or Statement of Financial Position)*, *Reconcilement of Equity (or Statement of Stockholder's Equity for corporations)*, *Income Statement (or Statement of Earnings)*, and *Statement of Cash Flows.*

7. A number of states require corporations to furnish shareholders with annual statements. Certain corporations, whose stock is closely held, that is, owned by a small number of shareholders, are exempt.

8. In instances where the sale of stock or other securities must be approved by a state corporation or securities agency, the agency usually requires financial statements.

9. The Securities and Exchange Commission (SEC) requires most publicly held corporations (such as those whose stock is traded on public exchanges) to file annual and interim quarterly financial reports.

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Collecting and Managing Data

The language and principles of modern accounting have evolved from the centuries-old need for accurate record keeping. Today, the Financial Accounting Standards Board (FASB), the SEC, and the American Institute of Certified Public Accountants (AICPA) continue to refine and revise concepts and practices. Regardless of how complex a financial statement may seem, it is based on logic and practicality.

Collecting information for financial statements begins with the daily arithmetic of business and follows a continuing process called the audit trail. First, figures from original documents such as invoices are journalized, or recorded, daily in the book of original entry, which is called the journal. Today, these journals are maintained in electronic format. Items that are not normally recorded in the daily operations, such as those for depreciation and amortization, are called end-of-the-period adjustments and are calculated and journalized periodically. All of these detailed transactions are then posted to the general ledger. Amounts are balanced (credits must equal debits) and then used to prepare financial statements.

In most computerized accounting systems the balancing is maintained in real-time, behind the scenes, allowing financial statements to be prepared at any time.

In a number of small businesses, bookkeepers or owners themselves prepare these reports. Frequently, they use textbook samples as models or standard bank forms provided by loan officers. But a growing number of small operations retain accountants on at least an occasional basis. Accountants typically tailor statements to a specific enterprise, so statement formats vary somewhat.

Micro businesses can use a very simple and basic system to collect the information that will ultimately be used to construct the financial statements. The business owner should put all receipts, cancelled checks, and credit card slips into a large envelope. Have one envelope for each month. The owner can then deliver these receipts to his or her bookkeeper, who will construct the financial statements. The envelopes can then be filed away. For business travel using your personal vehicle, keep track of the odometer reading before the trip begins, and at the conclusion of the trip. When purchasing meals for customers, note on the receipt the name of the customer and the reason for the meeting. The Internal Revenue Service specifies the length of time different types of business records must be kept.

As the business grows, owners begin to find time to become more sophisticated and may adopt computer software to replace the bookkeeper.

Computer technology plays a major role in small business today. It significantly cuts the time it takes to manage a business' finances and, in turn, might produce higher sales and better profit margins because of improvements in analysis and information.

A lot of the time, tedium, and human error in financial accounting has disappeared as computers become more powerful and affordable to smaller companies. Software that automates the accounting function, records the audit trail, and feeds financial statements and other management reports is readily available. Accountants use computers and may have the knowledge to assist their small business clients with a conversion to computerized accounting. Some software firms, as well as SBDC's, now offer seminars and workshops designed to help small business owners learn all of the functions their programs can perform. Popular accounting software packages include QuickBooks, QuickBooks Pro, Quicken, and Peachtree, although standard office software such as MicroSoft Excel can be used for basic accounting.

Computers simplify and streamline financial analysis. For instance, a "what if" forecast with just one set of simple variables may take an entire day or longer to figure manually. Today, with an electronic spreadsheet, complex calculations with many variables can be produced quickly to test the effects of certain decisions.

The potential benefits of accounting software include the following:

- Produce more accurate accounting information faster.
- Improve timeliness and accuracy of financial status reports.
- Identify potential business or budget problems sooner.
- Implement better management controls.
- Reduce labor costs and outside consultants' fees.
- Speed collection of receivables.

- Reduce interest expense and improve cash flow.
- Reduce lost sales (as result of fewer stock outs).
- Reduce inventory (and inventory carrying costs).
- Realize higher return on investment.

Regardless of whether the entrepreneur chooses to manually maintain his or her bookkeeping or implements accounting software, it is still wise to consult with an accountant for advice on our ever changing tax laws.

The Income Statement

Business revenue, expenses, and the resulting profit or loss over a given period of time are detailed in the Income Statement. It is also called the Statement of Income and Expense, Statement of Earnings, or the Profit and Loss Statement. This report reflects the company's chosen fiscal year. For tax purposes, the owner may need to prepare a second Income Statement based on the calendar year, if the fiscal year is different. Check with a tax advisor about Internal Revenue Code requirements.

The following terms are commonly found on an income statement:

1. Heading
   The first facts to appear on any statement are the legal name of the business, the type of statement, and the period of time reported, e.g., month, quarter, or year.

2. Column Headings
   If you include both current month and year-to-date columns on the Income Statement you can review trends from accounting period to accounting period and compare previous similar periods. Also, it is often helpful to show the dollar amounts as percentages of net sales. This helps you analyze performance and compare your company to similar businesses. Remember, you can choose any period of time to analyze.

3. Revenue
   All income flowing into a business for services rendered or goods sold comes under this category. In addition to actual cash transactions, the revenue figure reflects amounts due from customers on accounts receivable as well as equivalent cash values for merchandise or other tangible items used as payment.

4. Less Sales Returns and Allowances
   The value of returned merchandise and allowances made for defective goods must be subtracted from gross sales to determine net sales.

5. Cost of Goods Sold
   Cost of goods sold equals the amount of goods available for sale minus the inventory remaining at the end of the accounting period. (Total goods available = beginning inventory + cost of purchasing or manufacturing new merchandise during the accounting period). Cost of goods sold

includes all costs directly related to the production of the product invoiced during the accounting period. Service businesses generally have no cost of goods sold.

6. Gross Profit
Also called *gross margin*, this figure is the difference between the cost of goods sold and net sales (Net Sales - Cost of Goods Sold = Gross Profit). It is the business's profit before operating expenses and taxes.

7. Operating Expenses
The expenses of conducting business operations generally fall into two broad categories: selling and general administrative. Manufacturers normally include some operating expenses, such as machinery and labor depreciation, as part of cost of sales (Item 5).

8. Total (Net) Operating Income
Total operating expenses are subtracted from gross profit to show what the business earned before financial revenue and expenses, taxes, and extraordinary items.

9. Other Revenue and Expenses
Income and expenses that are not generated by the usual operations of a business and that are not considered extraordinary (see Item 11) are recorded here. Typically included in this category are financial revenue, such as interest from investments, and financial expenses, such as interest on borrowed capital. (Loan principal is not considered an expense. It is a liability and is listed as such on the Balance Sheet).

10. Pretax Income
To derive this figure, also called pretax profit, total financial revenue (minus total financial expenses) is added to total operating income. Taxes are subtracted from pretax income if the business is a 'C' corporation. Proprietorships, limited liability companies, and 'S' corporations do not pay business taxes on income; the income is reported on the owners' personal returns. (For tax planning purposes, accountants estimate the annual taxes due, then project the monthly portion.)

11. Extraordinary Gain [Loss] Net of Income Tax [Benefit]
Within the framework of an individual business type and location, any occurrence that is highly unusual in nature, could not be foreseen, is not expected to recur, and that generates income or causes a loss is considered an extraordinary item. The extraordinary gain or loss is shown after calculating tax liability (or tax benefit, as would be the case with an extraordinary loss) on the Income Statement. Examples: A court award to a business not previously involved in lawsuits would be an extraordinary gain; a major casualty would be an extraordinary loss.

12. Net Income
Also called net profit, this figure represents the sum of all expenses (including taxes, if applicable). Net income or profit is commonly referred to as the *bottom line*.

13. Earnings per Share
Total outstanding common stock (the number of shares currently owned by stockholders) is divided into net income to derive this figure. It is not applicable to proprietorships and limited liability companies, but must be shown on the Income Statements of all publicly held corporations.

The Balance Sheet

A Balance Sheet records the total assets, liabilities, and equity (net worth) of a business as of a specific day. This statement is divided to provide two views of the same business: what resources the business owns, and the creditor and owner investments that supplied these resources. These divisions are generally set up in the two-column account form, with assets on the left, liabilities and equity on the right. An alternative -- the one column statement form or report form -- lists assets on top, liabilities and equity below.

The backbone of the Balance Sheet is the fundamental accounting equation: Assets = Liabilities + Equity (transposed: Assets - Liabilities = Equity. This equation is based on the accounting principle that every business transaction, such as selling merchandise or borrowing capital, has a *dual effect*. Any increase or decrease on one side of the equation always requires a corresponding change to the other side of the equation. If the sides don't balance, faulty arithmetic or inaccurate or incomplete records may be the cause.

The following is an example of the principle of balance: If a business owner purchases $2,000 worth of new merchandise on credit, assets are increased by the value of new inventory. Liabilities are increased $2,000 at the same time because the company has an accounts payable (liability) obligation to the suppliers of the merchandise.

To further illustrate the principle: If the same business had $2,000 cash and used it to buy new merchandise, assets would be increased by the inventory value, but decreased by the cash outlay. Thus, total assets would be unchanged, and liabilities and equity would not be affected.

The following terms are commonly found on a balance sheet:

1. Heading
The legal name of the business, the type of statement, and the day, month, and year must be shown at the top of the report.

2. Assets
Anything of value that is owned or legally due the business is included under this heading. Total assets include all net realizable and net book (also called net carrying) values. Net realizable and net book values are amounts derived by subtracting from the acquisition price of assets any estimated allowances for doubtful accounts, depreciation, and amortization, such as amortization of a premium during the term of an insurance policy. Appreciated values are not usually considered on Balance Sheets, except, for example, when you are recording stock portfolio values.

3. Current Assets

Cash and resources that can be converted into cash within 12 months of the date of the Balance Sheet (or during one established cycle of operations) are considered current. Besides cash (money on hand and demand deposits in the bank, such as regular savings accounts and checking accounts), these resources include the items listed below. They are ranked in a generally accepted order of decreasing liquidity--that is, the ease with which the items could be converted to cash.

- Accounts Receivable: The amounts due from customers in payment for merchandise or services.
- Inventory: Includes raw materials on hand, work in process, and all finished goods either manufactured or purchased for resale. Inventory value is based on unit cost and is calculated by any of several methods (see Inventory Valuation below).
- Temporary Investments: Interest- yielding or dividend-yielding holdings expected to be converted into cash within a year. Also called *marketable securities* or *short-term investments*, they include certificates of deposit, stocks and bonds, and time deposit savings accounts. According to accounting principles, they must be listed on the Balance Sheet at either their original cost or their market value, whichever is less.
- Prepaid Expenses: Goods, benefits, or services a business pays for in advance of use. Examples are insurance protection, floor space and office supplies.

4. Long-Term Investments

Also called long-term assets**,** these resources are holdings that the business intends to keep for a year or longer and that typically yield interest or dividends. Included are stocks, bonds and savings accounts earmarked for special purposes.

5. Fixed Assets

Fixed assets, frequently called plant and equipment, are the resources a business owns or acquires for use in operations and does not intend to resell. Regardless of current market value, land is listed at its original purchase price, with no allowance for appreciation or depreciation. Other fixed assets are listed at cost, minus depreciation. Fixed assets may be leased rather than owned. Depending on the leasing arrangement, both the value and liability of the leased property may need to be listed on the Balance Sheet.

6. Other Assets

Resources not listed with any of the above assets are grouped here. Examples include tangibles, such as outdated equipment which can be sold to the scrap yard, and intangibles, such as goodwill, trademarks and patents.

7. Liabilities

This term covers all monetary obligations of a business and all claims creditors have on its assets.

8. Current Liabilities

All debts and obligations payable within 12 months or within one cycle of operations are detailed here. Typically, they include the following, which generally are listed in the order due.

- Accounts Payable: Amounts owed to suppliers for goods and service purchased in connection with business operations.
- Short-Term Debt: The balances of principal due to pay off short-term debt for borrowed funds.
- Current Portion of Long-Term Debt: Current amount due of total balance on notes whose terms exceed 12 months.
- Interest Payable: Any accrued amounts due for use of both short-and long-term borrowed capital and credit extended to the business.
- Taxes Payable: Amounts estimated by an accountant to have been incurred during the accounting period. For accounting purposes, this total may differ from the actual tax total required by the Internal Revenue Codes, since taxes payable are based on accounting income and not taxable income. (**Note:** Income taxes are business obligations for corporations; proprietorships and partnerships do not pay income taxes; the income is reported on the owners' personal returns.)
- Accrued Payroll: Salaries and wages currently owed but not yet paid.

9. Long Term Liabilities

Long-term liabilities are notes, payments, or mortgage payments due over a period exceeding 12 months or one cycle of operations. They are listed by outstanding balance (minus the Current Portion due).

10. Equity

Also called net worth, equity is the claim of the owner(s) on the assets of the business. In a proprietorship or limited liability company, equity is each owner's original investment, plus any earnings after withdrawals.

In a corporation, the owners are the shareholders--those who have invested capital (cash or other assets) in exchange for shares of stock. The corporation's equity is the sum of contributions plus earnings retained after paying dividends. It is detailed as follows:

- Capital Stock: The total amount invested in the business in exchange for shares of stock at value up to the par value. Par is the per-share price assigned to the original issue of stock, regardless of subsequent selling prices.
- Capital Paid-In in Excess of Par: The amount in excess of par value that a business receives from shares of stock sold at a value above par.

- Treasury Stock: When a company buys back its own stock or when a closely held business buys out other owners. The value of the stock is recorded here and ordinarily does not receive dividends.
- Retained Earnings: The total accumulated net income minus the total accumulated dividends declared since the corporation's founding. These earnings are part of the total equity for any business. However, the figure is usually listed separately from owner investments only on corporate Balance Sheets which are done for the benefit of shareholders.

11. Total Liabilities and Equity
The sum of these two amounts must always equal Total Assets.

Reconciliation of Equity

This statement reconciles the equity shown on the current Balance Sheet. For corporations this statement is referred to as the Statement of Retained Earnings or Statement of Shareholder Equity. For limited liability companies it is referred to as the Statement of Members Equity, and for Proprietorships as the Statement of Owner's Equity. It records equity at the beginning of the accounting period and details additions to, or subtractions from, this amount made during the period. Additions and subtractions typically are net income or loss and owner contributions and/or deductions.

Figures used to compile this statement are derived from previous and current Balance Sheets and from the current Income Statement.

Statement of Cash Flows

The fourth main document of financial reporting is the Statement of Cash Flows. Many small business owners and managers find that the cash flow statement is perhaps the most useful of all the financial statements for planning purposes. Cash is the life blood of a small business – if the business runs out of cash chances are good that the business is out of business. This is because most small businesses do not have the ability to borrow money as easily as larger business can.

The statement can be prepared frequently (monthly, quarterly) and is a valuable tool that summarizes the relationship between the Balance Sheet and the Income Statement and traces the
In financial accounting, a cash flow statement, also known as *statement of cash flows* or *funds flow statement*, is a financial statement that shows how changes in balance sheet accounts and income affect cash and cash equivalents, and breaks the analysis down to operating, investing, and financing activities. Essentially, the cash flow statement is concerned with the flow of cash in and cash out of the business. The statement captures both the current operating results and the accompanying changes in the balance sheet. As an analytical tool, the statement of cash flows is useful in determining the short-term viability of a company, particularly its ability to pay bills.

By understanding the amounts and causes of changes in cash balances, the entrepreneur can realistically budget for continued business operations and growth. For example, the Statement of Cash Flows helps answer such questions as: Will present working capital allow the business to acquire new equipment, or will financing be necessary?

Many small businesses may not need to prepare the Statement of Cash Flows. However, according to GAAP, it should be prepared whenever an operation's financial statements are compiled, reviewed, or audited by a CPA. In addition, creditors, investors, new owners or partners, and the Internal Revenue Service may require the information it provides. This statement can usually be produced by most accounting software applications.

Notes to Financial Statements

If an important factor does not fit into the regular categories of a financial statement, it should be included as a note. Also, anything that might affect the financial position of a business must be documented. Three major types of notes include:

1. Methodology
   Discussion of the accounting principles used by the company. For example, accrual basis of accounting vs. cash basis of accounting.

2. Contingent Liabilities
   Circumstances that have occurred as of the statement date and which represent potential financial obligations must be recorded by type and estimated amount. Example: A business owner cosigns a bank note. If the primary borrower should default, the business owner who cosigned would become liable.

3. Required Disclosures
   It is necessary that all significant information about the company be described in a disclosure statement. Example: If the business has changed accounting procedures since the last accounting period, the change must be described.

Financial Ratios

Financial ratios are a valuable and easy way to interpret the numbers found in statements. Ratio analysis provides the ability to understand the relationship between figures on spreadsheets. It can help you to answer critical questions such as whether the business is carrying excess debt or inventory, whether customers are paying according to terms, and whether the operating expenses are too high.

When computing financial relationships, a good indication of the company's financial strengths and weaknesses becomes clear. Examining these ratios over time provides some insight as to how effectively the business is being operated.

Many industries compile average (or standard) industry ratios each year. Standard or average industry ratios offer the small business owner a means of comparing his or her company with others within the same industry. In this manner they provide yet another measurement of an individual company's strengths or weaknesses. RMA (Risk Management Association, formerly named Robert Morris & Associates) is a good source of comparative financial ratios. It can be found on the Internet at http://www.rmahq.org/

Following are the most critical ratios for most businesses, though there are others that may be computed.

1. Liquidity

   Measures a company's capacity to pay its debts as they come due. There are two ratios for evaluation liquidity.

   Current Ratio - Gauges how able a business is to pay current liabilities by using current assets only. Also called the *working capital ratio***.** A general rule of thumb for the current ratio is 2 to 1 (or 2:1, or 2/1). However, an industry average may be a better standard than this rule of thumb. The actual quality and management of assets must also be considered.

   The formula is:

   Total Current Assets
   Total Current Liabilities

   Quick Ratio - Focuses on immediate liquidity (i.e., cash, accounts receivable, etc.) but specifically ignores inventory. Also called the *acid test ratio*, it indicates the extent to which you could pay current liabilities without relying on the sale of inventory. *Quick assets*, are highly liquid--those immediately convertible to cash. A rule of thumb states that, generally, your ratio should be 1 to 1 (or 1:1, or 1/1).

   The formula is:

   Cash + Accounts Receivable
   (+ any other quick assets)
   Current Liabilities

2. Safety

   Indicates a company's vulnerability to risk--that is, the degree of protection provided for the business' debt. Three ratios help you evaluate safety:

   Debt to Worth - Also called *debt to net worth.* Quantifies the relationship between the capital invested by owners and investors and the funds provided by creditors. The higher the ratio, the greater the risk to a current or future creditor. A lower ratio means your company is more financially stable and is probably in a better position to borrow now and in the future. However, an

extremely low ratio may indicate that you are too conservative and are not letting the business realize its potential.

The formula is:

$$\frac{\textbf{Total Liabilities (or Debt)}}{\textbf{Net Worth (or Total Equity)}}$$

Times Interest Earned – Assesses the company's ability to meet interest payments. It also evaluates the capacity to take on more debt. The higher the ratio, the greater the company's ability to make its interest payments or perhaps take on more debt.

The formula is:

$$\frac{\textbf{Earnings Before Interest \& Taxes}}{\textbf{Interest Charges}}$$

Cash Flow to Current Maturity of Long-Term Debt - Indicates how well traditional cash flow (net profit plus depreciation) covers the company's debt principal payments due in the next 12 months. It also indicates if the company's cash flow can support additional debt.

The formula is:

$$\frac{\textbf{Net Profit + Non-Cash Expenses*}}{\textbf{Current Portion of Long-Term Debt}}$$

*Such as depreciation, amortization, and depletion.

3. Profitability

Measures the company's ability to generate a return on its resources. Use the following four ratios to help you answer the question, "Is my company as profitable as it should be?" An increase in the ratios is viewed as a positive trend.

Gross Profit Margin - Indicates how well the company can generate a return at the gross profit level. It addresses three areas: inventory control, pricing, and production efficiency.

The formula is:

$$\frac{\textbf{Gross Profit}}{\textbf{Total Sales}}$$

Net Profit Margin - Shows how much net profit is derived from every dollar of total sales. It indicates how well the business has managed its operating expenses. It also can indicate whether the business is generating enough sales volume to cover minimum fixed costs and still leave an acceptable profit.

The formula is:

$$\frac{\text{Net Profit}}{\text{Total Sales}}$$

Return on Assets - Evaluates how effectively the company employs its assets to generate a return. It measures efficiency.

The formula is:

$$\frac{\text{Net Profit}}{\text{Total Assets}}$$

Return on Net Worth - Also called *return on investment (ROI)*. Determines the rate of return on the invested capital. It is used to compare investment in the company against other investment opportunities, such as stocks, real estate, savings, etc. There should be a direct relationship between ROI and risk (i.e., the greater the risk, the higher the return).

The formula is:

$$\frac{\text{Net Profit}}{\text{Net Worth}}$$

4. Efficiency

Evaluates how well the company manages its assets. Besides determining the value of the company's assets, you should also analyze how effectively the company employs its assets. You can use the following ratios:

Accounts Receivable Turnover - Shows the number of times accounts receivable are paid and reestablished during the accounting period. The higher the turnover, the faster the business is collecting its receivables and the more cash the company generally has on hand.

The formula is:

$$\frac{\text{Total Net Sales}}{\text{Average Accounts Receivable}}$$

Accounts Receivable Collection Period - Reveals how many days it takes to collect all accounts receivable. As with accounts receivable turnover (above), fewer days means the company is collecting more quickly on its accounts.

The formula is:

$$\frac{\text{365 Days}}{\text{Accounts Receivable Turnover}}$$

Accounts Payable Turnover - Shows how many times in one accounting period the company turns over (repays) its accounts payable to creditors. A higher number indicates either that the business has decided to hold on to its money longer, or that it is having greater difficulty paying creditors.

The formula is:

$$\frac{\textbf{Cost of Goods Sold}}{\textbf{Average Accounts Payable}}$$

Payable Period - Shows how many days it takes to pay accounts payable. This ratio is similar to accounts payable turnover (above.) The business may be losing valuable creditor discounts by not paying promptly.

The formula is:

$$\frac{\textbf{365 Days}}{\textbf{Accounts Payable Turnover}}$$

Inventory Turnover - Shows how many times in one accounting period the company turns over (sells) its inventory. This ratio is valuable for spotting understocking, overstocking, obsolescence, and the need for merchandising improvement. Faster turnovers are generally viewed as a positive trend; they increase cash flow and reduce warehousing and other related costs. Average inventory can be calculated by averaging the inventory figure from the monthly Balance Sheets. In a cyclical business, this is especially important since there can be wide swings in asset levels during the year. For example, many retailers might have extra stock in October and November in preparation for the Thanksgiving and winter holiday sales.

The formula is:

$$\frac{\textbf{Cost of Goods Sold}}{\textbf{Average Inventory}}$$

Inventory Turnover in Days - Identifies the average length of time in days it takes the inventory to turn over. As with inventory turnover (above), fewer days mean that inventory is being sold more quickly.

The formula is:

$$\frac{\textbf{365 Days}}{\textbf{Inventory Turnover}}$$

Sales to Net Worth - Indicates how many sales dollars are generated with each dollar of investment (net worth). This is a volume ratio.

The formula is:

$$\frac{\textbf{Total Sales}}{\textbf{Average Net Worth}}$$

Sales to Total Assets - Indicates how efficiently the company generates sales on each dollar of assets. A volume indicator, this ratio measures the ability of the company's assets to generate sales.

The formula is:

$$\frac{\text{Total Sales}}{\text{Average Total Assets}}$$

Debt Coverage Ratio - An indication of the company's ability to satisfy its debt obligations, and its capacity to take on additional debt without impairing its survival.

The formula is:

$$\frac{\text{Net Profit + Any Non-Cash Expenses}}{\text{Principal on Debt}}$$

Key Terms and Concepts

The following are brief descriptions and explanations of terms and concepts related to financial statements. (Items defined elsewhere in the text are not listed here.)

Accrual Basis of Accounting

By this long-established and widely used principle, revenue and expenses are recognized when a service is performed or goods are delivered, regardless of when payment is received or made. This method allows what accountants call the *matching* of revenues and associated expenses.

Revenue example - If a store sells $500 worth of radios in a day, $500 of revenue is earned and entered in the books even though the proceeds of the sale may not be collected for a month or longer.

Expense example - If the store clerk earns a $10 commission on the day of the radio sale, this expense to the business is recorded that day even though it may not actually be paid until the next payroll day.

Receivables Aging

This report lists a customer's name, credit limit, total balance, and any amounts 30, 60, 90 or more than 90 days past due. By preparing this report once a month, an owner can spot trends and plan next month's collection efforts.

Amortization

The gradual reduction of debt by means of equal periodic payments sufficient to meet current interest and liquidate the debt at maturity; also, the process of writing off against expenses the cost of a prepaid, intangible asset over a fixed period.

Appreciation

Any increase from the acquisition price of a fixed asset or investment to current appraised market value. However, for financial statement purposes, appreciation is not considered because of four accounting concepts:

(1) the objectivity principle - which would necessitate an appraisal of each asset's market value per accounting period--a costly and highly variable endeavor.
(2) *the continuity assumption* - that fixed assets are acquired for continuing business operations and not for resale
(3) *the principle of conservatism* **-** which states that, given a choice of values, an accountant always chooses the more conservative
(4) that financial statements reflect the *original costs.*

Cash Basis of Accounting

As its name implies, this method recognizes revenue and expenses only when cash payment is actually received or made. Because it does not properly match income and expenses (see Accrual Basis of Accounting in this section), the cash basis does not always provide an accurate picture of profitability and is less commonly used than the accrual basis. The Internal Revenue Code places certain restrictions on the use of cash basis accounting for computing income tax liability. For further information, contact a tax advisor.

Cash Flow

Cash flows fall into two categories: *inflows* and *outflows*. *Inflows* include revenues from sales, proceeds from loans, and capital injections by owners. *Outflows* include costs of sales, operating expenses, income taxes, repayment of loans and distribution to owners. Cash is used to purchase materials, to pay for overhead expenses, to pay labor, and to market merchandise.

By studying a business's individual cash flow cycle, the owner can determine the working cash needs of the company. These will include day-to-day needs, as well as possible increases in the costs for materials, labor, and overhead. By being aware of these cash needs, the owner can achieve a balance between cash use and profits.

Common-Size

A term applied to financial statements that use 100 percent of one category as the basis for determining the proportion that other statement items represent. Net sales is used as the basis figure for Income Statements, total assets for Balance Sheets. Since the total always sums to 100 percent, the statements prepared in this manner are referred to as "common-size." This form of comparative statement enables the analyst to see at a glance the Balance Sheet trends and the proportionate changes taking place in the individual accounts form one statement period to the next.

Depreciation

A universal accounting assumption holds that all fixed assets--with the exception of land--deteriorate, wear out, or become obsolete.

This process represents a decline in value that is called depreciation. It is calculated by apportioning an asset's original acquisition price, minus any expected salvage value, over the asset's expected years of useful life. (For accounting purposes, land is always valued at its original purchase price.) On the Income Statement, depreciation incurred during the accounting period is detailed as an expense. On the Balance Sheet, depreciation is reflected by an asset's listed net book or net carrying value (cost less accumulated depreciation).

The simplest and most common means of calculating depreciation is by the *straight-line* method. Using it, accountants divide the estimated useful life of an asset into its purchase price minus any applicable salvage value. Example: An $11,000 machine has a $1,000 salvage value and an expected useful life of 10 years. Annual depreciation = ($11,000 - $1,000) ÷ 10 = $1,000. In five years, straight-line *accumulated depreciation* would be $5,000.

There are other common calculation methods that allow more accelerated depreciation of fixed assets. These methods distribute the original acquisition cost more heavily during an asset's early years. Accountants can show owners the various means to determine this depreciation, which is more complex than straight-line.

Depreciation computed according to the GAAP rules is not necessarily the same as that computed to comply with the Internal Revenue Code. For further information, consult a tax advisor.

Inventory Valuation

Because inventory units are usually purchased at varying prices, methods have been established to calculate the cost of goods sold and the value of remaining inventory. Three widely used methods are:

Average Cost - The total number of units of goods available is divided into the total manufacturing or acquisition cost (including freight charges to get the raw materials to the manufacturer's or supplier's location.)

FIFO - An acronym for "first in, first out." This method is based on the assumption that the inventory acquired first is sold first. Consequently, the ending (remaining) inventory consists of the most recently purchased items. An advantage of this method of valuation is that it reflects recent costs of inventory on the Balance Sheet.

LIFO - An acronym for "last in, first out." This method of valuation assumes that those items of inventory most recently acquired are sold before the older acquisitions. As a result, the ending inventory figure consists of the older purchases. Proponents of this valuation method argue that by representing current prices in the cost of goods sold, matching is more accurately accomplished.

Example: The first item in costs $100, the second costs $300, and the third costs $500. Two of these units are sold.

Calculated by *average cost*: $100 + $300 + $500 = $900 ÷ 3 = $300. Therefore, the cost of goods sold = $600 (2 units x $300); the remaining inventory is valued at $300.

Calculated by *FIFO*, the cost of goods sold is $100 + $300 = $400; the remaining inventory is valued at $500.

Calculated by *LIFO*, the cost of goods sold is $500 + $300 = $800; the remaining inventory is valued at $100.

Leverage
The concept of borrowing heavily for financing needs in order to minimize the capital investment and maximize the return on investment.

Liquidate
To convert non-cash assets into cash; also, to close the business by selling all assets and paying all debts.

Liquidity
The ease with which items can be converted into cash without loss.

Negative Cash Flow
Cash receipts that are insufficient to meet ongoing costs and other cash needs, such as necessary investment in fixed assets or expanded inventory.

Working Capital
The difference between total current assets and total current liabilities; the resulting pool of resources readily available to maintain normal business operations.

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Financial Statements as a Management Tool

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This article shows you how to use your financial statements to answer ten important questions. In addition, three case studies provide examples of how financial statement analysis works. Figure 1, Summary Table of Financial Ratios, shows several ratios that are commonly used for analyzing financial statements. Keep in mind that the ratios shown in Figure 1 are only a sample of dozens of widely-used ratios in financial statement analysis. Many of the ratios overlap.

To illustrate financial statement analysis, we will use the financial statements of K-L Fashions, Inc. K-L Fashions is a direct mail order company for quality "cut and sewn" products. Their financial statements are presented in Figure 2. Like most small businesses, they have a relatively simple capital structure and their income statement reflects typical revenues and expenses. Inventory consists primarily of merchandise obtained under contract from approved garment makers and held for resale. K-L Fashions uses trade credit for purchases, but its sales consist almost entirely of credit card sales. Consequently, we see a very low accounts receivable balance compared with accounts payable. Some of the items that would normally be seen on financial statements have been consolidated to simplify the presentations.

Financial statement analysis can be applied from two different directions. Vertical analysis is the application of financial statement analysis to one set of financial statements. Here, we look "up and down" the statements for signs of strengths and weaknesses. Horizontal analysis looks at financial statements and ratios over time. In horizontal analysis, we look for trends -- whether the numbers are increasing or decreasing; whether particular components of the company's financial position are getting better or worse.

We will look at the financials from the perspectives of four different groups: owners, managers, short-term creditors and long-term creditors.

Owners

Although owners of small businesses often are also the managers, the initial concern is with owners as investors in the business. Owners use financial statement data as a way to measure whether their money is working as hard in the business as it would be in an alternative investment. The data can also tell how well you or your managers have managed the firm's assets. Thus, the ratios that are of greatest interest to you as owner/investor are those that measure profitability relative to (1) your own investment in the firm and (2) the total amount invested in the firm from both your capital and borrowed funds.

1. *How well is the company doing as an investment?* - The *Return on Investment (ROI)* [Net Income ÷ Owners' Equity (Average)] measures the profitability of the firm on owner-invested dollars. Net income is the after-tax return. The owners' equity (or capital) account is the investment. It is the amount you have contributed directly to the business and amounts that you have reinvested via undistributed profits.

   ROI gives an indication of the past earning power of your investment and can be used to compare the company's performance in this regard to other companies in the industry. It should also be compared with other investment opportunities open to you. If your company typically generates a return of 10 percent and you can invest elsewhere at 15 percent, it doesn't make sense from a purely economic standpoint to keep your funds tied up in the company.

   K-L Fashions' ROI for fiscal 2005 was about 12.7 percent [$147,430 ÷ $1,157,150]. Average owners' equity is used as the denominator to approximate the amount available for use in generating net income over the course of the entire year. Taken by itself, this figure is neither impressive not disturbing. The median "return on net worth" calculated by Dun and Bradstreet (D&B) for catalog and mail-order houses was 22.3 percent. The trend established over the last three years is more important. Comparing the 2005 return with the two preceding years, there is a sharp drop from 43.4 percent in 2003, to 28.2 percent in 2004, to 12.7 percent in 2005.

2. *How well has management employed the company's assets?* - The *Return on Assets (ROA)* [Net Income ÷ Average Total Assets] measures the profitability of the firm on all invested dollars. That is, it measures how well the firm's assets have been employed in generating income. This measure is somewhat broader than the return on equity because it compares the returns on total capital. This includes the capital that you and the creditors have provided.

   What constitutes a satisfactory ROA? It depends on the type of assets and their end use. Once again, since companies within a given industry tend to employ similar assets, your ROA should be measured against industry norms.

   K-L Fashions' ROA for fiscal 2005 was 8.4 percent [$147,430 ÷ $1,761,660] compared with a median of 10 percent for the industry for the most recent period. Again, K-L Fashions falls short. We also see a declining ROA over a three year period: 25 percent for 2003, 18.3 percent for 2004, and 8.4 percent for 2005.

Managers

Managers, too, are interested in measuring the operating performance in terms of profitability and return on invested capital. If they are not owners, managers must still satisfy the owners' expectations in this regard. As managers, they are interested in measures of operating efficiency, asset turnover, and liquidity or solvency. These will help them manage day-to-day activities and evaluate potential credit customers and key suppliers. Manager ratios serve as cash management tools by focusing on the management of inventory, receivables and payables. Accordingly, these ratios tend to focus on operating data reflected on the profit and loss statement and on the current sections of the balance sheet.

3. *Are profits high enough, given the level of sales?* - In other words, how efficiently is management conducting operations? The *Net Profit Margin* [Net Income ÷ Sales (or Return on Sales) is a measure of the relative efficiency of the company's operations after deducting all expenses and income taxes. It measures the proportion of each sales dollar that results in net income.

   The average for this ratio varies widely from industry to industry. To serve as an aid in management, the company's net profit margin should be compared with that of similar companies in the same industry, and with the company's past figures. The manager should monitor this ratio and investigate potential problems when the ratio begins to fall below the industry average or has shown continued deterioration during the most recent quarter or two. If both conditions exist, management is likely facing a problem that requires immediate attention. Incidentally, most bank loan officers use the return on sales ratio as a key indicator in making term loan decisions. A deteriorating ratio is often seen as an indication of impending business distress.

   The fiscal 2005 net profit margin for K-L Fashions was 2.4 percent [147,430/6,039,750]. By comparison, the median return on sales for the industry, as reported by D&B, was 4.0 percent, meaning that another of the company's profitability measures is below the industry norm. Equally troubling is the downward trend in the net profit margin since 2003. In fiscal year 2004, the net profit margin was 5.3 percent, down from 7.1 percent for 2003. Over this period, profits declined 54.3 percent, despite a 32.5 percent increase in sales. If the company were maintaining operating efficiency, increases in sales would result in increases in profits (This scenario is generally an indication that some operating expenses are getting out of hand.) An examination of K-L Fashions' income statement suggests that selling, general and administrative expenses, which grew by 55 percent over the past two years, could be the cause of the decreased profitability. Because the financials for K-L Fashions only provide general categories, it is difficult to assess the cause of the increase in this expense category.

4. *How well are the company's assets being employed to generate sales revenue?* - The *Asset Turnover ratio* [Sales ÷ Average Total Assets] indicates the relative efficiency with which managers have used the firm's assets to generate output, and thus, it helps answer this question. Here again, what is acceptable or appropriate varies from industry to industry. Usually, however, a higher ratio is better. A very high turnover rate could signal an opportunity for expansion or the need for early replacement of assets. It could also mean that the company is in a high-volume, low-margin industry.

   K-L Fashions' asset turnover ratio was 3.4 times [$6,039,750 ÷ $1,761,660] for fiscal 2005 and, despite a decrease from fiscal 2004, remains at a level comparable with fiscal year 2003. This means little by itself; but compared with the industry average of 3.1 times, we might conclude that sales performance is probably satisfactory for the amount of resources available.

   Neither the profit margin nor the asset turnover by itself provides an adequate measure of operating efficiency or profitability. But multiplying the profit margin by the asset turnover ratio gives us the "Return on Assets" ratio or earnings power on total assets. This ratio is the same as the ROA computed for the owners but is presented in a form that managers often find more useful. It blends, in one number, all the major ingredients of profitability; yet it allows the manager to see how the individual

components contribute. Thus, there are two basic ingredients to profitability; asset turnover and profit margin. An improvement in either -- without changing the other -- will increase the return on assets.

What can managers do to increase the returns on assets and owners' investments? The return on assets will increase by either an increase in the asset turnover or an increase in the profit margin. Three separate items are involved in the calculation: sales, net income, and assets. However, since net income is simply sales minus expenses, the three individual items subject to management control are sales, expenses and assets. Either increasing sales, decreasing expenses, or decreasing assets, while holding the others constant, will improve the ROA and with it the ROI. Given K-L Fashions' most recent financial statement, it appears the most fruitful efforts would consist of controlling costs to increase both profits and the profit margin.

Notice that it doesn't require sophisticated analysis to come to this conclusion. This illustrates, however, one role of financial statement analysis: to highlight areas that need management attention. Once problem areas are highlighted, solutions can be obvious. This is why a common-sense approach of increasing sales and lowering expenses works to improve profitability.

5. *Are receivables coming in too slowly?* - The *Average Collection Period* [(Average A/R ÷ Annual Credit Sales) x 365] of receivables tells how many days, on average, customers' trade accounts (A/R) are outstanding. The average collection period is a measure of both liquidity and performance. As a measure of liquidity, it tells how long it takes to convert accounts receivable into cash. As a measure of performance, it indicates how well the company is managing the credit extended to customers.

Whether the average collection period is too high will depend on what kind of credit terms the company extends to its customers and how appropriate those terms are. If accounts are expected to be paid in 30 days, a 34 day average would be considered very good. Most customers tend to withhold payment for as long as the credit terms allow. This practice, along with some ever-present slow accounts, can cause the average collection period to exceed the stated limit by a week to 10 days and should not be a matter of concern. An average collection period of 48 days in this case, however, could be a danger signal. Customers who are slow in paying their bills, may never pay at all.

As the balance sheet shows, K-L Fashions' accounts receivable are insignificant. The average collection period relating to all sales was .5 days [($7,785 ÷ $6,039,750) x 365] for 2005 and less than one-half day for each of the prior two years. This rapid turnover of receivables is understandable, because K-L Fashions' "credit sales" are largely bank credit card sales. Cash management in this area seems to be good in that no time is wasted in getting credit card invoices and personal checks credited to the company's account.

Because accounts receivables balances for K-L Fashions comprise a minor portion of the company's total assets, this ratio is not particularly useful as a cash management tool to its managers. And, as stated previously, a common-sense approach to financial statement analysis must be maintained. If, like K-L Fashions, your business has few receivables, then analysis of them would not be worthwhile. Another example is service industries that have no inventory. With no inventory, the next section of analysis is irrelevant.

6. *Is too much cash tied up in inventories?* - The *Inventory Turnover* [Cost of Goods Sold Expense ÷ Average Inventory] ratio is used to measure the speed with which inventories are being sold and is useful in managing inventory levels. How much inventory should the company keep on hand? The answer depends on making a delicate trade-off between anticipated near-term sales, the costs of ordering and holding inventory, the cost of stock-outs, etc. It also depends on the expected future availability of goods from the company's suppliers. In either case, excessive cash tied up in inventories reduces a company's solvency.

   This ratio is vital for small-business managers who must make very effective use of the limited capital available to them. Just what is an appropriate turnover rate depends on the industry, the inventory itself, and general economic conditions. For example, the Brokaw Division of Wausau Papers (in Brokaw, Wisconsin) often has one to three years' worth of raw material inventory (logs) on hand. Because the road and weather conditions limit the time when wood can be received in Northern Wisconsin, Wausau Papers is forced to have a very slow inventory turnover rate for raw materials at that particular plant. However, finished goods (cut, colored paper) turn over every 28 days.

   If inventory turnover for the firm is consistently much slower than the average for the industry, then inventory stocks probably are either excessively high or contain a lot of obsolete items. Excessive inventories simply tie up funds that could be used to make needed debt payments or to expand operations. An extremely high turnover rate could be a sign of stock-outs -- not being able to fill a customer's order because the goods are not on hand. However, on the positive side, if neither stock-outs nor collections are a problem, then a high ratio can be good.

   K-L Fashions' balance sheet also shows that, other than plant and equipment, more dollars have been invested in inventory than any other asset category. Given the type of firm, this is not unusual. However, the inventory turnover rate for the company is only 4.5 items per year [$3,573,070 ÷ $797,860], meaning that it takes an average of 81.5 days [365 ÷ 4.5] for the company to sell its inventory once it is purchased. This translates into about 81 days of inventory. Does this indicate too much inventory for the rate at which it is selling? On the surface it might seem excessive, considering that inventory balances should be at a low point after the Christmas sales rush. A look at similar companies, however, reveals that K-L Fashions' turnover is not much slower than the industry average of 5.1 times (or 72 days). Even with this level of inventory, management stated in its annual report that the company was able to fill only 82 percent of orders from goods on hand.

Short-Term Creditors

Short-term creditors, including managers who extend credit to trade customers, are interested in the solvency of borrowers or customers. As a result, they tend to focus on the current section of the balance sheet. The same calculations that a manager does on his/her own financials statements can also be done on a debtor's financial statements. The most widely used financial ratios used to answer questions of short-term solvency are the *current ratio* and *quick ratio*.

7. *Does this customer have sufficient cash or other liquid assets to cover its short-term obligations?* - The *Current Ratio* [Current Assets ÷ Current Liabilities] is one of the most frequently used measures of solvency. It shows the relationship between current assets and current liabilities. Current liabilities are

obligations that will come due in the next 12 months. Current assets are assets that are expected to be converted to cash in the same period. This ratio is widely used to provide one indication of whether a prospective customer or borrower is a good short-term credit risk. An old rule-of-thumb says that the current ratio should be at least 2.0 to provide an adequate margin of safety. Whether this ratio is high enough, however, depends on the type of company involved and, to some extent, on the time of year. (Airlines often have current ratios under 1.)

What constitutes a good ratio also depends on the composition of the current assets relative to the due dates for the current obligations. If inventory makes up a significant portion of current assets and it is moving slowly, a higher-than-average ratio may hide potential liquidity problems. Thus, the quick ratio should also be evaluated.

The *Quick Ratio* [Cash + Marketable Securities + A/R ÷ Current Liabilities] (or *acid test*) is a somewhat more accurate guide to short-term solvency. This ratio is the same as the current ratio except that it excludes inventory and prepaid expenses -- the least liquid of the current assets. It provides a more penetrating measure of solvency than does the current ratio. If receivables turn over rapidly, a quick ratio of 1.0 or a little higher is probably adequate. A grocery store will often have quick ratios of .25 to .50 and current ratios that exceed 2.

Suppose we are a supplier to K-L Fashions. K-L Fashions' current ratio at the end of fiscal year 2005 was 1.8 times ($1,078,240 ÷ $607,740), down from 2.3 times the previous year and below the industry median of 2.5 times. However, even if the latest current ratio were 2.3 or better, it alone would not provide us much comfort because inventory comprises so much of the company's current assets.

K-L Fashions' latest quick ratio is .5 times ($284,730 ÷ $677,740) compared with an industry average of 1.0 times. This is a more stringent and valid test of liquidity in this case. If the ratio is at least 1.0 times (which means that liquid assets equal current liabilities), we can usually assume that the company has few short-term payment problems. At .5 times, however, we would want to look at other indicators of future cash flows. Any small company with these kinds of numbers may be required by creditors to provide a short-term projection of future cash receipts and disbursements.

8. *How quickly does the prospective credit customer pay its bills?* - Suppose that, on balance, we find the company's short-term solvency to be acceptable. Before agreeing to supply the company on a credit basis (or establishing credit terms for the company), we should try to determine how quickly the company normally pays its bills. The *Average Age of Payables* [(Average Payable ÷ Net Purchases) x 365] helps answer this question. That is, having determined that a company has the capacity to pay its short-term obligations as they come due (through the current or quick ratios), it is also important to evaluate its payment practice. In a manner similar to calculating the average collection period for accounts receivable, one can compute the average "age" of a company's payable, which is the average number of days it takes to pay its invoices. The age of the potential customer's payable will give a reasonable estimate of how soon a creditor can expect to be paid. This is particularly important for the small business that has just landed a major customer.

A large corporation is likely to use very effective (from its own standpoint) cash management procedures to ensure prompt payment from its customers while delaying payment to its suppliers as

long as possible. Unless the small business is a critical suppler of its large corporate customer, that corporation may not accelerate its payment cycle to meet the supplier's cash flow needs. That's why it is critically important for the decision-making process of the small-business owner/manager to be able to estimate the potential customer's payment cycle.

To calculate the average age of payables for K-L Fashions, we need to estimate purchases because they are not reported directly in the statements. Cost of goods sold (which is on the income statement) equals beginning inventory, plus net purchases, minus ending inventory. Therefore, purchases equal the cost of goods sold ($3,573,070) minus beginning inventory $857,090) plus ending inventory ($738,630), or about $3,454,610. Using this calculation, we can calculate that the average age of K-L Fashions' payables is [($311,060 ÷ $3,454,610) x 365] = 32.9 days. If K-L Fashions were a potential customer, we should not expect it to pay our invoices much sooner than 33 days.

Long-Term Creditors

Bankers and other long-term creditors want to be assured of receiving interest and principal when each become due. These creditors are particularly interested in the earning power and the present and future financial capacity of the borrower.

9. *As a potential or present long-term borrower, is the company's debt load excessive?* - If the company's debt load is too high -- it is highly leveraged -- it means that creditors of the firm have a disproportionately high share, and owners have a disproportionately low share, of the inherent risk of being in business. A simple measure of the "risk loan" is the *Debt-to-Equity (D/E)* [Total Debt ÷ Total Equity] ratio. This ratio relates the investment provided by creditors to that provided by owners. It indicates who is the major risk-bearer in this business. That is, if the D/E ratio is 10:1, it means that creditors have $10 invested in this business for every $1 that the owner has invested. Since the owner is making the decisions, the creditor in this case is in an extremely precarious position. The creditors in this case stand to lose 10 times as much as the company's owners. Therefore, the owner might be more willing to take more speculative risks.

Conversely, if the ratio is 1:10, it means that the owner has more to lose. The creditors for this type of company would feel safer knowing the owner has a bigger personal stake. From a creditor's standpoint, a lower D/E ratio is better. A long-term creditor tends to be skeptical of borrowers' good intentions or judgment when the company is highly leveraged or is seeking new funds that will cause it to become highly leveraged. Owners should use this ratio to view their companies as a long-term creditor would, and should seek to keep the debt-to-equity relationship within industry norms.

K-L Fashions' D/E is .6 ($685,740 ÷ $1,168,260), compared with a median D/E of .6 for the industry. This would normally indicate relative financial strength. However, we should note that those liabilities that do not need to be paid or settled in the near term, constitute only about 11 percent of total liabilities. Except for advance payments on orders the other 89 percent are short-term obligations. Consequently, this ratio is less important in this case than the short-term solvency measures -- even to the company's long-term creditors. This reinforces the concept that ratio analysis should be applied with common sense.

10. *Are earnings and cash flow sufficient to cover interest payments and provide for some principal repayment?* **-** The *Times Interest Earned (TIE)* [Income + (Interest + Taxes) ÷ Interest Expense] ratio may be used to help answer this question. Note that this ratio uses income before interest and income taxes are subtracted because this is the amount of income available to cover interest. The larger the number, the easier it will be for the debtor company to suffer an earnings depression, and still make its interest payments. The TIE measures the bank's safety in terms of the likelihood that it will continue to receive periodic interest payments. The TIE does not, however, indicate how well *total* debt payments are covered.

The *Cash Flow to Total Liabilities* [Operating Cash Flow ÷ Total Liabilities] ratio is preferred by many bankers as a measure of earnings power relative to all debt. This debt coverage ratio depicts a company's debt repayment capability and is one of the more important indexes of long-term solvency. The cash flow figure in the numerator refers to net cash provided by operations as reported on the statement of cash flows in Figure 2. For small companies that don't prepare a cash flow statement, operating cash flow can be estimated by taking income before interest and taxes and adding back depreciation and other significant non-cash charges.

The industry average for this ratio is not likely to serve as a particularly useful benchmark. Bankers are more interested in the trend of the ratio. Increasing levels of debt without commensurate increases in cash generated by profitable operations is a sure sign of financial problems ahead. This could occur if the ROA is less then the borrowing rate.

K-L Fashions' earnings before interest and taxes is $259,610, compared with interest expense of $10,180. Thus, its interest coverage in terms of the times interest earned ratio is 25.5 times [$259,610 ÷ $10,180]. Although this ratio has declined substantially over the past three years, it has not declined as sharply as earnings because interest charges have declined. Furthermore, it is still quite large, indicating to creditors that interest payments are well covered.

K-L Fashions' cash flow statement shows that net cash provided by operations during fiscal year 2005 was $512,020, a substantial increase over both 2004 and 2003. Compared to the downward trend in net income, the cash flow from operations suggests the company has been reporting a large amount of non-cash expenses like depreciation and amortization. A likely cause in the increased non-cash charges is the large increases in land and buildings and in fixtures and equipment. Furthermore, it appears from the balance sheet that the expansion was financed by internally generated cash and without the assistance of long-term creditors. As these investments became productive, the company probably began depreciating them, resulting in the downward trend in net income. When these factors are considered, the decline in net profit margins does not look so serious.

The *cash flow to total liabilities ratio* [Operating Cash Flow ÷ Total Liabilities] is therefore $512,020 ÷ $685,740 = 74.7 percent. Standing alone, this ratio suggests that the company is conservatively capitalized and generates sufficient cash to cover its future obligations. The ratio is particularly healthy considering the fact that more than half of total debt is in the form of accounts payable, used to finance inventory and receivables.

Three Case Studies

Case 1: Is a critical supplier in good financial condition?

A manager should not overlook the use of financial statement data in selecting key suppliers of raw material and component parts if the information is available. For small companies that depend upon other companies for critical raw materials or merchandise, the ability to determine the availability of those items could mean the difference between success and failure. This is particularly important for the smaller companies that do not have the purchasing clout of their larger competitors. Yet this is one of the most overlooked aspects of inventory management in most companies.

One of the key criteria to consider in evaluating potential or existing suppliers is financial health. Unless a suppler has staying power, all of its other fine qualities won't mean much. Here we look to the supplier's financial statements for some answers. Four easily obtainable ratios are probably sufficient to evaluate a supplier's financial health adequately: *(1) profit margin*, *(2) inventory turnover*, *(3) quick ratio* and *(4) debt-to-equity*.

The *profit margin* (return on sales) should be used in evaluating a supplier the same way it was used to evaluate the manager's own company. It should be compared with other companies in the industry to evaluate the supplier's relative operating efficiency. More important, however, is to look at the trend of this ratio. Even if the current year's profit margin is within industry norms, a declining ratio could indicate that the supplier is facing serious competition or even a financial crisis.

The *inventory turnover ratio* can be used to determine whether the supplier's inventories are moving, on the one hand, and whether its inventory levels may be too low, on the other. A key is to consider the industry average. A low turnover could indicate that inventory is not moving, leading to a future liquidity crisis. An exceptionally high turnover could indicate that the supplier is maintaining very low inventory levels, which could mean that goods will not be available when a manager orders them.

The observation that high turnover could be either good or bad reinforces the point that ratio computation is the starting point for financial statement analysis -- not the final point. Out-of-line ratios are "red flags" that call for an explanation. Any ratio that is too high or too low needs to be examined closely for its causes.

The *quick* and *debt-to-equity ratios* are used extensively by short-term creditors and long-term creditors, respectively, to assess a debtor's liquidity and debt structure. Although we are not concerned with being paid on time by the supplier, we want reasonable assurance that the supplier can discharge his financial obligations, both short-term as well as long-term, and will not be forced into bankruptcy. As noted earlier, the current ratio provides only a rough measure of the supplier's short-term debt paying ability. The quick ratio is a better test and usually is just as easily obtainable from the supplier's balance sheet. Cash and cash equivalents (marketable securities), plus receivables, are frequently listed separately among the current assets. For this purpose, we would be satisfied with a quick ratio of 1.0 or higher, or at least equal to the industry norm.
The *debt-to-equity ratio* provides an indication of how heavily the supplier is in debt, relative to the amount of capital provided by the owners. The higher the ratio, the more concerned one should be about the long-term

welfare of the supplier. As a customer, we probably wouldn't be too concerned as long as the supplier's D/E ratio is less than 100 percent, which would indicate equal amounts of debt and equity capital.

How would we assess K-L Fashions if it were a potential supplier or raw materials or component parts instead of a direct mail retailer? If we want to establish a relationship with this company and rely on it to make timely deliveries of critical items we want to be sure it is in good financial condition. We have suggested four ratios that should be adequate for this purpose: the *profit margin*, *inventory turnover*, *quick ratio* and *debt-to-equity ratio*. Because we have calculated these ratios already, we will simply comment on them in the present context.

Recall that the *profit margin* was below average for the type of company involved and was declining. Looking at this measure alone, one might conclude that the supplier will soon be facing a serious financial crisis. However, the *inventory turnover ratio* was only slightly below the industry average and does not show a definite trend. Still, the inventory has been turning over only once every 80 days or so. This relatively low turnover ratio appears to be due primarily to a higher-than-average level of inventory as a percent of total assets. This could be viewed as favorable from our standpoint as customer, since high inventory levels should result in fewer back orders. However, high levels of slow moving inventories reduce the liquidity of a company's current assets and working capital.

The *quick ratio* of .5 times is substantially below the industry average -- and the general benchmark -- of 1.0 times. Since we are a customer in this case, we are not concerned about being paid by this company; but we might wonder about the company's ability to discharge its short-term debts as they come due. On the other hand, the *debt-to-equity ratio* of .6 times indicates that the company is not highly leveraged and still has a fair amount of financial flexibility. The company can probably obtain additional long-term funds to make up for near-term shortfalls. So, while the first three ratios indicate that our potential supplier may be facing a liquidity squeeze, the last indicates that the company's total debt position is relatively solid. On balance, if this were one of a limited number of potential suppliers of critical materials, we would find little difficulty in establishing long-term commitments.

We based our evaluation of K-L Fashions solely upon information reported in its financial statements. Although we attempted to address the questions from the standpoint of an insider making a self-evaluation, we clearly do not have all of the specific knowledge that is available to management. Thus, while we might have expressed concern about the company's liquidity and profitability--particularly recent trends in these measures--it is possible that management has everything under control. The point of the illustration is that managers can use ratio and trend analysis to uncover danger signs and to point to areas that need attention.

Case 2: When sales decline, what can I do to weather the storm? Can I do anything to change it around? - For this case, there are two broad questions to examine:

(1) Looking back, did any of management's decisions cause the downturn?
(2) Looking forward, what can management do to get through the slump, and what can management do to reverse the slump?

In the previous case, financial statement analysis was used to answer a question and help make a decision. For this case, we use financial statement analysis to help manage the crisis, or point to sources for possible intervention.

What caused sales to go down? Obviously, external factors can cause sales slumps. However, it should be equally obvious that management's decisions can also affect sales. Where do these show up in financial statement analysis?

- Sales returns: Although not discussed above, if sales returns as a percentage of sales increases, it could be a sign of poor product quality or general customer dissatisfaction. If product quality diminishes, you could be losing not just the current sales, but also sales well into the future. If you find that you are sending more raw materials or products back to your supplier, it could mean that too many inferior items are slipping through, and the quality of products you make or sell is suffering. Lost sales due to poor quality products can be very hard to turn around.

- Net profit margin: While it's always nice to have a high net profit margin, a profit margin that grows too quickly could be a signal that some financial corners have been cut. For example, continuing with the sales return discussion, you could save money by buying cheaper goods. This would show up as a lower cost of goods sold, and a higher margin. However, cheaper goods could then result in dissatisfied customers and lost sales. You could also increase the profit margin by cutting advertising expense. This may also result in lower sales. Finally, a high profit margin could be a sign that prices are artificially high.

- Accounts receivable turnover: It's nice to have a fast turnover of receivables. However, like the profit margin, a turnover ratio that changes too dramatically or too fast, could be a signal for lost sales. Potential sales could be lost if your sales instrument's credit and collection policy is too tight. For example, American Express requires the total balances on its charge cards to be paid upon receipt of the invoice. As a result of this policy, some customers prefer to pay with Visa, which allows periodic repayment, rather than with American Express. In American Express' case, their repayment policy might improve collections, but it also may result in lost sales.

Looking forward, what can management do to correct the declining sales pattern? Obviously, the first tack would be to fix any problems identified by the previous analysis. However, if this yields little help, there are other things management can do.

- Inventory turnover: This is perhaps the most important ratio to monitor when sales decline. By effectively managing inventory levels, a manager can minimize the cost of lower sales. Because it costs money to buy and hold inventory, maintaining or increasing inventory turnover (by buying less and letting the stock run down) can save money and prevent losses.

Case 3: I can't pay my bills on time. What should I do first?

As in Case 2, we can look to the financial statements for causes and cures. You may have a liquidity problem if the current and quick ratios are too low. The causes of cash flow problems include: declining sales, poor pricing, poor accounts receivable turnover and poor inventory turnover. Poor inventory turnover also means you are buying inventory, but that inventory isn't selling quickly enough.

- Net profit margin: Looking at the net profit margin can give you insights on whether or not the product is priced adequately to cover overhead expenses. In the K-L Fashions case, sales were increasing, but the profit margin was decreasing. If the product is priced too low, then sales revenues may not be sufficient to cover all of the other operating expenses, like advertising, salaries, etc.

- Inventory turnover: Even small changes in turnover ratios can have a significant impact on the earnings of a company. For example, in the K-L Fashions illustration, inventory turned over every 81.5 days. If K-L Fashions could reduce inventory and reduce turnover to the industry average of 72 days, then average inventory would decline to $704,825 [72 days x $3,573.070 (cost of goods)/365 days = $704,825] from $797,860. That amounts to $93,035 that could be invested elsewhere and save $9,304 in interest costs (using a 10 percent interest rate).

- Accounts payable turnover: Similarly, the accounts payable turnover is presently 33 days. If K-L Fashions slows payment down by just one day, average accounts payable would rise to $321,799 [34 days x $3,454,610 (purchases)/365 = $321,799] from $311,060. The difference of $10,739 translates into a $1,074 interest savings.

To improve cash flow from receivables without adjusting your credit or collection policy, consider borrowing against the receivables through an assignment or factoring arrangement.

Figure 1. Summary Table of Financial Ratios

Ratio	Formula	What it measures	What it tells you
Owners:			
Return on Investment (ROI)	$\frac{\text{Net Income}}{\text{Average Owners' Equity}}$	Return on owners' capital When compared with return on assets, it measures the extent to which financial leverage is being used for or against the owner.	How well is this company doing as an investment?
Return on Assets (ROA)	$\frac{\text{Net Income}}{\text{Average Total Assets}}$	How well assets have been employed by management.	How well has management employed company assets? Does it pay to borrow?
Managers:			
Net Profit Margin	$\frac{\text{Net Income}}{\text{Sales}}$	Operating efficiency. The ability to create sufficient profits from operating activities.	Are profits high enough, given the level of sales?
Asset Turnover	$\frac{\text{Sales}}{\text{Average Total Assets}}$	Relative efficiency in using total resources to product output.	How well are assets being used to generate sales revenue?
Return on Assets	$\frac{\text{Net Income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Total Assets}}$	Earning power on all assets; ROA ratio broken into its logical parts: turnover and margin .	How well has management employed company assets?
Average Collection Period	$\frac{\text{Average A/R} \times 365}{\text{Annual Credit Sales}}$	Liquidity of receivables in terms of average number of days receivables are outstanding.	Are receivables coming in too slowly?
Inventory Turnover	$\frac{\text{Cost of Goods Sold Expense}}{\text{Average Inventory}}$	Liquidity of inventory; the number of times it turns over per year.	Is too much cash tied up in inventories?

Average Age of Payables	Average A/P x 365 Net Purchases	Approximate length of time a firm takes to pay its bills for trade purchases.	How quickly does a prospective customer pay its bills?
Short-Term Creditors			
Working Capital	Current Assets – Current Liabilities	Short-term debt-paying ability.	Does this customer have sufficient cash or other liquid assets to cover its short-term obligations?
Current Ratio	Current Assets Current Liabilities	Short-term debt-paying ability without regard to the liquidity of current assets.	Does this customer have sufficient cash or other liquid assets to cover its short-term obligations?
Quick Ratio	Cash+Mktble Sec.+A/R Current Liabilities	Short-term debt-paying ability without having to rely on sale of inventory.	Does this customer have sufficient cash or other liquid assets to cover its short-term obligations?
Long-Term Creditors: Debt-to-Equity Ratio	Total Debt Total Equity	Amount of assets provided by creditors for each dollar of assets provided by owner(s)	Is the company's debt load excessive?
Times Interest Earned	Net Income+(Interest+Taxes) Interest Expense	Ability to pay fixed charges for interest from operating profits.	Are earnings and cash flows sufficient to cover interest payments and some principal repayments?
Cash Flow to Liabilities	Operating Cash Flow Total Liabilities	Total debt coverage. General debt-paying ability.	Are earnings and cash flows sufficient to cover interest payments and some principal repayments

Figure 2. K-L Fashions, Inc. Financial Statements
Income Statement
For the year ended January 31:

(Dollars in thousands)	2005	2004	2003	2002
Net Sales	$6,039,750	$5,452,010	$4,558,060	$3,362,910
Cost of Goods	3,573,070	3,135,730	2,616,710	1,903,480
Gross Profit	2,466,680	2,316,280	1,941,350	1,459,430
Selling, General and Administrative Expenses (including depreciation)	2,221,540	1,849,100	1,434,860	1,076,990
Income from Operations	245,140	467,180	506,490	382,440
Other Income (expenses):				
Interest and other income	14,470	19,510	27,250	14,410
Interest Expense	(10,180)	(13,990)	(12,320)	(13,570)
Income Before Income Taxes	249,430	472,700	521,420	383,280
Income Tax Provision	102,000	181,990	198,600	162,080
Net Income	$147,430	$290,710	$322,820	$221,200
(As a Percentage of Sales)				
Net Sales	100.0%	100.0%	100.0%	100.0%
Cost of Goods	59.2	57.5	57.4	56.6
Gross Profit	40.8	42.5	42.6	43.4
Selling, General and Administrative Expenses (including depreciation)	36.8	33.9	31.5	32.0
Income from Operations	4.0	8.6	11.1	11.4
Other Income (expenses):				
Interest and other income	.3	.4	.6	.4
Interest Expense	(.2)	(.3)	(.3)	(.4)
Income Before Income Taxes	4.1	8.7	11.4	11.4
Income Tax Provision	1.7	3.4	4.3	4.8
Net Income	2.4%	5.3%	7.1%	6.6%

Figure 2. (Cont.) K-L Fashions, Inc. Financial Statements
Balance Sheet
January 31:

(Dollars in thousands)	2005	2004	2003	2002
Assets				
Current Assets:				
Cash and Cash Equivalents	$272,640	$82,540	$321,390	$281,750
Receivables	12,090	3,480	7,550	2,740
Inventory	738,630	857,090	668,200	464,440
Prepaid Expenses	54,880	54,030	39,670	33,630
Total Current Assets	1,078,240	997,140	1,036,810	782,560
Property, Plant & Equipment (at cost):				
Land and Buildings	531,270	383,350	312,670	151,140
Fixtures and equipment	476,460	411,230	251,920	219,740
Leasehold improvements	16,460	15,120	12,340	9,080
Construction in progress	----	46,370	32,800	6,740
Less Accumulated Depreciation	(248,430)	(183,890)	(135,020)	(99,470)
Property, Plant & Equipment, net	775,760	672,180	474,710	287,230
Total Assets	$1,854,000	$1,669,320	$1,511,520	$1,069,790
Liabilities and Stockholders' Equity				
Current Liabilities:				
Accounts Payable	$377,970	$244,150	$259,040	$212,223
Advance Payment on Orders	4,460	2,030	3,500	4,530
Income Taxes Payable	70,800	53,020	103,970	53,940
Other Current Obligations	154,510	139,950	148,790	117,900
Total Current Liabilities	607,740	439,150	515,300	388,600
Long-Term Debt	78,000	84,130	76,740	86,670
Stockholders' Equity:				
Common Stock; 20.1M, 20.1M &20.0M Shares, respectively, at par	2,010	2,010	2,000	2,000
Additional Capital, net	311,360	307,810	293,080	223,080
Retained Earnings	983,810	875,160	624,400	341,666
Less Treasury Stock, at cost	(128,920)	(38,940)	----	----
Total Stockholders' Equity	1,168,260	1,146,040	919,480	566,740
Total Liabilities and Equity	$1,854,000	$1,669,320	$1,511,520	$1,069,790

Figure 2. K-L Fashions, Inc. Financial Statements
Statement of Cash Flows
(Major component totals only)
For the year ended January 31:

(Dollars in thousands)

	2005	2004	2003	2001
Net cash flows from operating activities	$ 512,020	$ 95,200	$ 255,600	$ 217,030
Net cash flows from investing activities	(175,410)	(250,560)	(226,690)	(52,310)
Net cash flows from financing activities	(146,510)	(83,490)	10,730	(43,290)
Net increase (decrease) In cash and cash equivalents	$ 190,100	$(238,850)	$39,640	$121,430

Additional Readings

These readings are intended to accompany "Financial Statements as a Management Tool", an article from the Small Business Forum, and are intended to supplement, not contradict or alter the information contained in the Small Business Forum article.

1. Uncollectible Notes and Receivables

Most retail companies (and some service companies as well) make a large portion of their sales on account rather than for cash. Sometimes, when a customer falls behind in the payment of their charges, they may ask for a note to give them a longer time to repay the debt. Whether these unpaid accounts are held as receivables or as notes, they need to be accounted for and eventually discounted. There are two methods of accounting for receivables that are thought to be uncollectible. The *allowance method* provides in advance for them, and the *direct write-off (or charge-off) method* recognizes the expense only when certain accounts are judged uncollectible. The operating expense incurred because of the failure to collect is called an expense or loss from *uncollectible accounts (or notes)*, *doubtful accounts*, or *bad debts*.

Most large businesses estimate the current uncollectible portion of their trade receivables and use the allowance method. The provision for these future uncollectibles is made by an adjusting entry at the end of each fiscal period. Two accounts are carried on the books to allow this adjustment. There is a debit to Uncollectible Accounts Expense and a matching credit to Allowance for Doubtful Accounts. The uncollectible accounts expense is then reported on the income statement as an administrative expense, and at the end of the fiscal period, the balance in the Uncollectible Accounts Expense is closed to Income Summary.

When a company sells most of its goods or services on a cash basis, the amount of its receivables is likely to represent only a small portion of its current assets, and the uncollectibles accounts is small in relation to revenue. Therefore it is acceptable to delay recognition of the bad debt until the account is actually deemed worthless. In these cases, a simple direct write-off is used. The Uncollectible Accounts Expense is debited, and Accounts Receivable is credited.

Since Accounts Receivable is a part of current assets, and therefore a part of many ratios used to judge the health of the company, it is important to maintain close supervision of uncollectible accounts.

2. Cash Flows

The comparison of cash flow statements, over a period of time, offers a more realistic measurement tool than accounting profits. It is only cash flow that the company actually receives that can be reinvested. Accounting profits are shown when they are earned rather than when the money is actually in hand. Therefore, cash flows more correctly reflect the true timing of benefits and costs.

Cash flows are generally divided into three main categories: (1) cash flow from operations, (2) investments made by the company, and (3) financing transactions, such as a stock issue or the acquiring of debt. The data needed to construct a cash flow statement come from the beginning and ending balance sheets of an accounting period and the corresponding income statement at the end of the same period. (A sample cash flow statement is included as Figure 4.)

3. Capital Requirements

One of the methods to determine the impending need for capital is to examine the Cash Flow Projection with the assumption that there has been no capital injection at this time. The projected cash flow statements must be carefully completed and include ALL cash needs; such as working capital, all fixed assets, and inventory increases. If a capital need exists, the end of the period cash balances will decline continuously until the break-even point is reached and the ending cash balance begins to climb. By this method, the capital needed is an amount which equals or exceeds the lowest cash balance in the projections. If this amount is invested as equity, the amount stands. If the amount is received as debt, the total must be increased to reflect the cash required for loan interest and principal payment.

If there is already some cash on hand and more can be generated effectively by internal means; such as inventory reduction and acceleration of accounts receivable collection, then the outside capital requirement may be reduced.

4. Sources of Industry Standards

Dun & Bradstreet, Inc. is a widely-known and used source of industry average ratios. D&B provides fourteen ratios calculated for a large number of industries. The complete information includes the fourteen ratios, with the interquartile ranges, for 125 lines of business activity based on their financial statements. The 125 types of business activity consist of 71 manufacturing and construction categories, 30 categories of wholesalers, and 24 categories of retailers.

Another group of useful ratios can be found in the annual Statement Studies compiled and published by Robert Morris Associates, which is the national association of bank loan officers. These are representative averages based on financial statements received by banks in connection with loans made. Eleven ratios are computed for 156 lines of business.

The Federal Trade Commission (FTC) publishes quarterly financial data on manufacturing companies. Both balance sheet and income statement data are developed from a systematic sample of corporations. The reports are published perhaps six months after the financial data have been made available by the companies. They include an analysis by industry groups and by asset size and financial statements in ratio form (or common-size analysis) as well. The FTC reports are a rich source of information and are frequently used for comparative purposes.

Credit departments of individual firms compile financial ratios and averages on their (1) customers in order to judge their ability to meet obligations and (2) suppliers in order to evaluate their financial ability to fulfill contracts. The First National Bank of Chicago, for instance, compiles semiannual reports on the financial data for finance companies. The NCR, Inc. gathers data for a large number of business lines.

Financial ratios for many industries are compiled by trade associations and constitute an important source to be checked by a financial manager seeking comparative data. These averages are usually the best obtainable. In addition to balance sheet data, they provide detailed information on operating expenses, which makes possible an informed analysis of the efficiency of the firms.

5. Limitation to Ratio Analysis

Although ratios are exceptionally useful tools, they do have limitations and must be used with caution. Ratios are constructed from accounting data, and accounting data are subject to different interpretations and even to manipulation. For example, two firms may use different depreciation methods or inventory valuation methods, and depending on the procedures followed, reported profits can be raised or lowered. Similar differences can be encountered in the treatment of research and development expenditures, pension plan costs, mergers, product warranties, and bad-debt reserves. Further, if firms use different fiscal years, and if seasonal factors are important, this can influence the comparative ratios. Thus, if the ratios of two firms are to be compared, it is important to analyze the basic accounting data upon which the ratios were based and to reconcile any major differences.

A financial manager must also be cautious when judging whether a particular ratio is "good" or "bad" and in forming a composite judgment about a firm on the basis of a set of ratios. For example, a high inventory turnover ratio could indicate efficient inventory management, but it could also indicate a serious shortage of inventories and suggest the likelihood of stock-outs. Further, there is nothing sacred about the industry average figures--after all, any management worth its salt will try to be better than average.

Ratios, then, are extremely useful tools. But as with other analytical methods, they must be used with judgment and caution, not in an unthinking, mechanical manner.

6. Break-Even Analysis-Dollar Sales

Calculating break-even points on the basis of dollar sales instead of on units of output is frequently useful. The main advantage of this method, is that it enables one to determine a general break-even point for a firm that sells many products at varying prices. Furthermore, the procedure requires a minimum of data. Only three values are needed: sales, fixed costs, and variable costs. Sales and total-cost data are readily available from annual reports of corporations and from investment manuals. Total costs must then be segregated into fixed and variable components. The major fixed charges (rent, interest, depreciation, and general and administrative expenses) may be taken from the income statement. Finally, variable costs are calculated by deducting fixed costs from total costs. Break-even occurs when the contribution margin equals fixed costs. Contribution margin is calculated by subtracting variable costs from total sales. [A formula for the break-even point in terms of sales dollars needed is: **s = fc / (1 - vc / s)** or **fc / gp** -- stated as a percent of sales; where **s**=sales, **fc**=fixed costs, **vc**=variable costs, and **gp**=gross profit] In business terminology, a high degree of leverage implies that a relatively small change in sales results in a large change in profits. We can divide leverage into two categories: financial leverage and operating leverage.

The significance of the degree of operating leverage is clearly illustrated by Figure 3. Three firms, A, B, and C, with differing degrees of leverage, are contrasted. Firm A has a relatively small amount of fixed charges--it does not have much automated equipment, so its depreciation cost is low. Note, however, that A's variable cost line has a relatively steep slope, denoting that its variable costs per unit are higher than those of the other firms. Firm B is considered to have a normal amount of fixed costs in its operations. It uses automated equipment (with which one operator can turn out a few or many units at the same labor cost) to about the same extent as the average firm in the industry. Firm B breaks even at a higher level of operations than does firm A. At a production level of 40,000 units, B is losing $8,000 but A breaks even.

On the other hand, firm C has the highest fixed costs. It is highly automated, using expensive, high-speed machines that require very little labor per unit produced. With such an operation, its variable costs rise slowly. Because of the high overhead resulting from charges associated with the expensive machinery, firm C's break-even point is higher than that for either firm A or firm B. Once firm C reaches its break-even point, however, its profits rise faster than do those of the other firms.

7. Limitation of Break-even Analysis

Break-even analysis is useful in studying the relations among volume, prices, and costs; it is thus helpful in pricing, cost control, and decisions about alternative expansion programs. It has limitations, however, as a guide to managerial actions.

Linear break-even analysis is especially weak in what it implies about the sales possibilities for the firm. Any linear break-even chart is based on a constant sales price. Therefore, in order to study profit possibilities under different prices, a whole series of charts is necessary, one chart for each price.

With regard to costs, break-even analysis is also deficient--the relations indicated by the chart do not hold at all outputs. As sales increase, existing plant and equipment are worked to capacity; both this situation and the use of additional workers and overtime pay cause variable costs to rise sharply. Additional equipment and plant space are required, thus increasing fixed costs. Finally, over a period ,the products sold by the firm change in quality and quantity. Such changes in product mix influence the level and slope of the cost function. Linear break-even analysis is useful as a first step in developing the basic data required for pricing and for financial decisions. But more detailed analysis is required before final judgments can be made.

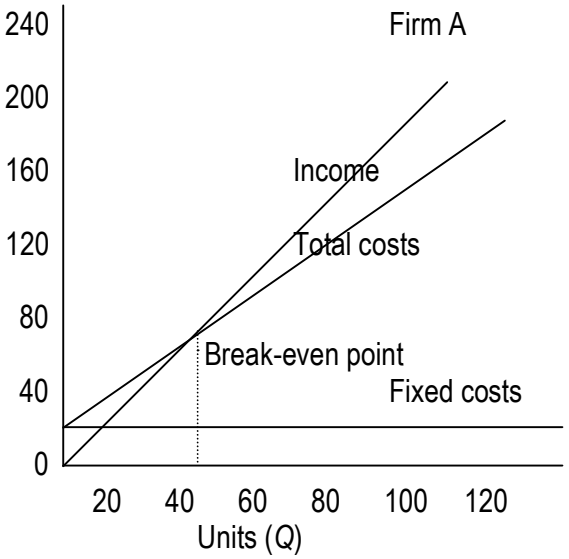
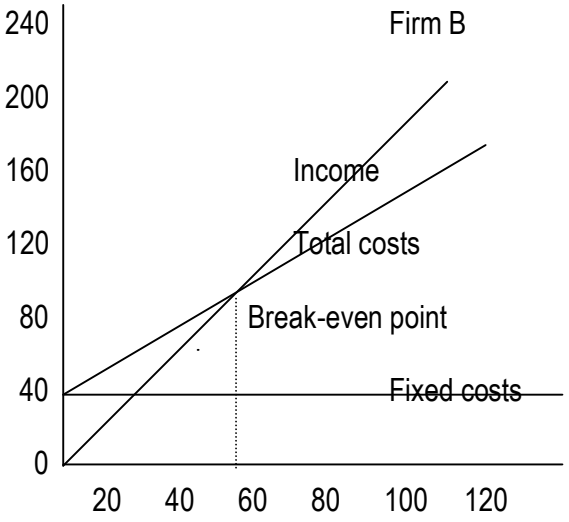


FIGURE 3.

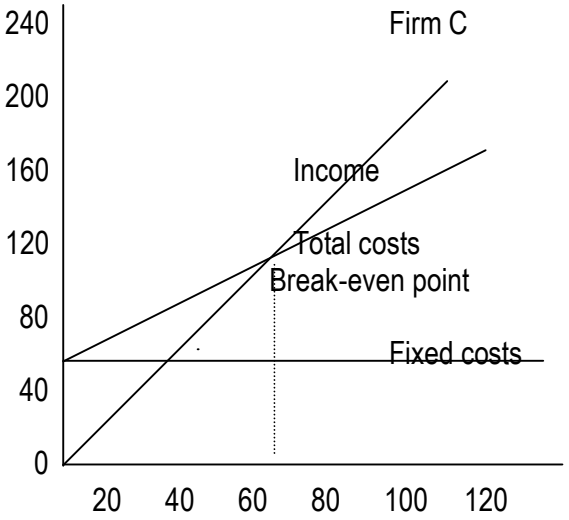
Selling Price = $2.00
Fixed Costs = $20,000
Variable Costs =$1.50 Q

Units sold(Q)	Sales	Costs	Profit
20,000	$ 40,000	$ 50,000	-$10,000
40,000	80,000	80,000	0
60,000	120,000	110,000	10,000
80,000	160,000	140,000	20,000
100,000	200,000	170,000	30,000
120,000	240,000	200,000	40,000



Selling Price = $2.00
Fixed Costs = $40,000
Variable Costs =$1.20 Q

Units sold(Q)	Sales	Costs	Profit
20,000	$ 40,000	$ 64,000	-$24,000
40,000	80,000	88,000	- 8,000
60,000	120,000	112,000	8,000
80,000	160,000	136,000	24,000
100,000	200,000	160,000	40,000
120,000	240,000	184,000	56,000



Selling Price = $2.00
Fixed Costs = $60,000
Variable Costs =$1.00 Q

Units sold(Q)	Sales	Costs	Profit
20,000	$ 40,000	$ 80,000	-$40,000
40,000	80,000	100,000	- 20,000
60,000	120,000	120,000	0
80,000	160,000	140,000	20,000
100,000	200,000	160,000	40,000
120,000	240,000	180,000	60,000

Figure 4. - Sample Cash Flow Statement (without numbers):

Cash flows from operations	
Cash inflows received from customers	
Net sales	$xxx,xxx
Less change in accounts receivable	- x,xxx
Cash inflows received from customers	$xxx,xxx
Cash paid to suppliers	
Cost of goods sold	$xxx,xxx
Plus change in inventory	Xx,xxx
Less change in accounts payable	- xx,xxx
Cash paid to suppliers	$xxx,xxx
Other operating cash outflows and interest payments	
Marketing expenses	$ xx,xxx
General and administrative expenses	Xx,xxx
Less change in accrued expenses	- xxx
Interest expense	Xx,xxx
Less change in interest payable	- xxx
Other operating cash outflows and interest payments	$xxx,xxx
Cash tax payments	
Provision for taxes in the income statement	$ xx,xxx
Less change in accrued taxes	- x,xxx
Cash tax payments	$ xx,xxx
Total cash flows from operations	$ xx,xxx
Cash flows --- investment activities	
	$ xx,xxx
Purchase of fixed assets	
Purchase of other current assets	Xxx
Purchase of patents	Xx,xxx
Net cash used for investments	$xxx,xxx
Cash flows --- financing activities	
	$ xx,xxx
Proceeds from long-term debt	
Common stock dividends	- xx,xxx
Net cash provided (used) by financing activities	$ xx,xxx
Total cash flows (change in cash in balance sheets)	$ x,xxx

Conclusion

Compiling, analyzing, and understanding financial statements provides business owners one of the most important tools for reducing the considerable risk involved in starting and growing a business. The comparison of financial ratios to industry standards is, perhaps, one of the best uses of financial information, as it allows the business owner to compare the performance of his or her business with other like businesses.

In addition to providing information to owners critical for their own decision making, the accuracy of financial statements will impact the business' tax obligations and opportunities to obtain equity and/or debt financing. Careful record keeping leads to accurate financial statements, thereby reducing the business' tax burden. Business owners have the opportunity to compare their financial ratios with industry standards before applying for loans, thereby giving them the opportunity to correct any problems that could lead to the rejection of their business loan application or equity offering.

Sources of Financial Analysis Information

Information from SBA on understanding financial statements. Includes SBA's templates. http://www.sba.gov/managing/financing/statement.html

The Interpretation of Financial Statements, Benjamin O. Graham, Spencer B. Meredith.

The Analysis and Use of Financial Statements, Gerald I. White, Ashwinpaul C. Sondhi, Haim D. Fried.

Securities and Exchange Commission: sec.gov/edgar.html

Financial and Operating Results of Department and Specialty Stores, published by the National Retail Merchants Association. This is an annual list of detailed financial information.

Standard and Poor's industry reports for a fee: standardandpoors.com is. Some colleges and universities may have a subscription.

National Venture Capital Association nvca.org

Securitiesdata.com

Proquest Direct

Value Line Investment Survey

Official Guide to American Incomes

Consumer Expenditure Survey

Federal Reserve Bulletin

International Financial Statistics

Bloomberg Database

Economy.com has links to nearly a million sources of economic and financial data on industries, consumers, and government statistics. economy.com/freelunch/

Active Money, provided by the Columbus Enterprise Development Corporation. Active Money takes one through the process of building financial projections in a clear and simple way.cedcorp.com/activemoney/start_cd.htm

entreworld is the Kauffman Center for Entrepreneurial Leadership, which provides a variety of resources, including the financial benchmarking system at .businessekg.com

Pratt's Guide to Venture Capital Sources is published by Venture Economics. This is a list of venture capital companies, along with their investment criteria and areas of focus.

bankrate.com provides information on bank lending, current rates and credit cards.

toolkit.cch.com is the Commerce Clearing House, which provides model spreadsheets, sample business plans, reports, and legal and tax information.

moneyhunter.com

Dun & Bradstreet: http://www.dnb.com/us/ and http://smallbusiness.dnb.com/

RMA (Risk Management Association) Annual Statement Studies http://www.rmahq.org/

Studyfinance.com provides a free, self-paced tutorial on basic financial statements. It introduces basic financial statements and financial statement concepts.

Women's Business Development Center tutorial, Understanding Basic Financial Statements
http://www.onlinewbc.gov/docs/finance/fs_intro.html

American Express:
http://home3.americanexpress.com/smallbusiness/Landing/informyourdecisions.asp?open_home=informbhead&open_pthome=artdisc_gbutton

Internal Revenue Service: Includes an online classroom for their Small Business Tax Workshop
http://www.irs.gov/businesses/small/index.html

IRS Small Business Tax Workshop locations in Florida:
http://www.irs.gov/businesses/small/article/0,,id=99547,00.html