

Financial Statement Analysis

INTRODUCTION

Sadly, it is common to hear entrepreneurs say, “I do not know anything about finance, because I was never good with numbers. Therefore, I focus on my product and let someone else worry about the numbers.” Someone with such an attitude can never achieve successful high-growth entrepreneurship. Financial statement analysis is not brain surgery! Everyone can understand it. In fact, no matter how distasteful or uncomfortable it might be to the high-growth entrepreneur, he must learn and use financial statement analysis. Finance is like medicine. No one likes it because it usually tastes awful, but everyone knows that it is good for you.

PROACTIVE ANALYSIS

Entrepreneurs must engage in proactive analysis of their financial statements to better manage their company and influence the business decisions of the company’s managers, as well as attract capital from investors and creditors.¹

Financial statements must be used as tangible management tools, not simply as reporting documents. While it is not required that the entrepreneur be able to develop these statements herself—a job that is done by the CFO—she must be able to completely understand every line item. The entrepreneur who cannot do this will have a much more difficult time growing the company and raising capital.

For example, one of the fundamentals of finance says that accounts receivable (A/R) and inventory should not grow at an annual rate faster than revenue growth. If they do, it is a sign that the company's working capital is being depleted because the accounts receivable and inventory represent a drag on a company's cash.

A case in point: The management team at Lucent Technologies failed to do a proactive analysis of this relationship. The result? The stock price declined 30 percent shortly after the company reported its 1999 financial results. The results showed that compared with the previous year, revenues grew an impressive 20 percent. Unfortunately, A/R and inventory grew 41 percent and 54 percent, respectively!

Another problem for entrepreneurs who do not analyze their financial statements proactively is that these entrepreneurs also risk being taken advantage of or exploited. There are numerous accounts of companies losing money to employees who were stealing products and cash. In many instances, the theft was not identified immediately because the owners excluded themselves from all financial statement analysis. Not surprisingly, many of the thieves are bookkeepers, accountants, accounts receivable and payable clerks, and CFOs. All of the aforementioned are positions intimately involved in the company's financings. There's a lesson here: thieves do not always look like scumbags! Heck, if they did, you would not have hired *that* person in the first place.

Automated Equipment Inc. is a family-run manufacturing business in Niles, Illinois. The company's bookkeeper was a friendly 35-year-old woman who was inflating payouts to vendors and then altering the names on the checks and depositing them in accounts under her control. It took the company four years to discover the embezzlement, and by then the woman had stolen nearly \$610,000, leaving the company in near financial ruin. Among other things, the bookkeeper purchased a Cadillac sport-utility vehicle, expensive clothing, and fine meats. Oh, she also put a \$30,000 addition on her home. The theft forced the company to lay off 4 of its 11 employees, including the owner's wife and a 27-year worker. By the way, the bookkeeper had a separate federal student loan conviction from her *previous* job.

Bette Wildermuth, a longtime business broker in Richmond, Virginia, has 25 years' worth of stories of business owners getting

surprised by the people they trust. Often, she's the one who catches the shenanigans when poring over financials at the time of a sale. "I was asked by the owner of a fabrication company to come talk about the possibility of selling his company. He specifically asked me to come on a Wednesday afternoon because his bookkeeper would not be there. You see he didn't want to cause her any worry over a possible job loss. After all, she'd been with his company for 15 years." Wildermuth was left alone with the books and records to try and determine a valuation. After about two hours, she said, the owner returned and proudly asked, "Did you notice that our sales are up and we're continuing to make a profit?" Wildermuth had noticed and congratulated him. "I also told him that an astute buyer would notice that and more, and that both of us would have the same question. 'Bob,' I asked, 'Why are you paying your home mortgage from the business account?' He told me that that was impossible because his mortgage had been paid off years ago." It turned out that the sweet, Norman Rockwellesque woman who had handled his finances for 15 years was robbing him blind. She was also paying her personal Visa card from the company books. "When I told him what was going on," Wildermuth remembers, "he looked like he had been punched in the stomach."

Another great example to highlight this point is the story of Rae Puccini, who, by the time she was 55 years old, had been convicted eight times over two decades for stealing money from her employers. In July 2000, while facing another conviction for the same crime, she committed suicide. Her final crime was using her position as the office manager to steal \$800,000 from her employer, Edelman, Combs & Lattuner (ECL), a prominent Chicago-based law firm that hired her in 1996. The lawsuit against her stated,

She forged signatures, cut herself "bonus" checks and transferred money from her bosses' bank account. She used the firm's American Express credit card to pay for a Caribbean cruise and a vacation at the Grand Hotel on Mackinac Island, Michigan. She also used the credit card to pay for a Mexico vacation with her boyfriend as well as groceries, flowers, furniture and liquor. Her 2000 Buick LeSabre was paid for by a \$35,000 bonus that she paid herself. Her most expensive gift to herself was the \$200,000 house that she purchased in the suburbs, using a \$42,000 check that she cut from the firm.²

How did she pull off this incredible crime? First, she created a fake résumé to hide her prison record. Second, she earned her employers' trust easily. Third, she worked long hours to create an impression that she was very dedicated to the firm. As an attorney at another law firm, where she also stole money, stated, "She ostensibly was very loyal and trusted. She came in early and stayed late."³ The final reason was that no one in the law firm was involved in the supervision and analysis of its financials. She was practically given *carte blanche*, without any checks and balances. She was finally caught when ECL partners asked her to show documentation explaining how the company's cash had been spent. When she hedged, the partners looked through her work area and found incriminating evidence.⁴

Approximately one month before her death, Puccini went to a funeral home, selected flowers, and paid for her body to be cremated. She donated many of her clothes to Goodwill and set up a postfuneral dinner at a Greek restaurant. Her final act was to type a confessional letter that included the statement, "No one knew what I was doing with the finances of ECL."⁵ She was absolutely correct.

When the entrepreneur is involved in his company's finances, such sordid stories regarding losses of cash to theft can be practically eliminated because the entrepreneur's knowledge and participation serve as a deterrent.

To utilize the financial statements as management tools, the entrepreneur must have them prepared more than once a year. Monthly financial statements developed by an outside accounting firm can be expensive. In addition, monthly statements, by definition, are short-term-focused, and their analysis may encourage entrepreneurs to micromanage and overreact. The ideal is to produce quarterly statements, which should be completed, and be in the entrepreneur's hand for analysis, no later than 30 days following the close of a quarter.

In this chapter, we will learn that the data contained in financial statements can be analyzed to tell an interesting and compelling story about the financial condition of a business. Included in the financial statement analysis discussion will be a case study. We will examine the income statement of the Clark Company to

determine what is taking place with its operations, despite the fact that we know nothing about the industry or the company's products or services. Using information provided in this statement, we will then prepare financial projections (i.e., pro formas) for the next year.

INCOME STATEMENT ANALYSIS

In terms of financial analysis, all items, including expenses and the three margins—gross, operating, and net—mentioned in Chapter 4, are analyzed in terms of percentage of revenues. As Figure 5-1 shows, the cost of goods sold (COGS) percent *plus* the gross profit percent should equal 100 percent. The COGS percent *plus* the total operating expense percent *plus* the interest expense percent *plus* the tax expense percent *plus* the net income percent should also equal 100 percent.

FIGURE 5-1

Income Statement Analysis

Total revenues	\$8,000	100.00%
COGS	2,000	25.00%
Gross margins	\$6,000	75.00%
Operating expenses		
Wages	\$1,000	12.50%
Rent	300	3.75%
Selling expenses	400	5.00%
Depreciation	500	6.25%
Amortization	300	3.75%
Total operating expense	\$2,500	31.25%
Operating profit	\$3,500	43.75%
Interest expense	200	2.50%
Profit before taxes	\$3,300	41.25%
Income tax expenses	1,320	16.50%
Net income	\$1,980	24.75%

RATIO ANALYSIS

A ratio analysis, using two or more financial statement numbers, may be undertaken for several reasons. Entrepreneurs, along with bankers, creditors, and stockholders, typically use ratio analysis to objectively appraise the financial condition of a company and to identify its vulnerabilities and strengths. As we will discuss later, ratio analysis is probably the most important financial tool that the entrepreneur can use to proactively operate a company. Therefore, the entrepreneur should review the various ratios that we discuss in this section at least quarterly, along with the three key financial reports: income statement, balance sheet, and cash flow statement. There are six key ratio categories:

- Profitability ratios
- Liquidity ratios
- Leverage (capital structure) ratios
- Operating ratios
- Cash ratios
- Valuation ratios

Table 5-1 provides a description of selected financial ratios and the formulas used to calculate them.

T A B L E 5-1

Financial Accounting Ratios

Ratio	Description	Formula
Profitability ratios	Measure earning potential.	
Gross margin percentage	Measures the gross profit margin the company is achieving on sales—that is, the profit after COGS is deducted from revenues.	$(\text{Sales} - \text{COGS})/\text{sales}$
Return on equity	Measures the return on invested capital. Shows how hard management is making the equity in the business work.	$\text{Net income}/\text{stockholders' equity}$
Net operating income	Measures income generated from operations without regard to the company's financing and taxes.	$\text{Sales expenses (excluding interest)}/\text{sales}$

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TABLE 5-1**Financial Accounting Ratios (continued)**

Ratio	Description	Formula
Net profit margin	Measures the net profit margin the company is achieving on sales.	Net profit/sales
Liquidity ratios	Measure a company's ability to meet its short-term payments.	
Current ratio	Measures whether current bills can be paid. A 2-to-1 ratio minimum should be targeted.	Current assets/current liabilities
Quick ratio (acid-test ratio)	Measures liquidity. Assesses whether current bills can be paid without selling inventory or other illiquid current assets. A 1-to-1 ratio minimum should be targeted.	(Current assets – inventory and other illiquid assets)/current liabilities
Leverage ratios	Evaluate a company's capital structure and long-term potential solvency.	
Debt/equity ratio	Measures the degree to which the company has leveraged itself. Ideally, the ratio should be as low as possible, giving greater flexibility to borrow.	Total liabilities/ stockholders' equity
Operating ratios	Focus on the use of assets and the performance of management.	
Days payable	Measures the speed at which the company is paying its bills. Ideally, one should wait to pay the bills as long as possible without negatively affecting product service or shipments from suppliers.	Accounts payable/(COGS/365)
Collection ratio ("days receivable")	Measures the quality of the accounts receivable. It shows the average number of days it takes to collect receivables. The ideal situation is to get paid as quickly as possible.	Accounts receivable/ (revenues/365)
Inventory turns	Measures the number of times inventory is sold and replenished during a time period. It measures the speed at which inventory is turned into sales.	COGS/average inventory outstanding

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TABLE 5-1**Financial Accounting Ratios (continued)**

Ratio	Description	Formula
Days inventory carried	Measures the average amount of daily inventory being carried.	$\text{Inventory}/(\text{COGS}/365)$
Cash flow ratios	Measure a company's cash position.	
Cash flow cycle	Measures the number of days it takes to convert inventory and receivables into cash.	$(\text{Receivables} + \text{inventory})/\text{COGS}$
Cash flow debt coverage ratio	Measures whether a company can meet its debt service requirements. A 1.25-to-1 ratio minimum should be targeted.	$\text{EBITDA}/(\text{interest} + \text{principal due on debt})$
Valuation ratios	Measure returns to investors.	
Price/earnings (P/E) ratio	Measures the price that investors are willing to pay for a company's stock for each dollar of the company's earnings. For example, a P/E ratio of 8 means that investors are willing to pay \$8 for every dollar of a company's earnings.	$\text{Price of stock}/\text{earnings per share}$

A company's ratios cannot be examined in a vacuum, i.e., by looking at only one year for one company. To attempt to do so renders the ratios virtually meaningless. The greatest benefit of historical and present-day ratios derived from two analytical measurements—internal and external—is the ability to do annual internal comparisons. This type of analysis will show if there are any trends within a company across time. For example, a comparison can be made of selected income statement line items across a two-year, five-year, or ten-year period. This type of analysis will help to assess the soundness of a company's activities as well as identify important trends. Basically, it allows the entrepreneur to answer the question, is my internal performance better today than it was last year, five years ago, or ten years ago? If the answer is yes, then the next question is, how did it get better? If the answer is no, then the next question is, why didn't it get better? Deeper analysis should be undertaken to determine not only why things

are getting worse but also what is making things better. If the entrepreneur knows and understands the detailed reasons why her ratios improved over time, then she can use that information for prescriptive elements of future strategic plans.

The entrepreneur should also do an external comparison of the company's ratios against those of the industry. This comparison should be against both the industry's averages and the best and worst performers within the industry. This will allow the entrepreneur to assess the company's operations, financial condition, and activities against comparable companies. (Table 5-2 shows a comparison of turnover ratios.) The successful entrepreneur knows that respecting and understanding the competition is a basic business requirement, and the first step to take toward that endeavor is to understand how you compare with the competition. Ratio analysis is one of the most objective ways to do such measurements.

TABLE 5-2**Inventory Turnover Ratios**

Store	Turnover
Wal-Mart	8.0
Target	6.6
Kohl's	4.0
Sears	3.8
J.C. Penney	3.5
Macy's	3.0

Source: 2007 company financial statements (as compiled by Reuters).

Many banks provide business loans on the condition that the company maintains certain minimum ratios, such as debt/equity, net worth, and acid test. These conditions are usually included in the covenant section of the loan agreement, and not maintaining the minimum ratios puts the company technically in default on the loan. Other investors, such as venture capitalists, may use ratio attainment as "milestones" for determining whether and when they will invest more capital. For example, they may tell the entrepreneur that his

next round of financing will occur when the company attains 50 percent gross margins for four consecutive quarters.

In addition to performing historical and present ratio analyses internally and externally, the entrepreneur should also use ratios to drive the future of the business. For example, the entrepreneur's strategic plans may include growing revenues while decreasing inventory. Therefore, the days of inventory carried must be reduced while the inventory turnover ratio is increased to some targeted number. Simply stating these objectives is not enough. After determining the respective targeted numbers, a strategic plan must be developed and implemented to actually reduce the amount of inventory carried and to ship to customers new inventory that is received to customers quickly.

Such a relationship between the two ratios would look as shown in Table 5-3.

TABLE 5-3

Inventory Ratio Comparison Example

	2003	2004	2005	2006	2007
Inventory turns	8	11	11	12	14
Days of inventory carried	43	34	33	30	28

As you can see in the table, the amount of average daily inventory being carried decreases from 43 days' worth of inventory to 28 over a projected five-year period. Now, if the entrepreneur's goal is also to increase revenues over this same period of time, then she must turn the smaller volume of daily inventory each year more frequently. And, as the table shows, that is in fact what the entrepreneur forecasts: to increase the inventory turns from 8 times a year to 14. The just-in-time inventory model, pioneered and perfected by companies such as Toyota and Dell, works only if a company's vendors and partners are highly synchronized.

Events outside the control of the company can also cause big problems. In the wake of the terrorist attacks in New York in September 2001, Cherry Automotive of Waukegan, Illinois, was forced to shut down three production lines while it waited for circuit

boards to be flown in from Asia. The delay cost the company \$40,000. To ensure that this didn't happen again, Cherry started carrying three weeks' worth of components inventory, compared with the two to three days' worth it carried prior to the attacks. Managers described the move as "going from just-in-time to just-in-case." Not that the owners took the decision lightly; by their estimates, that one change will cost the company \$250,000 annually.⁶ Appendix A offers a listing of national average inventory turnover ratios and amount of sales in ending inventory for selected retail and wholesale industries.

Another proactive way to use ratios is for the entrepreneur to set short-term, medium-term, and long-term objectives with regard to internal and external ratios. For example, the short-term plan covers the next 12 months to get the days receivables ratio back down to the best level in the company's 10-year history. The medium-term (i.e., 24 months) plan may be to get the company's days receivable down to at least the industry average. Finally, the long-term (i.e., 36 months) plan may be to make the company's days receivable the lowest in the industry, making it the market leader. Thus, ratios have immense value to the entrepreneur as analytical and proactive management tools. And successful entrepreneurs regularly compare their performance against historical highs, lows, and trends, as well as against the industry.

What are good and bad ratios? Well, it depends on which ratios are being examined and, more importantly, the specific industry. Regarding the first point, good days receivable are determined by a company's invoice terms. The standard invoice has the following terms: "2/10, net 30 days." This means that the payer can take a 2 percent discount if the invoice is paid within 10 days. After 10 days, the invoice's gross amount must be paid within the next 20 days. Thus, the customer is being given a total of 30 days following the date of the invoice to pay the bill. If the company does business under these terms, then days receivable of 45 days or greater are considered bad. The ideal target is to have days receivable no more than 10 days greater than the invoice.

The second factor that determines what are good and bad ratios is the industry (see Table 5-4 for good and bad key ratios for several industries). For example, if we analyze two different technology industries, we will see two distinctly different ideas of what is

considered good operating margins. In the office equipment industry, the company with the strongest operating margin is Pitney Bowes at 16 percent.⁷ That is significantly lower than that of GlaxoSmithKline, the pharmaceutical industry leader, which had an operating margin of 34 percent!⁸ As stated earlier, everything is relative. Both of these companies have significantly better operating margins than Amazon.com, whose operating margin was 3.7 percent in 2007.⁹

TABLE 5-4

Key Ratios for Various Industries

Industry	Ratio	Best	Worst
Landscaping services	Current ratio	2.0	1.0
	Inventory turns	N/A	N/A
	Days receivable	8.0	55.0
Grocery stores	Current ratio	2.3	0.9
	Inventory turns	23.3	11.8
	Days receivable	0.0	3.0
Electronic computer manufacturing	Current ratio	2.9	1.2
	Inventory turns	21.0	3.3
	Days receivable	30.0	60.0
Colleges and universities	Current ratio	4.1	1.0
	Inventory turns	N/A	N/A
	Days receivable	8.0	38.0
Airlines	Current ratio	1.5	0.6
	Inventory turns	N/A	N/A
	Days receivable	1.0	30.0
Dress manufacturing	Current ratio	1.5	1.1
	Inventory turns	7.2	2.8
	Days receivable	39.0	63.0
Soft drink manufacturing	Current ratio	2.3	1.1
	Inventory turns	19.3	7.3
	Days receivable	19.0	34.0

Source: Annual Statement Studies: Financial Ratio Benchmarks, 2006-2007, Risk Management Association.

Typically, the financial ratios of successful firms are never lower than the industry average. For example, companies in the computer-manufacturing industry carry, on average, 75 days of

inventory. That dramatically contrasts with Dell, which carries an average of 4 days of inventory.¹⁰ This is one of the reasons why Dell has been so financially successful. As Kevin Rollins, CEO of Dell at the time, explained, "Our product is unique, in that it's like fresh fish. The longer you keep it, the more it loses value. In our industry, the product depreciates anywhere from a half to a full point a week. You can literally see the stuff rot. Cutting inventory is not just a nice thing to do, it's a financial imperative."¹¹

There are some instances where it is perfectly acceptable for a company's ratios to be worse than the industry average. This occurs when the below-average ratios are part of the company's strategic plan. For example, inventory turns and days inventory carried that are slower and greater, respectively, than the industry average may not be signs of negative performance. It could be that the company's strategic plan requires it to carry levels of inventory greater than the industry average; as a result, inventory turns would be slower. For example, if a company promises overnight delivery, while competitors ship in 14 days, that company's inventory carried will be higher and turns will be slower. Ideally, the gross margins should be higher than the industry's because the company should be able to charge a premium for the faster deliveries. Given this fact, it is essential that the entrepreneur perform a comparison of industry averages when writing the business plan, when developing the projections, and, most importantly, before submitting the plan to prospective investors.

An example of a company that runs with higher expenses than its competitors is Commonwealth Worldwide Chauffeured Transportation. Dawson Rutter, the company's founder and CEO, dropped out of three universities before starting the company. Over a four-year period, Commonwealth grew its business from 40 customers to 4,000 and increased its revenues over 248 percent. Rutter has the philosophy of "building the church for Easter Sunday." He says, "We create infrastructure in anticipation of revenue. That ensures delivery will be impeccable 100 percent of the time. We can always handle 105 percent of our absolute busiest day. Is that a more expensive way of doing it? You bet. But the fact is we don't lose customers, which means we can afford to pay that premium."¹²

How can entrepreneurs find out industry averages for private companies? Figure 5-2 lists periodicals and other resources

commonly used to compare an existing company's performance against the industry, as well as to determine if the pro formas in a business plan are in line with the industry being entered. As noted previously, you'll also find national averages for turnover ratios in Appendix A.

FIGURE 5-2

Industry Ratio Sources

Annual Statement Studies, Risk Management Association (formerly Robert Morris Associates)
Almanac of Business and Industrial Financial Ratios, Prentice Hall
 Bizstats.com
Industry Norms and Key Business Ratios, Dun & Bradstreet
Risk Management Association eCompare2, online financial statement analysis tool
Value Line Investment Survey

BREAKEVEN ANALYSIS

The analysis of financial statements should also be used to determine a company's breakeven (BE) point. Successful entrepreneurs know how many widgets, meals, or hours of service they have to sell, serve, or provide, respectively, before they can take any real cash out of the company. Equation 5-1 shows the equation for calculating a company's BE point.

EQUATION 5-1

Breakeven Point

$$\text{Fixed expenses} \div \text{gross margin} = \text{total breakeven sales}$$

$$\text{Total breakeven sales} \div \text{unit price} = \text{number of units to sell}$$

Using the information contained in Figures 4-1 and 4-4 for the Bruce Company, one can prepare a selected set of financial ratios and BE for the company. Table 5-5 shows the financial ratios, BE, and an explanation of the numbers.

TABLE 5-5**Selected Financial Accounting Ratios for the Bruce Company**

Ratio	Amount	Explanation
Gross margin percentage	75%	75 cents of every dollar of sales goes to gross profit. Or the product's labor and material costs were 25 cents.
Return on equity	26%	The company is getting a return of 26% on the capital invested in the company.
Net profit margin	24.75%	More than 24 cents of every dollar of sales goes to the bottom line.
Current ratio	0.57	The ratio is less than 1, which indicates that the company can't meet its short-term financial obligations.
Quick ratio (acid-test ratio)	0.28	The ratio is less than 1, which means that the company can't pay its debt.
Debt/equity ratio	1.2	The company owes \$1.20 of debt for every dollar of equity.
Collection ratio	13 days	It takes 13 days on average to collect receivables.
Inventory turns	3.33	Inventory turns 3.33 times.
Cash flow cycle	0.45 day	It would take less than a day to convert inventory to cash.
Breakeven point		$BE = \$700 \div 0.75 = \933

MEASURING GROWTH

When measuring the growth of a company, the entrepreneur should be sure to do it completely. Many people use compounded annual growth rate (CAGR) analysis when measuring and discussing growth. In addition to CAGR, another means of measurement is simple growth. Before going any further, let's discuss the two. In finance, both terms are typically used to discuss the rate of growth of money over a certain period of time.

Simple interest is the rate of growth relative to only the initial investment or original revenues. This base number is the present value (PV). Future value (FV) is the sum of the initial investment and the amount earned from the interest calculation. Thus, the simple interest rate or the rate of growth of a company with revenues of \$3,885,000 in Year 1 and \$4,584,300 in Year 2 is 18 percent,

because \$699,300, the difference between revenues in Years 1 and 2, is 18 percent of Year 1 revenues. Using the simple interest rate of 18 percent, Year 3's revenues would be \$5,283,600. This was determined by simply adding \$699,300, or 18 percent of the initial number, \$3,885,000, to Year 2's revenue number. Therefore, an 18 percent simple growth rate would add \$699,300 to the previous year's revenue to determine the level of revenues for the next year. In conclusion, the formula to determine the simple growth rate is the equation shown in Equation 5-2.

EQUATION 5-2

Simple Growth Rate

$$\text{Simple growth rate} = \frac{\text{dollars of growth}}{\text{initial investment} \times \text{time}}$$

Using Equation 5-2, let's input the numbers to answer the question, at what simple interest rate must \$3,885,000 grow in two years to equal \$5,283,600? Another way to look at this question is, if you received a two-year loan of \$3,885,000 at 18 percent simple interest, what would you owe in total principal and interest? The answer would be \$5,283,600, as calculated in Figure 5-3.

FIGURE 5-3

Components of Dollar of Growth Calculation

Year 1 (present value)	=	\$3,885,000
Year 3 (future value)	=	\$5,283,600
Dollars of growth (or FV – PV)	=	\$1,398,600
Time	=	2 years

The concept of compounding is commonly used by financial institutions such as banks, relative to both the money they lend and the deposits they receive. CAGR analysis—which is popular among professionals with graduate business school backgrounds, including

consultants and commercial and investment bankers—simply shows the interest rate, compounded annually, that must be achieved to grow a company from revenues in Year 1 to revenues in a future year. That sounds similar to what we just said about simple interest. However, the word *compounded*, which is *not* included in the definition of simple interest, makes a huge difference. Compounding means that you earn interest not only on the initial investment (i.e., the PV), as was the case with simple growth, but also on the interest earned each year, or the actual dollars of growth. Therefore, unlike simple growth, the compounded rate of growth each year reflects the initial investment plus the earnings on reinvested earnings.

Let's use the same numbers from the simple growth rate discussions to illustrate the concept of CAGR. A company with an 18 percent CAGR and Year 1 revenues of \$3,885,000 will have the future revenues shown in Figure 5-4.

FIGURE 5-4

CAGR Example

Year 2: \$4,584,300 (i.e., $\$3,885,000 \times 1.18$)
 Year 3: \$5,409,474 (i.e., $\$4,584,300 \times 1.18$)

In comparing simple annual growth with compounded annual growth, clearly the comparison in Table 5-6 shows the latter to be more advantageous to investors or entrepreneurs who want rapid growth.

TABLE 5-6

Simple and Compounded Annual Growth Comparison

Revenues at 18% Rate	Simple Growth	Compounded Annually
Year 1	\$3,885,000	\$3,885,000
Year 2	\$4,584,300	\$4,584,300
Year 3	\$5,283,600	\$5,409,474
Year 4	\$5,982,900	\$6,383,179
Year 5	\$6,682,200	\$7,532,151

As you can see in Table 5-6, the first-year growth with compounding is the same as simple growth because the base is the same. The shortcoming with using CAGR is that it looks at only two years, the beginning year and the ending year, completely ignoring the years in between. Therefore, when used alone, this popular growth measurement tells an incomplete story that can be misleading.

For example, two companies with Year 1 revenues of \$3,885,000 and Year 5 revenues of \$7,532,151, as shown in Table 5-7, will show the same 18 percent CAGR despite the fact that the revenues in Years 2, 3, and 4 looked very different.

TABLE 5-7

CAGR Comparison

	Company 1	Company 2
Year 1	\$3,885,000	\$3,885,000
Year 2	\$4,584,300	\$3,000,000
Year 3	\$5,409,474	\$2,900,000
Year 4	\$6,383,179	\$2,700,000
Year 5	\$7,532,151	\$7,532,151

The reason why both companies have the same CAGR is that both had the same revenues in Year 1 and Year 5. The formula for CAGR considers only these two data points. It ignores what happens in between because theoretically CAGR means that in any given year throughout the five-year period, the company's annual compounded growth in revenues was an even 18 percent based on the information given about Year 1 and Year 5 and based on how CAGR is calculated. That is to say, the growth followed a relatively linear progression. But as Table 5-7 shows, that is not always the case. Company 2's revenues declined in three consecutive years. So the major shortfall in using CAGR is that it does not take into account the actual growth rates from year to year over the five-year period. Therefore, a more complete analysis using CAGR must include the analysis of real annual growth rates to see if there are any trends.

Finally, if we want to determine the actual revenues in Year 5 (i.e., FV) of a company that had revenues of \$3,885,000 in Year 1 (i.e., PV) and was growing at a compounded annual rate of 18 percent, the formula shown in Figure 5-5 could be used.

FIGURE 5-5

Sample Future Value Calculation

$$\text{Future value} = \text{present value} \times (1 + \text{Year 1 rate}) \times (1 + \text{Year 2 rate}) \times (1 + \text{Year 3 rate}) \times (1 + \text{Year 4 rate})$$

$$\text{Future value} = \$3,885,000 \times (1.18) \times (1.18) \times (1.18) \times (1.18)$$

$$\text{Future value} = \$3,885,000 \times (1.18)^4$$

$$\text{Future value} = \$7,532,151$$

Note: 1 is added to each year's interest rate to show that for every dollar invested, 18% will be returned.

CASE STUDY—CLARK COMPANY

Figure 5-6 presents an income statement for the Clark Company for three years. There is no information regarding the company's industry, products, or services. This information is not needed. Numbers alone can tell a story, and every entrepreneur must get comfortable with being able to review financial statements, understand what is going on with the company, and recognize its strengths, weaknesses, and potential value. As we stated in Chapter 1, a successful entrepreneur must have the ability, willingness, and comfort to make decisions given ambiguous, imperfect, or incomplete information. The analysis of Figure 5-6 gives you the opportunity to demonstrate this trait. As you will see, it is an itty-bitty, tiny business. Nevertheless, the analysis would be exactly the same if each line item were multiplied by \$1 million. The point being made is that the analysis of a small company's financials is the same as that of a large company's. The only difference is the number of zeros to the left of the decimal points. An appropriate analogy can be made to swimming. If you can swim in 4 feet of water, you can also swim in 10 feet of water and deeper.

FIGURE 5-6**Clark Company Income Statement (Selected Years)***

	2005	2006	2007
Revenues	137,367	134,352	113,456
Returns and allowances			588
Cost of goods sold	42,925	38,032	40,858
Gross profits	94,442	96,320	72,010
Operating expenses			
Advertising	3,685	3,405	2,904
Bad debts	150	50	130
Automobile expense	1,432	460	732
Depreciation	1,670	1,670	835
Employee benefits programs			
Insurance	2,470	2,914	1,915
Interest			
Mortgage			
Other	153		2,373
Legal and professional services	1,821	1,493	
Office expense	10,424	8,218	8,965
Rent	14,900	20,720	13,360
Repairs and maintenance	1,293	2,025	
Supplies	305	180	195
Taxes and licenses	11,473	5,790	1,062
Travel	730	1,125	
Meals and entertainment	108	220	192
Utilities	2,474	2,945	2,427
Wages	5,722	11,349	12,214
Other			
Freight	1,216	1,645	874
Sales tax			7,842
Total Expenses	60,026	64,209	56,020
Net profit or loss	34,416	32,111	15,990

* Note: The cash accounting method was used for 2005 and 2006. The accrual accounting method was used for 2007.

By examining the income statement, we will be able to better understand how management is handling the company's overall operations. Using financial ratio analysis, we will assess how well the company's resources are being managed. A good analysis will

enable a potential buyer to assess, for example, whether the company is worth acquiring, based on its strengths and weaknesses, and to determine how much to pay for it.

When analyzing the numbers, it is important to (1) look at the numbers and compare them with historical performance or with a benchmark such as an industry average, to assess how the company is performing in that specific area, and (2) highlight any trends. The importance of trends as one looks at financial statements is that they are used to predict the future. One should always ask: Is there a trend in this line item? Is it an upward or downward trend? What is the main reason(s) for this trend? What does the trend mean for the future?

The following assumptions should be made in the analysis of the Clark Company case:

- This company is a cash business; there are no receivables.
- It is owner-operated.
- The numbers provided are correct.

An analysis of every line item could be made, but our analysis will focus on three of the most important items: revenue, gross profit, and net profit.

Revenue Analysis

The analysis of a company's historical annual revenue includes answers to the following questions: What are the sales growth rates for the past few years? What is the trend in sales growth? Is it declining or increasing? Why are revenues increasing or decreasing? Not only should you be concerned about whether or not revenues are increasing, but you should also ask whether the increase is consistent with what is taking place in the industry. Sales increasing for a short period may not be good enough. You need to compare a company's sales growth with the rate at which you want it to grow. The absolute minimum amount you want sales to grow, at an annual rate, is at the rate of inflation, which since 1774 has averaged approximately 4.1 percent per year.¹³ Some industries have clearly outperformed this benchmark. For example, in the professional sports industry, since 2002, the average annual percentage increase in ticket prices for the four major sports leagues (i.e., the NBA, NFL,

NHL, and MLB) has been 14.5 percent.^{14,15} The revenue at the largest 17 securities companies in 2006 rose a staggering 44 percent.¹⁶ In 2006, Fortune 500 companies increased their revenues by 9 percent,¹⁷ while inflation that year was 3 percent.

Revenue for the Clark Company has been declining. Revenues declined by 2 percent between 2005 and 2006 and by 16 percent between 2006 and 2007. This downward trend is a cause for concern. Some of the reasons for the decline in revenues may be:

- Price increases resulting from higher costs.
- The owner is despondent, and he is not managing his business properly, or he simply is not present at the company.
- Increased competition, as a result of the high gross margins, could be putting pressure on prices. One way to keep prices high is to have a patent on a product, which allows the owner to set the price fairly high. This assumes, of course, that there is a demand for the product or service. When the patent expires, the business will inevitably face competition.
- The product could be becoming obsolete.
- An unanticipated event or an act of God, known in the legal profession as a “force majeure,” could be one reason for the decline in revenue. For example, there could have been a tornado or a severe rainstorm and the storage area where the entire inventory was kept could have been flooded, thereby damaging inventory and reducing the volume that was available for sale.
- There could have been construction outside of the company’s place of business that prevents easy access by customers.

So there are, in some instances, legitimate reasons why revenue could be decreasing that have nothing to do with the soundness of the business or its management. When undertaking financial analysis, it is important to consider all likely scenarios.

While strong revenue growth is typically viewed positively, it can also be a sign of bad tidings. The fundamentals of finance associate excellent revenue increases with at least corresponding increases in the company’s net income. The best example of this

point is Microsoft. From 1990, when Microsoft introduced its Windows 3.0 operating system, to 1999, its revenues grew 17 times, from \$1.18 billion to \$19.8 billion. During the same time period, its net income grew an astounding 28 times, from \$279 million to \$7.79 billion! On a larger scale, the Fortune 500 demonstrated this concept in historic fashion between 2000 and 2006. Aided by strong productivity gains and a growing economy, the largest American companies grew earnings an astonishing 80 percent while revenue growth grew 38 percent. During this period, posttax profit margins hit 7.9 percent, a 27 percent increase over the already impressive 6.2 percent margins in 2000.¹⁸

But if revenues are growing because prices have been lowered, then that means that the company is probably growing at the expense of margins. Therefore, the growth may not in fact be profitable. For example, during the period from 1991 to 1997, Hewlett-Packard's revenue from personal computers increased dramatically to approximately \$9 billion in annual revenues. Also during this period, its market share increased from 1 to 4 percent. In 1998, with the support of price cuts, sales increased 13 percent. Despite all this good news, HP's personal computer business experienced a loss of in excess of \$100 million.¹⁹

Another issue with regard to revenue growth that you should be aware of is that the growth may be occurring because competitors are conceding the market. Competitors may be leaving the market because the product will soon be obsolete; or perhaps they are leaving because the ever-increasing cost of doing business—things such as liability insurance—is driving them out of the market. Thus, it is just as important for the entrepreneur to know why he is experiencing excellent growth as it is to know the reasons for low or no growth. The successful entrepreneur knows that revenues should be grown strategically. It is well-managed growth that ultimately improves the profitability of the company.

Sometimes growing too fast can be just as damaging as no growth at all. A few problems common to rapid growth are poor quality, late deliveries, an overworked labor force, cash shortages, and brand dilution. Unmanaged growth is usually not profitable. For example, Michael Dell, the founder of Dell Computers, which grew 87 percent per year for the first eight years and 34 percent annually since 1992, said, "I've learned from experience that

a company can grow too fast. You have to be careful about expanding too quickly because you won't have the experience or the infrastructure to succeed."²⁰ This comment was made after he experienced a \$94 million charge against earnings in 1993 for, among other things, the failure of a line of poor-quality laptops.

The story of 180s, a sports apparel company, further demonstrates the dangers of growing too fast. At one point, the company was ranked number 32 on the prestigious *Inc.* 500 list of fastest-growing companies. The firm grew revenues from \$1 million in 1999 to \$50 million in 2004. However, by 2005, 180s was suffocating under too much debt and was taken over by a private equity firm. Lamenting its impending sale, Bernie Tenenbaum, a venture capitalist who had considered investing in 180s at one point, said, "I'd say they'd be lucky to get 10 cents on the dollar." Actually, he was optimistic—it turned out to be 8 cents on the dollar. Bill Besselman, a one-time partner with the co-owners of the firm, explains their failure: "In the end, they grew the top line, but they didn't manage the bottom line. They got sucked into the vortex."²¹

Even Starbucks, one of the greatest entrepreneurial stories of all time, has suffered unmanageable growth that has diluted its brand and caused it to fall behind Dunkin' Donuts in customer loyalty. Starbucks founder and chairman Howard Schultz explains how growing too fast caused this problem: "Over the past ten years, in order to achieve the growth, development, and scale necessary to go from less than 1,000 stores to 13,000 stores and beyond, we have had to make a series of decisions that, in retrospect, have led to the watering down of the Starbucks experience, and, what some might call the commoditization of our brand."²² In 2008 Starbucks took steps to correct this problem by announcing the closing of 600 underperforming stores across the United States.

The Largest Customer

Inherent in the growth issue is a key question: how large is the company's largest customer? Ideally, an entrepreneur's largest customer should account for no more than 10 to 15 percent of the company's total revenues. The reasoning is that a company should be able to lose its largest customer and still remain in business. Of course, the ideal is often not the reality. One survey of 300

manufacturers in the apparel and home goods industries showed that over half of these firms receive more than 20 percent of their sales from their largest customer.²³ The goal should be to diversify your client base while maintaining the benefits of economies of scale. An example of a company that suffered as a result of not properly diversifying is Boston Communications Group, Inc. (BCGI). In 2004, Verizon Wireless, representing approximately 20 percent of BCGI sales, decided to end the relationship between the two companies.²⁴ BCGI's shares, which had traded as high as \$22 in 2003, dropped 50 percent in one year. The company was unable to recover. In 2006, it laid off 21 percent of its workforce and fired two of its top officials. The company was finally purchased in 2007 by India-based Megasoft Ltd. for \$3.60 per share, less than 20 percent of its 2003 value.²⁵

Interestingly, many companies find that losing the customer that generates the largest amount of revenue actually results in more company profitability, because the largest customers are rarely the most profitable. The reason is that customers who purchase large volumes are often invoiced at lower prices. For example, Morse Industries, a private lamp manufacturer, was ecstatic to get Wal-Mart, the country's largest retailer, as a customer. The addition of Wal-Mart increased its revenue over 50 percent in one year. But after one year, the company decided to drop Wal-Mart as a customer. Why? The revenues of Morse Industries had grown enormously, but the gross, operating, and net margins had actually declined because the company charged Wal-Mart 25 percent less than it charged its other customers. Another reason for the decline was that Wal-Mart's orders were so large that Morse Industries' labor force could barely produce enough. The result was that orders placed by other consumers, who were not receiving a discount and therefore were generating higher margins, were being delayed or even canceled. Several of these long-term, excellent, paying customers quietly moved their business from Morse Industries to another supplier.

The founder of Morse solved the company's problem after he performed an analysis of his company's growth and found that it was not profitable. His analysis included using the matrix shown in Figure 5-7 to define each customer and the importance of that customer.

FIGURE 5-7**Customer Analysis Matrix**

<u>High volume</u> Low margin	<u>High volume</u> Low margin
<u>Low volume</u> low margin	<u>Low volume</u> High margin

Source: Susan Greco, "Choose or Lose," *Inc.*, December 1998, p. 58.

He defined the categories as follows:

- *High volume/low margin.* Customers that provided revenues greater than \$1 million per year, with gross margins of no more than 35 percent.
- *Low volume/low margin.* Customers that provided revenues of less than \$1 million per year, with gross margins of no more than 35 percent.
- *Low volume/high margin.* Customers that provided revenues of less than \$1 million per year, with gross margins in excess of 35 percent.
- *High volume/high margin.* Customers that provided revenues greater than \$1 million per year, with gross margins in excess of 35 percent.

His immediate initial response was to simply drop only the customers in the low-volume/low-margin section. But on second thought, he decided to analyze the data even further to determine how profitable each customer was to the company by performing a contribution margin analysis on each customer

Equation 5-3 shows the contribution margin formula.

EQUATION 5-3**Contribution Margin**

$$\begin{aligned} \text{Revenues} - \text{variable costs} &= \text{contribution margin} \\ &\rightarrow \text{Fixed costs and profits} \end{aligned}$$

The contribution margin is the difference between revenues and all the variable costs (i.e., the costs that would not be incurred if this customer left) associated with a unit of product. Therefore, it is the profit available, after breakeven, to contribute to the company's fixed costs and profits.

The contribution margin analysis is presented in Table 5-8. Clearly, as you can see from the table, the least profitable business was not the low-margin/low-volume business but, in fact, the high-volume/low-margin business. Therefore, Morse attempted to raise its prices to customers who fell into these two categories. Several of them refused to accept the price increase, including Wal-Mart, so he dropped them. His growth strategy for returning the company to profitability included attempting to grow the volume of the remaining customers, who fell into the high-volume/high-margin and low-volume/high-margin categories, without decreasing prices. The second part of the strategy was the implementation of a policy that all new business had to have at least a 40 percent contribution margin. While his revenues in the immediate term went down, his net profits and cash flow increased dramatically. Ultimately, his revenues increased, as a result of his ability to maintain high quality standards and ship promptly. Most importantly, his profit dollars and percentages also increased.

TABLE 5-8

Customer Analysis Calculation

	High Volume/ Low Margin/	Low Volume/ Low Margin	Low Volume/ High Margin	High Volume/ High Margin
Annual revenues	\$12,000,000	\$800,000	\$900,000	\$3,000,000
Variable costs	10,000,000	600,000	500,000	1,500,000
Contribution margin	\$2,000,000	\$200,000	\$400,000	\$1,500,000
Percentage	17%	25%	44%	50%

The lesson: Growth for the sake of growth, without regard to profitability, is both foolish and harmful and will inevitably lead to insolvency. This is what happened to the dot-com companies of the late 1990s. Many businesses engage in such growth in the name of

gaining market share. But evidence repeatedly shows that the companies with the strongest market share, excluding perhaps Microsoft, are rarely the most profitable. Two recent examples illustrate the danger of focusing on sales. In 2006, Toyota sold approximately 9.02 million vehicles worldwide. During the same time period, GM sold 9.18 million vehicles. Despite this sales edge of 162,000 cars, Toyota earned \$11.6 billion in profit, while GM lost \$2 billion.²⁶ How did this happen? GM obviously wasn't focusing on profits. In the world of video games, the importance of profitability over market share is demonstrated in the battle among Nintendo, Sony, and Microsoft. Sony's Playstation and Microsoft's Xbox consoles have dominated the market for years. In early 2006, however, Nintendo had recorded close to a billion dollars in profit on its Wii console while Sony's game division was barely profitable and Microsoft lost money on Xbox.²⁷

Additional support for the case for looking at the bottom line is evidence from a survey completed by J. Scott Armstrong and Kesten C. Green that showed that companies that adopt what they call "competitor-oriented objectives" actually end up hurting their own profitability. To restate their point, the more a firm tries to beat competitors, as opposed to maximize profits, the worse it will fare. A 2006 Harvard Business School study, "Manage for Profit, Not for Market Share," estimated that companies that let market share or sales volume guide their actions sacrifice 1 to 3 percent of their revenue. In hard numbers, a manager of a \$5 billion business leaves between \$50 and \$150 million in his customers' and competitors' pockets every year by focusing on market share rather than the bottom line.

The drawbacks of high market share and lower profitability were further confirmed by a study of more than 3,000 public companies. The study's results showed that more than 70 percent of the time, firms with the greatest market share do not have the highest returns, as the examples in Figure 5-8 show. The study found that the key to success for smaller, more profitable competitors was their absolute vigilance in controlling costs and eliminating customers who returned low margins.

GROSS MARGINS

One of the initial financial ratios that business financiers examine when reviewing the income statement is the gross margin. What is a good gross margin? Well, a "good" gross margin, like all the other

FIGURE 5-8**High Market Share versus High Returns**

Category	High Market Share	Higher Returns
Discount stores	Wal-Mart	Family Dollar
Office furniture	Ricoh Company Ltd	Chyron Corp.
Pharmaceuticals	Johnson & Johnson	Alcon, Inc.

items we will be analyzing, is relative and depends on the industry in which a company operates. In general, gross margins of 35 percent and above are considered to be very good. Table 5-9 provides comparative gross margins for different companies.²⁸ See also Appendix A for common-sized income statement values for different industries.

TABLE 5-9**Comparative Gross Margin Percentages**

Company/Industry	Gross Margin, %
Amazon.com	22.6
Hewlett-Packard	47.1
Dell	16.6
Nike	43.8
Starbucks (2000)	56.0
Starbucks (2007)	23.3
Starbucks—espresso	90.0
Starbucks—coffee	70.0
Kroger	24.2
eBay	77.0
Yahoo!	59.3
Salesforce.com	76.1
Microsoft	79.1

Source: Company financial statements for FY'2007 as compiled by Reuters; USA Today, "Starbucks cultivates caffeine rush", April 30, 1996

Supermarkets generally have razor-thin gross margins, ranging between 10 and 15 percent. Computers, which have become almost a commodity product, have gross margins that are also very

slim. That is why it is so difficult to compete in the computer hardware industry: because the average price at which a retailer sells a computer is only about 10 to 15 percent higher than what it costs to produce it. On the other hand, some computer manufacturers have been able to achieve gross margins that are higher than the industry average. One example was Compaq Computer, which was the number two computer manufacturer in the country before its merger with Hewlett-Packard in 2002. Compaq consistently had gross margins above 20 percent. The combined Hewlett-Packard had a corporate gross margin of 47.1 percent in 2007 largely due to its higher gross margin services and printer businesses.^{28a}

There are several industries in which companies make very decent gross margins. For example, Nike's average gross margin is about 44 percent, whereas Starbucks, as indicated in Table 5-9, applies toward its gross profit 70 cents of every dollar it makes selling coffee. Or more profoundly, as Table 5-9 also shows, a cup of Starbucks espresso, with a 90 percent gross margin, costs only 10 percent of its selling price!²⁹ Starbucks' overall corporate gross margin has fallen to roughly 23 percent in 2007, which is more than half of what its margins were just 7 years earlier. Much of this drop can be attributed to the increasing percentage of food and other lower margin products sold in its retail establishments. Microsoft on the other hand still enjoys a gross margin of nearly 80 percent.

Gross margins are also very high in other businesses, some of them illegal. University of Chicago economist Steven Leavitt and Harvard sociologist Sudir Venkadesch undertook an analysis of the financial books of a drug gang—a very rare set of financial statements to analyze. Not surprisingly, they found that the gang was able to reap very high gross margins—approximately 80 percent—by selling crack cocaine.³⁰

A venture capitalist once stated, “Gross margin is the entrepreneur’s best friend. It can absorb all manner of adversity with two exceptions, philanthropy or pricing stupidity. Actually, in this case the two are synonymous.”³¹ Good gross margins provide a novice entrepreneur with breathing space, allowing him a chance to make costly mistakes and still be potentially profitable. On the other hand, in a low-gross-margin business—such as grocery stores, for example—management mistakes and waste, as well as theft and pilferage, must be minimized, because the margins are too thin to

be able to absorb these costs. A low-gross-margin business must also have volume, whereas a high-gross-margin business may sacrifice unit volume sales because its ultimate profit comes from the high margins. The ideal business, like Microsoft, dominates its industry relative to units of volume, while at the same time maintaining high gross margins. This is a rarity. High-gross-margin industries inevitably attract competitors who compete on price, thereby reducing gross margins throughout the industry.

For example, independent retailers of books used to enjoy gross margins in excess of 35 percent. Those attractive gross margins were the primary reason that major chains such as Barnes & Noble and Amazon.com entered the market and now dominate it. Twenty years ago, independent retailers sold 60 percent of all book titles. Since 1991, the independents' share of the book market has declined from 32 percent to 10 percent. The big competitors increased because of the attractiveness of the gross margins.³²

I always tell my Kellogg students, "If you leave here, start your own business, and are lucky enough to have good gross margins, for God's sake, don't brag about it." If someone asks you, "How's business?" your standard reply should be a simple shrug of the shoulders and a polite response of, "Not bad; could always be better." It is always tough to maintain high gross margins. One way companies are able to do so is to have a patent or copyright on the product, essentially giving them a legal monopoly for a period of time. That was the case with the product Nutrasweet, an artificial sugar sweetener whose patent expired in 1999.

Ironically, not every entrepreneur is interested in high-gross-margin businesses. One of the primary reasons, as stated earlier, is because heavy competition is inevitable. Therefore, those who are interested in low-margin businesses are those who view excellent operational execution as their competitive advantage or as a barrier to entry of competitors. For example, as noted earlier, the computer manufacturing industry is notorious for low gross margins. Despite this fact, Dell Computers is able to prosper as the number two manufacturer in the world because of its outstanding operations—it carries four days of inventory compared with ten days at Hewlett-Packard. This means that Dell can turn its inventory more than 83 times a year compared with the industry's average of 4.9. The attitude of an entrepreneur who knows his competitive advantage is best illustrated by Michael Dell, who stated that he was not

happy with his company's inventory of four days—his ultimate goal is to measure Dell's inventory not in days, but in hours.³³

Gross margins are a factor that the entrepreneur should focus on very heavily in the business plan as well as in operations. Good, healthy gross margins do not usually happen by chance. They may happen by chance for the "mom-and-pop" entrepreneur who runs a business haphazardly. Because the strategy is to sell whatever can be sold at whatever cost, the mom-and-pop enterprise expects to absorb the costs and take whatever falls to the bottom line.

A high-growth entrepreneur, in contrast, is one who manages with a plan in mind. This entrepreneur expects to grow the company at a certain rate and plans to have a certain level of gross margins. A high-growth entrepreneur is one who wants to have a company for the purpose of wealth creation and therefore is an absolute bulldog when it comes to managing gross margins. The question that logically follows is, how can gross margins be increased?

Cut Labor and/or Material Costs

The following are ways to reduce labor costs:

- Train the workforce so that productivity increases.
- Reduce the labor force and have fewer employees work more efficiently. GE, one of the most profitable companies in the world, did just this. Over an eight-year period, GE cut 208,000 jobs worldwide. In one division, it cut 1,800 jobs, and profits rose 21 percent.³⁴
- Reduce employee absenteeism, which results in increased labor costs because of the need for overtime pay. Industry studies have shown that employee absenteeism is at its highest point since 1999 and can cost companies as much as 15 percent of their payroll.
- Make the workforce more productive by using technology. For example, technology has been used in McDonald's franchises to reduce labor costs. The production process has been automated to the point where one person can now do what it used to take four people to do in terms of cooking and food preparation.
- Increase volume. The cost per item produced or cost per service rendered should go down as the volume goes up.

Labor costs should go down as employees gain more experience. People learn more and therefore should become more efficient, even if this is not done through the introduction of new technology.

- Find a cheaper labor force. Companies can move their operations, for instance, to a different region of the country or abroad, where labor is cheaper. For example, Nike manufactures all its products outside the United States in low-labor-cost countries such as China and Thailand, where unskilled labor can cost as little as \$0.67 per hour, or 3 percent of the average hourly compensation cost for production workers in the United States for the same year. Even skilled labor can be significantly cheaper outside the United States. Draft Dynamix, the leading fantasy sports draft software company, used software programmers in India to build its first product. The programmers cost approximately \$20 per hour for work that costs as much as \$60 per hour in the United States. Over the course of a year, outsourcing the work to India saved Draft Dynamix in excess of \$90,000. The CEO of Draft Dynamix, Ted Kasten, provides perspective on overseas labor: "I would caution that it isn't a one-for-one savings. Working with overseas software consultants and programmers requires more time per task than a U.S. based programmer due to time differences and distance." "Still," he explains, "we wouldn't have made it without these programmers. The cash we saved from these labor costs enabled us to survive long enough to start generating revenue." Draft Dynamix recently licensed its product to CBS Sportline and ESPN.com, two of the leading fantasy sports Web sites on the Internet, and secured another round of angel financing. One cautionary note here: using labor outside the country sometimes has its own risks. After the September 11, 2001, terrorist attack in New York, Illinois-based Product Development Technologies Inc. (PDT) scratched plans to source a client's manufacturing job in Brazil. The company was worried about the reliability of air shipments from abroad. Making the parts at home squeezed profits on the \$60,000 order because labor costs were 30 percent higher.

But as PDT's owner said, "We can't afford to be even a week late."³⁵

- Provide employees with stock options, restricted stock units, or other incentive programs in lieu of higher salaries.
- Reduce employee benefit costs. Employer health insurance premiums have risen 81 percent since 2000. In fact, a survey of small businesses conducted by the National Federation of Independent Business and Wells Fargo showed that the cost of health insurance was the number one concern of small-business owners. The world of health insurance is ever changing, but options such as health savings accounts and health reimbursement arrangements offer mechanisms enabling employers to control costs.³⁶
- Continually turn over the workforce, reducing the number of higher-paid unskilled workers. For example, fast-food restaurants expect and want a certain amount of annual turnover in their unskilled employees because newer workers cost less.
- Implement good management skills. One of the easiest ways to reduce labor costs is simply for entrepreneurs to manage their employees. They need to manage, referring to the good old way of managing people, which means stating expectations, giving employees the necessary tools, and holding them accountable for their performance.

The following are ways to reduce material costs:

- Obtain competitive bids from suppliers, which may allow for the purchase of materials at lower cost.
- Buy in higher volumes to get volume discounts. The problem here is the inventory carrying cost. Ideally, one does not want to increase inventory. Therefore, the entrepreneur should make commitments to its suppliers to buy a certain volume within a period of time. Such a commitment should result in price-volume discounts. The commitment versus buy strategy allows entrepreneurs to keep inventories low, costs down, and cash available for other investments or uses.

- Outsource part of the production. Someone else may be able to produce a piece of a product or render a specific part of a service at a lower cost.
- Use a substitute material that can be purchased at a lower cost in the production process. Ideally you want to keep the quality of the product the same, but there is a possibility that you can actually get a substitute material that may be less expensive.
- Manage waste, pilferage, and obsolescence. Materials that have been stolen, thrown away, or destroyed, or are just sitting around because of obsolescence, negatively affect material costs.
- Do quality control checks throughout the various stages of the manufacturing process before additional value is added. This is in contrast to the traditional way of checking quality only at the end of the process. Waste and rework costs are always greater using the process of checking quality at the end.
- Let the most experienced and trained person perform the most detail-oriented or labor-intensive work, for example, cutting all patterns, because they should be able to get more cuts per square yard than an inexperienced person. For example:

	Worker 1	Worker 2
Material cost per yard	\$10	\$10
Units cut per yard	4	2
Cost per unit	\$2.50	\$5

Thus, the cost per unit for Worker 1 is lower because there is less material wasted.

Raise the Price

Raising the price of the product or service will enable the entrepreneur to increase gross margins, assuming, of course, that costs do not increase proportionately. While much is made in the press of the

various factors that can produce pricing power for a company, the best way to increase profitability through price increases is by differentiating and creating value for which the consumer will pay. Linear Technology, a \$1.1 billion semiconductor company, is a prime example of creating pricing power through differentiation. In contrast to industry heavyweights like Intel, which focus on bigger clients with huge demand for commodity-like chips, Linear has chosen to operate on the periphery and sell to smaller clients with needs that Linear can service better than the competition. The result? Linear's chips are priced a third more than its rivals', and the company made a 39 percent net profit margin in 2006, besting the tech industry's best-known profit powerhouses, Microsoft Corp. and Google Inc., which earned 26 percent and 24 percent, respectively.³⁷

Amazingly, there are companies that, for a short time, were successful in challenging the importance of business fundamentals with regard to gross margins. For the most part, this was true in the e-commerce industry, where most companies were primarily focused on growing revenues even when it was at the expense of gross margins. For example, buy.com formerly sold merchandise, including CDs, books, videos, software, and computer equipment, at cost and, shockingly, sometimes even below cost. The company guaranteed the lowest prices available on the Internet. The result was zero and sometimes negative gross margins! Despite these facts, buy.com, which was founded in 1996, had 1998 revenues of \$111 million and a public market valuation in excess of \$400 million.³⁸

But reality set in, and by September 2001 the vultures were circling with stockholder class-action lawsuits. In just over a year, buy.com's stock price had dropped from its opening-day price of just over \$30 a share to about \$0.08 per share. Its stock was delisted from the Nasdaq on August 14, 2001. I hope your kid's college fund was not tied up in that one. All kidding aside, these kinds of infamous cases—where managers “fumble the fundamentals”—play out every day in far more subtle ways in every business sector. When entrepreneurs ignore the fundamentals of finance or simply trust someone else to stand guard, they invite trouble to the table.

Before we close this section on gross margin, let us analyze the Clark Company. What are the gross margins for the Clark Company? They are as follows:

- 2005: 70 percent
- 2006: 72 percent
- 2007: 64 percent

The company has excellent gross margins—in excess of 60 percent for all three years. However, one sees an 8 percentage point decline in gross margins in 2007, indicating that something has changed.

What are some of the possible reasons for a decline in gross margins?

- There may have been a change in the product mix being sold. A higher percentage of lower-margin items may have been sold.
- The cost of supplies may have gone up.
- The company may have changed its accounting system from a cash system to accrual. This change in accounting system results in no change in the timing of cash receipts; since this is a cash business and therefore the company does not have receivables, the change in the system will not affect the timing of when revenues are recognized. However, the accounting system change forces the company to recognize costs earlier. The result of this change is potentially lower gross margins because costs are being recognized earlier, and therefore lower net profit as well.
- The company may be buying from different suppliers at higher costs and/or selling to different customers.

An examination of the income statement shows that 2006 was the first year in which products were returned. Also, and more importantly, as the note at the bottom of the statement shows, there was a change in the accounting method, from cash to accrual. And as we just stated, the change does not affect revenues because this is a cash business, but it does have a negative effect on all three margins because more expenses are being recognized. Therefore, as a result of the change, we are not comparing “apples to apples” with the prior year.

NET MARGINS

What are acceptable net margins? We've determined that the Clark Company has outstanding gross margins. But how do its net margins compare? In general, net margins of 5 percent or better are considered very good. According to Hussman Funds, since 1955, the average profit margins of the 500 largest U.S. companies have ranged between 5.5 percent and 7.5 percent. In fact, 2006 was a banner year for large U.S. corporations, as the Fortune 500 largest U.S. companies generated a posttax profit margin of 7.9 percent, equivalent to \$785 billion. This was a 29 percent increase over 2005 and obliterated the previous cyclical peak of \$444 billion. The top three companies in terms of net income, throughout the world, were U.S.-based. The net margins of these companies are shown in Table 5-10.

TABLE 5-10

Net Margin Top Ten

Company	Net Margin, %
Ambac Financial Group	45.3
Prologis	42.7
Public Storage	41.2
MGIC Investment	41.1
Linear Technology	40.3
Gilead Sciences	40.1
QUALCOMM	37.4
Yahoo!	36.1
Burlington Resources	35.7
Apache	35.2

Source: *BusinessWeek*, April 2006.

Privately owned companies want to minimize taxes, and therefore they reduce operating income, which in turn reduces their net income. The point being made is that the net income is usually a manipulated number that understates the company's true financial performance. A few exceptions might be companies that are preparing to go public or be sold. These companies may want to look as financially strong as possible.

In contrast, a publicly owned company aggressively seeks positive net margins, as high as possible, because the net margin affects the stock price. As one money manager remarked, "There is a greater tendency among companies to pull out the stops to generate the kind of positive earnings that Wall Street demands."³⁹ For example, a few years ago, America Online decided not to recognize some huge marketing expenses in its quest for positive annual earnings. The Securities and Exchange Commission unearthed this fact and forced AOL to take a charge of more than \$385 million in 1996, wiping out all the profit the company had made up to that point.

The greatest example of this kind of chicanery was the case of Enron, the one-time darling of Wall Street. Through off-balance-sheet transactions, Enron masked hundreds of millions of dollars of losses in its effort to continually beat analysts' estimates. The house of cards eventually crumbled, and one year after ranking number seven on the Fortune 500, Enron filed for bankruptcy. The carnage was severe, with more than 5,600 employees losing their jobs and in many cases their life savings. Over 20,000 creditors were left holding \$63 billion in debt, and tens of billions in shareholder value was lost.^{40,41}

Government regulation has targeted this kind of fraudulent behavior, and it has had an impact. A 2002 survey indicated that 59 percent of CFOs disclosed more information in financial statements than they had previously done, and 57 percent said that they planned to disclose more information in the next 12 months.⁴² Moreover, the Sarbanes-Oxley reform act has targeted this kind of abuse and changed the way in which corporate boardrooms and audit firms operate. However, this problem will never completely go away. Therefore, when analyzing the financial statements of a privately or publicly owned company, beware. Things—especially net income—may be significantly different from what the statements show.

The problem with looking at just net income for a public or private company is that income does not pay the bills. Cash flow pays the bills. Net income is typically an understatement of the company's cash flow because it includes noncash expenses such as depreciation and amortization. In addition, expenditures that have nothing to do with the operation of the company may also be included, thereby lowering the company's net income. It is common for owners of private companies to run certain personal

expenditures through their income statement because they view it as one of the perks of ownership. Therefore, one must realize that net income can be, and usually is, a manipulated number. For example, the late Leona Helmsley, owner of several upscale hotels in New York while she was alive, made improvements to her personal home and charged them against her company, thereby reducing the taxes owed. She was convicted of tax evasion as a result and served time in prison. One of the smoking guns used to convict her was an employee who quoted her as saying, "Only poor people pay taxes."

The reality that net income can be a manipulated number is best illustrated by a controversy regarding the 1995 movie *Forrest Gump*. The movie has grossed over \$600 million worldwide, making it one of the highest-grossing movies in history. A fellow who agreed to take a percentage of the movie's net income as his compensation wrote the story. Believe it or not, this movie never reported a positive net income, and thus the writer was due nothing. The issue was in dispute for a number of years and was recently resolved, finally opening the door for the long-awaited sequel to the original blockbuster. What's the entrepreneurial moral of the story? As an investor, never agree to take a percentage of the net income because you cannot control the expenses, be they real or make-believe.

Conversely, if you are the entrepreneur, always try to compensate investors based on net income, never on revenues. Basing compensation on revenues has gotten many entrepreneurs in financial trouble, because giving someone a percentage of revenues ("off the top") ignores whether a company has a positive cash flow.

The final problem that must be highlighted, with regard to putting too much importance on net earnings, is that the net earnings figure does not tell you where the earnings came from. Did they come from strong company operations or from financial instruments? A fundamentally sound company derives most of its earnings from operations, specifically from product sales or services rendered, not from interest earned on invested capital. The primary reliance upon interest earned would force the company to be in the money management business. Yahoo!, which had always been touted as one of the few profitable Internet

companies, found itself being justifiably criticized in 1997 and 1998. The criticism came from the observation that “in 1997 and 1998, Yahoo’s interest income accounted for nearly 40% of its net income. By comparison, Cisco’s 1998 interest income was only 12.5% of its earnings and Microsoft’s 15.5%.”⁴³ As noted in Chapter 2, Yahoo! began an ugly downward spiral in 2001 and is struggling to recover.

Before we close this section, let us analyze the net income of the Clark Company. The net margins for the Clark Company are 25, 24, and 14 percent for 2005, 2006, and 2007, respectively. This would indicate that the company’s net margins are outstanding. The trend, however, is downward, with the caveat that the final year was negatively affected by the change in accounting method previously discussed.

OTHER ISSUES TO CONSIDER

Is the Owner Managing the Business Full Time?

When evaluating the income statement of the Clark Company, one can find evidence that the owner may not be at the place of business on a full-time basis. First, there is an increase in wages, which may represent the hiring of a new employee to run the business, as the owner is taking more time off. An examination of a company’s financial statements requires a thorough analysis of the wages section. It is important to ask: Who are the employees? Do these employees actually exist? In some cities like Chicago, dead men have been known to vote in elections, and they also appear on city payrolls. During the due diligence, if the name of an employee is provided, you should look to see if the last name of the employee matches the last name of the owner. It would also be wise to follow up with the question, “How many employees are relatives, and what are their specific tasks and responsibilities?” Wages may have increased because a relative of the owner has been added to the payroll and is being paid an exorbitant wage for doing nothing or for doing something as simple as opening and locking up the company every day.

Figure 5-9 presents financial projections for 2008 for the Clark Company, based on historical information.

FIGURE 5-9**Clark Company Pro Forma Income Statement for 2008**

	Best Case	Worst Case	Most Likely Case
Income			
Gross sales	111,187	95,303	103,245
Returns and allowances			
Cost of goods sold	31,132	35,262	33,555
Gross profits	80,055	60,041	69,690
Expenses			
Advertising	3,336	2,859	3,097
Bad debts	111	95	103
Automobile expense	1,112	953	1,032
Depreciation	835	835	835
Employee benefits programs			
Insurance	2,224	1,906	2,065
Interest			
Mortgage			
Other			
Professional services			
Office expense	9,200	9,200	9,200
Other business property	13,400	13,400	13,400
Repairs and maintenance			
Supplies	226	226	226
Taxes and licenses	1,112	953	1,032
Travel			
Meals and entertainment	173	173	173
Utilities	2,600	2,600	2,600
Wages	12,200	12,200	12,200
Other			
Freight	1,245	1,245	1,245
Sales tax	7,783	6,671	7,227
Total expenses	55,556	53,317	54,437
Net profit or loss	24,499	6,724	15,253

How can you be sure the numbers are correct? In all likelihood, they will not be. It is rare that the actual numbers meet the projections. Pro forma development is simply educated guessing.

Revenues

Historically, if we look at the Clark Company pro forma income statement shown in Figure 5-9, the best case is a decrease in revenue of 2 percent; the worst case is a decrease of 16 percent. And the most-likely-case scenario is taken as an average of these two extremes—a decrease of 9 percent. This is a reasonable, logical argument for preparing the projections for sales revenue.

Gross Margins

With regard to gross margins, there were no clear trends during the three years of data that were provided. Gross margins increased between 2005 and 2006 and then declined between 2006 and 2007. The best-case gross margin would be 72 percent, the worst-case gross margin would be 64 percent, and the most-likely-case scenario would be an average of the two—68 percent. Again, there is very logical reasoning behind the development of these projections, which is what financiers hope to find.

NOTES

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