Table of Contents:

Introduction to Fundamental Analysis
Qualitative Analysis
Introduction to Financial Statements
Income Statement
Balance Sheet
Cash Flow Statement
Two Important Metrics: Return on Equity and Return on Invested Capital
Valuation
Putting it All Together: Investment Recommendation Example

Recommended websites:
Motley Fool – www.fool.com – Introductory information to investing and stock research
Investopedia – www.investopedia.com – Introductory info to the markets

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Introduction to Fundamental Analysis

What is Fundamental Analysis?
In this section we are going to review the basics of fundamental analysis, examine how it can be broken down into quantitative and qualitative factors, introduce the subject of intrinsic value and conclude with some of the downfalls of using this technique.

Introduction
Fundamental analysis is the cornerstone of investing. In fact, some would say that you aren't really investing if you aren't performing fundamental analysis. Because the subject is so broad, however, it's tough to know where to start. There are an endless number of investment strategies that are very different from each other, yet almost all use the fundamentals. The goal of this tutorial is to provide a foundation for understanding fundamental analysis. It's geared primarily at new investors who don't know a balance sheet from an income statement. While you may not be a "stock-picker extraordinaire" by the end of this tutorial, you will have a much more solid grasp of the language and concepts behind security analysis and be able to use this to further your knowledge in other areas without feeling totally lost. The biggest part of fundamental analysis involves delving into the financial statements. Also known as quantitative analysis, this involves looking at revenue, expenses, assets, liabilities and all the other financial aspects of a company. Fundamental analysts look at this information to gain insight on a company's future performance. A good part of this tutorial will be spent learning about the balance sheet, income statement, cash flow statement and how they all fit together. But there is more than just number crunching when it comes to analyzing a company. This is where qualitative analysis comes in - the breakdown of all the intangible, difficult-to-measure aspects of a company. Finally, we'll wrap up the tutorial with an intro on valuation and point you in the direction of additional tutorials you might be interested in. (Also, although it's not required, you might find it helpful to read our Investing 101 tutorial, as well as our tutorial on Stock Basics, before starting.) Ready? Let's dive into things with our first section, What Is It?

The Very Basics
When talking about stocks, fundamental analysis is a technique that attempts to determine a security's value by focusing on underlying factors that affect a company's actual business and its future prospects. On a broader scope, you can perform fundamental analysis on industries or the economy as a whole. The term simply refers to the analysis of the economic well-being of a financial entity as opposed to only its price movements. Fundamental analysis serves to answer questions, such as: Is the company's revenue growing? Is it actually making a profit? Is it in a strong-enough position to beat out its competitors in the future? Is it able to repay its debts? Is management trying to "cook the books"?

Of course, these are very involved questions, and there are literally hundreds of others you might have about a company. It all really boils down to one question: Is the company's stock a good investment? Think of fundamental analysis as a toolbox to help you answer this question. Note: The term fundamental analysis is used most often in the context of stocks, but you can perform fundamental analysis on any security, from a bond to a derivative. As long as you look at the economic fundamentals, you are doing fundamental analysis. For the purpose of this tutorial, fundamental analysis always is referred to in the context of stocks.

Fundamentals: Quantitative and Qualitative
You could define fundamental analysis as “researching the fundamentals”, but that doesn’t tell you a whole lot unless you know what fundamentals are. As we mentioned in the introduction, the big problem with defining fundamentals is that it can include anything related to the economic well-being of a company. Obvious items include things like revenue and profit, but fundamentals also include everything from a company’s market share to the quality of its management. The various fundamental factors can be grouped into two categories: quantitative and qualitative. The financial meaning of these terms isn’t all that different from their regular definitions. Here is how the MSN Encarta dictionary defines the terms: Quantitative – capable of being measured or expressed in numerical terms. Qualitative – related to or based on the quality or character of something, often as opposed to its size or quantity. In our context, quantitative fundamentals are numeric, measurable characteristics about a business. It’s easy to see how the biggest source of quantitative data is the financial statements. You can measure revenue, profit, assets and more with great precision. Turning to qualitative fundamentals, these are the less tangible factors surrounding a business - things such as the quality of a company’s board members and key executives, its brand-name recognition, patents or proprietary technology.

Quantitative Meets Qualitative
Neither qualitative nor quantitative analysis is inherently better than the other. Instead, many analysts consider qualitative factors in conjunction with the hard, quantitative factors. Take the Coca-Cola Company, for example. When examining its
stock, an analyst might look at the stock’s annual dividend payout, earnings per share, P/E ratio and many other quantitative factors. However, no analysis of Coca-Cola would be complete without taking into account its brand recognition. Anybody can start a company that sells sugar and water, but few companies on earth are recognized by billions of people. It’s tough to put your finger on exactly what the Coke brand is worth, but you can be sure that it’s an essential ingredient contributing to the company’s ongoing success.

The Concept of Intrinsic Value
Before we get any further, we have to address the subject of intrinsic value. One of the primary assumptions of fundamental analysis is that the price on the stock market does not fully reflect a stock’s “real” value. After all, why would you be doing price analysis if the stock market were always correct? In financial jargon, this true value is known as the intrinsic value. For example, let’s say that a company’s stock was trading at $20. After doing extensive homework on the company, you determine that it really is worth $25. In other words, you determine the intrinsic value of the firm to be $25. This is clearly relevant because an investor wants to buy stocks that are trading at prices significantly below their estimated intrinsic value. This leads us to one of the second major assumptions of fundamental analysis: in the long run, the stock market will reflect the fundamentals. There is no point in buying a stock based on intrinsic value if the price never reflected that value. Nobody knows how long “the long run” really is. It could be days or years. This is what fundamental analysis is all about. By focusing on a particular business, an investor can estimate the intrinsic value of a firm and thus find opportunities where he or she can buy at a discount. If all goes well, the investment will pay off over time as the market catches up to the fundamentals. The big unknowns are: 1) You don’t know if your estimate of intrinsic value is correct; and 2) You don’t know how long it will take for the intrinsic value to be reflected in the marketplace.

Coming Up with Ideas
Check out the following websites: Google Finance, Yahoo Finance, MSN Money and Stockpickr. All of these sites have some great information for stock investment ideas. On Yahoo Finance, take a look under the Investment tab and "Education;" On MSN Money, go to the Investing tab then "Stock Research" on the left hand column. Also, MSN Money publishes what they call "Expert Picks." This is basically a handful of investing experts who make recommendations for stocks and publish them free of charge. These expert picks can sometimes be very useful and lead to good investments, however I would not base your whole portfolio around them.

Go to www.MotleyFool.com. This website has probably some of the best information for independent investors. The website is a massive community of expert and amateur investors looking to share their own knowledge and make sound stock picks. When looking up stocks on this site, you not only get basic information about the company, but you can also see who is recommending the stock and if they are Bullish or Bearish on it. There is also something called CAPS, which is a rating system for specific stocks. If the stock has 5 stars, then it may be a golden investment opportunity. You can also see a list all of the stocks on the website that have gained the golden-clad 5 star rating.

Read the newspaper, watch CNBC, pay attention to what’s around you. Look up companies that spark your interest or seem interesting – they might be publicly traded.

A few other ideas (from Dhando Investor):
- magicformulainvesting.com : stocks are ranked by P/E and ROIC. Pabrai recommends this as a terrific screening process
- valueinvestorsclub.com : contains the stock ideas of other value investors
- Value Line's bottoms list : stocks that have lost the most value in the last week, stocks with the lowest P/E's etc
- 52-week low lists
- Outstanding Investor Digest and Value Investor Insight : both contain interviews with great value investors who offer up some ideas every once in a while
- Portfolio Reports : This publication lists the buying activity of some of North America's top money managers
- Guru Focus : a site dedicated to tracking the buying and selling of some of the world's top value investors
- Super Investor Insight : tracks the 13-F filings of the top money managers
- Major business publications (e.g. Wall Street Journal, BusinessWeek, etc.)
- Attend the Value Investing Congress
Qualitative Analysis

Qualitative Factors - The Company
Before diving into a company's financial statements, we're going to take a look at some of the qualitative aspects of a company. Fundamental analysis seeks to determine the intrinsic value of a company's stock. But since qualitative factors, by definition, represent aspects of a company's business that are difficult or impossible to quantify, incorporating that kind of information into a pricing evaluation can be quite difficult. On the flip side, as we've demonstrated, you can't ignore the less tangible characteristics of a company. In this section we are going to highlight some of the company-specific qualitative factors that you should be aware of.

Business Model
Even before an investor looks at a company's financial statements or does any research, one of the most important questions that should be asked is: What exactly does the company do? This is referred to as a company's business model – it's how a company makes money. You can get a good overview of a company's business model by checking out its website or reading the first part of its 10-K filing (Note: We'll get into more detail about the 10-K in the financial statements chapter. For now, just bear with us). Sometimes business models are easy to understand. Take McDonald's, for instance, which sells hamburgers, fries, soft drinks, salads and whatever other new special they are promoting at the time. It's a simple model, easy enough for anybody to understand.

Other times, you'd be surprised how complicated it can get. Boston Chicken Inc. is a prime example of this. Back in the early '90s its stock was the darling of Wall Street. At one point the company's CEO bragged that they were the "first new fast-food restaurant to reach $1 billion in sales since 1969". The problem is they didn't make money by selling chicken. Rather, they made their money from royalty fees and high-interest loans to franchisees. Boston Chicken was really nothing more than a big franchisor. On top of this, management was aggressive with how it recognized its revenue. As soon as it was revealed that all the franchisees were losing money, the house of cards collapsed and the company went bankrupt.

At the very least, you should understand the business model of any company you invest in. The "Oracle of Omaha", Warren Buffett, rarely invests in tech stocks because most of the time he doesn't understand them. This is not to say the technology sector is bad, but it's not Buffett's area of expertise; he doesn't feel comfortable investing in this area. Similarly, unless you understand a company's business model, you don't know what the drivers are for future growth, and you leave yourself vulnerable to being blindsided like shareholders of Boston Chicken were.

Competitive Advantage
Another business consideration for investors is competitive advantage. A company's long-term success is driven largely by its ability to maintain a competitive advantage - and keep it. Powerful competitive advantages, such as Coca Cola's brand name and Microsoft's domination of the personal computer operating system, create a moat around a business allowing it to keep competitors at bay and enjoy growth and profits. When a company can achieve competitive advantage, its shareholders can be well rewarded for decades. Harvard Business School professor Michael Porter distinguishes between strategic positioning and operational effectiveness. Operational effectiveness means a company is better than rivals at similar activities while competitive advantage means a company is performing better than rivals by doing different activities or performing similar activities in different ways. Investors should know that few companies are able to compete successfully for long if they are doing the same things as their competitors. Professor Porter argues that, in general, sustainable competitive advantage gained by:

- A unique competitive position
- Clear tradeoffs and choices vis-à-vis competitors
- Activities tailored to the company's strategy
- A high degree of fit across activities (it is the activity system, not the parts, that ensure sustainability)
- A high degree of operational effectiveness

Have you ever wondered what Warren Buffett means when he says that he looks for businesses with wide economic moats? While it's fun to imagine a company in a castle surrounded by alligator-invested waters, what Buffett actually means is that he looks for businesses that have strong competitive advantages. There are many different types.
Brand: Some people will only buy Apple computers, others will only drive Harleys, and yet others will only wear Nike sneakers. Be it through smart advertising, quality products, or the ultimate achievement -- teens think it’s cool -- once a brand develops a loyal customer base, competitors will have a hard time prying those folks away.

Quality: It didn’t take long for Google to become the king of search engines. Why? Its product was just that good. And as long as a company continues to deliver top-notch goods or services, a cult of happy buyers will usually continue to follow.

Pricing Power: Some businesses are large enough that they can under-price their competitors. Wal-Mart is an example. Others have a price advantage because they're vertically integrated -- meaning that one company handles all stages of making, selling, and distributing its products, versus farming out part of the job to someone else. There are many ways to build pricing power, and businesses that can consistently charge lower prices than their competitors stand a good chance at winning repeat customers.

Competitive advantages are frequently cited by ultra-long-term investors such as David Gardner, who look for stocks they can hold for a decade or more. The greater a company's competitive edge, the more likely it is to keep cranking out those cash flows. That said, several factors can threaten a company's moat -- maybe the business is a leader in a collapsing industry (printed newspapers, anyone?), or perhaps a new company has come along with better ideas, faster execution, disruptive technology, and even lower prices. Even a wildly popular brand could suddenly fall out of fashion (poor Crocs). But whatever the reason, moats don’t necessarily last forever. They’re a very attractive quality in a business, but like everything else, they need to be monitored.

Management
Just as an army needs a general to lead it to victory, a company relies upon management to steer it towards financial success. Some believe that management is the most important aspect for investing in a company. It makes sense - even the best business model is doomed if the leaders of the company fail to properly execute the plan. So how does an average investor go about evaluating the management of a company? This is one of the areas in which individuals are truly at a disadvantage compared to professional investors. You can’t set up a meeting with management if you want to invest a few thousand dollars. On the other hand, if you are a fund manager interested in investing millions of dollars, there is a good chance you can schedule a face-to-face meeting with the upper brass of the firm. Every public company has a corporate information section on its website. Usually there will be a quick biography on each executive with their employment history, educational background and any applicable achievements. Don't expect to find anything useful here. Let's be honest: We're looking for dirt, and no company is going to put negative information on its corporate website. Instead, here are a few ways for you to get a feel for management:

1. Conference Calls - The Chief Executive Officer (CEO) and Chief Financial Officer (CFO) host quarterly conference calls. (Sometimes you'll get other executives as well.) The first portion of the call is management basically reading off the financial results. What is really interesting is the question-and-answer portion of the call. This is when the line is open for analysts to call in and ask management direct questions. Answers here can be revealing about the company, but more importantly, listen for candor. Do they avoid questions, like politicians, or do they provide forthright answers?

2. Management Discussion and Analysis (MD&A) - The Management Discussion and Analysis is found at the beginning of the annual report (discussed in more detail later in this tutorial). In theory, the MD&A is supposed to be frank commentary on the management's outlook. Sometimes the content is worthwhile, other times it's boilerplate. One tip is to compare what management said in past years with what they are saying now. Is it the same material rehashed? Have strategies actually been implemented? If possible, sit down and read the last five years of MD&As; it can be illuminating.

3. Ownership and Insider Sales - Just about any large company will compensate executives with a combination of cash, restricted stock and options. While there are problems with stock options (See Putting Management Under the Microscope), it is a positive sign that members of management are also shareholders. The ideal situation is when the founder of the company is still in charge. Examples include Bill Gates (in the '80s and '90s), Michael Dell and Warren Buffett. When you know that a majority of management's wealth is in the stock, you can have confidence that they will do the right thing. As well, it's worth checking out if management has been selling its stock. This has to be filed with the Securities and Exchange Commission (SEC), so it's publicly available information. Talk is cheap - think twice if you see management unloading all of its shares while saying something else in the media.
4. Past Performance - Another good way to get a feel for management capability is to check and see how executives have done at other companies in the past. You can normally find biographies of top executives on company web sites. Identify the companies they worked at in the past and do a search on those companies and their performance.

Corporate Governance
Corporate governance describes the policies in place within an organization denoting the responsibilities and relationships between management, directors and stakeholders. These policies are defined and determined in the company charter and its bylaws, along with corporate laws and regulations. The purpose of corporate governance policies is to ensure that proper checks and balances are in place, making it more difficult for anyone to conduct unethical and illegal activities. Good corporate governance is a situation in which a company complies with all of its governance policies and applicable government regulations (such as the Sarbanes-Oxley Act of 2002) in order to look out for the interests of the company's investors and other stakeholders. Although, there are companies and organizations (such as Standard & Poor's) that attempt to quantitatively assess companies on how well their corporate governance policies serve stakeholders, most of these reports are quite expensive for the average investor to purchase. Fortunately, corporate governance policies typically cover a few general areas: structure of the board of directors, stakeholder rights and financial and information transparency. With a little research and the right questions in mind, investors can get a good idea about a company's corporate governance.

Financial and Information Transparency - This aspect of governance relates to the quality and timeliness of a company's financial disclosures and operational happenings. Sufficient transparency implies that a company's financial releases are written in a manner that stakeholders can follow what management is doing and therefore have a clear understanding of the company's current financial situation.

Stakeholder Rights - This aspect of corporate governance examines the extent that a company's policies are benefiting stakeholder interests, notably shareholder interests. Ultimately, as owners of the company, shareholders should have some access to the board of directors if they have concerns or want something addressed. Therefore companies with good governance give shareholders a certain amount of ownership voting rights to call meetings to discuss pressing issues with the board. Another relevant area for good governance, in terms of ownership rights, is whether or not a company possesses large amounts of takeover defenses (such as the Macaroni Defense or the Poison Pill) or other measures that make it difficult for changes in management, directors and ownership to occur. (To read more on takeover strategies, see The Wacky World of M&As.)

Structure of the Board of Directors - The board of directors is composed of representatives from the company and representatives from outside of the company. The combination of inside and outside directors attempts to provide an independent assessment of management's performance, making sure that the interests of shareholders are represented. The key word when looking at the board of directors is independence. The board of directors is responsible for protecting shareholder interests and ensuring that the upper management of the company is doing the same. The board possesses the right to hire and fire members of the board on behalf of the shareholders. A board filled with insiders will often not serve as objective critics of management and will defend their actions as good and beneficial, regardless of the circumstances. Information on the board of directors of a publicly traded company (such as biographies of individual board members and compensation-related info) can be found in the DEF 14A proxy statement. We've now gone over the business model, management and corporate governance. These three areas are all important to consider when analyzing any company. We will now move on to looking at qualitative factors in the environment in which the company operates.

Qualitative Factors - The Industry
Each industry has differences in terms of its customer base, market share among firms, industry-wide growth, competition, regulation and business cycles. Learning about how the industry works will give an investor a deeper understanding of a company's financial health.

Customers - Some companies serve only a handful of customers, while others serve millions. In general, it's a red flag (a negative) if a business relies on a small number of customers for a large portion of its sales because the loss of each customer could dramatically affect revenues. For example, think of a military supplier who has 100% of its sales with the U.S. government. One change in government policy could potentially wipe out all of its sales. For this reason, companies will always disclose in their 10-K if any one customer accounts for a majority of revenues.

Market Share - Understanding a company's present market share can tell volumes about the company's business. The fact that a company possesses an 85% market share tells you that it is the largest player in its market by far. Furthermore, this could also suggest that the company possesses some sort of "economic moat," in other words, a competitive barrier serving to
protect its current and future earnings, along with its market share. Market share is important because of economies of scale. When the firm is bigger than the rest of its rivals, it is in a better position to absorb the high fixed costs of a capital-intensive industry.

Industry Growth - One way of examining a company's growth potential is to first examine whether the amount of customers in the overall market will grow. This is crucial because without new customers, a company has to steal market share in order to grow. In some markets, there is zero or negative growth, a factor demanding careful consideration. For example, a manufacturing company dedicated solely to creating audio compact cassettes might have been very successful in the '70s, '80s and early '90s. However, that same company would probably have a tough time now due to the advent of newer technologies, such as CDs and MP3s. The current market for audio compact cassettes is only a fraction of what it was during the peak of its popularity.

Competition - Simply looking at the number of competitors goes a long way in understanding the competitive landscape for a company. Industries that have limited barriers to entry and a large number of competing firms create a difficult operating environment for firms. One of the biggest risks within a highly competitive industry is pricing power. This refers to the ability of a supplier to increase prices and pass those costs on to customers. Companies operating in industries with few alternatives have the ability to pass on costs to their customers. A great example of this is Wal-Mart. They are so dominant in the retailing business, that Wal-Mart practically sets the price for any of the suppliers wanting to do business with them. If you want to sell to Wal-Mart, you have little, if any, pricing power.

Regulation - Certain industries are heavily regulated due to the importance or severity of the industry's products and/or services. As important as some of these regulations are to the public, they can drastically affect the attractiveness of a company for investment purposes. In industries where one or two companies represent the entire industry for a region (such as utility companies), governments usually specify how much profit each company can make. In these instances, while there is the potential for sizable profits, they are limited due to regulation. In other industries, regulation can play a less direct role in affecting industry pricing. For example, the drug industry is one of most regulated industries. And for good reason - no one wants an ineffective drug that causes deaths to reach the market. As a result, the U.S. Food and Drug Administration (FDA) requires that new drugs must pass a series of clinical trials before they can be sold and distributed to the general public. However, the consequence of all this testing is that it usually takes several years and millions of dollars before a drug is approved. Keep in mind that all these costs are above and beyond the millions that the drug company has spent on research and development. All in all, investors should always be on the lookout for regulations that could potentially have a material impact upon a business' bottom line. Investors should keep these regulatory costs in mind as they assess the potential risks and rewards of investing.

Porter's Five Forces
Understanding the dynamics of competitors within an industry is critical for several reasons. First, it can help to assess the potential opportunities for your venture, particularly important if you are entering this industry as a new player. It can also be a critical step to better differentiate yourself from others that offer similar products and services. One of the most respected models to assist with this analysis is Porter's Five Forces Model. This model, created by Michael E. Porter and described in the book “Competitive Strategy: Techniques for Analyzing Industries and Competitors,” has proven to be a useful tool for both business and marketing-based planning.

Background
The pure competition model does not present a viable tool to assess an industry. Porter's Five Forces attempts to realistically assess potential levels of profitability, opportunity and risk based on five key factors within an industry. This model may be used as a tool to better develop a strategic advantage over competing firms within an industry in a competitive and healthy environment. It identifies five forces that determine the long-run profitability of a market or market segment – Suppliers, Buyers, Entry/Exit Barriers, Substitutes, and Rivalry.
Power of suppliers
An industry that produces goods requires raw materials. This leads to buyer-supplier relationships between the industry and the firms that provide the raw materials. Depending on where the power lies, suppliers may be able to exert an influence on the producing industry. They may be able to dictate price and influence availability. A segment is unattractive when an organization’s suppliers have the ability to:

- Increase prices without suffering from a decrease in volume
- Reduce the quantity supplied
- Organize in a formal or informal manner
- Compete in an environment with relatively few substitutes
- Provide a product/material that is a critical part of the end product or service
- Impose switching costs on their customers when they depart
- Integrate downstream by purchasing or controlling the distribution channels.

One example of this is DeBeers’ ability to wield influence within the diamond industry. DeBeers’ high level of control over some of the most productive diamond mines in the world gives them extreme power within the industry. The best defense in mitigating the power of suppliers is to build win–win relationships with suppliers or arrange to use multiple suppliers.

Power of buyers
The power of buyers describes the impact customers have on an industry. When buyer power is strong, the relationship to the producing industry becomes closer to what economists term a monopsony. A Monopsony is a market where there are many suppliers and one buyer. Under these market conditions, the buyer has the most influence in determining the price. Few pure monopsonies actually exist, but there is often a connection between an industry and buyers that determines where power lies.

The bargaining power of buyers increases when they have the ability to:

- Be “organized” in some form with others providing similar products and services
- Purchase a product that represents a significant fraction of the buyer’s costs
- Buy a product that is undifferentiated
- Incur low switching costs when they change vendors
- Be price sensitive, with other options available
- Integrate upstream, to purchase the providers of the goods.

To mitigate the power of buyers, sellers can seek to select buyers with less power to negotiate, switch suppliers, or develop superior offers that strong buyers cannot refuse.

Barriers to entry/exit
The possibility of new firms entering the industry impacts competition. A key is to assess how easy it is for a new player to enter an industry. The most attractive segment has high entry barriers and low exit barriers. Although any firm should be able to enter and exit a market, each industry often presents varying levels of difficulty, commonly driven by economics.
Manufacturing-based industries are more difficult to enter than many service-based industries. The definable characteristics of each industry protect profitable areas for firms and inhibit additional rivals from entering the market. These inhibitive characteristics are referred to as **barriers to entry**.

Barriers to entry are more than the expected ebb and flow that markets typically experience. For example, when industry profits increase, one would expect firms to enter the market to take advantage of the high profit levels, which will eventually result in reducing profits. Conversely, when profits decrease, we would expect some firms to exit. Other factors that will deter new entrants are falling prices, actions that keep prices artificially low, expectations that future prices will fall, large or unpredictable start-up expenditures, and other extreme uncertainties. Barriers to entry are unique characteristics to each industry. They reduce the rate of entry of new firms and, therefore, maintain a level of profits for current industry competitors. Barriers to entry can be created or exploited to enhance a firm’s competitive advantage.

Barriers to entry arise from several sources:

- Patents and proprietary knowledge
- Asset specificity – (Specialized technology or infrastructure)
- Economies of scale
- Government.

Barriers to exit work similarly to barriers to entry. Exit barriers limit the ability of a firm to leave the market and can exacerbate rivalry – unable to leave the industry, a firm must compete. Some of an industry’s entry and exit barriers can be summarized as follows: Profitability potential is high when both entry and exit barriers are high. In this situation, firms do face more risk because poorer-performing ones tend to continue to produce regardless of profitability and, therefore, continue to add to the supply.

**Substitute products**

Porter’s Five Forces model refers to “substitute products” as those products that are available in other industries that meet an identical or similar need for the end user. As more substitutes become available and affordable, the demand becomes more elastic since customers have more alternatives. Substitute products may limit the ability of firms within an industry to raise prices and improve margins. For example, the price of aluminum cans is constrained by the price of glass bottles, steel cans, and plastic containers. These containers are substitutes, yet they are not rivals in the same industries. A substitute product to the services offered by a CPA firm is accounting or tax-based software – two very different industries that offer some of the same consumer benefits.

The threat of substitutes often impacts price-based competition. There are other concerns in assessing the threat of substitutes relating to technology. New technologies contribute to competition though substitute products and services. Think of the impact wireless technologies have had on traditional telephone service. Except in remote areas it is unlikely that cable TV could compete with free broadcast TV from an antenna without the greater diversity of entertainment that it affords the customer. Again, a segment is unattractive when there are actual or potential substitutes for a product.

**Rivalry**

Firms strive to secure a competitive advantage over their rivals. The intensity of rivalry varies within each industry and these differences can be important in the development of strategy. Industries that are “concentrated,” versus “fragmented,” often display the highest level of rivalry. Many, including The US Bureau of Census, recognize industry concentration and measure it by the “concentration ratio” (CR). The Census Bureau reports the CR by Standard Industrial Classification (SIC) Code and it indicates the percent of market share held by the four largest firms. A high concentration ratio indicates that a majority of market share is controlled by the largest firms. If a few firms hold a large market share, the competitive landscape is less competitive as it nears that of a monopoly. A low CR indicates that the industry has many rivals, none with significant market share. These fragmented markets are said to be competitive.

In pursuing an advantage over its rivals, a firm can choose from several competitive moves:

- Changing prices
- Improving product differentiation
- Creatively using channels of distribution
- Exploiting relationships with suppliers.
For example, the intensity of rivalry is increased by the following industry characteristics:

- Numerous competitors that are particularly strong or aggressive that are competing for the same customers and resources
- Declining sales revenues and volumes resulting in slow market growth, creating the need to actively fight for market share
- High fixed costs result in an economy of scale effect
- High storage costs or highly perishable products
- Plant capacity is being added, over and above what is needed to meet demand
- Low switching costs for buyers
- Low levels of product differentiation
- Strategic stakes are high when a firm is losing market position or has potential for great gains
- High exit barriers place a significant cost on abandoning the product
- A diversity of rivals with different cultures, histories, and philosophies
- An industry shakeout
- When a rival acts in a way that elicits a counter-response by other firms
- Competitors have high stakes – economic and other – and will battle to remain as a player within the segment.

These conditions will make competing within the industry more challenging, commonly leading to frequent price wars, advertising battles, and the addition of new products.

**Service**

Service can also play a part in the industry’s dynamics. Those competitors that provide superior service may bring an advantage to their competitive position if the industry/customer places value on this attribute. This is another point of differentiation and can be a key strategic element to consider. If a competitor has a service component that is difficult to replicate, it will prove to offer a strategic advantage.

**The result**

We can look at several industries and see how Porter’s Five Forces would depict them; the entertainment industry is in flux, telecommunications companies are volatile, computer firms are merging, utility industries are down, the housing market is up. Porter’s Five Forces can assist us to better understand these dynamics in a more objective manner and hopefully make better strategic decisions as a result.
Introduction to Financial Statements

Introduction
The massive amount of numbers in a company's financial statements can be bewildering and intimidating to many investors. On the other hand, if you know how to analyze them, the financial statements are a gold mine of information. Financial statements are the medium by which a company discloses information concerning its financial performance. Followers of fundamental analysis use the quantitative information gleaned from financial statements to make investment decisions. Before we jump into the specifics of the three most important financial statements - income statements, balance sheets and cash flow statements - we will briefly introduce each financial statement's specific function, along with where they can be found.

The Major Statements
The Balance Sheet - The balance sheet represents a record of a company's assets, liabilities and equity at a particular point in time. The balance sheet is named by the fact that a business's financial structure balances in the following manner: Assets = Liabilities + Shareholders' Equity

Assets represent the resources that the business owns or controls at a given point in time. This includes items such as cash, inventory, machinery and buildings. The other side of the equation represents the total value of the financing the company has used to acquire those assets. Financing comes as a result of liabilities or equity. Liabilities represent debt (which of course must be paid back), while equity represents the total value of money that the owners have contributed to the business - including retained earnings, which is the profit made in previous years.

The Income Statement - While the balance sheet takes a snapshot approach in examining a business, the income statement measures a company's performance over a specific time frame. Technically, you could have a balance sheet for a month or even a day, but you'll only see public companies report quarterly and annually. The income statement presents information about revenues, expenses and profit that was generated as a result of the business' operations for that period.

Statement of Cash Flows - The statement of cash flows represents a record of a business' cash inflows and outflows over a period of time. Typically, a statement of cash flows focuses on the following cash-related activities:

- Operating Cash Flow (OCF): Cash generated from day-to-day business operations
- Cash from investing (CFI): Cash used for investing in assets, as well as the proceeds from the sale of other businesses, equipment or long-term assets
- Cash from financing (CFF): Cash paid or received from the issuing and borrowing of funds

The cash flow statement is important because it's very difficult for a business to manipulate its cash situation. There is plenty that aggressive accountants can do to manipulate earnings, but it's tough to fake cash in the bank. For this reason some investors use the cash flow statement as a more conservative measure of a company's performance.

10-K and 10-Q
Now that you have an understanding of what the three financial statements represent, let's discuss where an investor can go about finding them. In the United States, the Securities And Exchange Commission (SEC) requires all companies that are publicly traded on a major exchange to submit periodic filings detailing their financial activities, including the financial statements mentioned above. Some other pieces of information that are also required are an auditor's report, management discussion and analysis (MD&A) and a relatively detailed description of the company's operations and prospects for the upcoming year. All of this information can be found in the business' annual 10-K and quarterly 10-Q filings, which are released by the company's management and can be found on the internet or in physical form. (For more information, see Where can I find a company's annual report and its SEC filings?) The 10-K is an annual filing that discloses a business's performance over the course of the fiscal year. In addition to finding a business's financial statements for the most recent year, investors also have access to the business's historical financial measures, along with information detailing the operations of the business. This includes a lot of information, such as the number of employees, biographies of upper management, risks, future plans for growth, etc.

Businesses also release an annual report, which some people also refer to as the 10-K. The annual report is essentially the 10-K released in a fancier marketing format. It will include much of the same information, but not all, that you can find in the 10-K. The 10-K really is boring - it's just pages and pages of numbers, text and legalese. But just because it's boring doesn't mean it isn't useful. There is a lot of good information in a 10-K, and it's required reading for any serious investor. You can think of the 10-Q filing as a smaller version of a 10-K. It reports the company's performance after each fiscal quarter. Each year three
10-Q filings are released - one for each of the first three quarters. (Note: There is no 10-Q for the fourth quarter, because the 10-K filing is released during that time). Unlike the 10-K filing, 10-Q filings are not required to be audited. Here's a tip if you have trouble remembering which is which: think "Q" for quarter.

Other Important Sections Found in Financial Filings

The financial statements are not the only parts found in a business's annual and quarterly SEC filings. Here are some other noteworthy sections:

Management Discussion and Analysis (MD&A) - As a preface to the financial statements, a company's management will typically spend a few pages talking about the recent year (or quarter) and provide background on the company. This is referred to as the management discussion and analysis (MD&A). In addition to providing investors a clearer picture of what the company does, the MD&A also points out some key areas in which the company has performed well. Don't expect the letter from management to delve into all the juicy details affecting the company's performance. The management's analysis is at their discretion, so understand they probably aren't going to be disclosing any negatives. Here are some things to look out for:

- How candid and accurate are management’s comments?
- Does management discuss significant financial trends over the past couple years? (As we've already mentioned, it can be interesting to compare the MD&As over the last few years to see how the message has changed and whether management actually followed through with its plan.)
- How clear are management's comments? If executives try to confuse you with big words and jargon, perhaps they have something to hide.
- Do they mention potential risks or uncertainties moving forward?

Disclosure is the name of the game. If a company gives a decent amount of information in the MD&A, it's likely that management is being upfront and honest. It should raise a red flag if the MD&A ignores serious problems that the company has been facing.

The Auditor's Report - The auditors' job is to express an opinion on whether the financial statements are reasonably accurate and provide adequate disclosure. This is the purpose behind the auditor's report, which is sometimes called the "report of independent accountants". By law, every public company that trades stocks or bonds on an exchange must have its annual reports audited by a certified public accountants firm. An auditor's report is meant to scrutinize the company and identify anything that might undermine the integrity of the financial statements.

While the auditor's report won't uncover any financial bombshells, audits give credibility to the figures reported by management. You'll only see unaudited financials for unlisted firms (those that trade OTCBB or on the Pink Sheets). While quarterly statements aren't audited, you should be very wary of any annual financials that haven't been given the accountants' stamp of approval.

The Notes to the Financial Statements - Just as the MD&A serves an introduction to the financial statements, the notes to the financial statements (sometimes called footnotes) tie up any loose ends and complete the overall picture. If the income statement, balance sheet and statement of cash flows are the heart of the financial statements, then the footnotes are the arteries that keep everything connected. Therefore, if you aren't reading the footnotes, you're missing out on a lot of information. The footnotes list important information that could not be included in the actual ledgers. For example, they list relevant things like outstanding leases, the maturity dates of outstanding debt and details on compensation plans, such as stock options, etc. Generally speaking there are two types of footnotes:

- Accounting Methods - This type of footnote identifies and explains the major accounting policies of the business that the company feels that you should be aware of. This is especially important if a company has changed accounting policies. It may be that a firm is practicing "cookie jar accounting" and is changing policies only to take advantage of current conditions in order to hide poor performance.
- Disclosure - The second type of footnote provides additional disclosure that simply could not be put in the financial statements. The financial statements in an annual report are supposed to be clean and easy to follow. To maintain this cleanliness, other calculations are left for the footnotes. For example, details of long-term debt - such as maturity dates and the interest rates at which debt was issued - can give you a better idea of how borrowing costs are laid out. Other areas of disclosure include everything from pension plan liabilities for existing employees to details about ominous legal proceedings involving the company. The majority of investors and analysts read the balance sheet, income statement and cash flow statement but, for whatever reason, the footnotes are often ignored. What sets informed investors apart is digging deeper and looking for information that others typically wouldn't. No matter how boring it might be, read the fine print - it will make you a better investor.
Income Statement

Introduction
An income statement is a report that shows how much revenue a company earned over a specific time period (usually for a year or some portion of a year). An income statement also shows the costs and expenses associated with earning that revenue. The literal “bottom line” of the statement usually shows the company’s net earnings or losses. This tells you how much the company earned or lost over the period. Income statements also report earnings per share (or “EPS”). This calculation tells you how much money shareholders would receive if the company decided to distribute all of the net earnings for the period. (Companies almost never distribute all of their earnings. Usually they reinvest them in the business.)

To understand how income statements are set up, think of them as a set of stairs. You start at the top with the total amount of sales made during the accounting period. Then you go down, one step at a time. At each step, you make a deduction for certain costs or other operating expenses associated with earning the revenue. At the bottom of the stairs, after deducting all of the expenses, you learn how much the company actually earned or lost during the accounting period. People often call this “the bottom line.”

At the top of the income statement is the total amount of money brought in from sales of products or services. This top line is often referred to as gross revenues or sales. It’s called “gross” because expenses have not been deducted from it yet. So the number is “gross” or unrefined. The next line is money the company doesn’t expect to collect on certain sales. This could be due, for example, to sales discounts or merchandise returns. When you subtract the returns and allowances from the gross revenues, you arrive at the company’s net revenues. It’s called “net” because, if you can imagine a net, these revenues are left in the net after the deductions for returns and allowances have come out.

Moving down the stairs from the net revenue line, there are several lines that represent various kinds of operating expenses. Although these lines can be reported in various orders, the next line after net revenues typically shows the costs of the sales. This number tells you the amount of money the company spent to produce the goods or services it sold during the accounting period. The next line subtracts the costs of sales from the net revenues to arrive at a subtotal called “gross profit” or sometimes “gross margin.” It’s considered “gross” because there are certain expenses that haven’t been deducted from it yet.

The next section deals with operating expenses. These are expenses that go toward supporting a company’s operations for a given period – for example, salaries of administrative personnel and costs of researching new products. Marketing expenses are another example. Operating expenses are different from “costs of sales,” which were deducted above, because operating expenses cannot be linked directly to the production of the products or services being sold. Depreciation is also deducted from gross profit. Depreciation takes into account the wear and tear on some assets, such as machinery, tools and furniture, which are used over the long term. Companies spread the cost of these assets over the periods they are used. This process of spreading these costs is called depreciation or amortization. The “charge” for using these assets during the period is a fraction of the original cost of the assets. After all operating expenses are deducted from gross profit, you arrive at operating profit before interest and income tax expenses. This is often called “income from operations.”

Next companies must account for interest income and interest expense. Interest income is the money companies make from keeping their cash in interest-bearing savings accounts, money market funds and the like. On the other hand, interest expense is the money companies paid in interest for money they borrow. Some income statements show interest income and interest expense separately. Some income statements combine the two numbers. The interest income and expense are then added or subtracted from the operating profits to arrive at operating profit before income tax. Finally, income tax is deducted and you arrive at the bottom line: net profit or net losses. (Net profit is also called net income or net earnings.) This tells you how much the company actually earned or lost during the accounting period. Did the company make a profit or did it lose money?

Most income statements include a calculation of earnings per share or EPS. This calculation tells you how much money shareholders would receive for each share of stock they own if the company distributed all of its net income for the period. To calculate EPS, you take the total net income and divide it by the number of outstanding shares of the company.

The income statement is basically the first financial statement you will come across in an annual report or quarterly Securities And Exchange Commission (SEC) filing. It also contains the numbers most often discussed when a company announces its results - numbers such as revenue, earnings and earnings per share. Basically, the income statement shows how much money the company generated (revenue), how much it spent (expenses) and the difference between the two (profit) over a certain time period. When it comes to analyzing fundamentals, the income statement lets investors know how well the company’s
business is performing - or, basically, whether or not the company is making money. Generally speaking, companies ought to be able to bring in more money than they spend or they don't stay in business for long. Those companies with low expenses relative to revenue - or high profits relative to revenue - signal strong fundamentals to investors.

Revenue as an investor signal
Revenue, also commonly known as sales, is generally the most straightforward part of the income statement. Often, there is just a single number that represents all the money a company brought in during a specific time period, although big companies sometimes break down revenue by business segment or geography. The best way for a company to improve profitability is by increasing sales revenue. For instance, Starbucks Coffee has aggressive long-term sales growth goals that include a distribution system of 20,000 stores worldwide. Consistent sales growth has been a strong driver of Starbucks' profitability. The best revenue are those that continue year in and year out. Temporary increases, such as those that might result from a short-term promotion, are less valuable and should garner a lower price-to-earnings multiple for a company.

What are the Expenses?
There are many kinds of expenses, but the two most common are the cost of goods sold (COGS) and selling, general and administrative expenses (SG&A). Cost of goods sold is the expense most directly involved in creating revenue. It represents the costs of producing or purchasing the goods or services sold by the company. For example, if Wal-Mart pays a supplier $4 for a box of soap, which it sells to customers for $5. When it is sold, Wal-Mart's cost of good sold for the box of soap would be $4.

Next, costs involved in operating the business are SG&A. This category includes marketing, salaries, utility bills, technology expenses and other general costs associated with running a business. SG&A also includes depreciation and amortization. Companies must include the cost of replacing worn out assets. Remember, some corporate expenses, such as research and development (R&D) at technology companies, are crucial to future growth and should not be cut, even though doing so may make for a better-looking earnings report. Finally, there are financial costs, notably taxes and interest payments, which need to be considered.

Profits = Revenue - Expenses
Profit, most simply put, is equal to total revenue minus total expenses. However, there are several commonly used profit subcategories that tell investors how the company is performing. Gross profit is calculated as revenue minus cost of goods sold. Returning to Wal-Mart again, the gross profit from the sale of the soap would have been $1 ($5 sales price less $4 cost of goods sold = $1 gross profit). Companies with high gross margins will have a lot of money left over to spend on other business operations, such as R&D or marketing. So be on the lookout for downward trends in the gross margin rate over time. This is a telltale sign of future problems facing the bottom line. When cost of goods sold rises rapidly, they are likely to lower gross profit margins - unless, of course, the company can pass these costs onto customers in the form of higher prices.

Operating profit is equal to revenues minus the cost of sales and SG&A. This number represents the profit a company made from its actual operations, and excludes certain expenses and revenues that may not be related to its central operations. High operating margins can mean the company has effective control of costs, or that sales are increasing faster than operating costs. Operating profit also gives investors an opportunity to do profit-margin comparisons between companies that do not issue a separate disclosure of their cost of goods sold figures (which are needed to do gross margin analysis). Operating profit measures how much cash the business throws off, and some consider it a more reliable measure of profitability since it is harder to manipulate with accounting tricks than net earnings.

Net income generally represents the company's profit after all expenses, including financial expenses, have been paid. This number is often called the "bottom line" and is generally the figure people refer to when they use the word "profit" or "earnings". When a company has a high profit margin, it usually means that it also has one or more advantages over its competition. Companies with high net profit margins have a bigger cushion to protect themselves during the hard times. Companies with low profit margins can get wiped out in a downturn. And companies with profit margins reflecting a competitive advantage are able to improve their market share during the hard times - leaving them even better positioned when things improve again.

General Terminology
Income statements come with various monikers. The most commonly used are "statement of income," "statement of earnings," "statement of operations" and "statement of operating results." Many professionals still use the term "P&L," which stands for profit and loss statement, but this term is seldom found in print these days. In addition, the terms "profits," "earnings" and "income" all mean the same thing and are used interchangeably.
In the income statement, four measures of profitability (*) are revealed at four critical junctions in a company's operations - gross, operating, pretax and after tax. In the single-step presentation, the gross and operating income figures are not stated; nevertheless, they can be calculated from the data provided.

One last general observation: Investors must remind themselves that the income statement recognizes revenues when they are realized (i.e., when goods are shipped, services rendered and expenses incurred). With accrual accounting, the flow of accounting events through the income statement doesn't necessarily coincide with the actual receipt and disbursement of cash. The income statement measures profitability, not cash flow.

### Income Statement Accounts

- **Sales** (a.k.a. revenue): These all refer to the value of a company's sales of goods and services to its customers. Even though a company's "bottom line" (its net income) gets most of the attention from investors, the "top line" is where the revenue or income process begins. Also, in the long run, profit margins on a company's existing products tend to eventually reach a maximum that is difficult on which to improve. Thus, companies typically can grow no faster than their revenues.

- **Cost of Sales** (a.k.a. cost of goods (or products) sold (COGS), and cost of services): For a manufacturer, cost of sales is the expense incurred for raw materials, labor and manufacturing overhead used in the production of its goods. While it may be stated separately, depreciation expense belongs in the cost of sales. For wholesalers and retailers, the cost of sales is essentially the purchase cost of merchandise used for resale. For service-related businesses, cost of sales represents the cost of services rendered or cost of revenues. (To learn more about sales, read *Measuring Company Efficiency, Inventory Valuation For Investors: FIFO And LIFO* and *Great Expectations: Forecasting Sales Growth*.)

- **Gross Profit** (a.k.a. gross income or gross margin): A company's gross profit does more than simply represent the difference between net sales and the cost of sales. Gross profit provides the resources to cover all of the company's other expenses. Obviously, the greater and more stable a company's gross margin, the greater potential there is for positive bottom line (net income) results. Gross margin is gross profit divided by revenues and it shows for every $1 of revenue, how much goes to the sales of the goods.

- **Selling, General and Administrative Expenses**: Often referred to as SG&A, this account comprises a company's operational expenses. Financial analysts generally assume that management exercises a great deal of control over this expense category. The trend of SG&A expenses, as a percentage of sales, is watched closely to detect signs, both positive and negative, of managerial efficiency.

- **Research & Development (R&D) Expenses**: This is the part of its income a company is re-investing in the business to find and develop new products. It's an indication of how much management values innovation. Look at whether it is increasing or decreasing from year to year.

- **Operating Income** (also called Earnings Before Interest & Taxes – EBIT): Deducting SG&A from a company's gross profit produces operating income. This figure represents a company's earnings from its normal operations before any so-called non-operating income and/or costs such as interest expense, taxes and special items. Income at the operating level, which is viewed as more reliable, is often used by financial analysts rather than net income as a measure of profitability.

- **Interest Expense**: This item reflects the costs of a company's borrowings. Sometimes companies record a net figure here for interest expense and interest income from invested funds.

- **Pretax Income** (a.k.a. income before taxes): Another carefully watched indicator of profitability, earnings garnered before the income tax expense is an important step in the income statement. Numerous and diverse techniques are available to companies to avoid and/or minimize taxes that affect their reported income. Because these actions are not part of a company's business operations, analysts may choose to use pretax income as a more accurate measure of corporate profitability.

- **Income Taxes**: As stated, the income tax amount has not actually been paid - it is an estimate, or an account that has been created to cover what a company expects to pay.
Special Items or Extraordinary or Non-recurring Expenses: A variety of events can occasion charges against income. They are commonly identified as restructuring charges, unusual or nonrecurring items and discontinued operations. These write-offs are supposed to be one-time events. Investors need to take these special items into account when making inter-annual profit comparisons because they can distort evaluations.

Net Income (a.k.a. net profit or net earnings): This is the bottom line, which is the most commonly used indicator of a company's profitability. Of course, if expenses exceed income, this account caption will read as a net loss. After the payment of preferred dividends, if any, net income becomes part of a company's equity position as retained earnings. Supplemental data is also presented for net income on the basis of shares outstanding (basic) and the potential conversion of stock options, warrants etc. (diluted). (To read more, see Evaluating Retained Earnings: What Gets Kept Counts and Everything You Need To Know About Earnings.)

Dividends to Shareholders: Companies pay dividends to the shareholders who own the companies. If any dividends have been paid during the period being reported, they are shown on this line. These can be to common stock holders, preferred stock holders, or other investors depending on the company. Dividends usually are paid only once a year.

Sample Income Statement
Now let's take a look at a sample income statement for company XYZ for FY ending 2008 and 2009 (expenses are in parentheses):

<table>
<thead>
<tr>
<th>Income Statement For Company XYZ FY 2008 and 2009</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Figures USD)</td>
<td>2008</td>
<td>2009</td>
</tr>
<tr>
<td>Net Sales</td>
<td>1,500,000</td>
<td>2,000,000</td>
</tr>
<tr>
<td>Cost of Sales</td>
<td>(350,000)</td>
<td>(375,000)</td>
</tr>
<tr>
<td>Gross Income</td>
<td>1,150,000</td>
<td>1,625,000</td>
</tr>
<tr>
<td>Operating Expenses (SG&amp;A)</td>
<td>(235,000)</td>
<td>(260,000)</td>
</tr>
<tr>
<td>Operating Income</td>
<td>915,000</td>
<td>1,365,000</td>
</tr>
<tr>
<td>Other Income (Expense)</td>
<td>40,000</td>
<td>60,000</td>
</tr>
<tr>
<td>Extraordinary Gain (Loss)</td>
<td>-</td>
<td>(15,000)</td>
</tr>
<tr>
<td>Interest Expense</td>
<td>(50,000)</td>
<td>(50,000)</td>
</tr>
<tr>
<td>Net Profit Before Taxes (Pretax Income)</td>
<td>905,000</td>
<td>1,360,000</td>
</tr>
<tr>
<td>Taxes</td>
<td>(300,000)</td>
<td>(475,000)</td>
</tr>
<tr>
<td>Net Income</td>
<td>605,000</td>
<td>885,000</td>
</tr>
</tbody>
</table>

Now that we understand the anatomy of an income statement, we can deduce from the above example that between the years 2008 and 2009, Company XYZ managed to increase sales by about 33%, while reducing its cost of sales from 23% to 19% of sales. Consequently, gross income in 2009 increased significantly, which is a huge plus for the company's profitability. Also, general operating expenses have been kept under strict control, increasing by a modest $25,000. In 2008, the company's operating expenses represented 15.7% of sales, while in 2009 they amounted to only 13%. This is highly favorable in view of the large sales increase.

As a result, the bottom line - net income - for the company in 2009 has increased from $605,000 in 2008 to $885,000 in 2009. The positive inter-annual trends in all the income statement components, both income and expense, have lifted the company's profit margins (net income/net sales) from 40% to 44% - again, highly favorable.
### Sample Income Statement

**ABC Widget Company**

($1,000s)

<table>
<thead>
<tr>
<th></th>
<th>Q2</th>
<th>Q1</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sales Revenue</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Widgets</td>
<td>4,125</td>
<td>4,330</td>
</tr>
<tr>
<td>Repair kits</td>
<td>143</td>
<td>20</td>
</tr>
<tr>
<td>Service</td>
<td>1,443</td>
<td>1,102</td>
</tr>
<tr>
<td><strong>Total Sales Revenue</strong></td>
<td><strong>5,711</strong></td>
<td><strong>5,452</strong></td>
</tr>
<tr>
<td><strong>Sales Costs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Widgets</td>
<td>2,204</td>
<td>2,111</td>
</tr>
<tr>
<td>Repair kits</td>
<td>18</td>
<td>4</td>
</tr>
<tr>
<td>Service</td>
<td>1,189</td>
<td>947</td>
</tr>
<tr>
<td><strong>Total Sales Costs</strong></td>
<td><strong>3,411</strong></td>
<td><strong>3,062</strong></td>
</tr>
<tr>
<td><strong>Gross Profit (Loss)</strong></td>
<td><strong>2,300</strong></td>
<td><strong>2,390</strong></td>
</tr>
<tr>
<td>Gross Margin</td>
<td>40%</td>
<td>44%</td>
</tr>
<tr>
<td><strong>Operating Expenses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General &amp; Administrative</td>
<td>292</td>
<td>301</td>
</tr>
<tr>
<td>Sales &amp; Marketing</td>
<td>1,389</td>
<td>1,414</td>
</tr>
<tr>
<td>Research &amp; Development</td>
<td>214</td>
<td>214</td>
</tr>
<tr>
<td>Other Operating Expenses</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total Operating Expenses</strong></td>
<td><strong>1,900</strong></td>
<td><strong>1,936</strong></td>
</tr>
<tr>
<td><strong>Operating Income</strong></td>
<td><strong>400</strong></td>
<td><strong>454</strong></td>
</tr>
<tr>
<td>Operating Margin</td>
<td>7%</td>
<td>8%</td>
</tr>
<tr>
<td><strong>Interest Paid</strong></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Income before Taxes</strong></td>
<td><strong>399</strong></td>
<td><strong>452</strong></td>
</tr>
<tr>
<td>Taxes</td>
<td>127</td>
<td>144</td>
</tr>
<tr>
<td><strong>Net Income from Continuing Operations</strong></td>
<td><strong>272</strong></td>
<td><strong>308</strong></td>
</tr>
<tr>
<td>Profit Margin</td>
<td>5%</td>
<td>6%</td>
</tr>
<tr>
<td><strong>Non-recurring Events</strong></td>
<td>n/a</td>
<td>1</td>
</tr>
<tr>
<td><strong>Net Income</strong></td>
<td>272</td>
<td>307</td>
</tr>
<tr>
<td><strong>Dividends to Stockholders</strong></td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td><strong>Net Income Available to Shareholders</strong></td>
<td><strong>272</strong></td>
<td><strong>301</strong></td>
</tr>
</tbody>
</table>

### Conclusion

You can gain valuable insights about a company by examining its income statement. Increasing sales offers the first sign of strong fundamentals. Rising margins indicate increasing efficiency and profitability. It’s also a good idea to determine whether the company is performing in line with industry peers and competitors. Look for significant changes in revenues, costs of goods sold and SG&A to get a sense of the company’s profit fundamentals. When an investor understands the income and expense components of the income statement, he or she can appreciate what makes a company profitable. In the case of Company XYZ, it experienced a major increase in sales for the period reviewed and was also able to control the expense side of its business. That’s a sign of very efficient management.
Balance Sheet

The Snapshot of Health
Investors often overlook the balance sheet. Assets and liabilities aren't nearly as sexy as revenue and earnings. While earnings are important, they don't tell the whole story. The balance sheet highlights the financial condition of a company and is an integral part of the financial statements. The balance sheet, also known as the statement of financial condition, offers a snapshot of a company's health. It tells you how much a company owns (its assets), and how much it owes (its liabilities). The difference between what it owns and what it owes is its equity, also commonly called "net assets" or "shareholders equity". The balance sheet tells investors a lot about a company's fundamentals: how much debt the company has, how much it needs to collect from customers (and how fast it does so), how much cash and equivalents it possesses and what kinds of funds the company has generated over time.

Balance what? Liquid who?
The balance sheet is a record of a company's assets and liabilities -- in short, what it's already got or expects to get soon, and what it owes to others. Shareholder value ultimately comes from liquid assets -- assets that can easily be converted into cash. The amount of liquid assets a company can amass ultimately determines its value. Better yet, if a company generates more liquid assets than it needs to fund its operations, it can give the excess back to shareholders in the form of dividends or share buybacks.

Most investors spend too much time obsessing over a company's earnings, and too little time studying the balance sheet and its cousin, the statement of cash flows. The balance sheet can tell you whether a company's got enough money to keep funding growth, or whether it'll have to take on debt or issue bonds or additional stock to sustain itself. Does a company have too much of its money tied up in inventory? Is the company collecting money from its customers reasonably quickly? The balance sheet knows all. A balance sheet provides detailed information about a company's assets, liabilities and shareholders' equity.

Assets are things that a company owns that have value. This typically means they can either be sold or used by the company to make products or provide services that can be sold. Assets include physical property, such as plants, trucks, equipment and inventory. It also includes things that can't be touched but nevertheless exist and have value, such as trademarks and patents. And cash itself is an asset. So are investments a company makes.

Liabilities are amounts of money that a company owes to others. This can include all kinds of obligations, like money borrowed from a bank to launch a new product, rent for use of a building, money owed to suppliers for materials, payroll a company owes to its employees, environmental cleanup costs, or taxes owed to the government. Liabilities also include obligations to provide goods or services to customers in the future.

Shareholders’ equity is sometimes called capital or net worth. It's the money that would be left if a company sold all of its assets and paid off all of its liabilities. This leftover money belongs to the shareholders, or the owners, of the company.

The following formula summarizes what a balance sheet shows:

\[
\text{ASSETS} = \text{LIABILITIES} + \text{SHAREHOLDERS' EQUITY}
\]

A company's assets have to equal, or "balance," the sum of its liabilities and shareholders' equity.

A company’s balance sheet is set up like the basic accounting equation shown above. On the left side of the balance sheet, companies list their assets. On the right side, they list their liabilities and shareholders’ equity. Sometimes balance sheets show assets at the top, followed by liabilities, with shareholders’ equity at the bottom.

Assets are generally listed based on how quickly they will be converted into cash. Current assets are things a company expects to convert to cash within one year. A good example is inventory. Most companies expect to sell their inventory for cash within one year. Noncurrent assets are things a company does not expect to convert to cash within one year or that would take longer than one year to sell. Noncurrent assets include fixed assets. Fixed assets are those assets used to operate the business but that are not available for sale, such as trucks, office furniture and other property.
Liabilities are generally listed based on their due dates. Liabilities are said to be either current or long-term. Current liabilities are obligations a company expects to pay off within the year. Long-term liabilities are obligations due more than one year away.

Shareholders’ equity is the amount owners invested in the company’s stock plus or minus the company’s earnings or losses since inception. Sometimes companies distribute earnings, instead of retaining them. These distributions are called dividends.

A balance sheet shows a snapshot of a company’s assets, liabilities and shareholders’ equity at the end of the reporting period. It does not show the flows into and out of the accounts during the period.

The first major component of the balance sheet is current assets. These assets can easily be converted to cash within one operating cycle -- the amount of time the company needs to sell a product and collect cash from that sale, often anywhere between 60 and 180 days.

Companies need current assets to fund their day-to-day operations. If current assets fall short, the company will have to scramble for other sources of short-term funding, either by taking on debt (hello, interest payments) or issuing more stock (hello, shareholder dilution).

There are five main kinds of current assets:

- Cash and equivalents
- Short- and long-term investments
- Accounts receivable
- Inventories
- Prepaid expenses

**Cash and equivalents** These assets are literally money in the bank: cold, hard cash or something equivalent, like bearer bonds, money market funds, or vintage comic books. (OK, maybe not that last one.) As completely liquid assets, cash and equivalents should get special respect from shareholders. If a company had nothing better to do with these funds, it could mail them straight to you as a fat dividend, or use them to buy back shares and boost the value of your stock.

**Short-term investments** These represent the next step above cash and equivalents. They normally come into play when a company has so much cash on hand that it can afford to tie some of it up in bonds lasting less than one year. This money can't immediately be liquefied without some effort, but it does earn a higher return than plain old cash. Cash and investments give shares immediate value, and while they're not entirely easy to liquidate, in a pinch they can be distributed to shareholders with minimal effort.

**Accounts receivable** Normally abbreviated as A/R, these are funds that customers currently owe to a company. They've received the company's products, but haven't yet paid for those goods or services. Companies routinely buy goods and services from other companies on credit. Although A/R is almost always turned into cash within a short amount of time, some customers aren't so diligent. In rare cases, companies have to write off bad accounts receivable if they've shipped goods or provided services to a customer unwilling or unable to pay.

In that event, you'll see something called "allowance for bad debt" in parentheses beside the accounts receivable number. The company's set this money aside to cover the potential for bad customers, based on any such problems it may have previously endured. Even with this allowance, companies may still be forced to take hefty writedowns, or convert part of their accounts receivable to a loan, if a big customer finds itself in unexpected trouble.

It's important to compare how quickly accounts receivable grow compared to revenue. If receivables are rising faster than revenue, you know that the company hasn't yet been paid for many of the sales in that particular quarter. (Later in this series, we'll look more closely at ways to measure accounts receivable, including A/R turnover and days sales outstanding.)
**Inventories**

These are the components and finished products that a company has currently stockpiled to sell to customers. Not all companies have inventories, particularly if they are involved in advertising, consulting, services, or information industries. For companies that do sell physical goods, however, inventories are extremely important.

Investors should view inventories somewhat skeptically when evaluating a company's assets. Because of various accounting systems like FIFO (first in, first out) or LIFO (last in, first out), as well as real liquidation compared to accounting value, the balance sheet often overstates inventories' value. In addition, inventories tie up capital. Money sunk into inventory can't be used to help sell those goods (and turn them back into cash). Companies with inventories growing faster than revenue, or sluggish sales of backed-up inventory, can be disasters waiting to happen. Again, we'll look more closely at inventory turnover later in this series.

**Prepaid expenditures**

The company has already paid these expenses to its suppliers. They can be a lump sum paid to an advertising agency, or a credit for some bad merchandise issued by a supplier. Although these expenditures aren't technically liquid, since the company does not actually have the money in question in the bank, having bills already paid is a definite plus. It means that those bills won't have to be paid in the future, allowing more of the revenue for that particular quarter to flow to the bottom line and become liquid assets.

Current liabilities are what a company currently owes to its suppliers and creditors. These are short-term debts, all due in less than a year. Paying them off normally requires the company to convert some of its current assets into cash. Beyond simply being bills to pay, liabilities -- confusing as this might sound -- are also a source of assets. Any money that a company pulls from a line of credit, or postpones paying from its accounts payable, is an asset that can be used to grow the business. There are five main categories of current liabilities:

- Accounts payable
- Accrued expenses
- Income tax payable
- Short-term notes payable
- Portion of long-term debt payable

**Accounts payable**

This is the money the company currently owes to its suppliers, partners, and employees -- the basic costs of business that the company hasn't yet paid, for whatever reason. One company's accounts payable is another company's accounts receivable, which is why both terms are similarly structured. A company has the power to push back the due dates on some of its accounts payable. Paying those debts later than expected can often produce a short-term increase in earnings and current assets.

**Accrued expenses**

The company has racked up these bills, but not yet paid them. These are normally marketing and distribution expenses that are billed on a set schedule and have not yet come due.

**Income tax payable**

This is a specific type of accrued expense -- the income tax a company accrues over the year, but does not have to pay yet, according to various federal, state and local tax schedules. Although they're subject to withholding, some taxes simply are not accrued by the government over the course of the quarter or the year. Instead, they're paid in lump sums whenever the bill is due.

**Short-term notes payable**

The company has drawn off this amount from its line of credit from a bank or other financial institution. It needs to be repaid within the next 12 months.

**Portion of long-term debt**

This represents a chunk of a company's longer-term obligations that may come due in a given year or quarter. That's why it's counted as a current liability, even though it's called "long term." The remainder of the balance sheet is taken up by a
hodgepodge of items that are not current, meaning that they are either assets that cannot be easily turned into cash or liabilities that will not come due for more than a year. Specifically, there are five categories:

- Total assets
- Long-term notes payable
- Stockholder's/shareholders' equity
- Capital stock
- Retained earnings

Total assets are assets that are not liquid but are kept on a company's books for accounting purposes. They mainly comprise production plants, property, and equipment, and include land, buildings, vehicles, and equipment that a company has bought for the purpose of operating its business. Total assets are subject to an accounting convention called depreciation for tax purposes, meaning that the stated value of the total assets and the actual value or price paid might be very different. Long-term notes payable or long-term liabilities are loans that are not due for more than a year. Often loans from banks or other financial institutions, these loans are secured by various assets on the balance sheet, such as inventories. Most companies will tell you in a footnote to this item when the debt will become due and the interest rate the company is paying on it.

The last main component, stockholders' or shareholders' equity, is composed of capital stock and retained earnings. Frankly, this is more than a little bit confusing and does not always add much value to the analysis. Capital stock is the par value of the stock issued that is recorded purely for accounting purposes; it has no real relevance to the actual value of the company's stock. Capital in excess of stock is another weird and difficult accounting convention. Essentially, it is additional cash a company gets from issuing stock in excess of par value under certain financial conditions.

Retained earnings is another accounting convention that, basically, is the money a company has earned minus earnings to be paid to shareholders as dividends and stock buybacks; this amount is recorded in the company's books. Retained earnings simply measures the amount of capital a company has generated. It is most useful for determining what sorts of returns on capital a company has produced. When you add together capital stock and retained earnings, you get shareholders' equity -- the amount of equity that shareholders currently have in the company.

### Read the Balance Sheet

<table>
<thead>
<tr>
<th>Balance Sheet for Wal-Mart</th>
<th>As of Jan 31, 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assets</strong></td>
<td><strong>Liabilities and Shareholders' Equity</strong></td>
</tr>
<tr>
<td><strong>Current Assets:</strong></td>
<td>Current Liabilities</td>
</tr>
<tr>
<td>Cash and Cash Equivalents</td>
<td>6,614 Commercial Paper 3,764</td>
</tr>
<tr>
<td>Receivables</td>
<td>2,862 Accounts Payable 26,373</td>
</tr>
<tr>
<td>Inventories</td>
<td>52,191 Accrued Liabilities 13,485</td>
</tr>
<tr>
<td>Prepaid Expenses and Other</td>
<td>2,959 Accrued Income Taxes 1,340</td>
</tr>
<tr>
<td><strong>Total Current Assets</strong></td>
<td>43,924 Long-term Debt, due within one year 4,295</td>
</tr>
<tr>
<td></td>
<td>Obligations Under Capital Leases, due within one year 259</td>
</tr>
<tr>
<td></td>
<td>Total Current Liabilities 48,826</td>
</tr>
<tr>
<td><strong>Property and Equipment, at cost:</strong></td>
<td></td>
</tr>
<tr>
<td>Land</td>
<td>16,543</td>
</tr>
<tr>
<td>Buildings and Improvements</td>
<td>86,163 Long-term Debt 26,429</td>
</tr>
<tr>
<td>Fixtures and Equipment</td>
<td>22,750 Long-term Obligations Under Capital Leases 3,742</td>
</tr>
<tr>
<td>Transportation Equipment</td>
<td>1,746 Deferred Income Taxes and Other 4,562</td>
</tr>
<tr>
<td>Total Property and Equipment, at cost:</td>
<td>67,302 Minority Interest 1,487</td>
</tr>
<tr>
<td>Less Accumulated Depreciation</td>
<td>21,427</td>
</tr>
<tr>
<td>Property and Equipment, net</td>
<td>75,075 Shareholders' Equity: Preferred Stock 0</td>
</tr>
<tr>
<td>Property Under Capital Lease</td>
<td>5,579 Common Stock 417</td>
</tr>
<tr>
<td>Less Accumulated Amortization</td>
<td>2,163 Capital in Excess of Par Value 2,998</td>
</tr>
<tr>
<td>Property Under Capital Lease, net</td>
<td>3,415 Accumulated Other Comprehensive Income 1,053</td>
</tr>
<tr>
<td>Goodwill</td>
<td>12,188 Retained Earnings 49,105</td>
</tr>
<tr>
<td>Other Assets and Deferred Charges</td>
<td>2,056 Total Shareholders' Equity 62,171</td>
</tr>
<tr>
<td><strong>Total Assets</strong></td>
<td>138,187 Total Liabilities and Shareholders' Equity 138,187</td>
</tr>
</tbody>
</table>

As you can see from the balance sheet above, it is broken into two sides. Assets are on the left side and the right side contains the company's liabilities and shareholders' equity. It is also clear that this balance sheet is in balance where the value of the assets equals the combined value of the liabilities and shareholders' equity. Another interesting aspect of the balance sheet is how it is organized. The assets and liabilities sections of the balance sheet are organized by how current the account is. So for the asset side, the accounts are classified typically from most liquid to least liquid. For the liabilities side, the accounts are organized from short to long-term borrowings and other obligations.
Analyze the Balance Sheet With Ratios

With a greater understanding of the balance sheet and how it is constructed, we can look now at some techniques used to analyze the information contained within the balance sheet. The main way this is done is through financial ratio analysis.

Financial ratio analysis uses formulas to gain insight into the company and its operations. For the balance sheet, using financial ratios (like the debt-to-equity ratio) can show you a better idea of the company’s financial condition along with its operational efficiency. It is important to note that some ratios will need information from more than one financial statement, such as from the balance sheet and the income statement.

The main types of ratios that use information from the balance sheet are financial strength ratios and activity ratios. Financial strength ratios, such as the working capital and debt-to-equity ratios, provide information on how well the company can meet its obligations and how they are leveraged. This can give investors an idea of how financially stable the company is and how the company finances itself. Activity ratios focus mainly on current accounts to show how well the company manages its operating cycle (which include receivables, inventory and payables). These ratios can provide insight into the company's operational efficiency.

There are a wide range of individual financial ratios that investors use to learn more about a company. (To learn more about ratios and how to use them, see our Ratio Tutorial.)

Now we'll have some fun with numbers and play around with these bits of information. We do this to get the nitty-gritty details about how well the company manages its assets and whether or not its price represents a bargain, based on the assets it has at its disposal.

The first tool you use is called the current ratio. A measure of just how much liquidity a company has, this number is simply the current assets divided by the current liabilities.

For instance, if Joe's Bar and Grill has $10 million in current assets and $5 million in current liabilities, here's the formula:

\[
\text{Current ratio} = \frac{\text{current assets}}{\text{current liabilities}}
\]

As a general rule, a current ratio of 1.5 or greater can meet near-term operating needs sufficiently. A higher current ratio can suggest that a company is hoarding assets instead of using them to grow the business -- not the worst thing in the world, but it's something that could affect long-term returns.

You should always check a company's current ratio (and any other ratio) against the same information for its main competitors. Certain industries have their own norms in terms of the current ratios that do make sense and those that do not. For instance, in the auto industry, a high current ratio makes a lot of sense if a company does not want to go bankrupt during the next recession.

When we discussed inventories, we mentioned that sometimes inventories are not necessarily worth the amount they are on the books for. This is particularly true in retail, where you routinely see close-out sales with 60% to 80% markdowns. It is even worse when a company going out of business is forced to liquidate its inventory, sometimes for pennies on the dollar. And if a company has much of its liquid assets tied up in inventory, it will be very dependent on the sale of that inventory to finance operations. If the company is not growing sales very quickly, this can turn into an albatross that forces the company to issue stock or take on debt.

Because of all of this, it pays to check the quick ratio. The quick ratio is simply current assets minus inventories divided by current liabilities. By taking inventories out of the equation, you can find out if a company has sufficient liquid assets to meet short-term operating needs.

For instance, if Joe's Bar and Grill has $10 million current assets and $2.5 million in inventories, the quick ratio is:

\[
\text{Quick ratio} = \frac{(\text{current assets} - \text{inventories})}{\text{current liabilities}}
\]

\[
\text{Quick ratio} = \frac{($10 \text{ million current assets} - $2.5 \text{ million inventories})}{\text{current liabilities}} = 1.5 \text{ quick ratio}
\]
Looks like Joe's makes the grade again. Most people look for a quick ratio greater than 1.0 to be sure there is enough cash on hand to pay bills and keep going. Like the current ratio, the quick ratio can also vary by industry. It always pays to compare this ratio to that of peers in the same industry to understand what it means in context. In addition, some investors will use something called the cash ratio: the amount of cash a company has divided by its current liabilities. This is not a tool to use, however, so we don't have a general guideline if you want to check it. It is just another method to compare companies in the same industry to determine how well they are funded.

Working capital is simply current assets minus current liabilities. It's the best way to judge how much a company has in liquid assets to build its business, fund its growth, and produce shareholder value. If a company has ample positive working capital, it's in good shape, with plenty of cash on hand to pay for everything it might need to buy. But negative working capital means that the company's current liabilities exceed its current assets, removing its ability to spend as aggressively as a working-capital-positive peer. All other things being equal, a company with positive working capital will always outperform a company without it.

Working capital is the absolute lifeblood of a company. For most companies, acquiring working capital was 99% of the reason they went public in the first place, whether they wanted to build their businesses, fund acquisitions, or develop new products. Anything good that comes from a company springs from working capital. And if a company runs out of working capital, but still has bills to pay and products to develop, it's got big problems.

A key comparison
You can discover some pretty cool things by comparing working capital to a company's current market capitalization. Market cap equals the value of currently outstanding shares of stock, plus any long-term debt or preferred shares (a special form of debt). You add in those last two factors because anyone buying the company would not only have to pay the current market price, but also incur responsibility for all its debts.

To compare the two metrics, divide working capital by market cap. Let's use Joe's Bar and Grill for another example. We know that Joe's has $10 million in current assets and $5 million in current liabilities. If you also know that Joe's Bar and Grill has no debt, and 1 million shares outstanding at $10 a pop, you can figure out the working capital-to-market capitalization ratio

\[
\frac{\text{Current assets} - \text{Current liabilities}}{\left(\text{Shares outstanding} \times \text{Share price}\right) + \text{Debt}}
\]

Now let's plug in those numbers from Joe's:

\[
\frac{($10 million - $5 million)}{((1 million \times $10) + 0)} = 0.5 = 50\%
\]

All that math tells you that working capital backs up 50% of the market's valuation of Joe's Bar and Grill. Theoretically, if you liquidated Joe's tomorrow, you'd get $0.50 on the dollar from working capital alone. This is a tremendous amount of money to have at your disposal, and a huge plus for Joe's. Basically, if you see working capital-to-market cap ratios of 50% or higher, your company's looking good. (For retailers and clothing manufacturers in particular, you might want to subtract inventories from working capital before you check that percentage, just to make sure the resulting number's not too different.)

Even though working capital is nifty, simply comparing a company's cash hoard to its market capitalization can also be pretty enlightening. Simply divide the company's cash and equivalents by its market capitalization. If 10% or more of your company's capitalization is backed up with cold, hard cash, you know it has ample funds to keep itself going.

The last three ratios that you can derive from the balance sheet are the Price-to-Book Ratio, Days Sales Outstanding (DSO), and Inventory Turnover. We saved them for last because they're the most complicated.

Perhaps the least valuable ratio of these three is the venerable Price-to-Book Ratio. Conceived in a time when America was made up mainly of industrial companies that had actual hard assets like factories to back up their stock, its utility has waned in the past few decades as more and more companies that are not very capital intensive have grown and become commercial giants. The fact that Microsoft (Nasdaq: MSFT) doesn't have very much in the way of book value doesn't mean the company is overvalued -- it just means that the company does not need a lot of land and factories to make a very high-margin product.
Traditional **book value** is simply the shareholders' equity divided by the number of shares of stock outstanding. In order to look at the company as a whole, you can use the aggregate market capitalization of the company divided by the current shareholders' equity. You can also look at something called **Enterprise Value**, which is market capitalization minus cash and equivalents plus debt. The reason you subtract cash and equivalents from market capitalization is because if someone were to actually buy the company, they would get all the cash the company currently has, meaning it would effectively be deducted from the cost after the transaction was closed. The enterprise value (EV) to shareholders' equity (SE) looks like this, then:

\[
EV/SE = ((\text{Shares Out} \times \text{Price}) + \text{Debt-Cash}) / \text{Shareholders' equity}
\]

This number will get you a simple multiple, much like the price/earnings ratio or the price/sales ratio. If it is below 1, then it means that the company is selling below book value and theoretically below its liquidation value. Some value investors will shun any companies that trade above 2 times book value or more.

**Days Sales Outstanding** is a measure of how many days worth of sales the current accounts receivable (A/R) represents. It is a way of transforming the accounts receivable number into a handy metric that can be compared with other companies in the same industry to determine which player is managing its receivables collection better. A company with a lower amount of days worth of sales outstanding is getting its cash back quicker and hopefully putting it immediately to use, getting an edge on the competition. To figure out DSO, you first have to figure out **Accounts Receivables Turnover**. This is:

\[
\text{A/R Turnover} = \frac{\text{Sales for period}}{\text{Average A/R for period}}
\]

Sometimes you will only be able to get the accounts receivable from the last fiscal year, and therefore will have to use the revenues from the last fiscal year. However, the fresher the information, the better. What this ratio tells you is how many times in a year a company turns its accounts receivable. By "turn," we mean the number of times it completely clears all of the outstanding credit. For this number, higher is better. To turn this number into days sales outstanding, you do the following:

\[
\text{DSO} = \frac{\text{Current accounts receivable}}{\left(\frac{\text{Sales for period}}{\text{Days in period}}\right)}
\]

This tells you roughly how many days worth of sales are outstanding and not paid for at any given time. As you might have expected, the lower this number is, the better it is for the company. By comparing DSOs for various companies in the same industry, you can get a picture of which companies are managing their credit better and getting money in faster on their sales. This is a crucial edge to have because money that is not tied up in accounts receivable is money that can be used to grow the business.

The same is true of **Inventory Turnover**. The less money that's filling up your distribution channels, the more money you will have to do all the other things a company needs done -- marketing, advertising, research and development, acquisitions, expansions, and so on. You want a company to turn its inventories as often as possible during the year in order to free up that working capital to do other things. To figure out how much a company is turning its inventory, you need to find out the **Cost of Goods Sold** (COGS) for the past 12 months. COGS is the second entry in the Consolidated Statement of Earnings right below the revenue line. Just add up the last four quarters worth of COGS and then find out the current inventory level. If you have problems finding these numbers, a call to the company's investor relations department will usually get you the information you need.

\[
\text{Inventory turnover} = \frac{\text{Cost of goods sold}}{\text{Average inventory for period}}
\]

If two companies are the same in every way but one is turning over its inventories more often, the one with better inventory management is the one that is going to be able to grow faster. Inventory management actually is a bottleneck for growth if it is not efficient enough, tying up a lot of working capital that could be better used elsewhere. If you can find out a company's DSO and inventory turns relative to its peers, you will have an incredible view into how well the company can fund its own growth going forward, thus allowing you to make better investments.

**Conclusion**

The balance sheet, along with the income and cash flow statements, is an important tool for investors to gain insight into a company and its operations. The balance sheet is a snapshot at a single point in time of the company’s accounts - covering its assets, liabilities and shareholders’ equity. The purpose of the balance sheet is to give users an idea of the company's financial position along with displaying what the company owns and owes.
Cash Flow Statement

Introduction
If a company reports earnings of $1 billion, does this mean it has this amount of cash in the bank? Not necessarily. Financial statements are based on accrual accounting, which takes into account non-cash items. It does this in an effort to best reflect the financial health of a company. However, accrual accounting may create accounting noise, which sometimes needs to be tuned out so that it's clear how much actual cash a company is generating. The statement of cash flow provides this information, and here we look at what cash flow is and how to read the cash flow statement. The cash flow statement shows how much cash comes in and goes out of the company over the quarter or the year. At first glance, that sounds a lot like the income statement in that it records financial performance over a specified period. But there is a big difference between the two. What distinguishes the two is accrual accounting, which is found on the income statement. Accrual accounting requires companies to record revenues and expenses when transactions occur, not when cash is exchanged.

At the same time, the income statement, on the other hand, often includes non-cash revenues or expenses, which the statement of cash flows does not include. Just because the income statement shows net income of $10 does not mean that cash on the balance sheet will increase by $10. Whereas when the bottom of the cash flow statement reads $10 net cash inflow, that's exactly what it means. The company has $10 more in cash than at the end of the last financial period. You may want to think of net cash from operations as the company's "true" cash profit. Because it shows how much actual cash a company has generated, the statement of cash flows is critical to understanding a company's fundamentals. It shows how the company is able to pay for its operations and future growth. Indeed, one of the most important features you should look for in a potential investment is the company's ability to produce cash. Just because a company shows a profit on the income statement doesn't mean it cannot get into trouble later because of insufficient cash flows. A close examination of the cash flow statement can give investors a better sense of how the company will fare.

What Is Cash Flow?
Business is all about trade, the exchange of value between two or more parties, and cash is the asset needed for participation in the economic system. For this reason - while some industries are more cash intensive than others - no business can survive in the long run without generating positive cash flow per share for its shareholders. To have a positive cash flow, the company's long-term cash inflows need to exceed its long-term cash outflows.

An outflow of cash occurs when a company transfers funds to another party (either physically or electronically). Such a transfer could be made to pay for employees, suppliers and creditors, or to purchase long-term assets and investments, or even pay for legal expenses and lawsuit settlements. It is important to note that legal transfers of value through debt - a purchase made on credit - is not recorded as a cash outflow until the money actually leaves the company's hands.

A cash inflow is of course the exact opposite; it is any transfer of money that comes into the company's possession. Typically, the majority of a company's cash inflows are from customers, lenders (such as banks or bondholders) and investors who purchase company equity from the company. Occasionally cash flows come from sources like legal settlements or the sale of company real estate or equipment.

Cash Flow vs Income
It is important to note the distinction between being profitable and having positive cash flow transactions: just because a company is bringing in cash does not mean it is making a profit (and vice versa). For example, say a manufacturing company is experiencing low product demand and therefore decides to sell off half its factory equipment at liquidation prices. It will receive cash from the buyer for the used equipment, but the manufacturing company is definitely losing money on the sale: it would prefer to use the equipment to manufacture products and earn an operating profit. But since it cannot, the next best option is to sell off the equipment at prices much lower than the company paid for it. In the year that it sold the equipment, the company would end up with a strong positive cash flow, but its current and future earnings potential would be fairly bleak. Because cash flow can be positive while profitability is negative, investors should analyze income statements as well as cash flow statements, not just one or the other.

The Statement of Cash Flows or the Cash Flow Statement (CFS)
Complementing the balance sheet and income statement, the cash flow statement (CFS), a mandatory part of a company's financial reports since 1987, records the amounts of cash and cash equivalents entering and leaving a company. The CFS allows investors to understand how a company's operations are running, where its money is coming from, and how it is being spent. Here you will learn how the CFS is structured and how to use it as part of your analysis of a company.
The cash flow statement differs from these other financial statements because it acts as a kind of corporate checkbook that reconciles the other two statements. Simply put, the cash flow statement records the company's cash transactions (the inflows and outflows) during the given period. It shows whether all those lovely revenues booked on the income statement have actually been collected. At the same time, however, remember that the cash flow does not necessarily show all the company's expenses: not all expenses the company accrues have to be paid right away. So even though the company may have incurred liabilities it must eventually pay, expenses are not recorded as a cash outflow until they are paid (see the section "What Cash Flow Doesn't Tell Us" below).

The Structure of the CFS
The cash flow statement is distinct from the income statement and balance sheet because it does not include the amount of future incoming and outgoing cash that has been recorded on credit. Therefore, cash is not the same as net income, which, on the income statement and balance sheet, includes cash sales and sales made on credit.

Three Sections of the Cash Flow Statement
Companies produce and consume cash in different ways, so the cash flow statement is divided into three sections: cash flows from operations, financing and investing. Basically, the sections on operations and financing show how the company gets its cash, while the investing section shows how the company spends its cash. (To continue learning about cash flow, see The Essentials Of Cash Flow, Operating Cash Flow: Better Than Net Income? and What Is A Cash Flow Statement?)

Cash Flows from Operating Activities
This section shows how much cash comes from sales of the company's goods and services, less the amount of cash needed to make and sell those goods and services. Investors tend to prefer companies that produce a net positive cash flow from operations. High growth companies, such as technology firms, tend to show negative cash flow from operations in their formative years. At the same time, changes in cash flow from operations typically offer a preview of changes in net future income. Normally it's a good sign when it goes up. Watch out for a widening gap between a company's reported earnings and its cash flow from operating activities. If net income is much higher than cash flow, the company may be speeding or slowing its booking of income or costs.

Measuring the cash inflows and outflows caused by core business operations, the operations component of cash flow reflects how much cash is generated from a company's products or services. Generally, changes made in cash, accounts receivable, depreciation, inventory and accounts payable are reflected in cash from operations.

Cash flow is calculated by making certain adjustments to net income by adding or subtracting differences in revenue, expenses and credit transactions (appearing on the balance sheet and income statement) resulting from transactions that occur from one period to the next. These adjustments are made because non-cash items are calculated into net income (income statement) and total assets and liabilities (balance sheet). So, because not all transactions involve actual cash items, many items have to be re-evaluated when calculating cash flow from operations.

For example, depreciation is not really a cash expense; it is an amount that is deducted from the total value of an asset that has previously been accounted for. That is why it is added back into net sales for calculating cash flow. The only time income from an asset is accounted for in CFS calculations is when the asset is sold. Changes in accounts receivable on the balance sheet from one accounting period to the next must also be reflected in cash flow. If accounts receivable decreases, this implies that more cash has entered the company from customers paying off their credit accounts - the amount by which AR has decreased is then added to net sales. If accounts receivable increase from one accounting period to the next, the amount of the increase must be deducted from net sales because, although the amounts represented in AR are revenue, they are not cash.

An increase in inventory, on the other hand, signals that a company has spent more money to purchase more raw materials. If the inventory was paid with cash, the increase in the value of inventory is deducted from net sales. A decrease in inventory would be added to net sales. If inventory was purchased on credit, an increase in accounts payable would occur on the balance sheet, and the amount of the increase from one year to the other would be added to net sales. The same logic holds true for taxes payable, salaries payable and prepaid insurance. If something has been paid off, then the difference in the value owed from one year to the next has to be subtracted from net income. If there is an amount that is still owed, then any differences will have to be added to net earnings.

Cash Flows from Investing Activities
This section largely reflects the amount of cash the company has spent on capital expenditures, such as new equipment or anything else that needed to keep the business going. It also includes acquisitions of other businesses and monetary investments such as money market funds. You want to see a company re-invest capital in its business by at least the rate of
depreciation expenses each year. If it doesn't re-invest, it might show artificially high cash inflows in the current year which may not be sustainable. Changes in equipment, assets or investments relate to cash from investing. Usually cash changes from investing are a "cash out" item, because cash is used to buy new equipment, buildings or short-term assets such as marketable securities. However, when a company divests of an asset, the transaction is considered "cash in" for calculating cash from investing.

Cash Flow From Financing Activities
This section describes the goings-on of cash associated with outside financing activities. Typical sources of cash inflow would be cash raised by selling stock and bonds or by bank borrowings. Likewise, paying back a bank loan would show up as a use of cash flow, as would dividend payments and common stock repurchases. Changes in debt, loans or dividends are accounted for in cash from financing. Changes in cash from financing are "cash in" when capital is raised, and they're "cash out" when dividends are paid. Thus, if a company issues a bond to the public, the company receives cash financing; however, when interest is paid to bondholders, the company is reducing its cash.

Analyzing an Example of a CFS
Let's take a look at this CFS sample:

<table>
<thead>
<tr>
<th>Cash Flow Statement</th>
<th>Company XYZ</th>
<th>FY Ended 31 Dec 2003</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cash Flow From Operations</strong></td>
<td></td>
<td>2,000,000</td>
</tr>
<tr>
<td>Net Earnings</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Additions to Cash</strong></td>
<td></td>
<td>10,000</td>
</tr>
<tr>
<td>Depreciation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decrease in Accounts Receivable</td>
<td></td>
<td>15,000</td>
</tr>
<tr>
<td>Increase in Accounts Payable</td>
<td></td>
<td>15,000</td>
</tr>
<tr>
<td>Increase in Taxes Payable</td>
<td></td>
<td>2,000</td>
</tr>
<tr>
<td><strong>Subtractions From Cash</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increase in inventory</td>
<td></td>
<td>(30,000)</td>
</tr>
<tr>
<td><strong>Net Cash from Operations</strong></td>
<td></td>
<td>2,012,000</td>
</tr>
<tr>
<td><strong>Cash Flow From Investing</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment</td>
<td></td>
<td>(600,000)</td>
</tr>
<tr>
<td><strong>Cash Flow From Financing</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notes Payable</td>
<td></td>
<td>10,000</td>
</tr>
<tr>
<td><strong>Cash Flow for FY Ended 31 Dec 2003</strong></td>
<td></td>
<td>1,522,000</td>
</tr>
</tbody>
</table>

From this CFS, we can see that the cash flow for FY 2003 was $1,522,000. The bulk of the positive cash flow stems from cash earned from operations, which is a good sign for investors. It means that core operations are generating business and that there is enough money to buy new inventory. The purchasing of new equipment shows that the company has cash to invest in inventory for growth. Finally, the amount of cash available to the company should ease investors' minds regarding the notes payable, as cash is plentiful to cover that future loan expense.

Of course, not all cash flow statements look this healthy, or exhibit a positive cash flow. But a negative cash flow should not automatically raise a red flag without some further analysis. Sometimes, a negative cash flow is a result of a company's decision to expand its business at a certain point in time, which would be a good thing for the future. This is why analyzing changes in cash flow from one period to the next gives the investor a better idea of how the company is performing, and whether or not a company may be on the brink of bankruptcy or success.

Another Example
When you look at a cash flow statement, the first thing you should look at is the bottom line item that says something like "net increase/decrease in cash and cash equivalents", since this line reports the overall change in the company's cash and its equivalents (the assets that can be immediately converted into cash) over the last period. If you check under current assets on the balance sheet, you will find cash and cash equivalents (CCE or CC&E). If you take the difference between the current CCE and last year's or last quarter's, you'll get this same number found at the bottom of the statement of cash flows.
In the sample Microsoft annual cash flow statement (from June 2004) shown below, we can see that the company ended up with about $9.5 billion more cash at the end of its 2003/04 fiscal year than it had at the beginning of that fiscal year (see "Net Change in Cash and Equivalents"). Digging a little deeper, we see that the company had a negative cash outflow of $2.7 billion from investment activities during the year (see "Net Cash from Investing Activities"); this is likely from the purchase of long-term investments, which have the potential to generate a profit in the future. Generally, a negative cash flow from investing activities are difficult to judge as either good or bad - these cash outflows are investments in future operations of the company (or another company); the outcome plays out over the long term.

The "Net Cash from Operating Activities" reveals that Microsoft generated $14.6 billion in positive cash flow from its usual business operations - a good sign. Notice the company has had similar levels of positive operating cash flow for several years. If this number were to increase or decrease significantly in the upcoming year, it would be a signal of some underlying change in the company's ability to generate cash.

### Microsoft Corp MSFT

**Annual Cash Flow Statement**

<table>
<thead>
<tr>
<th>Fiscal year-end for Microsoft Corp falls in the month of June. All items in millions except per-share data.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cash Flow From Operations, Investments &amp; Financial Activities</strong></td>
</tr>
<tr>
<td>Net Income (Loss)</td>
</tr>
<tr>
<td>Depreciation/Amortization &amp; Depletion</td>
</tr>
<tr>
<td>Net Change from Assets/Liabilities</td>
</tr>
<tr>
<td>Net Cash from Discontinued Operations</td>
</tr>
<tr>
<td>Other Operating Activities</td>
</tr>
<tr>
<td>Net Cash From Operating Activities</td>
</tr>
<tr>
<td>Property &amp; Equipment</td>
</tr>
<tr>
<td>Acquisition/Disposition of Subsidiaries</td>
</tr>
<tr>
<td>Investments</td>
</tr>
<tr>
<td>Other Investing Activities</td>
</tr>
<tr>
<td>Net Cash from Investing Activities</td>
</tr>
</tbody>
</table>

**Uses of Funds**

| Issuance (Repurchase) of Capital Stock | -635 | -4,366 | -4,572 | -5,821 |
| Issuance (Repayment) of Debt | 0 | 0 | 0 | 0 |
| Increase (Decrease) Short-Term Debt | 0 | 0 | 0 | 0 |
| Payment of Dividends & Other Distributions | -1,729 | -857 | 0 | 0 |
| Other Financing Activities | 0 | 0 | 0 | 235 |
| Net Cash from Financing Activities | -2,364 | -5,223 | -4,572 | -5,586 |
| Effect of Exchange Rate Changes | 27 | 61 | 2 | -26 |
| Net Change In Cash & Equivalents | 9,544 | 3,422 | -906 | -924 |
| Cash at Beginning of Period | 6,438 | 3,016 | 3,922 | 4,846 |
| Cash at End of Period | 15,982 | 6,438 | 3,016 | 3,922 |

The "Net Cash from Operating Activities" reveals that Microsoft generated $14.6 billion in positive cash flow from its usual business operations - a good sign. Notice the company has had similar levels of positive operating cash flow for several years. If this number were to increase or decrease significantly in the upcoming year, it would be a signal of some underlying change in the company's ability to generate cash.

**Digging Deeper into Cash Flow**

All companies provide cash flow statements as part of their financial statements, but cash flow (net change in cash and equivalents) can also be calculated as net income plus depreciation and other non-cash items.

Generally, a company's principal industry of operation determine what is considered proper cash flow levels; comparing a company's cash flow against its industry peers is a good way to gauge the health of its cash flow situation. A company not generating the same amount of cash as competitors is bound to lose out when times get rough. Even a company that is shown to be profitable according to accounting standards can go under if there isn’t enough cash on hand to pay bills. Comparing amount of cash generated to outstanding debt, known as the operating cash flow ratio, illustrates the company’s ability to service its loans and interest payments. If a slight drop in a company's quarterly cash flow would jeopardize its loan payments, that company carries more risk than a company with stronger cash flow levels.
Unlike reported earnings, cash flow allows little room for manipulation. Every company filing reports with the Securities and Exchange Commission (SEC) is required to include a cash flow statement with its quarterly and annual reports. Unless tainted by outright fraud, this statement tells the whole story of cash flow: either the company has cash or it doesn't.

**Tying the CFS with the Balance Sheet and Income Statement**

As we have already discussed, the cash flow statement is derived from the income statement and the balance sheet. Net earnings from the income statement is the figure from which the information on the CFS is deduced. As for the balance sheet, the net cash flow in the CFS from one year to the next should equal the increase or decrease of cash between the two consecutive balance sheets that apply to the period that the cash flow statement covers. (For example, if you are calculating a cash flow for the year 2000, the balance sheets from the years 1999 and 2000 should be used.)

**What Cash Flow Doesn't Tell Us**

Cash is one of the major lubricants of business activity, but there are certain things that cash flow doesn't shed light on. For example, as we explained above, it doesn't tell us the profit earned or lost during a particular period: profitability is composed also of things that are not cash based. This is true even for numbers on the cash flow statement like "cash increase from sales minus expenses", which may sound like they are indication of profit but are not.

As it doesn't tell the whole profitability story, cash flow doesn't do a very good job of indicating the overall financial well-being of the company. Sure, the statement of cash flow indicates what the company is doing with its cash and where cash is being generated, but these do not reflect the company's entire financial condition. The cash flow statement does not account for liabilities and assets, which are recorded on the balance sheet. Furthermore accounts receivable and accounts payable, each of which can be very large for a company, are also not reflected in the cash flow statement.

In other words, the cash flow statement is a compressed version of the company's checkbook that includes a few other items that affect cash, like the financing section, which shows how much the company spent or collected from the repurchase or sale of stock, the amount of issuance or retirement of debt and the amount the company paid out in dividends.

**Free Cash Flow (FCF)**

By establishing how much cash a company has after paying its bills for ongoing activities and growth, FCF is a measure that aims to cut through the arbitrariness and "guesstimations" involved in reported earnings. Regardless of whether a cash outlay is counted as an expense in the calculation of income or turned into an asset on the balance sheet, free cash flow tracks the money.

To calculate FCF, make a beeline for the company's cash flow statement and balance sheet. There you will find the item cash flow from operations (also referred to as "operating cash"). From this number subtract estimated capital expenditure required for current operations:

\[
\text{Cash Flow From Operations (Operating Cash)} - \text{Capital Expenditure} = \text{Free Cash Flow}
\]

To do it another way, grab the income statement and balance sheet. Start with net income and add back charges for depreciation and amortization. Make an additional adjustment for changes in working capital, which is done by subtracting current liabilities from current assets. Then subtract capital expenditure, or spending on plants and equipment:

\[
\text{Net income} + \text{Depreciation/Amortization} - \text{Change in Working Capital} - \text{Capital Expenditure} = \text{Free Cash Flow}
\]

It might seem odd to add back depreciation/amortization since it accounts for capital spending. The reasoning behind the adjustment, however, is that free cash flow is meant to measure money being spent right now, not transactions that happened in the past. This makes FCF a useful instrument for identifying growing companies with high up-front costs, which may eat into earnings now but have the potential to pay off later.
What Does Free Cash Flow Indicate?
Growing free cash flows are frequently a prelude to increased earnings. Companies that experience surging FCF - due to revenue growth, efficiency improvements, cost reductions, share buy backs, dividend distributions or debt elimination - can reward investors tomorrow. That is why many in the investment community cherish FCF as a measure of value. When a firm's share price is low and free cash flow is on the rise, the odds are good that earnings and share value will soon be on the up. By contrast, shrinking FCF signals trouble ahead. In the absence of decent free cash flow, companies are unable to sustain earnings growth. An insufficient FCF for earnings growth can force a company to boost its debt levels. Even worse, a company without enough FCF may not have the liquidity to stay in business.

Is Free Cash Flow Foolproof?
Although it provides a wealth of valuable information that investors really appreciate, FCF is not infallible. Crafty companies still have leeway when it comes to accounting sleight of hand. Without a regulatory standard for determining FCF, investors often disagree on exactly which items should and should not be treated as capital expenditures. Investors must therefore keep an eye on companies with high levels of FCF to see if these companies are under-reporting capital expenditure and R&D. Companies can also temporarily boost FCF by stretching out their payments, tightening payment collection policies and depleting inventories. These activities diminish current liabilities and changes to working capital. But the impacts are likely to be temporary.

The Trick of Hiding Receivables
Let's look at yet another example of questionable FCF, which involves specious calculations of the current accounts receivable. When a company reports revenue, it records an account receivable, which represents cash that is yet to be received. The revenues then increase net income and cash from operations, but that increase is typically offset by an increase in current accounts receivable, which are then subtracted from cash from operations. When companies record their revenues as such, the net impact on cash from operations and free cash flow should be zero since no cash has been received.

What happens when a company decides to record the revenue, even though the cash will not be received within a year? The receivable for a delayed cash settlement is therefore "non-current" and can get buried in another category like "other investments". Revenue then is still recorded and cash from operations increases, but no current account receivable is recorded to offset revenues. Thus, cash from operations and free cash flow enjoy a big but unjustified boost. Tricks like this one can be hard to catch. (For more insight, see 5 Tricks Companies Use During Earnings Season.) Alas, finding an all-purpose tool for testing company fundamentals still proves elusive. Like all performance metrics, FCF has its limits. On the other hand, provided that investors keep their guard up, free cash flow is a very good place to start hunting.

Conclusion
A company can use a cash flow statement to predict future cash flow, which helps with matters in budgeting. For investors, the cash flow reflects a company's financial health: basically, the more cash available for business operations, the better. However, this is not a hard and fast rule. Sometimes a negative cash flow results from a company's growth strategy in the form of expanding its operations. By adjusting earnings, revenues, assets and liabilities, the investor can get a very clear picture of what some people consider the most important aspect of a company: how much cash it generates and, particularly, how much of that cash stems from core operations.

Like so much in the world of finance, the cash flow statement is not straightforward. You must understand the extent to which a company relies on the capital markets and the extent to which it relies on the cash it has itself generated. No matter how profitable a company may be, if it doesn’t have the cash to pay its bills, it will be in serious trouble.

At the same time, while investing in a company that shows positive cash flow is desirable, there are also opportunities in companies that aren't yet cash-flow positive. The cash flow statement is simply a piece of the puzzle. So, analyzing it together with the other statements can give you a more overall look at a company's financial health. Remain diligent in your analysis of a company's cash flow statement and you will be well on your way to removing the risk of one of your stocks falling victim to a cash flow crunch.
Two Important Metrics: ROE and ROIC

Introduction
Return on Equity (ROE) and Return on Invested Capital (ROIC) are two important metrics that take into how effectively the company is using its capital and equity by looking at what returns are generated with each of these. These calculations spread across the income statement (returns) and balance sheet (equity and capital). Let's dive into each a bit more.

Return on Equity
Disarmingly simple to calculate, return on equity is a critical weapon in the investor's arsenal, as long as it's properly understood for what it is. ROE encompasses the three pillars of corporate management -- profitability, asset management, and financial leverage. By seeing how well the executive team balances these components, investors can not only get an excellent sense of whether they will receive a decent return on equity but can also assess management's ability to get the job done.

Return on equity is calculated by taking a year's worth of earnings and dividing them by the average shareholder equity for that year. The earnings number can come directly from the Consolidated Statement of Earnings in the company's most recent annual filing with the SEC. It can also be figured as the sum of the past four quarters' worth of earnings, or as the average of the past five or 10 years' earnings, or it can even be an annualized figure based on the previous quarter's results. However, investors should be careful not to annualize the results of a seasonal business, in which all of the profit is booked in one or two quarters. The shareholder-equity number is located on the balance sheet. Simply the difference between total assets and total liabilities, shareholder equity is an accounting convention that represents the assets that the business has generated. It's assumed that assets without corresponding liabilities are the direct creation of the shareholder capital that got the business started in the first place.

The usual way investors will see shareholder equity displayed is as "book value" -- the amount of shareholder equity per share, or the accounting book value of the business beyond its market value or intrinsic economic value. A business that creates a lot of shareholder equity is a sound investment, because the original investors will be repaid with the proceeds that come from the business operations. Businesses that generate high returns relative to their shareholder equity pay their shareholders handsomely and create substantial assets for every dollar invested. These businesses are typically self-funding and require no additional debt or equity investments.

To quickly gauge whether a company is an asset creator or a cash consumer, look at the ROE it generates. By relating the earnings to the shareholder equity, an investor can quickly see how much cash comes from existing assets. If the ROE is 20%, for instance, then 20 cents of assets are created for every dollar originally invested. As additional cash investments increase on the asset side of the balance sheet, the ROE number shows whether additional dollars invested are dollars of return from previous investments.

If return on equity is simply:

\[
\text{ROE} = \frac{\text{one year's earnings}}{\text{shareholder equity}}
\]

… then how is it that we can see the profit margin, asset management, and financial leverage through this one calculation? If we expand the equation, we can start to take into account other variables. (We apologize if this gives you a flashback to high school algebra.)

\[
\text{ROE} = \left(\frac{\text{one year's earnings}}{\text{one year's sales}}\right) \times \left(\frac{\text{one year's sales}}{\text{assets}}\right) \times \left(\frac{\text{assets}}{\text{shareholder equity}}\right)
\]

Because the sales and the assets are both in the numerator and the denominator of the entire equation, they cancel one another out. When we break the equation apart in this manner, the three component parts of ROE come to light. Earnings over sales is profit margin, sales over assets is asset turnover, and assets over equity is the amount of leverage the company has. We'll discuss each one, and after we complete our analysis, we'll come back to ROE and how this composite number can be used to evaluate companies. We'll also explore its limitations as an analytical tool.

In our last installment, we examined the concept of return on equity and looked at one way to break the number apart into three separate components. ROE is one way to measure the return an investor receives on the capital invested in the business. By taking a year's worth of earnings and comparing it to the amount of shareholder equity on the balance sheet, you get a measurement of how much was returned for every dollar of equity the business has created.
As we saw in the last article, though, by manipulating the equation that defines ROE, you can isolate the three key tools that management has at its disposal to affect the returns of the business: pricing (earnings / sales), asset management (sales / assets), and financial leverage (assets / shareholder equity). ROE then becomes a measure not simply of how much of a return the company is generating from the equity it has created, but also of how successfully management has been at running the corporation.

**Profit margin (pricing)**

Pricing a product or service to create profits and volume is crucial to the success of any company. How well would Coca-Cola have fared had it decided that soda should be sold in 8-gallon jugs at $20 apiece? The container might have cost less as a percentage of the overall price, but the average motorist stopping by a convenience store wouldn't have room in the car for a big vat of soda. Purchases would have been restricted to home use, parties, and various entertainment establishments.

Pricing has become the realm of marketing. Nowadays, balancing profitability against volume is the bailiwick of market researchers, promotion gurus, and hard-nosed corporate executives. Yet all of the sales volume in the world is meaningless to shareholders if the company can't turn a profit. So pricing a product to be as profitable as possible and to generate stable sales growth is the holy grail of sales and marketing groups across the business world. The profit margin is one of the easiest ways to assess whether this group is meeting the profitability test.

The profit margin is the money left over after paying all of the costs of running the business. Calculating it is simple, a matter of dividing earnings (or profits) by sales, both measured over the same time period. Managements that increase the profit margin are controlling costs, either by squeezing efficiencies out of the business or cutting out unprofitable ventures. Although managements can cut costs too far—they can eliminate necessary research and development spending, for instance—a higher profit margin generally means a higher ROE.

The profit margin is also an expression of the amount of competition inherent in the business. Competitive industries such as grocery stores and discount chains tend to have a very low profit margin, since getting into those businesses is fairly easy. On the other hand, railroads, which operate as semi-monopolies on large-scale traffic routes and deliver bulk commodities, tend to have significantly higher profit margins. A high profit margin typically indicates that a company either has a highly proprietary good or service, possibly one that's "branded" and therefore able to carry a price premium. Or it could mean that the company is in a business where it has a monopoly or is part of an oligopoly over a particular type of good or service. Without some kind of moat around the basic business, new competitors can crunch a profit margin pretty quickly. Conversely, the more difficult it is for a new company to compete against an established business, the greater the potential profit margin for the existing company. In many cases, the existing company can temporarily lower prices in response to a threat of new competition and recoup lost revenue from other segments of its business.

A high profit margin rarely comes without either an entrenched business model or the semi-monopoly or oligopoly status that a railroad has. Railroads have limited competition where they own the tracks, and a huge, upfront capital investment has given many railroads a relative monopoly in some regions. However, as the next part of this series discusses at more length, if a high profit margin is complemented by a very low rate of asset turnover, the combination limits the total ROE. The vast majority of traditional, high-margin businesses are coupled with low asset turnovers— in other words, they can do only a certain amount of business without incurring additional costs that would constrict the profit margin. High profit margins can make a business look attractive. With profit margins such a critical part of return on equity, such a company should have a substantial edge, right?

Perhaps not. Although profit margins are crucial, sales generated for each dollar of assets plays an equally important role. Many high profit margin businesses don't produce strong sales from the assets they've invested. Generating more sales on fewer assets means tying up less capital the business generates in fixed assets. The term "capital-intensive" refers to the way some businesses require more capital than others to function. If a company needs substantial assets to generate high profit margins, its capital-intensive nature will often reduce its return on equity. Asset management is probably one of the factors individual investors have the most difficulty using to evaluate a company. Certainly you can compare various asset management ratios for companies within an industry. But how can you tell if a certain amount in sales per dollar of total assets is good or not good for a given company on more than just a relative basis?

Looking at asset management in the context of the total return on equity allows an investor to balance a company's asset management ability with its profit margins and the financial leverage it uses to discern whether the business is, in fact, great or whether it's simply mediocre. Because capital-intensive businesses have to use and maintain billions in assets, even ones with high profit margins aren't necessarily as exciting as they might be for an investor. And those businesses constantly have to invest new capital to generate revenues, so they can't return as much cash generated from operations to investors.
Conversely, a company that ramps up its asset management policies can improve shareholder return without necessarily raising its profit margins. For instance, one substantial investment that many companies make is in inventory. If a business can manage its inventory more efficiently, it can increase its return on equity. Minimizing inventory reduces total assets employed, leading to more sales per dollar of assets and leaving more cash on the balance sheet to distribute to shareholders or use for other projects.

The same holds true for low profit margin businesses as well. Often, such companies trade at low multiples because of the perception that they are commodity businesses with little opportunity for growth. However, if a business can structure its operations so that it has relatively small inventories on hand that it constantly sells and replenishes from production, then it will require fewer assets to generate a dollar of sales. A common tactic in recent years is to divert the resulting cash to stock buybacks, especially when the company is seen as undervalued. As you can see, improved asset management can increase shareholder return. Better asset management eventually shows up in the form of high profit margins, but high profit margins by themselves do not guarantee that shareholders will receive excellent returns. To ensure that return on equity is high, investors must look for businesses that have high margins and high asset turnover rates, whether it is sales to assets, looking at the inventory turns, the days sales outstanding (or collection period), the payables period, or the turnover in fixed assets. The last variable in the return-on-equity equation that can affect overall return is financial leverage.

Say that your profit margin is ebbing and your asset turnover just ain't what it used to be. Knowing that you are going to be compensated based on the return on equity (ROE) that your company is generating, how can you juice it up? Leverage, my boy, leverage. A few hundred million dollars in long-term debt to add some working capital to your balance sheet, and suddenly asset turnover doesn't appear to be a problem anymore. That capital also lets you expand your operations, pumping out more product at the lower profit margin to increase the raw earnings based on the same shareholder equity. Leverage is the answer -- heck, for many, leverage is the American way. In previous articles, we've explored return on equity as a way to analyze a business. Having looked at return on equity as being made up of three parts -- profit margin, asset management, and leverage -- we've examined these parts one by one. Let's focus on the leg of the ROE tripod known as leverage … a fancy-schmancy word for debt.

A lot of people want you to believe that debt is no good. Most of those people apparently buy their homes with cash. For the rest of the world, debt is much like anything else. It's OK in moderation, but overdoing it is not a good idea. As anyone who has ever had a high credit card balance can attest, debt tends to feed on itself, growing to enormous proportions with very little food and watering. When a company takes on debt, it increases the total amount of capital it has at its disposal to finance whatever it is it wanted to finance in the first place. Unlike equity, debt carries a direct cost called "interest" that eats away at a business's profitability. Sure, if you take on $500 million in debt, you can suddenly produce 1,200 more widgets a day. However, your profit margins on the extra widgets plummet to 5% from 10% because the interest on the debt costs you 5%, meaning that the additional gain becomes incremental.

The problem with adding leverage to a company's equity as a way to boost ROE is that after a certain point, the actual cost of the debt diminishes profit margins and decreases asset turns. Although there certainly are a number of cases where adding debt makes sense, it is not something that management wants to push as high as possible, unlike profit margins and asset turns. In fact, many perceive earnings generated from debt financing as higher risk than earnings generated from equity financing, particularly if the company is tied to the business cycle in any way, shape, or form. Whereas a company that is completely equity financed can normally ride out a downturn, a company with a large portion of debt financing is unfortunately not quite so well equipped.

Although this flies in the face of Modigliani and Miller's Nobel-prize winning M&M theorem, which states that the market value of any company is independent of its capital structure, investors often seem to pay less for debt-financed earnings. There are a number of potential explanations for this, the most apparent being that because debt financing increases the risk that the company will be injured in a cyclical downturn, that risk is discounted into the price that investors are willing to pay for future earnings. Put a bit more clearly, because the debt increases the likelihood of bankruptcy, investors are more cautious about the price they will pay for the stock. This alone should be sufficient to keep managers from maximizing leverage to increase the ROE, as it would have the unintended side effect of minimizing the stock price.

There are almost as many ways to assess how much long-term debt a company has as there are mutual funds, but the five most common include the debt-to-assets ratio, the debt-to-equity ratio, the debt-to-total capital ratio, the debt-to-market capitalization ratio, and the debt-to-revenue ratio. All of these ratios compare the amount of total liabilities to some other relevant part of the income statement or the balance sheet. The parts used for comparison in the five listed ratios are, in order: shareholder's equity, shareholder's equity plus long-term debt (total capital), market capitalization, and trailing-12-month
Return on Invested Capital

Return on invested capital, or ROIC, is a financial-performance forecasting tool that analysts use regularly. We believe that looking at economic earnings -- free cash flow, or ROIC minus a charge for the use of that capital -- produces a much better view of the economics and value of a company than just looking at earnings growth would. After all, earnings growth comes at a price in many instances, whether by way of heavy investment in working capital, fixed assets, or the issuance of stock to acquire other businesses. This series is an introduction to how ROIC is calculated. We believe that understanding ROIC is as fundamental as learning how to calculate earnings per share or figuring out a company's current ratio. It's not profit margins that determine a company's desirability; it's how much cash can be produced by every dollar that shareholders or lenders invest in a company. Measuring the real cash-on-cash return is what ROIC seeks to accomplish.

ROIC is sort of like return on equity but greatly improves upon it. ROE -- net income divided by the average shareholder equity in use over the period being examined -- takes into account in the denominator only the net assets a company has in use. A major problem with this calculation is that certain liabilities mandated by generally accepted accounting principles, or GAAP, reduce the amount of resources at the company's disposal in the ROE equation. Depending on the circumstances, though, these liabilities should not be counted as a reduction in the capital working for the benefit of shareholders. They should be counted as an addition to capital in use by shareholders. That being the case, moving an amount out of liabilities and into owners' equity necessarily increases the denominator of the ROE equation and thus lowers the company's ROE.

As we said in the first part of this series, return on invested capital is like return on equity (ROE) -- but even better. True, balance sheets using GAAP (Generally Accepted Accounting Principles) can understimate the amount of resources that a company currently has at its disposal. In turn, that can overstate the company's return on capital, luring investors into misjudging a business's performance and economics. However, return on invested capital still leaves ROIC in the dust for a number of reasons. First, ROE uses only the residual of assets minus liabilities as the invested capital base. A 15% return on equity might seem acceptable in all circumstances, but without also knowing how much leverage the company's taken on, and its return on all capital, investors can't truly know whether a potential investment is safe.
For example...
Here's a theoretical balance sheet:

- Total assets: $3,000
- Accounts payable: $200
- Accrued compensation expenses: $200
- Current portion of long-term debt: $100
- Long-term debt: $1,750
- Total liabilities: $2,250
- Shareholders' equity: $750

With these numbers, a company generating earnings of $112.50 during the fiscal year would run a nominally great return on equity of 15%. But the picture looks far less rosy when you compare earnings to all the capital invested in the business, long-term or short-term -- in other words, owners' equity and all financial debt. There are two ways to add up the capital at work, according to the theoretical work of Bennett Stewart III in *The Quest for Value: The EVA Management Guide*. (His theories are backed up by a heck of a lot of practical application by Stewart and his partners at his investment firm, so this isn't just propellerhead stuff). You can add up the capital a firm is using by focusing primarily on the right-hand side of the balance sheet, where you find liabilities and owners' equity, or by looking primarily on the left-hand side of the balance sheet, which lists assets. Remember, assets minus liabilities equals owners' equity -- the bottom line on a balance sheet.

Let's flip it around
Rearranging the equation, though, gets us to an expression of how all assets are funded on a balance sheet: assets = liabilities + owners' equity. In short, we can define invested capital as equal to all financial capital. To get this number, we'll start with all assets, then deduct non-interest-bearing current liabilities. In the above case, we have total assets of $3,000, from which we subtract non-interest bearing current liabilities of $400 -- the combined sum of accounts payable and accrued compensation expenses. While they're technically considered debt, these categories don't represent capital invested in the business by either equity or debt holders. As long as a company pays its vendors within standard or agreed-upon terms, accounts payable are not interest-bearing liabilities.

As for accrued compensation expenses, any company that doesn't pay by the day will operate with an average level of these liabilities all year long. If the company is a traditional manufacturer, its inventory represents the value of work that each employee contributes. But while the company's getting this value every day, it's usually only paying workers for it once every two weeks. Between paydays, the value of employees' work adds up; think of it as an interest-free short-term loan of labor. Either way we look at it, we have $2,600 in invested capital. Now we have to adjust the return before we divide it into invested capital to calculate ROIC. However, the net income figure we used in the calculation of return on equity isn't exactly equal to the "return" in ROIC.

See, ROE is concerned with the return on equity after all other financing sources have been taken care of. Net income is net of interest expense, as well as other expenses below the operating-income line on the income statement. We want to measure the income the company generates before considering what capital costs. This lets us look at the pure earnings power of a corporation, before we factor in the decisions it made to finance the business. Don't worry -- we're not ignoring leverage here. We'll consider the cost of capital later in this series. Up until now, we've looked at setting up the balance sheet to assess return on invested capital. We now look at the return part of the equation. As we pointed out in the last article, we want to measure the income the company generates before considering how much its capital costs. In this way, we are looking at the pure earnings power of a corporation before taking into account the decisions that were made to finance the business. Here's the hypothetical income statement we're working with:

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues</td>
<td>$1,875</td>
</tr>
<tr>
<td>Cost of Goods Sold</td>
<td>$1,200</td>
</tr>
<tr>
<td>Gross Profit</td>
<td>$675</td>
</tr>
<tr>
<td>Operating Expenses</td>
<td>$298.42</td>
</tr>
<tr>
<td>Operating Profit</td>
<td>$376.58</td>
</tr>
<tr>
<td>Net Interest Expense</td>
<td>$203.50</td>
</tr>
<tr>
<td>Pre-Tax Income</td>
<td>$173.08</td>
</tr>
</tbody>
</table>
Compared to the adjustments that need to be made to the balance sheet, this is the easy part. The return that the company is generating from operations is fully taxed operating income. To calculate, we tax the company's operating income at a standard statutory rate. In the U.S., the standard is around 35%, and it'll be a few points lower for companies with international operations. So the return from operations for the above company is equal to:

Operating income - income tax

Or

Operating income - [operating income x tax rate]

Another way to express this is:

Operating income x (1 - tax rate)

which translates to, using the standard U.S. tax rate:

Operating income x 65%

The tax component is something that no business can escape fully, although it can shield its operating profits with debt. But we want to look at the earnings power of the company and not the efficiency of its tax planning. In assigning a standard tax rate across enterprises, we can judge the operating efficiency of capital without biases on the industry in which the capital is employed. Whether or not we tax operating income, the comparisons across industries will be consistent. The goal is to look at fully taxed operating income. So in this example, the operating income is $376.58, and fully taxed operating income is equal to 65% of that figure, which is $244.78. On a base of $2,600 in invested capital, the company's ROIC is then $244.78 divided by $2,600, or 9.4%.

In short, the formula for ROIC is:

\[
\text{ROIC} = \frac{\text{After-tax operating earnings}}{\text{(total assets - non-interest-bearing current liabilities)}}
\]

There are other ways to look at ROIC, though. Some people would modify the denominator in the equation by deducting goodwill from total assets and non-interest-bearing current liabilities, because goodwill is an intangible asset arising from the purchase of another company at a price higher than the acquired company's appraised net asset value. (Appraised net asset value is usually in the neighborhood of book value.) The company's operating managers don't have use of this asset, so a company with goodwill will look less productive on an operating basis than will a company without goodwill. Therefore, when we look at a company's operating ROIC, we back goodwill out of the ROIC equation, since intangible assets are financial capital, not operating capital. On the same topic, we always want to back amortization of goodwill out of operating expenses. Since goodwill amortization schedules can differ so much between companies, and since this is a non-cash expense based on an accounting choice that's arbitrary (at least within legally permissible periods not exceeding 40 years), we don't count this as an operating expense. Again, this allows an investor to look at a company's operating performance before taking into account distortions to the cash return that a company is generating.

In fact, cash-on-cash returns are what we're looking for in calculating ROIC. We're trying to look past distortions that come from accounting conventions. Accounting is a rules-based system that allows for a number of choices that can be made by financial managers and approved by auditing firms and distort a company's true economic earnings. For instance, companies can use certain accounting methods, such as capitalizing expenses, which will increase reported earnings. Analysts focusing on ROIC rather than on just earnings growth, however, have a more useful metric for judging economic profitability. That's because the expenses that were capitalized rather than run immediately through the income statement will show up in the ROIC ratio as a larger amount of capital rather than a smaller amount of after-tax operating income. Using ROIC lets an analyst pay less attention to the accounting choices made to increase reported earnings and devote more attention to the company's cash-on-cash returns.

We've already discussed how return on invested capital lets investors see the cash-on-cash return of a business -- literally, the difference between the amount of cash you invest in the business, and the amount you get back. The more cash you can get
per dollar of investment, the better the business generally is. Whether the company is financed with equity (by selling stock) or debt, ROIC doesn't care. It helps you filter out any distortions caused by a company's accounting method, and clearly see how well the company is actually doing, and how efficiently it's being run.

A clearer view
You need to view operating performance independent of financing, because conventional accounting does not treat all financing costs equally. While interest, the cost of debt, is reflected on the income statement, the more intangible (but no less real) cost of the equity capital is not reflected at all. When you buy stock, you expect to earn a return. If investors do not get the return they expect, they will sell the stock to new investors, who expect their own target returns. The consensus expectation of all investors who own the stock is the cost of equity capital. Just because it's not deducted from earnings, like debt is, doesn't make it any less real. This is why ROIC is so powerful -- it looks at earnings power relative to how much capital is tied up in a business. The whole idea of earnings growth seems less important in isolation when you compare it to how much capital is being poured into a business. It's easy to grow earnings by pumping more money into a business, but it's a lot tougher to do so without affecting your current ROIC.

ROIC in action
Suppose Wallace's Widgets (Ticker: WIDGT) has been able to grow operating earnings by 20% per year for five years. If you purchase it at a P/E of 10, you might think you've scored a great deal, since its growth rate is much higher than the P/E. However, while you’re focusing on all that earnings growth, you might not realize that the company's ROIC is dropping like a stone. It's investing ever-increasing amounts into projects that earn ever-dwindling returns:

<table>
<thead>
<tr>
<th>Year</th>
<th>After-Tax Operating Earnings</th>
<th>Year-End Invested Capital</th>
<th>ROIC Operating Earnings Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$100</td>
<td>$500</td>
<td>20%</td>
</tr>
<tr>
<td>1</td>
<td>$120</td>
<td>$700</td>
<td>17.1%</td>
</tr>
<tr>
<td>2</td>
<td>$144</td>
<td>$1,180</td>
<td>12.2%</td>
</tr>
<tr>
<td>3</td>
<td>$173</td>
<td>$1,756</td>
<td>9.8%</td>
</tr>
<tr>
<td>4</td>
<td>$207</td>
<td>$2,447</td>
<td>8.5%</td>
</tr>
<tr>
<td>5</td>
<td>$249</td>
<td>$3,277</td>
<td>7.6%</td>
</tr>
</tbody>
</table>

Right off the bat, Wallace's Widgets invests $500 in core projects that produce a 20% return. In its first year, it invests another $200 in projects producing a 10% return. Every year afterward, it sinks money into an unlimited number of additional projects that all produce only a 5% return. Since its initial projects offer the highest rate of return, earnings look good at first. But to keep those earnings growing at the same rate, the company has to plow more and more cash into also-ran projects with far more meager returns.

At the end of the period, the company's operating income is up 150%. However, the company's invested capital has risen more than 550%. With the newest projects only earning 5%, no one would be happy to see management investing new money at such a low rate of return. That's probably why the stock only trades at 10 times earnings. Wallace's Widgets hasn't built shareholder value, because it has invested in projects whose ROIC falls below the rate investors expect. Those poor decisions have forced it to increase the capital invested in the business more quickly than it's growing its revenue and earnings. It had to keep investing in receivables, inventory, building warehouses, and other capital assets such as presses and trucks to create the 20% earnings growth that shareholders demanded. But over the intervening years, the company has likely had to take on lines of credit, issue commercial paper, and issue long-term debt and preferred stock to finance that expansion, because internally generated funds just couldn't cover it.

Even though management has focused on earnings growth, its horrible returns on new capital invested in the business prompt smart investors -- "lead steers," as Bennett Stewart calls them in his book -- to look elsewhere. These "lead steers" want a company that is beating its "cost of capital" -- investing new money into projects that have ROIC exceeding the expected returns shareholders demand. How do you compare ROIC to the cost of capital? We'll cover that next. We just looked at the unfortunate case of Wallace's Widgets (Ticker: WIDGT), whose return on capital steadily dwindled as it sank ever more cash into ever-less-profitable projects.

In the fifth and final year of our example, the company had after-tax operating earnings of $249 and was barely beating its cost of capital. At this point, the company had $3,277 in invested capital, which we'll assume came half from equity capital and half from debt. If investors only considered the cost of debt, it would look like the company was adding value to the capital at its disposal. Earnings before interest and taxes in year five would be $383 ($249 in earnings / (1 - 35% tax rate)), much higher
than the cost of debt. With $1,639 in debt, the company's interest expense (using an 8% loan rate) would be $131 in year seven, giving the company 2.9 times interest coverage, well within the comfort zone. After a tax savings of $46 (35% of interest expense -- in short, the company's tax rate times its interest expense) that the company receives from using debt rather than equity, the cost of debt capital is $85.

Time to pay the piper
But even though the cost of equity does not show up on a company's income statement, it's not free. Investors expect a rate of return on equity, one that's in line with the S&P 500 and takes into account the specific risks of the company in question. In this case, Wallace's Widgets has an average debt-to-equity ratio of 1 in year five; it may also be operating in a slower-growth industry with poor economics to begin with. In that case, we would demand a rate of return on equity of about 1.2 times the S&P 500's historical 10% return -- 12% -- to compensate for the extra risk. A lower return on equity will hurt the valuation of the company's equity, and ultimately diminish the multiple the market will pay for all the capital invested in the business, as well as its earnings and cash flow.

Again, we assume the company has $1,638 of equity in use. At 12% (the company gets no tax savings on this, since earnings attributable to equity are taxable), the cost of equity in use over the course of the year is $197. Combined with the after-tax cost of debt, the company's total cost of capital is $282 -- higher than its after-tax operating earnings. We can prove this by calculating the company's weighted average cost of capital on a percentage basis. With capital of $3,277 and 50/50 equity and debt, half the capital costs 12%, and the other half costs 5.2%, both after tax. Let's work out the weighted average cost of capital (WACC):

\[(0.5 \times 12\%) + (0.5 \times 5.2\%) = 8.6\%\]

Multiplying WACC by average total capital for the year, the company's cost of capital was $282. In this case, Wallace's Widgets should trade below the value of its capital, because it will continue to destroy value. Because the WACC of 8.6% is greater than the ROIC of 7.6%, the business will eventually sap away all shareholders' equity, and its creditors will end up taking control.

Cost-of-capital comparisons
ROIC alone can't tell you how well a company is operating. You should instead study it in relation to a company's cost of capital. Many companies and leveraged buyout firms have operated on this system, called Economic Value Added, or EVA, for a number of years. While this philosophy alone doesn't guarantee success, some of the biggest generators of shareholder value have embraced it. In our example, Wallace's Widgets would have stopped growing at a certain point to preserve shareholder value, forgoing growth for growth's sake, and devoting more of the value of its enterprise to its creditors than its shareholders.

When ROIC starts to drop, investors should pay attention. Falling ROIC can signal anything from a momentary blip in the company's progress to decay in industry or company fundamentals. Successful companies in more mature industries -- the characteristics defining success for companies in hypergrowth industries are much different -- generate ROIC above and beyond their cost of capital. Very strong companies maintain excellent returns on invested capital, even as they increase invested capital year after year. Others may rationalize their operations, selling off units that generate less ROIC than others. Dumping such operations can shrink a company's earnings, but the valuation on the remaining earnings and capital invested in the business can increase, making the company now worth more.

By looking at a company's financials from an ROIC standpoint, investors account for both the income statement and the balance sheet. The various ratios that an investor considers (leverage, cash conversion cycle elements, margins, asset turnover) are brought together under the unified ROIC model. ROIC also allows an investor to look through the various accounting choices that a company can make to portray earnings. Since most accounting regimes are rich in balance sheet accruals, ROIC is able to identify the real economic return a company generates. Whatever expenses don't go into net income stay on the balance sheet as part of the company's invested capital. In short, what doesn't get considered in the numerator in ROIC has to be considered in the denominator. We'll discuss that in greater detail next. Return on invested capital means different things to different people, because capital is a somewhat amorphous term and the modifier "invested" further complicates things. The main issue we'll look at in this last section of the ROIC series is the amount of cash that a company carries and how that plays into the calculation of ROIC.

Earlier, we explained that the denominator in ROIC -- invested capital -- can be calculated primarily from the liabilities & equities side of the balance sheet or primarily from the asset side of the balance sheet. This stands to reason because the accounting tautology of assets minus liabilities equals owners' equity (A - L = OE) can be restated as assets equals liabilities.
plus owners' equity \((A = L + OE)\). The capital that can be invested by management can be looked at through either prism (subject to some distortion-corrections in either case), but the amounts of invested capital must agree with one another. At the very least, they must be in the same neighborhood.

Let's review the definition of invested capital and ROIC. The invested capital base is total assets minus noninterest-bearing current liabilities, and the return is after-tax operating earnings. This is the more hardball way of defining the capital base, though. In Graham and Dodd's *Security Analysis*, return on capital is defined differently. The definition of return on capital in the fifth edition of that venerable tome is net income plus minority interest plus tax-adjusted interest (basically, after-tax operating profit) all divided by assets minus intangible assets (like goodwill or patents) minus short-term accrued payables. We accounted for the intangibles by looking at the difference between financial capital and capital that operating managers can actually lay their hands on, but we don't depart from Graham and Dodd on cash invested in the business. Whether it's funded by liabilities or owners' equity, the cash represents capital that has been invested in the business. However, there is a difference between invested and deployed, which is where some investors and analysts differ in their view of ROIC.

In our original definition of return on invested capital, we defined ROIC as after-tax operating profit divided by total assets minus noninterest-bearing current liabilities minus cash. Some feel more comfortable with this definition because cash represents capital that hasn't been deployed in other assets or represents potential to reduce liabilities or owners' equity. It's useful to see how well companies are using the assets they've actually deployed in their businesses. However, if a company is having trouble finding outlets to invest excess cash, the most conservative way to look at the company's ROIC performance may be to look at ROIC using a capital base that doesn't deduct the idle cash. If one were to judge the company on the huge ROIC with a capital base that didn't include the cash, one might falsely conclude that it is severely undervalued -- when in reality, it couldn't hope to invest all its cash in high-yielding business projects.

In the case of a fast-growing company that has issued securities but has not yet deployed the cash from those issuances, we don't want to get too racy with what we consider excess capital. On one hand, you wouldn't expect an acquirer simply to take that cash out of the business. But we also don't want to unduly penalize the company's valuation just because we are taking a snapshot of the financials at a time when it has not yet had the chance to invest all the capital that it has at its disposal. A compromise is in order. Depending on the capital intensity and the speed at which a company can turn inventory into cash (its cash conversion cycle), the invested capital base of the company should reflect only the cash balance that a company needs to have on hand to cover day-to-day cash outlay needs. For instance, most restaurants that aren't going under need to retain very little cash on hand because they operate in a cash business. Their inventory is turned into cash very quickly, while the payables for the inventory operate on a cycle not all that different from any other business with a good credit rating. Large industrial companies, on the other hand, take much longer to turn a pile of sheet steel or aluminum and a bunch of electronics into a final sale. They need a good deal of cash on hand to cover necessary cash disbursements in the normal course of a business cycle.

The compromise ROIC is thus: after-tax operating profit divided by assets minus noninterest-bearing current liabilities minus excess cash. Excess cash is cash beyond 0% to 20% of revenues. This level is left to the discretion of the investor, but conservatism is the better part of valor here. When some analysts look at a company and say, "Look at all that excess cash," it's not as if you could go in and buy out the company and pay down the debt you issued to acquire it. And it's not as if the company's profitability should be measured on an invested capital base from which all cash has been deducted. Most companies need a bunch of cash for several reasons. They need to be able to weather business downturns. In addition, many businesses take awhile to convert cash into inventory into revenue and back into cash again. For them, a higher percentage of base cash is appropriate. On the other hand, companies that turn cash into inventory into revenue back into cash very quickly need less cash to operate. In that case, any cash that it carries beyond a very small percentage of revenue should be deducted from its capital base.

As a compromise, this can work better and be more flexible than the very hardcore definition of invested capital we originally stated. Some businesses carry a bunch of cash, but an investor shouldn't deduct all cash from its capital base. Just because the company has a good ROIC and good margins doesn't mean that its cash conversion cycle and capital investment needs release it from holding cash on the balance sheet. If it chose to shoot all its cash back to shareholders, whatever short-term debt it would need to finance its working capital would show up in its invested capital base. While the concept behind discounted cash flow analysis is simple, its practical application can be a different matter. The premise of the discounted cash flow method is that the current value of a company is simply the present value of its future cash flows that are attributable to shareholders. Its calculation is as follows: For simplicity's sake, if we know that a company will generate $1 per share in cash flow for shareholders every year into the future; we can calculate what this type of cash flow is worth today. This value is then compared to the current value of the company to determine whether the company is a good investment, based on it being undervalued or overvalued.
Valuation

Introduction:
Though it may sometimes seem like it, stock prices aren't random. And the best investors know it. So how do investors decide whether or not a stock is a "buy"? Valuation. Valuation is the first step toward intelligent investing. When an investor attempts to determine the worth of her shares based on the fundamentals, it helps her make informed decisions about what stocks to buy or sell. Without fundamental value, one is set adrift in a sea of random short-term price movements and gut feelings. For years, the financial establishment has promoted the specious notion that valuation should be reserved for experts. Supposedly, only sell-side brokerage analysts have the requisite experience and intestinal fortitude to go out into the churning, swirling market and predict future prices. Valuation, however, is no arcane science that can only be practiced by MBAs and CFAs. With only basic math skills and some diligence, you can determine values with the best of them.

Before you can value a share of stock, you have to have some notion of what a share of stock is. A share of stock is not some magical creation that ebbs and flows like the tide; rather, it is the concrete representation of partial ownership of a publicly traded company. If XYZ Corp. has 1 million shares of stock outstanding and you hold a single, solitary share, that means you own a millionth of the company. Why would someone want to pay you for your millionth? There are quite a few reasons, actually. There is always going to be someone else who wants that millionth of the ownership because they want a millionth of the votes at a shareholder meeting. Although it's small by itself, if you combine that millionth with about 500,000 of its friends, you suddenly have a controlling interest in the company. That means you can make it do all sorts of things, like pay fat dividends -- or merge with your company.

Companies buy shares in other companies for all sorts of reasons. Whether it’s an outright takeover, in which a company buys all the shares, or a joint venture, in which the company typically buys enough of another company to earn a seat on the board of directors, the stock is always on sale. The price of a stock translates into the price of the company, on sale for seven and a half hours a day, five days a week. It is this information that allows other companies, public or private, to make intelligent business decisions with clear and concise information about what another company's shares might cost them. A share of stock is a stand-in for a share in the company’s revenue, earnings, cash flow, shareholders’ equity -- you name it, the whole enchilada. For the individual investor, however, this normally means just worrying about what portion of all of those numbers you can get in dividends. A share of ownership entitles you to a share of all dividends in perpetuity. Even if the company's stock does not currently have a dividend yield, there always remains the possibility that at some point in the future there could be some sort of dividend.

However, a company can also simply repurchase its own shares using its excess cash, rather than paying out dividends to shareholders. This effectively drives up the stock price by providing a buyer, as well as improving earnings per share (EPS) comparisons by decreasing the number of shares outstanding. Mature, cash flow-positive companies tend to be much more liberal with share repurchases as opposed to dividends, simply because dividends to shareholders get taxed twice. This series of articles will take you through the major methods for valuing companies. The main categories we'll go through are valuations based on earnings, revenue, cash flow, equity, and subscribers. With these methods under your belt, you should have a start on valuing nearly any kind of business.

Earnings
Companies are most commonly valued via their earnings. Also called net income or net profit, earnings are the money left over after a company pays all of its bills. To allow for apples-to-apples comparisons, most people who look at earnings measure them according to earnings per share (EPS). You arrive at the earnings per share by simply dividing the dollar amount of the earnings a company reports by the number of shares it currently has outstanding. Thus, if XYZ Corp. has 1 million shares outstanding, and it's earned $1 million in the past 12 months, it has a trailing EPS of $1. (It's called "trailing" because it looks at the numbers reported in the previous four completed quarters.)

\[
\frac{$1 million in earnings}{1 million shares} = $1 earnings per share (EPS)
\]

The earnings per share figure alone means absolutely nothing, though. To look at a company's earnings relative to its price, most investors employ the price/earnings (P/E) ratio. The P/E ratio takes the stock price and divides it by the last four quarters' worth of earnings. For instance, if, in our example above, XYZ Corp. was currently trading at $15 a share, it would have a P/E of 15.

\[
\frac{$15 share price}{$1 in EPS} = 15 P/E
\]
Is the P/E the Holy Grail?
Many individual investors stop their entire analysis of a company after they figure out the trailing P/E ratio. With no regard to any other form of valuation, this group blindly plunges ahead, purposefully ignoring the vagaries of equity analysis. Ben Graham popularized the P/E, but he also used many other techniques beyond to isolate value, too. Today, the P/E has been oversimplified by its devoted fans, who search primarily for companies that sport a very low price relative to their trailing earnings.

Also called a "multiple," the P/E ratio is most often compared against the current rate of growth in earnings per share. Some argue that that for a fairly valued growth company, the P/E ratio should roughly equal the rate of EPS growth. Returning to our example, if we find out that XYZ Corp. grew its earnings per share at a 13% over the past year, it would suggest that at a P/E of 15, the company is pretty fairly valued. Most believe that P/E only makes sense for growth companies relative to the earnings growth. If a company has lost money in the past year, or has suffered a decrease in earnings per share over the past 12 months, the P/E becomes less useful than other valuation methods we will talk about later in this series. In the end, P/E must be viewed in the context of growth; you can't consider it by itself without greatly increasing your potential for errors.

Are low P/E stocks really a bargain?
With the advent of computerized stock-screening, low-P/E stocks that have been mispriced have become increasingly rare. When Ben Graham formulated many of his principles for investing, he had to search manually through pages of stock tables to ferret out companies with extremely low P/Es. Today, simply punching a few buttons on an online database will give you a list as long as your arm. This screening has added efficiency to the market. When you see a low-P/E stock these days, it often deserves that gloomy metric because of its questionable future prospects. Intelligent investors value companies based on future prospects, not past performance, and stocks with low P/Es often have dark clouds looming in the months ahead. True, you can still find some great low P/E stocks that the market's simply overlooked for some reason. But when you do, you'll need to confirm these companies' real value by applying some other valuation techniques.

The PEG and YPEG
Two commonly used applications of the P/E ratio are the P/E and growth ratio (PEG) and the year-ahead P/E and growth ratio (YPEG). The PEG simply takes the annualized rate of growth out to its furthest estimate, then compares this with the trailing P/E ratio. Since future growth makes a company more valuable, it makes sense that higher growth rates should increase a company's valuation. Relying solely on a trailing P/E in this regard would be like trying to drive with your eyes fixed on the rearview mirror. For instance, if a company is expected to grow at 10% a year over the next two years, and it has a P/E of 10, it will have a PEG of 1.

$$\frac{10 \text{ trailing P/E}}{10\% \text{ projected EPS growth rate}} = 1.0 \text{ PEG}$$

The lower the PEG ratio, the more cheaply a company is valued. If the company in the above example only had a P/E of 5, but was expected to grow at 10% a year, it would have a PEG of 0.5. If the company had a P/E of 20 and expected growth of 10% a year, it would have a PEG of 2. While the PEG is most often used for growth companies, the YPEG is best suited for valuing larger, more-established ones. The YPEG uses the same assumptions as the PEG, but it looks at different numbers. Rather than basing the P/E ratio on trailing earnings, it compares the stock price to earnings estimates for the year ahead. It then uses estimated five-year growth rates, which are readily available from several quote sources. Thus, if the forward P/E is 10, and analysts expect the company to grow at 20% over the next five years, the YPEG is equal to 0.5. You should view the PEG and YPEG in the context of other measures of value, rather than considering them magic money machines.

Multiples
Rather than trying to look at growth rates, many investors simply look at estimated forward earnings, then guess what fair multiple someone might pay for the stock. For example, suppose XYZ Corp. has historically traded at about 10 times earnings, and it's currently down to 7 times earnings because it missed estimates one quarter. If the missed quarter was just a short-term anomaly, it would be reasonable to expect that the stock will return to its historic 10 times multiple. When you project fair multiples for a company based on forward earnings estimates, you start to make a heck of a lot of assumptions about what that company will do in the future. With enough research, you can reduce the risk of being wrong, but it will always still exist. Should one of your assumptions prove incorrect, the stock probably won't go where you'd expect it to. That said, most of the other investors and companies out there are using this same approach, making their own assumptions as well. In such a worst-case scenario, at least you won't be alone.

In a modification to the multiple approach, you can also determine the relationship between the company's P/E and the average P/E of the S&P 500. If XYZ Corp. has historically traded at 150% of the S&P 500, and the S&P is currently at 10, many investors believe that XYZ Corp. should eventually hit a fair P/E of 15, assuming that nothing changes. This historical
relationship requires some sophisticated databases and spreadsheets to figure out, and it's more often used by professional money managers than individual investors.

Cash Flows
Despite the fact that most individual investors are ignorant of cash flow, it is probably the most common measurement used by investment bankers for valuing public and private companies. Cash flow is literally the cash that flows through a company during the course of a quarter or the year after taking out all fixed expenses. Cash flow can be analyzed through Free Cash Flow (FCF) as earlier discussed, but as a shortcut, it is often defined as earnings before interest, taxes, depreciation, and amortization (EBITDA).

Why look at earnings before interest, taxes, depreciation, and amortization? Interest income and expense, as well as taxes, are all tossed aside because cash flow is designed to focus on the operating business and not secondary costs or profits. Taxes especially depend on the vagaries of the laws in a given year and actually can cause dramatic fluctuations in earnings power. For instance, early in a company's life, it usually loses money. When the company starts to turn a profit, it can often use those losses from previous years to cut its taxes. That can overstate current earnings and understate its forward earnings, masking the company's real operating situation. Thus, a canny analyst would use the growth rate of earnings before interest and taxes (EBIT) instead of net income in order to evaluate the company's growth. EBIT is also adjusted for any one-time charges or benefits.

As for depreciation and amortization, these are called non-cash charges, as the company is not actually spending any money on them. Rather, depreciation is an accounting convention for tax purposes that allows companies to get a break on capital expenditures as plant and equipment ages and becomes less useful. Amortization normally comes in when a company acquires another company at a premium to its shareholder equity -- a number that it accounts for on its balance sheet as goodwill and is forced to amortize over a set period of time, according to generally accepted accounting principles (GAAP). When looking at a company's operating cash flow, it makes sense to toss aside accounting conventions that might mask cash strength.

When and how to use cash flows
Cash flow is most commonly used to value industries that involve tremendous up-front capital expenditures and companies that have large amortization burdens. Cable TV companies, for instance, reported negative earnings for years as they made huge capital expenditures to build their cable networks. However, their cash flow actually grew; huge depreciation and amortization charges masked the companies' ability to generate cash. Sophisticated buyers of these properties use cash flow as one way of pricing an acquisition, thus it makes sense for investors to use it as well.

The most common valuation application of EBITDA, the discounted cash flow, is a rather complicated spreadsheet exercise that defies simple explanation. Economic value added (EVA) is another sophisticated modification of cash flow that looks at the cost of capital and the incremental return above that cost as a way of separating businesses that truly generate cash from ones that just eat it up. The most straightforward way for an individual investor to use cash flow is to understand how cash flow multiples work. By looking at recent mergers and acquisitions, you can divide the price that the acquirer pays for a company by its cash flow, producing a price-to-cash flow multiple. Then you can compare that ratio to the multiple of the company you're looking at. Investors interested in going to the next level with EBITDA and looking at discounted cash flow or EVA are encouraged to check out the bookstore or the library. Since companies making acquisitions use these methods, it makes sense for investors to familiarize themselves with the logic behind them as this might enable an investor to spot a bargain before someone else.

Equity
Whether it's tangible items such as cash, current assets, working capital, and shareholder equity, or intangible qualities such as management or brand name, equity is everything that a company has if it were to suddenly cease selling products and stop making money tomorrow. Traditionally, investors who rely on buying companies with a substantial amount of equity to back up their value were considered a paranoid lot hoping to collect something in liquidation. However, as the TV-dominated mass-consumer age has helped intangibles such as brand names create powerful moats around a core business, contemporary investors have begun to push the boundaries of equity by emphasizing qualities that have no tangible or concrete value but are absolutely vital to the company as an ongoing concern.

The balance sheet: cash and working capital
Like to buy a dollar of assets for a dollar in market value? Ben Graham did just that. He developed one of the premier screens for ferreting out companies with more cash on hand than their current market value. First, Graham would look at a company's cash and equivalents and short-term investments. Dividing this number by the number of shares outstanding gives a quick
measure that tells you how much of the current share price consists of just the cash that the company has on hand. Buying a company with a lot of cash can yield a lot of benefits, because cash can fund product development and strategic acquisitions and can pay high-caliber executives. Even a company that might seem to have limited future prospects can offer tremendous promise if it has enough cash on hand. Another measure of value is a company's current working capital relative to its market capitalization. Working capital is what's left after you subtract a company's current liabilities from its current assets. Working capital represents the funds a company has ready access to for use in conducting its everyday business. If you buy a company for close to its working capital, you have essentially bought a dollar of assets for a dollar of stock price -- not a bad deal. Just as cash funds all sorts of good things, so does working capital.

**Shareholder equity and book value**
Shareholder equity is an accounting convention that includes a company's liquid assets, including cash, hard assets such as real estate, and retained earnings. This metric is an overall measurement of how much liquidation value a company would have if all of its assets were sold off -- whether those assets are office buildings, desks, or old T-shirts sitting in inventory. Shareholder equity helps you value a company when you use it to figure out book value -- literally, the value of a company written down on the accounting ledger. To calculate book value per share, take a company's shareholder equity and divide it by the current number of shares outstanding. If you then take the stock's current price and divide by the current book value, you have the price-to-book ratio. Book value is a relatively straightforward concept. The closer to book value you can buy something at, the better it is. Book value, however, has a lot of skeptics these days. Depending on what tax consequences are being avoided, most companies can exercise some latitude in valuing their inventory and in reporting inflation or deflation on their real estate. But with financial companies such as banks, consumer-loan concerns, brokerages and credit card companies, the book value remains extremely relevant. For instance, in the banking industry, takeovers are often priced based on book value. Another use of shareholder equity is to determine return on equity. ROE is a measure of how much in earnings a company generates in four quarters in comparison with its shareholder equity. It is measured as a percentage. For instance, if XYZ Corp. made $1 million in the past year and has shareholder equity of $10 million, then the ROE is 10%. Some use ROE as a screen to find companies that can generate large profits with little in the way of capital investment. High-ROE companies are so attractive to some investors that they'll take the ROE and average it with the expected earnings growth to figure out a fair multiple. This is why mature companies in industries that require little capital can have relatively low growth rates compared to their price-to-earnings multiple.

**Intangibles**
Brand is the most intangible element to a company, but it's quite possibly the most important one to a company as an ongoing concern. For instance, if every single McDonald's restaurant were to suddenly disappear tomorrow, the company could simply go out and get a few loans and be built back up into a world power within a few months. How can McDonald's do that? It's the company's presence in our collective mind. If people were forced to name a fast-food restaurant, nine out of 10 people would say "McDonald's" without hesitating. The company's well-known brand adds tremendous economic value, even though a brand can't be quantified. Some investors are preoccupied by brands, particularly those emerging in industries that have traditionally been without them. Companies that build their names into strong brands have an incredible edge over their competition. A brand is also transferable to other products, in that it reduces barriers to entry in other industries, should a company decide to expand. The real trick with brands, though, is that it takes competent management to unlock the value. If a brand is forced to suffer through incompetence, then many people can start to doubt whether the brand value remains intact. The major buying opportunities for brands, ironically, come when people stop believing in them for a few moments and forget that brands normally survive even the most difficult of short-term traumas.

Intangibles can also sometimes mean that a company's shares can trade at a premium to its growth rate. Thus, a company with fat profit margins, a dominant market share, consistent estimate-beating performance, or a debt-free balance sheet can trade at a slightly higher multiple than its growth rate would otherwise suggest. Although intangibles are difficult to quantify, that doesn't mean they don't have a tremendous power over a company's share price. The only problem with a company that has a lot of intangible assets is that a single danger sign can make the premium completely disappear.

**Conclusion**
Valuation is both an art and a science and it takes years to fully understand how to value companies, but it is critical to understand how valuation works. Whenever you're thinking of investing in a company it is vital that you understand what it does, its market and the industry in which it operates. You should never blindly invest in a company. The calculations produced by the valuation ratios are used to gain some understanding of the company's value. The ratios are compared on an absolute basis, in which there are threshold values. For example, in price-to-book, companies trading below '1' are considered undervalued. Valuation ratios are also compared to the historical values of the ratio for the company, along with comparisons to competitors and the overall market itself.
Putting it All Together: Investment Recommendation Example

Introduction
The following report was completed by a Harvard SWS member in March 2007, following the first seminar series in the fall of 2006. The Harvard Investment fund purchased the stock at about $50 in May 2007 and eventually sold it about in June 2008 for about $75, for an annual return of approximately 50%. While there are areas for improvement in this report, it is a good example of something you would complete as a new member of SWS.

China Mobile Ltd (CHL)

overview of the Chinese wireless market from The Motley Fool
Since its 52 million subscriber network at the beginning of 2000, China’s wireless networks have grown to include more than 400 million wireless subscribers, compared to the U.S.’s current 202 million phone users. (At the beginning of 2007, China Mobile claimed 301 million of those wireless clients.) These 400 million wireless users “represent a penetration rate of only 30%, compared with the roughly 70% rate of the U.S., and the more than 90% penetration rate of Western Europe,” an indication that China and its wireless companies have huge growth ahead. The Chinese WVAS market is also burgeoning. WVAS, or wireless value added services, refers to text-messaging, playing games, sending pictures, or downloading music via cell phones. A study by Norson Telecom Consulting suggests that “revenue generated by WVAS providers in China will grow (from $565 million in 2003) to more than $1.9 billion in 2008”. Additionally, China’s per capita income is growing at an enormous rate: one estimate suggests that by 2025, 40% of China’s population will be considered middle class. As wireless phones and value-added services are “signs of prosperity”, those entering the middle class will be attracted to wireless services.

business overview from Google Finance and ChinaMobile.com
China Mobile is an investment holding company based out of Hong Kong, China. As its name suggests, the company specializes in telecommunications, operating mobile communication services throughout thirty-one of China’s provinces. According to the company website, China Mobile “operates not only basic mobile voice services but also value-added services such as data, IP telephone and multimedia. It has the right to operate Internet services and the international gateways, reputed for its brands like GOTOOne, Easy-own and M-Zone”. Basic mobile voice services refer to China Mobile’s local, domestic long-distance, and international long-distance wireless communications services. The company is headed by 58-year-old Jianzhou Wang, who has been with the company since November of 2004. Wang's bio indicates that he is “a professor-level senior engineer with extensive knowledge and 29 years of experience in the telecommunications industry.”

porter’s five forces analysis

1. Threat of New Entrants: There is speculation that ChinaTel may pursue China Unicom’s CDMA business, which could pose a threat. However, China Mobile is so entrenched in China, it has been compared to a natural monopoly. Indeed, the telecom giant demonstrates many characteristics of a natural monopoly, including declining marginal cost, existing loyalty, and network effects. (Positive network effects emerge because the size of a social network affects its value to each individual subscriber. For example, the more people join Facebook, the more likely it is you will find friends. The bigger your network, the greater the value of Facebook to you.) In general, it is difficult to build a wireless network to compete with current providers.

Additional Note
Disclaimers: Smart Woman Securities ("SWS") reminds you that nothing contained in an Investment Report or on this website constitutes tax or investment advice. Neither the information, nor any opinion, contained in an Investment Report constitutes a solicitation or offer by SWS to buy or sell any securities, futures, options or other financial instruments. Decisions based on information contained in an Investment Report are your sole responsibility. The information in the Investment Reports is provided "AS IS" and without warranties of any kind, either expressed or implied. By using viewing the Investment Reports and using this website, you accept the high risks and lack of liquidity that may be inherent in such an investment. You should be aware that you may be required to bear the financial risks of investments for an indefinite period of time. No assurance can be given that any investment objective will be achieved or that you will receive a return of your capital.
II. **Power of Suppliers:** China Mobile is so large an entity that its suppliers have little power and instead compete fiercely for contracts.

III. **Power of Buyers:** Because China Mobile has a huge number of customers, each subscriber has little effect on wireless subscription prices. There are few other options outside of China Mobile, so it becomes difficult for customers to switch.

IV. **Availability of Substitutes:** Beyond China Unicom, there are very few providers of wireless service on China Mobile’s scale. CHL claims ¾ of China’s 400 million wireless users.

V. **Competitive Rivalry:** The market is largely monopolistic. China Mobile is clearly the dominant firm, claiming up to 75% of China’s wireless telecom subscribers. Furthermore, China’s wireless industry is growing quickly, which is generally not characteristic of a highly competitive industry. However, competition is growing (see investment risks). China Mobile’s average churn rate is roughly 4%, which means about 4% of China Mobile’s customers terminate their service each month. For most of the United States’ mature companies, the churn rate is about 1 to 2%.

### Competition

<table>
<thead>
<tr>
<th>Competitor</th>
<th>Company Description</th>
<th>EPS</th>
<th>P/E Ratio</th>
<th>Implications for CHL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CHA:</strong> China Telecom Corporation Limited</td>
<td>ChinaTel Corporation Limited is a telecommunications and information service provider for China. They provide local, domestic long-distance, and international long-distance services.</td>
<td>-7.97</td>
<td>14.24</td>
<td>Largest competitor for CHL in China. CHA offers wireline services, so does not pose too huge of a threat to China Mobile’s consumer base.</td>
</tr>
<tr>
<td><strong>CHU:</strong> China Unicom Limited</td>
<td>China Unicom operates both GSM and CDMA mobile wireless companies throughout 30 provinces in China.</td>
<td>27.37</td>
<td>26.73</td>
<td>Largest wireless competitor. China Unicom is significantly smaller than China Mobile, with a market cap of 18 billion compared to China Mobile’s 181 billion market cap.</td>
</tr>
<tr>
<td><strong>CHL:</strong> China Mobile</td>
<td></td>
<td>21.85</td>
<td>21.65</td>
<td></td>
</tr>
</tbody>
</table>

### Financials

#### Income Statement

As a holding company, China Mobile generates significant revenues at relatively little cost of revenue. According to the most current statements, the company earned a gross profit of 90 billion Yuan. One of the biggest operating expenses for this telecom provider is depreciation, which likely arises from the rapidly falling value of wireless networks. Research and development expenses and risks are not a large focus for China Mobile.

<table>
<thead>
<tr>
<th>In Millions of CNY (except for per share items)</th>
<th>6 months Ending 06-30</th>
<th>6 months Ending 05-12-31</th>
<th>6 months Ending 05-06-30</th>
<th>6 months Ending 12-31</th>
<th>6 months Ending 04-12-31</th>
<th>6 months Ending 04-06-30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>100,673.00</td>
<td>94,126.00</td>
<td>87,639.00</td>
<td>82,757.00</td>
<td>70,537.00</td>
<td>86,420.00</td>
</tr>
<tr>
<td>Other Revenue, Total</td>
<td>36,306.00</td>
<td>34,368.00</td>
<td>26,908.00</td>
<td>23,204.00</td>
<td>15,883.00</td>
<td></td>
</tr>
</tbody>
</table>
China Mobile’s balance sheet indicates that the company is in a state of excellent health: cash holdings and assets are increasing at nearly twice the pace liabilities are increasing. Long term debt is relatively stable. With nearly 70 billion Yuan in cash and equivalents and a 31% operating margin as of the end of 2006, China Mobile is prepared for its forthcoming 3G expansion. CHL’s debt to equity ratio is 0.10, which is very significantly below the industry average of 1.23. This is a strong indication of CHL’s financial strength.

**Cash Flows**

An item of note on China Mobile’s statement of cash flows: growth in cash from operating activities consistently outpaces the outflow of cash to other investments.

| Gross Profit | 90,497.00 | 84,505.00 | 78,727.00 | 75,284.00 | 62,077.00 |
| Selling/General/Admin. Expenses, Total | 7,990.00 | 7,477.00 | 6,723.00 | 5,665.00 | 4,307.00 |
| Research & Development | - | - | - | - | - |
| Depreciation/Amortization | 34,542.00 | 28,638.00 | 27,730.00 | 25,087.00 | 21,029.00 |
| Other Operating Expenses, Total | 42,317.00 | 42,409.00 | 37,845.00 | 36,935.00 | 25,876.00 |
| Total Operating Expense | 95,025.00 | 88,145.00 | 81,210.00 | 75,160.00 | 59,672.00 |

<table>
<thead>
<tr>
<th>Balance Sheet as of 2006-06-30</th>
<th>As of 2005-12-31</th>
<th>As of 2005-06-30</th>
<th>As of 2004-12-31</th>
<th>As of 2004-06-30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash &amp; Equivalents</td>
<td>69,889.00</td>
<td>41,925.00</td>
<td>70,840.00</td>
<td>45,149.00</td>
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<tr>
<td>Cash and Short Term Investments</td>
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<td>42,090.00</td>
<td>95,198.00</td>
<td>65,413.00</td>
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<tr>
<td>Accounts Receivable – Trade, Net</td>
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<td>6,666.00</td>
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<tr>
<td>Total Receivables, Net</td>
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<td>73,038.00</td>
<td>9,385.00</td>
<td>9,023.00</td>
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<tr>
<td>Total Current Assets</td>
<td>158,508.00</td>
<td>121,076.00</td>
<td>109,836.00</td>
<td>99,909.00</td>
</tr>
<tr>
<td>Property/Plant/Equipment, Total – Gross</td>
<td>44,800.00</td>
<td>34,201.00</td>
<td>30,975.00</td>
<td>30,510.00</td>
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<td>Goodwill, Net</td>
<td>36,894.00</td>
<td>35,300.00</td>
<td>35,300.00</td>
<td>35,300.00</td>
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<tr>
<td>Long Term Investments</td>
<td>77.00</td>
<td>77.00</td>
<td>77.00</td>
<td>77.00</td>
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<tr>
<td>Other Long Term Assets, Total</td>
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<td>13,868.00</td>
<td>15,007.00</td>
<td>10,497.00</td>
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<tr>
<td>Total Assets</td>
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<td>421,027.00</td>
<td>395,654.00</td>
<td>368,752.00</td>
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<td>Accounts Payable</td>
<td>50,191.00</td>
<td>42,296.00</td>
<td>38,824.00</td>
<td>35,593.00</td>
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<td>Accrued Expenses</td>
<td>46,130.00</td>
<td>40,007.00</td>
<td>40,061.00</td>
<td>32,549.00</td>
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<tr>
<td>Notes Payable/Short Term Debt</td>
<td>0.00</td>
<td>0.00</td>
<td>5,952.00</td>
<td>8,180.00</td>
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<tr>
<td>Current Port. of LT Debt/Capital Leases</td>
<td>68.00</td>
<td>68.00</td>
<td>68.00</td>
<td>68.00</td>
</tr>
<tr>
<td>Other Current liabilities, Total</td>
<td>30,539.00</td>
<td>27,583.00</td>
<td>23,831.00</td>
<td>21,276.00</td>
</tr>
<tr>
<td>Total Current Liabilities</td>
<td>126,928.00</td>
<td>109,954.00</td>
<td>108,736.00</td>
<td>97,666.00</td>
</tr>
<tr>
<td>Long Term Debt</td>
<td>36,563.00</td>
<td>36,545.00</td>
<td>12,906.00</td>
<td>36,633.00</td>
</tr>
<tr>
<td>Capital Lease Obligations</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total Long Term Debt</td>
<td>36,563.00</td>
<td>36,545.00</td>
<td>12,906.00</td>
<td>36,633.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cash Flows in Millions of CNY (except for per share items)</th>
<th>6 months Ending 2006-06-30</th>
<th>6 months Ending 2005-12-31</th>
<th>6 months Ending 2005-06-30</th>
<th>6 months Ending 2004-12-31</th>
<th>6 months Ending 2004-06-30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash from Operating Activities</td>
<td>79,107.00</td>
<td>64,982.00</td>
<td>66,727.00</td>
<td>52,219.00</td>
<td>-</td>
</tr>
<tr>
<td>Cash from Investing Activities</td>
<td>-61,132.00</td>
<td>-57,583.00</td>
<td>-29,533.00</td>
<td>-40,685.00</td>
<td>-</td>
</tr>
<tr>
<td>Financing Cash Flow Items</td>
<td>-11,038.00</td>
<td>-13,670.00</td>
<td>-11,503.00</td>
<td>-13,346.00</td>
<td>-</td>
</tr>
<tr>
<td>Issuance (Retirement) of Stock, Net</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
valuation

Over the last five years, China Mobile has demonstrated consistent positive growth.

<table>
<thead>
<tr>
<th>key metric</th>
<th>CHL</th>
<th>comparison to industry</th>
<th>comparison to S&amp;P 500</th>
<th>implications for CHL</th>
</tr>
</thead>
<tbody>
<tr>
<td>P/E Ratio</td>
<td>21.33</td>
<td>25.86</td>
<td>20.37</td>
<td>CHL may be undervalued relative to the communications services industry.</td>
</tr>
<tr>
<td>Price to Book</td>
<td>4.39</td>
<td>3.03</td>
<td>3.96</td>
<td>A higher than average P/B ratio indicates that the stock price may be overvalued. A look at CHL’s balance sheet shows that this may be due to the company’s current liabilities.</td>
</tr>
<tr>
<td>Price to Sales</td>
<td>4.74</td>
<td>2.73</td>
<td>2.83</td>
<td>This high price to sales ratio is an indicator of optimistic consumer expectations – that is, investors expect future earnings to continue growing.</td>
</tr>
<tr>
<td>Earnings per share*</td>
<td>21.85</td>
<td>8.83</td>
<td>21.75</td>
<td>Indicates optimistic investor expectations.</td>
</tr>
</tbody>
</table>

China Mobile’s management effectiveness ratios are three to six times industry average, and many of the company’s efficiency multiples, such as net income per employee, are also above industry average, which reflects favorably on the efficient operations of this telecom giant. CHL’s EBITDA margin, at over 50%, is greatly above average for the industry and indicates the company’s profitability.

investment opportunities
promising 3G development

The term “3G” refers to third-generation mobile communications technology capable of simultaneously transmitting both voice and non-voice data. The typical example of such a capability is video messaging, in which both video and voice data are sent wirelessly. China is championing TD, a time-division CDMA network standard in an effort to depart from Western standards and skirt Qualcomm’s CDMA license fees. Wall Street analysts expected China Mobile to delay 3G expansion until after the 2008 Beijing Olympics, but news this month indicates that the company is expected to contract out its network construction in the near future. We believe CHL’s ahead-of-expected move will boost consumer expectations.

penetration of rural market

China Mobile is working on expanding into the Chinese rural market because demand for wireless services in the Chinese countryside has increased greatly and expected usage outpaces the costs of providing rural service. The company is receiving local government support for network construction and will likely receive a tax break from the national government as part of the rural economic development incentive program.

investment risks

increased competition

CHL’s addition of 3G networks could potentially bring increased competition, as 3G expansion provides a gap through which wireline companies could obtain TD licenses to enter the wireless industry. Moreover, intensifying competition with China Unicom for market share could lead to slower growth and contribute to falling revenue per subscriber. China Mobile must offer incentives such as cheaper phones to compete with China Unicom.

falling revenue per subscriber

CHL’s revenue per subscriber has consistently fallen each year. In 2006, its revenue per subscriber was roughly 1008 Yuan, compared to 1011 Yuan in 2005 and 1032 Yuan in 2004. However, since China Mobile’s stock value has very consistently risen in these years, this does not seem to affect stock price. Likewise, if we look at the history of the U.S. telecom markets, we see a similar trend, which provides a type of guide for China Mobile’s potential growth.

investment recommendation

Given its stable financials, effective management, and investment expansions, we believe China Mobile will continue to earn subscribers and expand deeper into China. (In addition, China Mobile will be able to claim further income tax credits for developing 3G technologies and serving rural locales.) According to cellular-news.com, the total Chinese subscriber base is expected to reach 600 million by 2009, which means the Chinese telecom industry is not slowing down. If this growth is stable, CHL will be expected to gain 50 million additional subscribers per year. With this growth in mind, we believe CHL will continue to report strong, stable earnings. Consequently, we rate CHL a BUY at its current market price of $45.99.

sources