

# BUS 123 W — Value Investing: An Introduction

## Six Parameters for Defining a Business

- **Products:** When thinking about products, first, determine whether the main products are goods or services. That's easy. Goods are physical and services are not. Then, try to narrow down your definition as best you can. The narrower your definition of the products, the better your understanding of the business.
- **Customers:** As specifically as possible, state who buys the business products. As a first pass, simply determine whether the customers are consumers or organizations. **Consumers** are people buying for themselves or their families. **Organizations** are governments, associations, and companies of all sizes. Then, try to narrow down your definition as best you can. The narrower your definition of the customer, the better your understanding of the business.
- **Industry:** Industry is generally straightforward, but nuances may appear.
- **Form:** Form refers to the way a business is structured, either legally or operationally. Often, the **legal form** of a company is unremarkable. It may simply be a normal incorporated entity like a corporation in the United States, a public limited company in the United Kingdom, or an Aktiengesellschaft in Germany. But sometimes there's something about a company's form that must be understood in order for what it does to make sense. **Operational form**, as the title implies, refers to how a business is operationally structured. For example, a company could be a franchisor or a franchisee. It could be a multi-level marketer or vertically integrated.
- **Geography:** Geography has two parts. One is where the company, itself, is located. The other is where the business' customers are located.
- **Status:** A company's status defines its place in the hierarchy of its industry. Is it the clear market leader? One of several leaders? A one-time leader that is losing market share? A startup?

## Income Statement

An income statement describes a business over a period of time, such as a month or a year. It's sometimes called a consolidated statement of operations, a profit and loss statement, or simply a P&L. The income statement first reports revenue, which is the sum of a business' sales during the period. Revenue is sometimes called turnover. An income statement also reports cost of goods sold, which is the sum of expenses the business incurred to produce sales. The income statement then measures operating expenses during the period, which is the sum of costs incurred by the business regardless of what was sold. Finally, the income statement measures income, which, generally speaking, is revenue minus cost of goods sold.

## Cash Flow Statement

Like the income statement, the cash flow statement describes a business over a period of time. It measures cash flow, which is the net amount of money coming into or out of a business. Cash flow is

sometimes called net cash flow. Net cash flow is cash inflow (cash coming into a business) minus cash outflow (cash going out of a business).

The cash flow statement divides cash flow into three types. Each type has its own cash inflows, cash outflows, and net cash flow.

Cash flow from operations generally is the cash flow that results from the business doing what it does. Consider a wholesale beverage distributor that buys bottled drinks for fifty cents each from a manufacturer and does nothing but sell the bottles to supermarkets for one dollar each. Its cash flow from operations would include the cash it receives from supermarkets; the cash it pays to manufacturers; and the cash it pays employees to receive, sort, and deliver bottles. Cash flow from operations is sometimes called operating cash flow or cash flow from operating activities. Cash flow from investments generally includes the purchase or sale of equipment that will last for multiple years. Think again about the wholesale beverage distributor. If it paid \$500,000 in cash to buy a warehouse, then cash flow from investments would go down by \$500,000. If it sold one of its delivery trucks for \$10,000, then cash flow from investments would go up by \$10,000. Cash flow from investments is sometimes called cash flow from investing activities. Cash flow from financing is sometimes called cash flow from financing activities. A company borrowing money from a bank or selling half of itself to investors for cash are examples of cash inflows from financing. A company paying the bank back or paying a dividend to the investors are examples of cash outflows from financing.

Cash flow statements can be prepared by either the direct method or the indirect method. The difference shows up only in the top third of cash flow statements, cash flow from operations. The direct method is simpler. Under it, the section begins with cash inflows from operations, proceeds to cash outflows from operations, and ends with net cash flow from operations. Under the indirect method, the section begins with the net income line from the income statement. It then shows adjustments necessary to yield the ending net cash flow from operations line. Most listed companies use the indirect method.

## **Balance Sheet**

While an income statement and a cash flow statement both look at a business over a period of time, a balance sheet looks at a business at a single point in time. A balance sheet shows what a business owns, what a business owes, and the difference between the two. What a business owns is called assets, what a business owes is called liabilities, and the difference between the two is called equity. If a business has more liabilities than assets, it has negative equity.

Assets, the first section of the balance sheet, are things that a business controls, finds valuable, and bought. There are two kinds of assets: current assets and noncurrent assets. Current assets are, generally, any asset that could be used within a year, including cash. Consider again the wholesale beverage distributor. Bottled drinks that it buys from a manufacturer, but has not yet delivered to supermarkets are current assets. Specifically, the bottled drinks are a type of current asset called inventory. Inventory is also called stock-in-trade. Non-current assets generally take more than a year to use. A delivery truck owned by the wholesale beverage distributor is a noncurrent asset. Assume that the distributor buys a new truck for \$30,000 in cash. On the cash flow statement, cash flow from investments decreases by \$30,000 and net cash flow decreases by \$30,000. On the balance sheet, current assets decrease by \$30,000 and noncurrent assets increase by \$30,000.

Now, assume that the truck will last for three years. After three years, it will be worthless. In other words, the distributor will "use" one-third of the truck's price each year. Each year, the distributor

will probably decrease the book value of the truck by \$10,000 on the balance sheet and recognize a \$10,000 operating expense on the income statement. This process of decreasing the book value of a noncurrent asset by recognizing an operating expense on the income statement is called depreciation.

If the noncurrent asset is intangible, the same process is called amortization. Examples of intangible noncurrent assets are patents and logos.

If a noncurrent asset does not lose value over time, it is not depreciated. Land is the best example of a noncurrent asset that is not depreciated. The purchase of a noncurrent asset is the same as a capital expenditure.

Sometimes a business buys an asset that will last for many years, but the business does not capitalize the asset. That is, the business recognizes the full price as an operating expense on the income statement at the time of purchase. This happens when the price of the asset is small. For example, an \$8 pencil sharpener may last for many years, but because \$8 is small, the business will expense it when it is purchased. In other words, the price is not material. Another way to think about it is that because the pencil sharpener fails the materiality test, it is depreciated all at once.

Liabilities is the second section on the balance sheet. Money borrowed from a bank is a liability because it must be paid back. If the distributor receives a delivery of bottled drinks from the manufacturer and has not yet paid for it, the money that the distributor owes to the manufacturer is a liability. Specifically, it is a type of liability called an account payable. Equity is the third section on the balance sheet. It is sometimes called shareholders' equity, owners' equity, or net assets. Equity equals assets minus liabilities.

Generally, a business is said to make money if it shows positive income on its income statement. If this income is retained—that is, not paid out as dividends—then equity increases by that amount. Income that is kept in the business is called retained earnings.

After assets, liabilities, and equity, the balance sheet has a final line called liabilities and equity. This line provides no new information; it just proves that liabilities plus equity equals assets. Sometimes the line is called total liabilities and shareholders' equity.

Now we turn to extracting key numbers from the financial statements. Later, we'll use these key numbers to calculate performance metrics. Those, in turn, will tell us if a business has been historically good.

# Key Numbers

The first key number is called capital employed.

## Capital Employed

Capital employed might be thought of as a company's required financial base. It's the capital invested that should be there in order for the company to maintain its current level of operations.

One way to calculate capital employed is to start with total assets and then subtract excess cash, non-interest bearing current liabilities, and possibly goodwill. So, capital employed is calculated from the balance sheet.

Determining how much cash is truly excess is difficult. Absent any specific guidance, one useful approach is to calculate two versions of capital employed: one with all cash subtracted and one with no cash subtracted.

The formula for calculating capital employed also calls for the subtraction of non-interest bearing current liabilities. This includes accounts payable, deferred income, and accrued expenses.

**Goodwill** will may also be subtracted. Here's what goodwill is. Assume that the balance sheet equity of company B is \$1,000,000. Company A acquires company B for \$1,500,000 in cash. Immediately after the acquisition, company A increases the goodwill on its balance sheet by \$500,000. That is, goodwill equals acquisition price in excess of equity.

Sometimes calculating capital employed also requires adding some items. A company may have entered into obligations not fully represented on the balance sheet. But they could rightly be seen as effectively increasing both assets and liabilities and, as such, should be included in capital employed. One example is property leases. Another is aircraft leases, as with airlines.

This is not a topic that we tackle too aggressively in this introductory course, but should you go on in value investing, please know that this is a subject worth mastering. The key phrase related to this concept is capitalizing operating leases.

Besides *capital employed*, there are five other *key numbers* that we can extract from the from the financial statements. Recall that we'll later use the key numbers to calculate *performance metrics*. Those, in turn, will tell us whether or not a business has been *historically good*.

## Operating Income

Operating income can be found right on the income statement. No math is required. It sometimes appears as *operating earnings* or *operating profit*. Operating earnings measures the profitability of a business without regard for the capital structure or tax regime in which it is trapped.

## Free Cash Flow

Unlike operating income, free cash flow does require some calculation. At a very basic level, it equals *cash flow from operations* minus *capital expenditures*. Therefore, it's derived from the cash flow statement. Free cash flow is a measure of the amount of cash that a company *throws off* just by operating. With this cash, a company could *do* things. To get a better grip on these possibilities, let's dive deeper into capital expenditures.

Recall that a **capital expenditure**—also called *capex*—is the purchase of a noncurrent asset. There are two types: maintenance capex and growth capex. **Maintenance capex** is the purchase of equipment that will replace equipment that is wearing out. It's *replacement*. It's a kind of expense that a company incurs just to *maintain* its level of operations. **Growth capex** is an expense incurred to *expand* operations. It results in a *bigger* enterprise.

To calculate free cash flow well, we would ideally like to deduct only *maintenance* capex from operating cash flow. After all, it's the cash-generating power of *current* operations that we're trying to measure. We'd hate to *underestimate* the performance of a business by subtracting *all* capex. The problem is that financial statements make it hard to see which portion of capex is just maintenance.

## Book Value

Earlier, we used this term to describe the *purchase price less depreciation of a noncurrent asset*. When applied to a whole company, book value means *equity*. It appears right on the balance sheet. It might be thought of as the company's worth from a formal accounting perspective.

## Tangible Book Value

Tangible book value is simply *book value* minus *intangible assets*. It might be thought of as the company's worth from an *even stricter* formal accounting perspective. Not only does it disregard the value of ongoing operations, it disregards the value of any patents, trademarks, and other assets that aren't physical.

## Shares

Many of the metrics we will calculate will be expressed on a *per-share basis*. This helps us to capture the dilutive effect of an increase in the number shares, or the concentrating effect of a decrease in the number of shares.

How should we count the number of shares? An annual report often puts forth several different measures. One is **shares outstanding**. This is the number of shares that people, investment funds, and other entities hold.

Another is **fully diluted shares**. It's equal to shares outstanding plus the number of shares that *could* become shares outstanding if other securities issued by the company were *exercised* or *converted*. For example, the exercise of a *warrant* could lead to an increase in the number of shares outstanding, as could the conversion of a *convertible bond*. An employee exercising stock options would have a similar effect.

Still, a third measure is **authorized shares**. That's the number of shares that a company is *allowed* to issue according to its charter. It equals shares outstanding plus shares authorized but not yet issued. Which to choose? When considering the *purchase* of a stock, there turns out to be great merit to using fully diluted shares. The fundamental reason for this is that in a successful company, anything that *can* become a share *will* become a share. Using authorized shares would be overkill. It's a major decision for a company to issue new shares that it doesn't have to because of a conversion or an exercise. It doesn't naturally happen in the normal course of events.

# Performance Metrics

Having learned to extract key numbers from financial statements, we can now calculate *performance metrics*. These will make clear whether or not a business has been *historically good*.

**Return on capital employed**, or ROCE, shows how much money a business *made* relative to the amount of capital it must *commit*. It is expressed as a percentage. This percentage is calculated by dividing *operating income* by *capital employed*.

**Free cash flow return on capital employed**, or FCFROCE, may be useful where *accrual accounting* clouds the essence of a business in a way that *cash accounting* does not. It is calculated by dividing *free cash flow* by *capital employed*.

Sometimes a company has an irregular year. A spike in demand could boost earnings or a recession could plunge cash flow, for instance. It could be misleading to judge a company based on one of those odd years. At the same time, it would be foolish to pretend that it didn't happen. What we really want is to analyze *normalized* results. One way to do this is to consider several years together. If the business hasn't fundamentally changed over the last three years, we could calculate ROCE by adding up the operating earnings of all three years and dividing that number by the sum of each years' capital employed. That would yield ROCE for a three-year period. FCFROCE can be safely handled in the same way.

**Growth in operating income per fully diluted share** is easy to calculate. Divide operating income by fully diluted shares for the first year. Then do the same for the second. Next, subtract the first from the second and divide the result by the first. A percentage will result.

**Growth in free cash flow per fully diluted share** is computed similarly. Divide free cash flow by the number of fully diluted shares for the first year, then do the same for the second. Then, subtract the first from the second and divide the result by the first.

**Growth in book value per fully diluted share** is computed similarly as well. Divide book value by the number of fully diluted shares for the first year, then do the same for the second. Then, subtract the first from the second and divide the result by the first.

What does growth in book value per fully diluted share *mean*? Well, it shows the increase in worth over time from a strict accounting standpoint. But it has limited utility as a stand-alone metric. This is in part because it fails to capture dividends. Dividends don't trickle down to book value. Instead, they rob from book value on a one-to-one basis. So any meaningful consideration of this metric would have to be done in the context of any dividends paid.

**Growth in tangible book value per fully diluted share** is calculated by dividing tangible book value by the number of fully diluted shares for the first year, and by then doing the same for the second. Then subtract the first from the second and divide the result by the first. This metric has merit but is of limited use by itself because, again, it doesn't capture dividends.

Like ROCE and FCFROCE, the growth performance metrics can be misleading if calculated for a year that happens to be irregular. To normalize the figures, we again try to look at a multiple-year period. This will let us calculate an *average* growth rate. But this involves a very different tactic than it does with ROCE and FCFROCE. Specifically, it requires a *geometric mean*, also known as the *compound annual growth rate (CAGR)*. Spreadsheets have built-in tools for this. Search your spreadsheet program for the function called GEOMEAN.

**Liabilities-to-equity ratio** is a straightforward calculation from the balance sheet: total liabilities divided by book value. It's meaning is nuanced.

Debt *amplifies* results. If things go well for a highly-leveraged company, they go really well. If they go poorly, they go quite poorly. While opinions vary, value investors will generally favor low debt-to-equity ratios over high ones.

Remember that performance metrics are *historical*; they measure how things *went*. For example, if we calculate a growth rate of 10%, that means that something *grew* at 10%, not necessarily that it's *growing* at 10%.