13.1: Explanations of Ratios (CH 2)

Liquidity Ratios

Liquidity Ratios are designed to measure a firm's ability to meet short-term liability (accounts payable, accruals, short-term loans, etc.) obligations. If these ratios are too low, that could mean that a company does not have the ability to repay its current liabilities as they become due and would be a sign of financial distress. Some firms will intentionally keep these ratios low as an aggressive strategy. Since short-term liabilities are typically a cheap form of financing and current assets typically offer low rates of return, firms that are confident that they can refinance short-term liabilities as they become due or generate enough cash flows to cover those short-term liabilities may try to maintain low liquidity ratios to maximize returns. However this can be a risky strategy. On the other hand, if these ratios are too high it may indicate that a company is not doing enough to maximize returns as they are focusing too much on current assets and not enough on developing new products/markets.

Current Ratio

The current ratio measures the ratio of a firm's current assets to its current liabilities. As a simple rule of thumb, most people like to see this ratio be between 1.5 and 4. However, industry and strategy differences may result in occasionally higher/lower values that are also considered "okay".

Quick Ratio

The Quick Ratio (sometimes called the Acid Test ratio) removes inventory from the current asset mix because it is the least liquid current asset. Before it can become cash to pay off liabilities it must first be sold and (if it is sold on a receivable basis) the sale be paid for in cash. As a simple rule of thumb, most people like to see this ratio between 1 and 2. As with the current ratio, some firms may be above or below this due to industry norms or strategic decisions and still be okay.

Asset Management Ratios

Asset Management ratios are designed to see how well a company is doing at generating sales from their current and long-term assets. The Days Sales Outstanding ratio is a little different from the other ratios in this category in that it is measuring collection time for our accounts receivable instead of our ability to generate sales from accounts receivable.

Inventory Turnover

The more frequently we can "turn over" our inventory the better off we will be. Holding inventory is expensive in terms of storage, obsolescence, and financing costs. A higher inventory turnover means more inventory moving through our firm and less sitting on the shelves. This ratio is very industry dependent, so determining what is "good" or "bad" will depend a lot on the industry. In general, the higher the better. However, we should not necessarily try to maximize the inventory turnover ratio as that may mean stock outages or not enough variety of merchandise and lower our overall revenues.

Days Sales Outstanding

The quicker we can collect our receivables, the better off we will be. High values for the DSO ratio (sometimes referred to as the Average Collection Period) indicate that it is taking us longer to collect our sales. This likely means higher financing costs and/or more bad debt expenses. It also may be a sign that we have to offer our customers more favorable financing terms in order to maintain sales. Sometimes this is referred to as "stuffing the channel" as our customers may be encouraged to "buy ahead" due to the favorable financing terms and will not need to buy as much from us next month/quarter. While a high level of DSO is likely a bad sign, it is not necessarily true that we want the ratio to be as low as possible. Allowing our customers to use credit is likely to help increase our sales (and in turn, our profits/cash flows). If our DSO is too low, we may be losing sales opportunities. A sudden increase from last year or being notably higher than our competitors is likely to be a red flag (unless there is a reasonable explanation).

Fixed Asset Turnover

Fixed Assets typically refer to long-term assets such as property, plant, and equipment. The greater the fixed asset turnover ratio, the better job we are doing of generating high sales with limited capital investment. As with many ratios, this one will be very dependent on industry as some industries are much more capital intensive than others.

Total Asset Turnover

Total Assets include both long-term and short-term assets. Just like the FAT ratio, higher is generally better as it indicates that we are generating high levels of sales on our investment in assets.

Debt Management Ratios

Debt Management ratios are designed to see how well a company is doing at servicing their long-term debt obligations.

Total Debt to Total Assets

The higher the level of TD/TA, the more risk the company is taking in their financing mix. This is not necessarily good or bad. There are some advantages to using debt financing, but it also increases the risk. Some companies can afford higher levels of TD/TA without increasing the risk too much while other firms need to keep this ratio lower. Management philosophy, firm size, profitability, and industry will play a large part in determining what an "acceptable" TD/TA level is. However, if this number is increasing dramatically or much higher than the industry average, there is reason to be concerned.

Total Debt to Total Equity

The TD/TE ratio is similar to the TD/TA assets as A = L + OE. The primary difference is that TD/TA will almost always be less than 1.0 while TD/TE can often be greater than 1.0. Again, a higher value is neither good or bad, but indicative of greater risk.

Times Interest Earned

The TIE ratio looks at how easily we are able to meet our interest requirements. Since we can be forced into bankruptcy if we can't pay our interest payments, this is important. Companies can typically meet interest obligation for a short time when the TIE is less than one or negative by reducing their assets, but this is only a short-term solution. In general we would like to see TIE above 2 in order to provide a little cushion. Another concern is that the TIE ratio may provide a false sense of comfort if we are starting a downturn because we are more concerned with the ability to meet future interest payments rather than past and a downturn may cause our EBIT to fall much faster than our interest.

Profitability Ratios

Profitability ratios analyze how well we are doing at generating profits for our shareholders. There are multiple ratios here as there are different ways to identify profits and different bases (sales, assets, owner's equity) that may be relevant.

Gross Profit Margin

The higher the gross profit margin, the greater markup we are able to have on our inventory. Looking at this ratio over time (or compared to key competitors) is a good way to evaluate our inventory costs and (in some cases) the ability of our brand to extract higher value.

Net Profit Margin

The higher the Net Profit Margin, the more of each sales dollar is making it to the bottom line. A company with a high profit margin will generate much more for its shareholders than a company with a low profit margin at the same level of sales. Profit margins are typically sensitive to economic conditions and also vary substantially from industry to industry.

Return on Assets

The higher the ROA, the better. We want to generate as much profit from each dollar invested in assets as possible. Typically ROA, like profit margin, will be sensitive to economic conditions and vary substantially from industry to industry. The more asset-intensive the industry, the lower the ROA.

Return on Equity

The equity represents the shareholders' contribution to the firm. Therefore, the ROE looks at how much profit we are making for each dollar invested by shareholders. The higher the ROE, the better. Companies can increase their ROE by using more debt financing. However, as mentioned earlier this increases the risk level. ROE (assuming it is positive) should always be higher than ROA.

Market Value Ratios

Market Value ratios are the most difficult to interpret. They measure how "cheap" or "expensive" the stock is relative to accounting measures. However, there are a large number of reasons why a stock should be more/less expensive than another relative to a specific accounting measure. While there are too many issues to discuss related to these ratios to explain them all, I will offer a sample issue with each ratio.

Price/Earnings Ratio

The PE ratio measures how much are you paying for each dollar that the firm makes (on a per share basis). While a lower PE ratio is "cheaper," consider a company's growth rate. If company A is growing rapidly and company B is not growing at all, you should expect to pay more for $1 in earnings from company A than for the same $1 of earnings from company B. Finance is forward-looking and company A should make much more per share going forward than company B. There are many other reasons why PE ratios vary from firm to firm and, by itself, the PE ratio is not a very good indicator of whether a stock is too cheap or too expensive. However, it is much better than just looking at the stock price by itself. For instance, on August 11, 2017, Alphabet (GOOGL) stock has a price of $930.09 while Facebook (FB) has a price of $168.08. At first glance, it seems like Alphabet is about 5 times as expensive as Facebook. However, Alphabet earned $29.59 per share (EPS) while Facebook earned $3.93 per share (EPS) over the previous twelve months. Thus, Alphabet is actually cheaper (in terms of earnings power per share relative to what you pay for the share) than Facebook. As Alphabet has a PE of 31.43 vs. Facebook's PE of 42.74. A simple way to think of these PE ratios is that it costs $31.43 to buy one dollar of earnings if you buy Alphabet while it costs $42.74 to buy one dollar of earnings if you buy Facebook. Why are investors paying 25-30% more for each dollar earned by Facebook? The answer is likely in perceived EXPECTED growth (although there may be other factors). Typically, the higher the expected growth, the more expensive (higher PE) the stock. Investors are expecting higher growth rates for Facebook than Alphabet over the remaining life of the two companies. Other possibilities may include risk (higher risk tends to lead to lower PE ratios), quality of earnings (higher quality of earnings should lead to higher PE ratios), and several other factors.

Market/Book Ratio

The MV/BV ratio measures how expensive the stock is relative to its accounting value. The higher the MV/BV ratio, the more "expensive" a stock is. Typically MV/BV will be high due to (A) intangible assets (such as brand names) not being fully recognized by the balance sheet, (B) high future growth rates not recognized by the historical value of assets, or (C) investors being overoptimistic about the future. Because of item C, there is a tendency for low MV/BV stocks to be better investments (higher risk-adjusted rates of return – on average over long periods) than high MV/BV stocks. Let's look at Alphabet and Facebook again. The book value per share (again as of August 11th, 2017) for Alphabet is $209.43 while Facebook has a book value per share of $21.50. Given the price of each stock ($930.09 for Alphabet and $168.08 for Facebook), that gives Alphabet a MV/BV ratio of 4.44 and Facebook a MV/BV ratio of 7.82. Again, Alphabet is "cheaper" than Facebook in terms of MV/BV ratio despite its higher price tag. In both cases, Alphabet being "cheaper" does not automatically make it a better investment. It depends on whether or not Facebook is worth the higher valuation.

Dividend Yield

Many conservative investors look for stocks that pay dividends as a source of (a) current income and (b) safety. Since firm's are reluctant to cut dividends and tend to only do so in times of severe financial distress, dividends provide a little bit of market protection for stock prices (if the stock price starts to fall too much, the current income potential of the dividend attracts buyers) and are more predictable than capital gains (although capital gains can be quite a bit higher). Dividend yields will vary significantly with many companies not paying dividends and some companies paying dividends as high as 5-6% (or occasionally even higher). Typically, firms that pay dividends are ones that have entered the "cash cow" stage of their life cycle where they are generating more cash flows than they can reasonably reinvest. Younger, faster growing firms are less likely to pay dividends and reinvest it into the firm. Some companies will use their extra cash flow to buy back shares instead of paying dividends (which theoretically should cause the stock price to rise slightly by reducing the shares outstanding – the pie is cut into fewer pieces).
