**Lecture 2 Review**

**Review of Basic Financial Instruments**

Financial Statements

* Balance Sheet
  + Provides a snapshot of the firms assets and liabilities at a given point in time
  + Assets = Liabilities + Equity
    - Assets = use of funds
    - We depreciate long-term assets
      * Depreciation is a non-cash expense (decreases taxes and increases cash flow)
    - Total assets gives an approximate value of what the firms assets are worth at some given time
      * Total assets is an approximate value because an assets value will usually be a book value not a market value (we care about the market value)
        + MV values what is to come
    - Liabilities + Equity = sources of funds
    - Shareholder equity represents the book value of the firms equity
  + The balance sheet represents a historical value of the firms assets, while the stock price of the firms stock represents the current value investors place on the firms future
* Income Statement
  + Summarizes the firms revenues and expenses over an accounting period (generally a quarter or year)

Net Sales (revenue)

* COGS

= GP

* SG&A
* R&D
* Depreciation and Amortization

= OP Y

* Other Income

= EBIT

* Interest Expense

= Pretax Income

* Taxes

= Net Income

/ Share Price

= EPS

Net Income = Dividends Paid + Addition to RE

Market Capitalization

* Market Capitalization: current market value of a firms common equity; the value of a company that is traded on the stock market
  + There are small and large market cap companies

Market Cap = (Current Price per Share) x (# of Trading Shares)

* The greater the cap, the greater the growth potential
  + If the cap is less than the book value of equity, the company is nearing bankruptcy

Enterprise Value

* Enterprise Value: a measure of a companies total value
  + EV = firm value = value of all investors
  + The EV allows you to compare companies

EV = MV of equity + MV of debt – cash

Market Cap Interest bearing

The Accounting and Finance Perspective

* Accounting likes to focus on net income and earnings while finance focuses on cash flows (aka money that’s been made and can be invested)

Accounting Finance

Revenues Cash In

* Expenses - Cash Out

= Net Income = Cash Flow

How to Use Financial Statements to Answer Questions Regarding the Firm

* Financial ratios are calculations based on values on the firms financial statements
* Financial ratio analysis answers performance issues facing the firm, like:
  + Can the firm pay its bills?
  + How efficient is management?
  + How does the market value firms?
* There are a couple things to keep in mind before using ratios:
  + Need a time series or a trend
  + Need to compare against another similar firm
  + Make sure the numbers are reliable
* Liquidity Ratios: measure the firms ability to meet cash requirements
  + Current Ratio

Current Ratio = (cash in) / (cash out)

= (current assets) / (current liabilities)

* + - Want this ratio to be greater than 1, but not too big
    - A higher current ratio 🡪 higher liquidity
  + Quick Ratio

Quick Ratio = (current assets – inventory) / (current liabilities)

* + - A higher quick ratio 🡪 higher liquidity
  + Cash
* Efficiency Ratios: measures how well a firm manages its current assets
  + AR Turnover

AR Turnover = (sales) / (AR)

* + - Measures how many times a year you turn over your receivables
    - A higher AR Turnover ratio 🡪 increased efficiency
  + Inventory Turnover

Inventory Turnover = (COGS) / (Inventory)

* + Total Asset Turnover

Total Asset Turnover = (sales) / (assets)

* + - Good measure of what the firm has done
  + Fixed Asset Turnover

Fixed Asset Turnover = (sales) / (fixed assets)

= (sales) / (net PPE)

* + Collections

Collections = (AR) / (Daily Sales)

= (AR) / (Sales / 365)

* + - Meausres how long it takes to collect a credit sale
    - Units are in days
    - Compare against policy
  + Days Held Inventory

Days Held Inventory = (Inventory) / (COGS / 365)

* + - Measures how long the inventory is in the warehouse for
* Coverage Ratios: measures the company’s ability to make interest payments (risk measure)
  + Times Interest Earned (TIE)

TIE = (EBIT) / (Interest Expense)

* + - The higher the TIE 🡪 the lower the default risk
* Leverage Ratios: a balance sheet measure of default risk and credit capacity
  + Total Debt Ratio

Total Debt Ratio = (Debt) / (Total Assets)

= (Total Liabilities) / (Total Assets)

* + Debt/Equity Ratio

D/E Ratio = (Debt) / (Shareholder Equity)

* + - Debt here includes long-term debt, notes, and total liabilities
    - The higher the D/E Ratio 🡪 the higher the default risk
* Profitability Ratios: measures how much income a firm produces from its sales after certain costs are removed
  + Get the info for these ratios from the Income Statement
  + Gross Profit Margin

GP Margin = (GP) / (Sales)

Sales – COGS = GP

* + - After every $1 of sales, how much money are we keeping
  + Operating Profit Margin

OP Y Margin = (Operating Profit) / (Sales)

Sales – COGS – SG&A – R&D – Depreciation = OP Y

* + - After every $1 of sales, what’s left to pay for things?
  + Net Profit Margin

Net Profit Margin = (Net Income) / (Sales)

Sales – COGS – SG&A – R&D – Depreciation – Interest – Taxes = Net Income

* + - Good indicator of the health of a business
* Investment Return Ratios
  + Return on Assets (ROA)

ROA = (Net Income) / (Total Assets)

* + - The bigger the ratio, the better off the company is
  + Return on Equity (ROE)

ROE = (Net Income) / (Shareholder Equity)

* + - Not useful for us
* Valuation Ratios: measures how the market values the firm relative to the company’s accounting/book values
  + Price to Earnings Ratio

P/E Ratio = (current price per share) / (current earnings per share)

* + - Measures the price today for $1 of the firms current earnings
      * Measures the expense of the stock
    - The greater the P/E ratio, the more expensive the stock and the greater the growth potential
      * The P/E ratio is an investment tool to look at to help you decide if a company is going to grow
    - Typically, the P/E ratio is between 10-30, but a growing firm has a P/E ratio of 30-60
      * Ex: the “dot com” bubble
        + Companies like Amazon and Yahoo had a P/E ratio of 5000, which is way overpriced

Investment Banking

* To infer the value of a company…

(Enterprise Value) / (EBITDA)

* EBITDA stands for Earnings Before Interest, Depreciation, Taxes, and Amortization
  + Pure operations number
    - Tells you what the company is doing

Takeaways

* Facebook is more profitable than Target
  + Facebook sales are growing faster and their margins are better
* Net Working Capital = (AR) + (Inventory) – AP
* Market-to-Book Value = (Market Value of Equity per Share) / (Book Value of Equity per Share)

Book Value of Equity per Share = (Shareholders Equity) / (Shares Outstanding)