Personal Finance: Another Perspective

Investing 5:
Stock Basics

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Objectives

A. Understand risk and return for stocks

B. Understand stock terminology

C. Understand how stocks are valued

D. Understand why stocks fluctuate in value

E. Understand stock investing strategies

F. Understand the costs of investing in stocks

G. Understand plans and strategies for stocks

A. Understand Risk and Return for Stocks

- Why include stocks in your portfolio?
  - Over time, common stocks, as an asset class, have outperformed all other major asset classes
  - Stocks, as an asset class, have a history of delivering strong long-term capital gains, the best (and most tax-efficient) type of return
  - Individual stocks in a diversified portfolio may reduce the overall risk of that portfolio
  - Stocks can be tax-efficient assets if tax planning is done wisely, as dividends and capital gains are taxed at a lower preferential federal tax rate

Risk and Return (continued)

- Why be concerned about stocks?
  - Stocks are susceptible to changes in both the domestic and world economy
  - Stocks are susceptible to changes in the business and political environment
  - Individual stocks can be very risky investments
  - Stocks are somewhat illiquid and have higher transaction costs
  - The growth of stock or equity investment is determined by more than just interest rates

Risk and Return (continued)

- Stocks and Risk--All Risk Is Not Equal
  - Stocks are susceptible to a number of risks:
    - Interest rate risk
      - Risk that a rise (fall) in interest rates will result in a decline (rise) in the stock's value
    - Inflation risk
      - Risk that a rise (decline) in inflation will result in a decrease (increase) in the value of the stock
    - Business risk
      - Risk that the share price will decline due to problems with the business

Risk and Return (continued)

- Financial risk
  - Risk how the firm raises money could affect the financial performance of the firm
- Liquidity risk
  - Risk that investors will be unable to find a buyer or seller for a stock when they need to sell or buy
- Political or regulatory risk
  - Risk that unanticipated changes in the tax or legal environment will have an impact on a company
- Exchange rate risk
  - Risk that changes in exchange rates will impact profitability for firms working internationally

Risk and Return (continued)

- Market risk
  - Risk of the overall market movements impact on price
  - There is an important indicator of how susceptible a stock is to movements of the market. This indicator is called Beta
    - Beta
      - Beta is the sensitivity of a stock to movements in the overall market

Risk and Return (continued)

- The importance of understanding Beta
  - If Beta = 1.0, the stock has the same risk as the market
    - A stock with beta equal to 1 will move in line with the market
  - If Beta > 1.0, the stock has more risk than the market
    - A stock with Beta > 1.0 will move more than the market (will be more volatile than the market)
  - If Beta < 1.0, the stock has less risk than the market
    - A stock with Beta < 1.0 will move less than the market (will be less volatile than the market)

Risk and Return (continued)

- In building a portfolio:
  - Track the beta of your portfolio, which is the weighted Beta of each of your stocks or funds. This will tell you how risky your portfolio is versus the market
- Remember:
  - A diversified portfolio moves with the market. There is less effect from one company. Be diversified in all your investing
    - Diversify by owning a broad array of financial assets. Don’t just invest in large-capitalization stocks, but broaden and deepen as well, into international, small cap., etc.

Risk and Return (continued)

- Understand the concept of leverage
  - Leverage is the process of increasing your purchasing power by borrowing money to invest in more assets
    - Leverage increases risk
  - Leverage magnifies capital gains ***and losses*** because the rate of return on the loan is fixed but the rate of return on the investment is not
    - ***Do not use leverage to invest***! It is debt pure and simple
      - If you want to invest larger amounts, save for it—don’t borrow for it

Questions

- Any questions of risk and return for stocks?

B. Understand Stock Terminology

- Common Stock
  - Common stock is ownership shares of a company. They are sold initially through an IPO, and then traded among investors through the secondary markets. Owners of common stock take more risk than with other types of stock, but receive a greater reward should the company perform well
- Preferred Stock
  - Preferred stock is also ownership shares of a company. However, it differs in that the dividend is guaranteed and paid before dividends on common stock are paid. However, if company profits increase, the dividend isn't increased accordingly.

Stock Terminology (continued)

- Classes of Stock
  - Some companies have multiple classes of stock, which have specific features, such a different voting or dividend policies
- Shareholders (or stock holders)
  - Investors who own shares (equity) in a company
- Voting Rights
  - Shareholders have the right to vote on major policy issues. Generally, each share of common stock has one vote (except for some companies with different classes of shares, with some classes having extra voting rights). Generally, shareholders vote by proxy, which is similar to an absentee ballot

Stock Terminology (continued)

- Investors make money in stocks in two ways:
  - Dividends
    - Companies may make payment to shareholders as part of the profits. Different types of companies have different dividend policies, which may change over time
  - Capital Gains (CG)
    - Investors purchase shares in companies with the expectation that the price of the shares will increase. This increase in share value is a capital gain

Stock Terminology (continued)

- Types of Capital Gains:
  - Realized: Gains realized when shares are sold.
  - Unrealized: Paper gains where the shares have not been sold
  - Realized Short-term: Gains realized where the stock was owned for a 365 days or less
  - Realized Long-term: Gains realized where the stock was owned for greater than 365 days.
    - Note that capital gains are taxed differently depending on how long you had owned the stock and your level of income

Stock Terminology (continued)

- Stock Split
  - A process where a company splits their shares to keep the price of their stock in a buying range (generally $6-$100 per share). Companies may give a stock split of (x) for 1, which results in the stock price declining by a the same multiple (x).
    - Assume you had 10 shares priced at $100 each or 10 * $100 = $1,000. If the stock split 2 for 1, you would have 20 shares (2 * 10) and the price would adjust to $50 each, or 100 / 2. Your value would be 20 * $50 = $1,000, the same as before
    - A stock split has no impact on firm value, but it may give information on the firm's prospects

Stock Terminology (continued)

- Reverse split
  - If the company's stock price is too low, they may do a reverse split which reduces the number of shares outstanding and raises the stock price. It is the opposite of a stock split
- Stock repurchases
  - This is where companies buy back their own shares. This is generally positive for the investor as each time this happens, this means the investor owns a larger proportion of the firm

Stock Terminology (continued)

- Book value per share
  - This is the value per share of the companies assets less liabilities. It is calculated by subtracting the firm's liabilities from the assets (i.e. owners equity), as given on a balance sheet, divided by the weighted average number of shares outstanding.
    - It is based on the value of company's assets when purchased and the depreciation method.
  - A more meaningful ratio is the Price to Book ratio, or market price divided by the book value per share.

Stock Terminology (continued)

- Earnings per share (EPS)
  - This is the level of earnings of each share of stock, not necessarily what will be paid as dividends. It is calculated by dividing company earnings by the weighted average shares outstanding (diluted). Earnings per share = (net income – preferred stock dividends) / the weighted average number of common shares outstanding.
    - A more helpful ratio is the Price Earnings ratio, or the share price divided by the EPS.

Stock Terminology (continued)

- Dividend Yield (DY)
  - The DY is the annual dividends per share divided by the market price. It is an indicator of return on the current share price. It is calculated by dividing the last 12 month's total dividends by the current market price.

Stock Terminology (continued)

- Key Asset Classes for Common Stocks
  - Large capitalization (or large cap) stocks
    - Companies with market capitalization (shares outstanding times price) of > $10 billion
  - Mid capitalization (or mid cap) stocks
    - Companies with market capitalization of between $2 billion and $10 billion
  - Small capitalization (or small cap) stocks
    - Companies with market capitalization of less than $2 billion

Stock Terminology (continued)

- Asset Classes (continued)
  - International
    - Companies whose major listing and operations are outside the United States and which are considered “developed” by the World Bank and IMF
  - Emerging Markets
    - Companies whose major listing and operations or from countries considered developed by the World Bank and IMF

Stock Terminology (continued)

- General Classifications of Common Stock
  - Blue-chip stocks
    - Stocks of the largest and best managed firms. This is not a specific list, but changes over time
  - Growth stocks
    - Companies which are growing faster than average and which generally reinvest dividends. They generally have higher PE and PB ratios than the market as a whole
  - Value stocks
    - Companies which are less expensive compared to the market. They generally have lower PE and PB ratios than the market as a whole

Stock Terminology (continued)

- Income stocks
  - Companies which pay dividends regularly
- Cyclical stocks
  - Companies whose share prices move up and down with the state of the economy
- Defensive stocks
  - Companies whose share prices move opposite to the state of the economy

C. Understand How Stocks are Valued

- The goal of valuation is to determine the intrinsic value of each company, i.e., the company’s fundamental economic value.
  - If the stock market price is greater than the intrinsic value, the investor would sell the stock.
  - If the market price is less than the intrinsic value, the investor would buy the stock.
    - Determining a firm’s value is one of the most challenging responsibilities of an investor.
  - It is done in a number of ways including:
    - Dividend Discount Models, Fundamental Analysis, Cash Flow Analysis, Liquidation Analysis, and Technical Analysis

Stock Valuation (continued)

- Dividend Discount Models (DDMs)
  - DDMs consider the value of a stock to be the present value of all future dividends earned from holding that stock, discounted at the firm's required rate of return
    - Value of common stock = $D_1 / (k - g)$
    - The price is the expected dividend divided by the discount rate (k) minus the stocks long-term growth rate (g)
  - While it is impossible to accurately determine the value as you can't predict the dollar amount of future dividends or the growth rate, it is helpful in your analysis

Stock Valuation (continued)

- Fundamental Analysis
  - Fundamental analysis assumes that the value of the stock can be determined based on the future earnings of the company
    - Analysts spend an inordinate amount of time understanding the company, the industry, the global industry, and the global economy in determining the intrinsic value of the company
  - Fundamental analysis has been found to add value in stock valuation, particularly when analysts are able to forecast earnings which are significantly different than the market consensus

Stock Valuation (continued)

- Cash Flow Analysis
  - Cash flow analysis assumes that the value of a company is the discounted value of the free cash flows to all shareholders and to equity shareholders as well
    - Investors build cash flow models that give forecasts of expected cash flows to the equity shareholders and to the total firm
  - While Cash Flow analysis is helpful in determining intrinsic value, often the value of the firm is in areas that are difficult to quantify in terms of cash flow

Stock Valuation (continued)

- Technical Analysis
  - Technical analysis assumes that supply and demand are the key factors needed to understand stock prices and market trends
    - Technical analysis focuses on the psychological factors (greed and fear) as well as economic factors in determining company value
  - While Technical Analysis is interesting, major research has found it of less value in predicting stock prices. However, many of the tools used in technical analysis are helpful in managing portfolios

Stock Valuation (continued)

- In valuing firms, a few ratios are often used
  - Price Earnings ratio (PE)
    - The PE is the market price of the stock is divided by the earnings per share, or what you would pay for $1 of earnings
      - This is one of the most widely used ratios, and is used to compare financial performance of different companies.
      - It is most useful when comparing a company’s PE to its own history, the industry PE, or to the market PE.
    - Most investors use the firms forecast (or PE for the coming year) rather than its historical PE

Stock Valuation (continued)

- Price to Book ratio (PB)
  - The PB ratio is the price of the company’s stock divided by the book value per share
    - This indicates the price you are paying for a $1 worth of assets as shown on the balance sheet.
  - Book Value doesn’t look at the value of the assets, only the non-depreciated portion of the assets. As such, there often can be a major discrepancy between the actual value of the assets and their book value

Stock Valuation (continued)

- Return on Equity (ROE)
  - This is a ratio of the company's earnings per share divided by the company's book value per share. It is a measure of how well the company is utilizing the assets of the company to make money.
    - Generally, the higher ROE, the better, as it indicates the company is utilizing its resources better
  - Understanding the trend of ROE is often as important as the absolute number. Is the company improving its ROE?

Stock Valuation (continued)

- Dividend Payout Ratio
  - This is the ratio of dividends paid divided by the earnings of the company. It is also calculated as dividends per share divided by earnings per share.
    - A high dividend payout ratio indicates the firm is returning to the shareholders a large percentage of company profits
    - A low dividend payout ratio indicates that the firm is retaining most of the profits for internal growth
  - The dividend payout ratio will be different for different types of firms

Questions

- Any questions on how a company is valued?

D. Why Stocks Fluctuate in Value?

- Why do stocks change in value?
  - There are many different reasons why stocks fluctuate in value. A few of the more common reasons are due to changes in:
    - Interest rates
    - Perceived risk of the company
    - Expected company earnings, dividends, and cash flow
    - Supply and demand
    - Investor sentiment and the market

Why Stocks Fluctuate in Value (continued)

- Interest rates
  - Investors require a certain "expected return" or discount rate to invest in stocks. A major component of this discount rate is interest rates
    - As interest rates decrease, shareholder's discount rate also decreases (which is tied to interest rates), and future earnings are discounted by this lower rate, increasing the value of the firm
    - As interest rates increase, shareholders require a higher discount rate, with all future earnings discounted at this higher rate, reducing the value of the firm

Why Stocks Fluctuate in Value (continued)

- Perceived Risk of the Company
  - There is an inverse relationship between perceived risk of the firm and price
    - As the perceived riskiness of a firm decreases, investors are willing to pay more for the company stock, resulting in an increase in stock price
    - As the perceived riskiness of a firm increases, investors are willing to pay less for the stock, resulting in a decrease in stock price

Why Stocks Fluctuate in Value (continued)

- Expected earnings, dividends, and cash flow
  - As earnings, dividends, and cash flow per share increase beyond what was expected, generally investors are willing to pay more for the stock, and the stock price increases
  - As earnings, dividends, and cash flow per share decreases beyond what was expected by the market, investors are less willing to pay for the stock, and hence the stock price declines

Why Stocks Fluctuate in Value (continued)

- Supply and demand
  - Stock prices may rise or fall based on supply and demand for their shares
    - If a large shareholder needs to sell shares of a stock to meet cash needs, supply increases and the price is likely to decline
    - Likewise, if a large investor gets new money into their account, and decides to increase their holding in the stock, the price of that stock will likely rise as the investor must pay a higher price to encourage others to sell the stock

Why Stocks Fluctuate in Value (continued)

- Investor sentiment and the market
  - Stock prices may rise or fall based on general investor sentiment and how the overall market is performing
    - If investors are generally positive on stocks, and the market is performing well, investors will likely bid up the price of all stocks
    - If investors sentiment is negative, and the market is performing poorly, investors will likely reduce their willingness to purchase the stock, resulting in a lower stock price

Questions

- Do you understand why stocks fluctuate in value?

E. Understand Stock Investing Strategies

- There are a number of different strategies for investing in stocks. The most common are:
  - Buy and Hold strategy
  - Dollar-cost Averaging strategy
  - Dividend reinvestment strategy

Stock Investing Strategies (continued)

- Buy and hold strategy
  - A buy and hold strategy is the buying of a financial asset and not selling it for an extended period of time. This is a very cost-effective long-term strategy. It:
    - Helps investors avoid market timing
    - Minimizes brokerage fees
    - Minimizes taxes, as gains are taxed as long-term capital gains, and since you do not sell for a long-time, you do not pay taxes until you sell
    - Moreover, while you still may get stock dividends each year, these are taxed at lower tax rates

Stock Investing Strategies (continued)

- Dollar-cost averaging
  - Dollar cost averaging is purchasing a fixed dollar amount of a security at regular intervals, such as every month. It:
    - Averages out fluctuations in the market and concentrates on the general trend
    - Takes luck and market timing out of the equation – it adds discipline to your investing
    - This is a good investment strategy, particularly if you are planning to fund your investments by paying yourself (taking 20% or more) out of your paycheck each month.

Stock Investing Strategies (continued)

- Dividend reinvestment plans (DRIPs)
  - Dividend reinvestment plans is a strategy where additional shares of stock are purchased with the dividend payments. It:
    - Simplifies the investment process
    - Avoids brokerage fees
    - While you still will pay taxes each year on the stock dividends, the tax rate is lower on stock dividends than interest (15% versus your marginal tax rate)

D. Understand the Costs of Investing in Stocks

- What are the major costs of investing in stocks?
  - Costs of stock investing can be divided into three areas:
    - Explicit costs
    - Implicit costs
    - Hidden costs

Costs of Stocks (continued)

- Explicit costs
  - Explicit costs are the costs you see each month on your financial statement. These include:
    - Brokerage commission costs and fees
      - This is a service charge assessed by a broker in return for arranging the purchase or sale of a financial assets. Commissions vary widely from broker to broker.
        - May be a set amount ($15 per trade) or a percentage of the purchase or sale price (or 75 basis points (.75%) for both buying and selling)

Costs of Stocks (continued)

- Explicit costs (continued)
  - Custody (or annual) fees
    - These are fees the brokerage house charges to hold the stocks, bonds, or mutual funds in your account.
      - These may be a minimum amount for small accounts ($15 per year), a specific charge per holding (18 basis points per security), or a percentage of assets under management

Costs of Stocks (continued)

- Implicit costs
  - These are taxes—critical costs which must be taken into account to get the true return of your portfolio but which are not noted on your monthly reports
    - Capital Gains taxes: gains you have made by selling financial assets
      - Short-term: Gains made in selling assets owned less than 1 year
      - Long-term Capital: Gains made in selling assets held for more than 1 year

Costs of Stocks (continued)

- Implicit costs (continued)
  - Dividends
    - Dividends are the returns you get from the company
      - Stock dividends are taxed at a preferential federal tax rate and your state marginal tax rate
      - Bond and other dividends are taxed at your federal and state marginal tax rates

Costs of Stocks (continued)

- Hidden Costs
  - Beyond the explicit and implicit costs, look for the following hidden costs:
    - Account Transfer Fees
      - Charges for moving assets either into or out of an existing account
    - Account maintenance fees
      - Fees for maintaining your account
    - Inactivity fees
      - Fees because you did not trade or have account activity during the period

Costs of Stocks (continued)

- Hidden Costs (continued)
  - Minimum balance fees
    - Fees because you failed to maintain a minimum balance in your account
  - Interest on margin loans
    - Interest on money you borrowed to buy securities
  - Sales charges or loads (e.g. loads on mutual funds)
    - Sales charges paid to the broker for helping you purchase specific securities

G. Understanding Plans and Strategies for Stocks

- Following are a few ideas for your plans and strategies for stocks
  - Overall Investment Plan
    - Stocks are good at doing what they do well, gaining returns in excess of inflation at a higher level of risk
    - What will you invest in? I will invest in stocks/funds which are great at gaining returns in excess of inflation (IV.A.)
    - What are your stock benchmarks? I will compare my stock/funds to the S&P500 for Large Cap, Russell 2000 for small cap, EAFE for International, S&P REIT for REITs, and MSCI EM Free for emerging markets (II.D., II.E., IV.A-C.)

Plans and Strategies for Stocks (continued)

- Plans and Strategies – General Investing
  - Due to the many different types of stocks and stock asset classes, investors can invest at differing risk levels within this asset class
  - While risk of individual stocks can be high, buying multiple stocks or stock funds can reduce that risk considerably (no-load and low cost stock mutual/index funds are recommended)
  - Some stocks are likely necessary to give you the returns needed to grow your portfolio above inflation as part of your diversified portfolio

Plans and Strategies for Stocks (continued)

- As you age and get closer to retirement, stocks, because of their risk, are a generally recommended to become a smaller percentage of your overall portfolio due to their higher volatility
- As you review stock and stock mutual funds for your portfolio, make sure you follow the principles of successful investing

Review of Objectives

A. Do you understand risk and return for stocks?

B. Do you understand stock terminology?

C. Do you understand how stocks are valued?

D. Do you understand why stocks fluctuate in value?

E. Do you understand stock investing strategies?

F. Do you understand the costs of investing in stocks?

G. Do you understand some plans and strategies for stocks?

Case Study #1

Data

Peter and Jessica, on the advice of their next-door neighbor, recently purchased 500 shares of a small capitalization internet company trading at $80 per share. The neighbor told them that the stock was a "real money maker" because it recently had a two-for-one stock split and would probably split again soon. Even better, according to the neighbor, the company was expected to earn $1 per share and pay a $0.25 dividend next year. Pete and Jessica have so far been unimpressed with the stock's performance—the stock had under performed the S&P500 index this year.

✓Application

- Pete and Jessica have come to you for advice. What do you think?

Case Study #1 Answers

- Peter and Jessica lack an important part of investing—knowledge of what they are invested in. Apparently their next-door neighbor lacks that same understanding as well.
  - Buying stock is the process of understanding and owning a piece of a company. It is not just knowing the numbers; they must know what the numbers mean, especially with individual stocks
    - Peter and Jessica (and their neighbor) do not know what the numbers mean
    - Before they invest in individual stocks, they should really learn more about investing and the process

Case Study #1 Answers

- Buying individual stocks is understanding what is going on in the world, region, country, economy, industry, and company. They need to understand Investing Principles 6 and 8: If you must invest in individual assets, know what you invest in and who you invest with, and Don’t waste too much time, money, and energy trying to beat the market, unless you have a lot of time, money, and energy.
  - For people who have never invested before, I believe buying mutual funds, index funds or ETFs (which are index funds which trade like stocks) is a much better first step in the investment and investment education process

Case Study #2

Data

- Assume you own 200 shares of ABC Stock selling at $410 per share. In order to make the stock more affordable for the average investor, ABC's management has decided to split the stock.

Calculations

- a. How much was your investment before the split?
  b. Assuming ABC's management decides to split the stock three-for-one, how may shares would you own after the split?
- c. What is the new price per share after the split?
- d. How much would your investment be worth after the three-for-one split?

Case Study #2 Answer

Calculations

- a. Before your investment was worth $82,000 or 200 shares x $410 per share
- b. Afterwards you would have 600 shares or 200 shares x 3
- c. Afterwards, the price of the share should decline to $136.67 or $410 / 3
- d. After the split, the value of your investment should remain at $82,000 or $136.67 x 600 shares

Case Study #3

Data

MAM Corporation recently announced that its year-end earnings per share (EPS) for this last year was $4.50, and they estimate next year's EPS will be $5.00 per share. MAM stock is currently selling at $85 per share.

Calculations

a. What is the historical (last year's) PE ratio for MAM?
b. What is the estimated (or forward) P/E ratio for MAM?
c. Assume the earnings prospects for MAM deteriorate and the company now estimates next year's earnings to be $4.00 per share. What would be MAM's new forward P/E ratio?

Case Study #3 Answer

- Divide the price per share by the earnings per share to calculate the respective P/E ratios. PE ratios are normally computed with an (x) after them to denote "times"
  - a. The historical P/E is $85/$4.5 or 18.9x
  - b. The forecast or forward PE ratio is $85 / $5 or 17.0x
  - c. Assuming prospects decline for next year, the forecast or forward PE ratio would be $85/4 or 21.3x.

Case Study #4

Data

- You own 1,000 shares of Boston Scientific Stock selling at $50 per share at the beginning of the year. You are in the 25% federal marginal tax rate, 15 percent qualified dividends tax rate, and you live in a state that has no state income tax. At the end of the year, the stock rose to $55 and you received $1.50 in dividends.

Calculations

- a. What was your before-tax return?
- b. What is your after-tax return assuming you held the stock for over one year?

Case Study #4 Answer

Calculations

- a. You only pay taxes on realized income, not unrealized income. Your before tax return is:
  - (55.00 – 50.00 + 1.50) / 50.00 or 13.0%
- b. Your after-tax return would include the unrealized capital gains and the dividend after you paid taxes. Since this is a stock dividend, it is taxed at the preferential rate of 15%. The after-tax return is:
  - (55.00 – 50.00+[1.50*(1 - .15)])/50.00 = 12.55%
  - Of the $1.50 dividends, you paid 22.5 cents in taxes, and you get to keep the remaining amount.