**PROJECT 4 ASSESSMENT REPORT**

**Note that you need to copy and save and cleanup all the historical data from Investopedia, Yahoo as well as Treasury.gov to answer some of the following questions. Make sure you save the data in normal Excel format (not in PDF, html or htm format) otherwise I won’t be able to open it. Note: all detail calculations and Excel work must be presented. Note that we use SPY fund as a proxy for the S&P500 market index.** (10% credit per question)

1. Based on your portfolio returns and the S&P 500 returns (<http://finance.yahoo.com/q/hp?s=SPY+Historical+Prices>) during the 3-month window, draw a price line to represent your portfolio value and another price line to represent S&P 500 value and compare them (both lines start with a $100 level. The rationale is that the same $100 you invested in your portfolio how is it different over time if you invested this $100 in the S&P500 portfolio). Did you beat the market (S&P 500 index) in terms of raw return during this trading period? If yes, by how much (the difference between your portfolio’s raw returns and S&P’s raw returns) during this holding period and by how much on an annual basis?
2. What is your asset allocation on average during the semester (for example, 100% in stock, 50/50 in stock and bond, 40/30/30 split in stocks, bonds and options, etc)? Have you ever had bond fund(s)?
3. How do you justify your asset allocation strategy and why you pick such securities in your portfolio?
4. Are you a risk-taker or risk-averser? What is your trading philosophy during this semester and why do you think your investment strategy is going to work? (For example, passive, active long, contrarian or hedge strategy.)
5. Although commission is 0, what is your total transactions costs (bid-ask spread multiplies by total shares for each security then multiples by 2 assuming you eventually sell them). What is your trading behavior, day trader or relative long-term holder? Do you think the more you trade the higher of your portfolio return? Do you think transaction costs are a significant disadvantage to a day trader? To a long-term trader? Based on your trading experience, do you think on average day trader make money? Please justify your answers.
6. Based on your trading experience, do you think that using a margin account (allowing you to borrow money from your broker to trade) will magnify your gain or loss? In reality, would you open and use a margin account over a cash account?
7. Have you been using short-selling to take advantage of downside market or stock price drop? If yes, by what percentage (approximately) do you believe your total return comes from short positions? If no, why do you think short-selling is not suitable for you?
8. What is your cumulative holding period raw and excess return and what will be your compounded annual raw and excess returns? Why cumulative holding period raw return is so close to cumulative holding period excess return? During this semester, what is your portfolio’s total risk in terms of standard deviation and market risk in terms of beta. (Market portfolio: [http://finance.yahoo.com/q/hp?s=SPY +Historical+Prices](http://finance.yahoo.com/q/hp?s=SPY%20+Historical+Prices)).
9. Calculate the S&P 500’s Sharpe ratio and calculate your portfolio’s Sharpe ratio, did your portfolio obtain diversification benefits in terms of a higher Sharpe ratio?
10. First, from the regression output in question 8, report the intercept (alpha) and coefficient (beta) of your portfolio. Note that Investopedia’s data has a **1-day** lag.

Next, from <http://finance.yahoo.com/q/hp?s=VOO+Historical+Prices>, download another ETF (Symbol: VOO)’s adjusted prices and calculate its raw returns, and run the VOO’s excess returns against S&P 500 index’s excess returns. Report the intercept (alpha) and coefficient (beta) for the VOO and their corresponding T-statistics. Determine if their T-statistics are statistically significant. Compare VOO’s alpha and beta with those of your portfolio. Why VOO regression’s beta is so close to 1 and alpha is also close to zero while your own portfolio’s beta is not that close to 1 and alpha is not so close to zero?