FINE 3200S : Investments

Homework 1
Winter 2019

Evaluation Rubric Benchmarks

The highest four of five scores are worth two mark each.

FULL MARK:	Shows depth of comprehension and provides a clear explanation
3-QTR MARK:	Good but for one error or oversight
HALF MARK:	On the right track, but missing important points or hard to follow
NO CREDIT:	Work is significantly off target or completely misses the concept

Tasks

You may discuss these problems with classmates, but except for the last problem, do your work independently. Submit written answers to five problems by uploading a doc to Canvas, by email, or on paper (if you really prefer) before the start of lectures on 19-jan-2018.

1. Briefly describe an exchange-traded fund that sells covered calls on dividend-paying stocks.
   a. What is the fund's stated investment objective? How do the fund managers seek to achieve it?
   b. Evaluate the comparative return profile offered to investors: under what economic circumstances will the fund pay a return higher or lower than the market average?
   c. How about the fund's risk? How does the fund's volatility of returns compare to the market index, and to a diversified portfolio of similar equity issues without the covered-call kicker?
   d. For which investors is the fund you found an especially well-suited investment vehicle?

2. Describe an effective, real-world investment strategy to achieve these return profiles:
   a. A portfolio that moves with close to 100% correlation to the VIX over the next three months.
   b. An equity (issue or portfolio) with 10% annual dividend yield or greater.
   c. A portfolio that achieves 3 times the return of FAANG stocks over the next three months.

3. Find (at least) two investments that exhibit zero, or even negative, return correlation. Collect data (Yahoo, Bloomberg, WRDS through our library) to estimate the returns, variances and covariance for each pair of candidate investments over the last twelve months using daily or weekly returns.
   a. Calculate sample covariances.
   b. Assuming the historic average returns and covariances are good estimates of future returns and covariances, calculate portfolio combinations using the formulas from Week 2 and plot the min-variance frontier. You may assume unlimited short sales and full use of proceeds.
   c. How would the min-variance frontier change if you cannot sell either of the securities short?

4. The Ontario Liberal (ruling) party passed legislation that raised the minimum wage from $11.40/hr to $14/hr on Jan 1, 2018 and then to $15/hr on Jan 1, 2019. Evaluate an increase in the minimum wage as an investment by society.

   Some (optional) prompts:

   a. Use economic arguments to predict the marginal effect on current minimum-wage employees, such as fringe benefits, number of new job openings available, hours worked per shift, etc.

   b. Use economic arguments to predict the marginal effect on the prices of goods and services offered by businesses that rely on minimum-wage workers and on the profits of such businesses.

   c. Identify the three elements of an investment in this situation. By passing a minimum wage law, what assets has Ontario committed, for what time period, and in exchange for what benefits to society?

   d. Assuming the benefits you identified in (c) are a non-negotiable societal goal, can you suggest a policy that would be a more cost-effective means to achieve them than a minimum wage?

5. Create a hypothetical equity portfolio that is closely correlated with the TSX index (there are many feasible choices). Then pick at least three points in time over at least two days to hedge your portfolio by selling short an equivalent number of S&P TSX 60 futures contracts, using either S&P/TSX 60 Index Mini Futures (SXM) or S&P/TSX 60 Index Standard Futures (SXF).

   a. Track the execution prices and cash flows for each of your trades.

   b. Evaluate the effectiveness of your hedge.

   c. Explain how this trading strategy can be used by fund managers to shift rapidly into "risk-on" or "risk-off" modes, depending on their very short-term outlook for markets in general.

NOTES: This problem may be solved together with your Stock-Trak team, but each student must write up an answer independently. You can find contract specifications and quotes here: https://www.m-x.ca/accueil_en.php