FN452: Asset Management and Portfolio Analysis

Practice problems for final exam

1. (17 points) Answer the following questions.
   1.1 (3 points) what is meant by an indexing portfolio strategy, and what is the justification for this strategy?
   1.2 (3 points) Compare sampling and full replication portfolio construction processes.
   1.3 (3 points) Briefly describe **three** techniques considered active equity portfolio management strategies.
   1.4 (3 points) Define and discuss the weak-form EMH. Describe the two sets of tests used to examine the weak-form EMH.
   1.5 (5 points) Describe how you would compute the abnormal rate of return for a stock for a period surrounding an economic event.

2. (12 points) Select one mutual fund or ETF from the U.S. market. Explain key features and past performance of the fund. Use data from **Yahoo Finance website** to conduct style analysis using appropriate ETFs as your independent variables.

4. (15 points) A fund manager in an asset management company have been asked to set up three portfolios **on December 31, 2018.** The fund's investments are to be made in **six stocks**, with allocation as shown in **the Excel file "Thai stock and market data_202012_Update" Sheet "Problem 4"**.
   a) Portfolio A: The optimal risky portfolio (with at least 10% in each asset)
   b) Portfolio B: The equal-weighted portfolio
   c) Portfolio C: The optimal active portfolio, incorporating the analyst forecasts of performance (short-sale not allowed)

   Evaluate performance of these three portfolios over the following 24 months using portfolio performance measurements (e.g. Sharpe ratio). **Compare and contrast** these three portfolio performances. Assume no portfolio rebalancing.

5. (20 points) Answer the following questions using **the Excel file used in class**.
   5.1 (10 points) Construct an index portfolio on **December 31, 2020**. Use stratified sampling approach with 150 stocks. Set constraints in the same manner as we performed in class.
   5.2 (10 points) Construct an index portfolio **without a capitalization constraint** on December 31, 2020. Use stratified sampling approach with 150 stocks. Set the other constraints in the same manner as we performed in class.

6. (8 points) Shown below are the investment weights for the securities held in four different portfolios: three mutual funds and the benchmark index that each of those funds uses.

	% Security investment weight:			
Security	Benchmark index	Fund X	Fund Y	Fund Z
1	10%	12%	40%	11%
2	10	13	0	9
3	10	8	5	9
4	10	15	0	9
5	10	7	0	11
6	10	10	0	11
7	10	5	30	9
8	10	14	0	11
9	10	6	0	11
10	10	10	25	9

6.1 (5 points) Calculate the active share measure for Fund X, Fund Y, and Fund Z relative to the benchmark index.

6.2 (3 points) Using these active share calculations, indicate which fund is the most likely to be considered: (i) a passive index fund, (ii) a closet index fund, and (iii) an actively managed concentrated stock-picking fund. Explain the reason for your classification.

7 (7 points) My pension plan will pay me $8,000 once a year for a 15-year period. The first payment will come in exactly five years. The pension fund wants to immunize its position.

7.1 (3 points) What is the duration of its obligation to me? The current interest rate is 10% per year.

7.2 (2 points) If the plan uses 5-year and 20-year zero-coupon bonds to construct the immunized position, how much money ought to be placed in each bond?

7.3 (2 points) What will be the face value of the holdings in each zero-coupon bond?

8 (7 points) Find an active equity strategy on the Internet.

8.1 (2 points) List the strategy’s investment objectives.

8.2 (2 points) Identify the portfolio construction process.

8.3 (3 points) List the strengths and weaknesses of the process.