Arbitrage Project #4: Managing an Index Fund

The project is to be completed by your study group of between 3-5 people. A report of no more than 10 typed pages is due in class on Thursday, May 29. You may include high quality, neat, and concise supporting material in an appendix that may get evaluated when we grade the reports (depending on the communication value of the material). We will pick two groups for each of the four projects to make short (about 7 minute) presentations during class on Tuesday, June 4. Your grade on the project will be 80% on the report and 20% on the presentation, if you are picked. It will be 100% on the report if you are not picked to present. You should submit an intermediate report of approximately one page in class on Tuesday May 6 so that we can give you feedback on the progress of your work. This project, along with the “grading cash” from the FTS labs, represents the main basis for your grade in this portion of FIN 434, so you should treat it as a serious assignment.

Situation

You are an index fund manager. The name of the game in this business is not to trail the index by much. It is a rare index manager indeed, who sometimes succeeds in beating the index. (How do you think he does that?) If there are no transactions then the fund tracks the index provided a sufficient number of stocks are included in the portfolio. But, you like most fund managers have to deal with transactions, portfolio rebalancing to reflect changes in index and other factors such as expenses. Assume that you are an manager of a S&P500 index fund with $250,000,000 in assets. Here are some decisions for you to make:
1. How many stocks to include in the portfolio? (Hint. Probably not 500). Consider the following to answer this question:
   • What causes you to rebalance the portfolio? What does rebalancing require? What is the cost of this activity and how is it affected by the number of stocks?
   • How does the number of stocks in the portfolio affect the costs of changing portfolio size (enlarge to add funds, shrink to redeem)?
   • What is the cost of having a portfolio that does not have all the stocks in the index?

2. An investor comes to you at 4:10pm of a trading day and asks to join the fund with $50,000,000. What will you do? Do you accept and if yes, at what terms?