**An Event Study**

**Instructions for Students**

This assignment makes use of the Excel Spreadsheet: An Event Study - S&P 500. The spreadsheet can be downloaded from <http://breese7160.tulane.edu/event-study/>

On the second tab of the spreadsheet (IndexChange\_500), we have listed approximately 265 different companies whose stock was added to the S&P 500 between Jan. 1, 2000 and June 30, 2015. Each of these stocks has price and volume data on Yahoo! Finance surrounding the date they were added to the S&P 500.

You are to randomly select between 50 and 100 of these stocks for this exercise. The exact number of stocks you select is not important. Feel free to use whatever method you wish to make your selections random.

List the ticker symbols for the stocks you selected on the “Inputs” tab of the spreadsheet. The first symbol should be inserted in cell C14 and the remaining symbols should also be in column C below the first one without skipping any cells. The cells are shaded blue for reference. The shading is not important for what you will be doing though. Be sure that the ticker symbols are typed in exactly as they appear on the IndexChange\_500 tab.

Once you have your ticker symbols listed, all you need to do is click the “Download” button. The spreadsheet will do then do the following:

1. Lookup the data on the IndexChange\_500 tab for each of the stocks you selected and note the date it was added to the index (row A), the date for 113 trading days before it was added to the index (row D), and the date for 10 trading days after it was added to the index (row E).
2. A macro embedded in the spreadsheet will go to Yahoo! Finance’s website and find the adjusted closing prices and trading volume for each of the 113 trading days before the event (the day the stock was added to the index), the day of the event, and the 10 trading days after the event. It will do this for each stock you selected as well as for the S&P 500 (our proxy for the market).
3. The excel spreadsheet will use these adjusted closing prices to calculate daily returns for each stock for the 112 days prior to the event, the day of the event, and the 10 days after the event.
4. Using the daily returns from day -112 to day -11, the spreadsheet will run separate regressions for each stock where the dependent variable is the returns for the stock and the independent variable is the returns for the S&P 500. Estimates of alpha and beta for each stock will be calculated.
5. Using those estimates of alpha and beta along with the actual returns for the S&P 500, the spreadsheet will calculate expected daily returns for each stock for each of the 21 days in the event window (10 days before the event, the day of the event, and 10 days after the event).
6. Actual returns for the stock which are greater than its expected return for any day in the event window are considered to be positive abnormal returns. Actual returns which are less than the expected return are negative abnormal returns. Cumulative abnormal returns (CARs) for each stock are calculated across the event window for each stock.
7. The CARs are averaged over the all the stocks you randomly selected for each day in the event window. Standard errors and T-stats are calculated. The average CARs and the T-Stats can be seen on the “Final” tab. The average CARs are then displayed in a graph as a function of the days of the event widow, giving you a nice visual picture of what happened to these stocks surrounding the date they were added to the S&P 500.
8. Additionally, the daily trading volume for each stock during the 100 trading days prior to the event window are averaged together to create an “expected volume” for each stock. For each day in the event window, the expected volume for each stock is subtracted from the stock’s actual trading volume on that day and scaled by the expected volume to give us a measure of the stock’s abnormal volume for that day. Cumulative abnormal volumes are calculated just like CARs. They are then averaged across all the stocks you selected, standard errors are calculated, and T-stats are found – just as they were for the CARs. The CAVs are also graphed as a function of days in the event window – just like the CARs.

The spreadsheet will take a couple of minutes to do all this. When it has completed all its calculations, you should take a few minutes to look at the cumulative data and the graphs on the “Final” tab as well as the data for each stock you selected in the “RESULTS” tab.

If you run into any problems, simply close out the spreadsheet, and reopen a fresh one from the website. If you found that the spreadsheet seemed to have problems with the data from a particular stock, choose a different one this time.

You should answer the following questions and turn them in as instructed:

1. Prior to using the spreadsheet in this exercise, what did you expect to happen to the returns and trading volume for these stocks on and around the date that they were added to the S&P 500?
2. In 2-3 paragraphs, summarize what the spreadsheet has done.
3. Does your event study show that there are statistically significant abnormal returns associated with a stock being added to the S&P 500? If so, how would you convince someone that these abnormal returns came from the stock’s addition to the index and not from something else?
4. Answer question #3, for trading volume instead of returns.
5. If you heard today that stock XYZ is to be added to the S&P 500 Index next week, what sort of a market reaction do you expect to see? Explain what you expect to see between now and the date of the addition, on the date of the addition, and during the two weeks after it is added to the index.
6. How certain are you that the reactions you “expect” to see from the previous question will happen for stock XYZ?
7. Online trading can be done for as little as $8.00 per trade. Considering transactions costs (commissions and bid-ask spreads), do you think you can make money from what you have found in this exercise? If yes, describe how you would do it and how much you think you can make. If not, explain why not.
8. Based on the method we used in this exercise, describe how an “abnormal return” is measured.
9. Come up with an original idea for an event study and describe how you would do it.