Assignment 1 **Group Number:_____**

Select **three** contracts to use in the hedge. **Analysis Task 1**: For each contract, state why you think this contract will offer the best hedge.

The justification should be based on logic. There is a reason for the high correlation. State what you think that reason is.

6 5 4 3 1 0

Data Task 1: Plot the prices for the spot asset and futures contracts. Should be three graphs in total (one for each futures contract).

6 5 4 3 1 0

Data Task 2: Plot the trading volume for the futures contracts. Should be three graphs in total (one for each futures contract).

6 5 4 3 1 0

Data Task 3: Is there missing data? If so, you will have to adjust the data to "fill in" the missing observations. Propose one method of doing so. State what assumptions must hold in order for your method to be valid.

6 5 4 3 1 0

Data Task 4: Identify the information you will use to construct the hedge. Create a table which displays this information. There should be one table with information about the three contracts.

6 5 4 3 1 0

"Naïve" hedging. Find the number of contracts that most closely matches the dollar value of the portfolio on a given day.

Data Task 5: Plot the value of the hedged portfolio, which includes the MSCI index and the futures contract.

6 5 4 3 1 0

Data Task 6: Create a table that shows the arithmetic average and standard deviation for each proposed hedged portfolio returns. Identify the best and worst contract for hedging MSCI risk.

6 5 4 3 1 0

Analysis Task 2: What do you think explains the difference in the hedged portfolio returns of the best and worst hedging instruments.

6 5 4 3 1 0

Data Task 7: Plot the distribution of the best hedged portfolio. Identify three days in which the hedge performed poorly.

6 5 4 3 1 0

Analysis Task 3: What explains the poor returns identified in Data Task 7?

6 5 4 3 1 0

2. Optimal Hedging Data Task 8: Now create an optimal hedge using a regression. You can use simple linear regression.

Describe how you estimated the hedge ratio. Create a table displaying the estimated results, statistical significance of the parameters and estimates of the "goodness of fit".

Please note that your grade will NOT depend on the actual fit of your hedge. Instead, your grade depends on the clarity and thoughtfulness of your analysis.

6 5 4 3 1 0

Data Task 9: Create a table that shows the arithmetic average and standard deviation for each proposed hedged portfolio returns. Identify the best and worst contract for hedging MSCI risk.

6 5 4 3 1 0

Analysis Task 4: What do you think explains the difference in the hedged portfolio returns of the best and worst hedging instruments.

6 5 4 3 1 0

Data Task 10: Plot the distribution of the hedged portfolio. Identify three days in which the hedge performed poorly.

6 5 4 3 1 0

Analysis Task 5: What explains the poor returns identified in Data Task 10?

6 5 4 3 1 0

Analysis Task 6: How does the hedge using the hedge ratio compare to the hedge using a naive dollar matching strategy?

6 5 4 3 1 0

Total Marks = 15%*(sum(marks for each component)/96)