IEEE-CIFEr 2014
Trading Competition

Thank you for participating in the CIFer 2014 Trading Competition. The Competition provides the opportunity for students and other participants to demonstrate quantitative portfolio management skills and computational intelligence techniques in a realistic but simulated trading environment. Each team will be given a basket of stocks and options, which must be held for the full duration of the tournament, and a quantity of cash, which may be used to purchase options to hedge the static portion of the portfolio.

In the context of this competition 'hedge' is seen as reducing risk. Therefore, teams are judged on their ability to gain a 1% annualized return each day. The tournament will be held over a 6 week period 1/13-2/21. Each market day a bid and ask price will be presented for each asset. Each team is given a basket of stocks and options that they are not allowed to trade during the tournament. With approximately $18 million in cash, teams must take offsetting positions to limit the volatility of their overall portfolio. A measurement known as the tracking error (TE) is taken at the beginning of each day. The team with the lowest cumulative tracking error is crowned the winner. Tracking error (TE) is defined to be:

$$TE_t = \begin{cases} (PV_t - T_t)/2 & if\ PV_t \geq T_t \\ (T_t - PV_t) & else \end{cases}$$

The equation above compares the Portfolio Value (PV) with a target (T), which is the initial portfolio plus a 1% annualized return to date. To minimize tracking errors, teams enter long or short positions in stocks or options to offset the illiquid position. Six rules limit the ability of teams to enter positions:

1. The value of the margin account must not exceed $22 million dollars. (Total value of all shorted assets)
2. Teams must have at least 30% of the margin account value in cash at all times.
3. Teams may not trade any asset more than once a day.
4. For a trade to be initiated the required amount of cash must be present in the portfolio.
5. Teams may not trade any asset that has a value of zero dollars.
6. Teams cannot trade assets in their initial portfolio.

Teams will have the ability to take off setting positions using assets derived from thirty stocks, over five market sectors. To determine a team's portfolio value all assets will be given the average value of the bid and ask price. Additionally, at the end everyday any cash on hand accrues 1% annualized interest.

All trades must be aggressive trades, meaning that sells orders must transact at the bid price and buy orders at the ask price. When making a trade teams must take into account transaction cost.

For buying and selling assets 0.4% of the total value of the trade will be charged as a transaction fee. For short selling the transaction cost is 1%.

For this tournament all options are treated as European options, meaning they cannot be exercised before their expiration date. The expiration date of all options is 3/21/2014, which is outside competition time frame. Therefore, teams do not have to worry about exercising options. Lastly, the competition assumes no stocks will pay dividends before the expiration of the options.

Through, the research and development of strategies to hedge illiquid assets it is our hope that contestants learn practical real world knowledge. Thank you again for participating in the competition. Good Luck.