

RITC 2017 – Scoring Methodology

OVERVIEW

The scoring and ranking methodology is designed to translate absolute performance into relative performance by the use of a ranking system. This ranking system is designed to discourage participants from “betting the house” in one sub-heat and generating very large absolute profits that will result in a clear win of the entire competition. Instead, participants’ absolute performance in each sub-heat is converted into a series of ordinal ranks which are subsequently converted into a final case ranking. These case rankings are mapped to case scores and then combined under the following weights:

Case	Weight
BP Commodities Case	20%
S&P Global Credit Risk Case	20%
Quantitative Outcry Case	10%
Volatility Trading Case	20%
Flow Traders ETF Case	20%
Mathworks Algorithmic Trading Case	10%

The scoring system is not intended to be extremely complex. However, throughout the trading competition there will be over 4,000 separate trading results. These results must then be averaged and ranked over several iterations to compute a final ranking and score. This document describes that process.

The purpose of the system is to reward consistently high performance (i.e. a team that places 8th, 5th, and 10th will have a higher final score than a team that places 1st, 10th, and 35th).

S&P Global Credit Risk Case, Flow Traders ETF Case, Volatility Trading Case

For each sub-heat, the final profits and losses (P&L)¹ of both members of a team are summed to form a dollar value of the team P&L. The teams are then ranked for each sub-heat by the dollar values of the team P&L with 1st place given to the team with the highest dollar value. In the event of a tie, the teams that have tied will be given the same rank. The teams below the tie will be given a

¹ For the Flow Traders ETF Case, the **Adjusted P&L** (as described in the Case Package) will be used. For the Volatility Trading Case, the P&L (as shown in the RIT) will **be decreased by the sum of penalties** received by each team member as described in the Case Package.

rank based on the number of teams that have scored better than them. Therefore, if three teams tied for 2nd place, the ranking for the top five teams would be 1st, 2nd, 2nd, 2nd, and 5th.

Each team's sub-heat ranks are then averaged. Teams are then ranked based on their average sub-heat rank to determine their overall heat rank. The team with the lowest average will be ranked first.

This process is repeated for the other two traders in the second heat of each case. The two overall heat ranks are then averaged, and the resulting averages are ranked to determine a final case ranking. This case ranking is then mapped to a point score where the lowest rank (best score) is given a score of $n+1$, where n is the number of teams below you plus the teams that tied with you (i.e. the first place team out of 52 teams will get a score of 52, the last place team will get a score of 1). To continue the above example, if you are tied for 2nd place with three other teams, you will get a score of 51.

BP Commodities Case

The BP Commodities Case will consist of two heats. Each team will compete in one of the two heats, and all four team members will compete together for the entire heat (i.e. half of the teams will compete in the first heat and half in the second heat). The final P&L of each team member will be summed to form a dollar value of the team P&L. The teams are then ranked for each sub-heat by the dollar values of the team P&L, with first place awarded to the team with the highest dollar value. Each team will be ranked for each of the eight sub-heats (4 sub-heats in heat 1 and 4 sub-heats in heat 2), where teams will automatically be ranked last in the heat in which they are not competing. In the event of a tie, the teams that have tied will be given the same rank. The teams below the tie will be given a rank based on the number of teams that have scored better than them. Therefore, if three teams tied for 2nd place, the ranking would be 1st, 2nd, 2nd, 2nd, and 5th.

Based on the above, each team's sub-heat ranks will be averaged and then the resulting averages will be ranked to determine their overall case rank. The team with the lowest average will be ranked first. This case ranking is then mapped to a point score where the lowest rank is given a score of $n+1$, where n is the number of teams below you plus the teams that tied with you.

Quantitative Outcry Case

The Quantitative Outcry Case will consist of two heats. The teams are ranked based on their P&L after bonus cash adjustments, as defined in the Case Package. This process is repeated for the second heat. The two heat ranks are then averaged for each team and the resulting averages are then ranked to determine a final case ranking. In the event of a tie, the teams that have tied will be given the same rank. As mentioned above, the teams below the tie will be given a rank based on the number of teams that have scored better than them. This case ranking is then mapped to a point score where the lowest rank is given a score of $n+1$, where n is the number of teams below you plus the teams that tied with you.

MathWorks Algorithmic Trading Case

The MathWorks Algorithmic Trading Case will consist of 4 preliminary heats and a final heat. The preliminary heats consist of each team competing in 3 sub-heats, with each sub-heat scored and ranked. If a team does not attend a preliminary heat, it will automatically be ranked last in that preliminary heat. Following the preliminary heats, all teams are ranked based on the average of their 3 sub-heat ranks. This ranking will determine the final ranks for teams 11-50, and those teams will each be assigned $n+1$ points, where n is the number of teams below them and tied with them (ranking 11th will provide 42 points assuming that there are 52 teams).

The top 10 teams from the preliminary heats will have their results reset (once they have qualified in the top 10, their qualifying scores are no longer relevant). They will then compete in a 5 sub-heat final heat. The sub-heat ranks from the final heat will be averaged and the resulting averages are ranked to determine the final ranking of the top 10 teams. Those teams are then assigned $n+1$ points, where n is the number of teams below them and tied with them.

Final Score

The final case scores are then multiplied by their case-weights to form a final weighted score. This final weighted score is used to rank teams, where the highest score is the best score. In the case of two or more teams having the same final weighted score, those teams will be ranked based on the variance of their final case scores. The team with the lowest variance will be ranked ahead of the others. For example, if the top 3 teams have the following scores:

Team	Final Case Scores						Final Weighted Score
	BP	S&P Global Credit Risk	Quantitative Outcry	Volatility Trading	Flow Traders ETF	MathWorks Algorithmic Trading	
Team 1	52	47	51	50	50	50	49.9
Team 2	50	44	51	46	46	52	47.5
Team 3	50	51	44	46	48	41	47.5

Team 1 will be ranked first as it has the highest weighted score. Team 2 and Team 3 have the same final weighted score and will be ranked based on the variance of their case scores. The variance for Team 2 is 8.81 while the variance for Team 3 is 11.88, therefore Team 2 will be ranked second while Team 3 will be ranked third.

Team	Final Rank
Team 1	1
Team 2	2
Team 3	3

Two (or more) teams that have the same score and the same variance will tie. In the event of a tie, the teams that have tied will be given the same rank. The teams below the tie will be given a rank based on the number of teams that have scored better than them. Therefore, if three teams tied for 2nd place, the ranking would be 1st, 2nd, 2nd, 2nd, and 5th.

Prizes

A \$1,000 prize will be awarded for each first place finish in a case (\$6,000 across all cases). All additional prizes are awarded based on overall competition rank, the details of which can be found in the table below. In the event of a tie, the prize will be split amongst the tied teams. For example, if there is a tie for the first place in the final overall ranking, the tied teams will split \$5,000 (\$3,000 for first place + \$2,000 for second place).

Teams are awarded prizes according to the following table:

Rank	Money Prize	Rank	Money Prize	Rank	Money Prize
1	\$3,000	19	\$200	37	\$100
2	\$2,000	20	\$200	38	\$100
3	\$1,000	21	\$150	39	\$100
4	\$500	22	\$150	40	\$100
5	\$500	23	\$150	41	\$50
6	\$500	24	\$150	42	\$50
7	\$500	25	\$150	43	\$50
8	\$500	26	\$150	44	\$50
9	\$500	27	\$150	45	\$50
10	\$500	28	\$150	46	\$50
11	\$250	29	\$150	47	\$50
12	\$250	30	\$150	48	\$50
13	\$250	31	\$100	49	\$50
14	\$250	32	\$100	50	\$50
15	\$250	33	\$100	51	\$50
16	\$200	34	\$100	52	\$50
17	\$200	35	\$100		
18	\$200	36	\$100		

All amounts are expressed in Canadian Dollars.