
THEY'RE CLUTCHING UP! TEAM MOMENTUM IN ROUND-BASED ESPORTS

A PREPRINT

Tony ElHabr

Georgia Institute of Technology

anthonyelhabr@gmail.com

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ABSTRACT

My research investigates patterns in round win percentages in professional matches (series) of two popular first-person shooter games, Call of Duty (Search and Destroy mode) and Valorant.

First, I find evidence in Call of Duty (COD) defying the naive hypothesis that a series represents a sequence of independent events (rounds), with each team having a constant 50% probability of winning a given round.

Second, I examine post-streak round win probability. For COD, in which teams play first to 6 round wins (maximum 11 rounds), I find that teams perform significantly worse than expected after streaks of 2, 3, and 4 wins when series end up going to 9, 10, or 11 rounds, even after accounting for the “hot-hand” phenomenon. In Valorant, which requires one side to win 13 rounds for the series victory, there is evidence of performing better than expected after streaks of up to 8 wins, which is perhaps not shocking given the economy aspect of the game.

Third, I compare win percentages in round one versus all other rounds, hypothesizing that there may be some advantage on either side when there is no prior information about how the opponent intends to play a given map in either game. I find one COD map for which there seems to be a significant defensive advantage in round one, but none otherwise.

Finally, I evaluate behavior when teams have two rounds left to win the series, observing a peak in COD offensive win percentages in the 4-4 state, and no such oddity in Valorant.

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1 Introduction

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References