

When Push Comes to Shove: Competing at Home is Disadvantageous in Crucial Chess Games

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Abstract

Is there home advantage in chess—do players win more games when they compete at home rather than away? And, does it matter whether the game is crucial or not?

We test these questions using two data sets, of chess games played in the Israeli adult leagues (N=31,992) and in youth leagues (N=7,653).

We found no overall difference between home and away players' scores, but we did find a robust interaction between home/away and whether the game can be defined as crucial for the result of the entire team-match. Playing at the home club is **disadvantageous** in crucial games. This result, found in adult leagues, was replicated in youth leagues.

Discussion

Home advantage is a well-established phenomenon in different sports. Our results indicate that competing at a home or an away club makes a difference even in chess. However, in crucial games which matter most, the effect is opposite to that found in other sports.

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Methods

Data

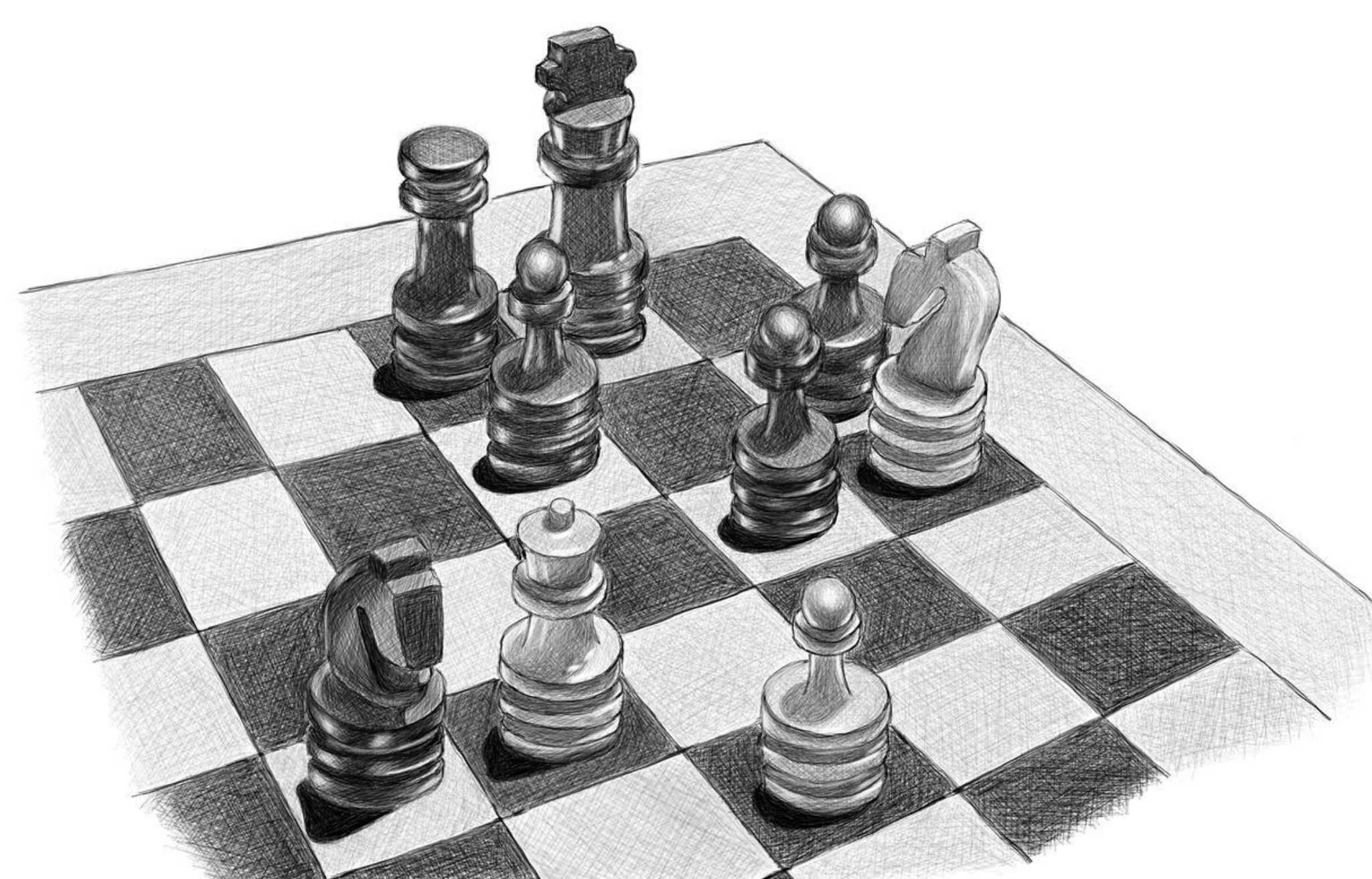
- 31,992 chess games played in the Israeli adult leagues, and 7,653 in the youth leagues, all from 2007 through 2019.
- The data do not include derby-games in which both teams play at their home.
- In both data sets the level of expertise ranges from beginner to grandmaster.
- In order not to double count the data, we analyzed only one, randomly chosen, player from each game.

Home/Away

Whether the match took place in the player's home club. Note that in chess the setting is such that familiarity with the local facilities is irrelevant, nor is there a crowd or referees (which are assumed to affect performance in other sports).

Crucial/Non-Crucial

We define a game as crucial if (and only if) without its outcome the entire match would have resulted in a draw. In other words, a crucial game is one that was decisive for the result of the entire match. It should be noted that winning a match grants a fixed bonus of a point to the winning team's score.



Results

We found no overall difference between home and away players' scores. We did find a significant interaction between home/away and whether the game was crucial—both in adult leagues ($p=0.017$) and in youth leagues ($p<0.01$). Playing at a home club was disadvantageous in crucial games. This finding is robust to the inclusion of additional control variables, such as age, gender, experience, year, and traveling distances. As expected, Elo difference and the pieces color had strong effects on the outcome of a game as well.

VARIABLES	(1) Result	(2) Result	(3) Result	(4) Result
Elo Difference	0.00106*** (0.00001)	0.00105*** (0.00001)	0.00106*** (0.00001)	0.00106*** (0.00001)
White Pieces	0.05478*** (0.00446)	0.05488*** (0.00445)	0.05477*** (0.00446)	0.05476*** (0.00445)
At Home	-0.00233 (0.00434)		-0.00234 (0.00434)	0.00283 (0.00486)
Crucial Game		0.00304 (0.00556)	0.00306 (0.00556)	0.01655** (0.00786)
At Home X Crucial Game				-0.02684** (0.01119)
Observations	31,992	31,992	31,992	31,992
R-squared	0.17670	0.17670	0.17670	0.17686

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

VARIABLES	(1) Result	(2) Result	(3) Result	(4) Result
Elo Difference	0.00113*** (0.00002)	0.00113*** (0.00002)	0.00113*** (0.00002)	0.00113*** (0.00002)
White Pieces	0.02930*** (0.00882)	0.02932*** (0.00883)	0.02932*** (0.00882)	0.02965*** (0.00880)
At Home	-0.00294 (0.00868)		-0.00300 (0.00868)	0.00885 (0.00916)
Crucial Game		-0.00732 (0.01398)	-0.00738 (0.01398)	0.04053** (0.01952)
At Home X Crucial Game				-0.09902*** (0.02847)
Observations	7,653	7,653	7,653	7,653
R-squared	0.29760	0.29762	0.29763	0.29885

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1