

# Rink Effects in the NHL

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# NHL's RTSS system has Rink Effects (REs)

- ▶ Recording of SHOTs (along with x,y coord's), HITS, GIVE, TAKE, BLOCK, MISS inconsistent from rink to rink
- ▶ Noted by many analysts including: Boyle, Zona, Desjardins, McCurdy, Fischer, and Awad.

# Few Analytical Solutions proposed

- ▶ GLOBALLY: Schuckers and Curro (2013) THoR does marginal adjustment across events
- ▶ SHOTs (x,y or distance): mean adjustment (SEVERAL), Krzywicki (2010), CDF adjustment (Schuckers & Curro, 2013), PDF adjustment (Thomas & student, ???)
- ▶ SHOTS (count): Pfeffer (2014) averaging of SHOT/GOAL ratio
- ▶ EVENTs not SHOTS: *crickets*

# General Approach: Schuckers and Macdonald

log-linear model of 5v5 EV Non-Empty Net events per 3600s,  $Y$ , per team  
Fit using 10-fold cross-validation lasso via `glmnet` in R

$\ln(Y+\epsilon) = \text{mean effect} + \text{rink effect} + \text{home ice} + \text{team effect FOR}$   
 $+ \text{team effect VS} + \text{avg score diff} + \text{home*rink (homer)}$

- ▶ Ran model for SHOTs, HITs, MISSs, BLOCKs, TAKEs, GIVEs
- ▶ Ran also for CORSI, FENWICK, TURNS
- ▶ Observational unit is team-game (2 obs per game)

Raw data from `nhlscrapr` for 2007-8 to 2012-13

Full paper at Royal Stat Society Intl. Conf. Sept. 2014

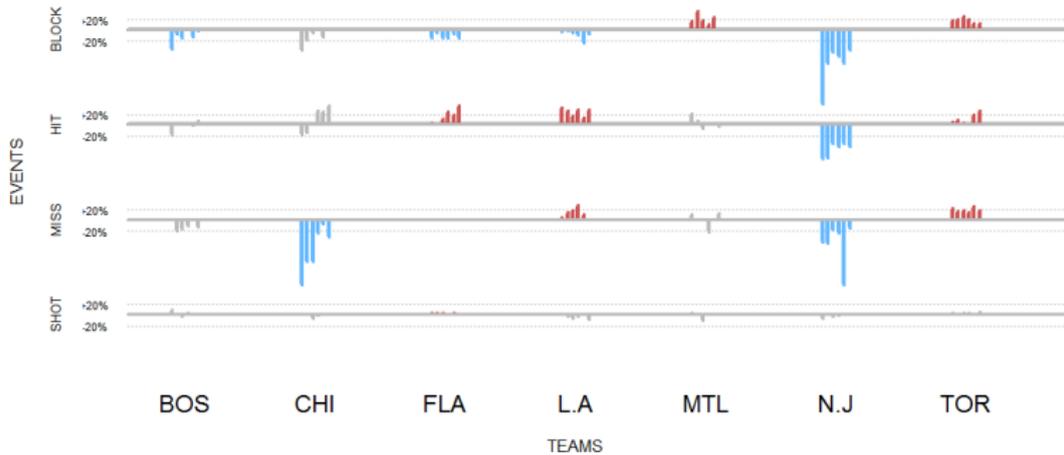
Rink's with significant, persistent problems across 3 of BLOCK, HIT, SHOT, MISS: **FLA, LAK, NJD, TOR**

Table 1 : Significant and Persistent RE's for MISS's

RINK	Effect
CAR	1.198
CBJ	0.860
CHI	0.527
DAL	1.172
EDM	1.112
L.A	1.161
N.J	0.571
TOR	1.245
COL*HOME	0.942
NYR*HOME	1.083

BOS significant and persistent in **BLOCKs, TAKEs (CORsIs)**

Rink Effects by (Selected)Team by Year, 2007-8 to 2012-13



# Links

- ▶ <http://www.habseyesontheprize.com/2013/2/20/4005122/how-reliable-is-the-nhl-com-shot-tracker>
- ▶ <http://www.coppernblue.com/2011/10/17/2495447/dear-oilers-find-new-official-scorers>
- ▶ <http://www.arcticicehockey.com/2010/10/18/1756880/clean-up-your-act-madison-square-garden>
- ▶ <http://www.coppernblue.com/2010/3/30/1396334/rtss-stats-giveaways-takeaways-and>
- ▶ <http://www.inlouwetrust.com/2010/7/8/1559914/blocked-shots-the-new-jersey>
- ▶ <http://www.puckprospectus.com/article.php?articleid=351>