

Home Advantage and Referees: Evidence from the European Rugby Cup

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Outline of Presentation

1. Introduction
2. Literature Review
3. European Rugby Cup – A brief history
4. Data
5. Model
6. Results



Introduction

- Home Advantage commonly observed in sport; often connected with match officials
- Rugby union interesting to study:
 - Home advantage high e.g. 70% Home team wins Top14 (Hogan et. al. (2014))
 - Referee is an instrumental influence on the game (Page & Page, 2014)



Literature Review 1

- Discretionary official 'bias'
 - adding extra time
 - awarding yellow and red cards
 - Spanish (Buraimo et al., 2012) and German football (Sutter & Kocher, 2004)
 - English FA cup (Downward & Jones 2007), English Premier League (Dawson et al., 2007; Buraimo et al., 2010)
 - UEFA champions League (Buraimo et al., (2012).

Literature Review 2

- Home Advantage exists in Rugby
 - Six nations Thomas et al. (2008); Vaz et al. (2012)
 - Currie cup (SA) Pretorious et al. (1999,2000)
- National Referee bias in Super 14 Rugby Union and European Super League (Rugby league)
 - Page & Page (2010)



European Rugby Cup – A brief history

- Launched 1995/1996
 - coincident with IRB's removal of professionalism
- Structure (Group then knock out)
 - Initially 2 teams from France, Ireland, Italy, Wales and Romania
 - 20 teams with inclusion of English, Scottish in 1998/9
 - 16 1998/9 as England withdrew; 24 teams from 1999/00
- Since 1997/98 teams play each other twice in group stages (home and away)
- Rebranded as European Champions Cup with 20 teams 2014/15

Data

- Drawn from all group games from 1995/6 to 2015/16
- Dependent variables
 - Yellow and Red Cards, number of penalty tries
 - Penalties scored etc. depend on other things
- Independent variables
 - Crowd size
 - Referee/team nationality – very small numbers!!!!
- Performance, group etc. controls



Results 1

Table 1: Variables

Variable	Definition	Mean	Std. Dev.	Min	Max
YCAtoH	Number of away yellow cards minus home yellow cards	0.20	0.86	-3	7
RCAtoH	Number of away red cards minus home red cards	0.01	0.20	-2	1
PTHtoA	Number of penalty tries awarded to home minus away	0.03	0.34	-2	3
Season	Seasonal Trend	11.68	5.56	1	21
Group	Pool group membership	3.36	1.66	1	6
BonusIntro	Bonus point introduced	0.67	0.47	0	1
ecc	European Champions Cup	0.04	0.20	0	1
Capacity	Stadium Capacity	0.09	0.29	0	1
Att	Attendance	9403.37	6803.33	300	75569
RefTeamNat	Home team and the referee are the same nationality	0.00	0.03	0	1
RefTeamANat	Away team and the referee are the same nationality	0.00	0.06	0	1
RankDiff	-1x(Home - Away) rank	0.00	1.68	-4	3
ko	Kick off time	5.87E+07	8.32E+06	4.59E+07	7.56E+07
attsrank	Interaction (Att x RankDiff)	2778.22	18680.63	-91784	151138
n=1,356					

Results 2

Table 1. Estimates

t statistics in parentheses

+ $p < 0.10$, * $p < 0.05$

	YCAtoH	RCAtoH	PTHtoA
Season	0.00323 (0.73)	0.000945 (0.92)	-0.000412 (-0.24)
Group	0.00184 (0.13)	0.000258 (0.08)	0.00328 (0.59)
BonusIntro	0.106* (2.04)	-0.00433 (-0.33)	-0.0343 (-1.57)
ecc	-0.166 (-1.24)	-0.00998 (-0.29)	-0.0194 (-0.38)
Capacity	-0.0660 (-0.73)	0.00408 (0.18)	-0.0563+ (-1.83)
Att	0.0000140+ (1.68)	0.000000816 (0.45)	0.0000111* (3.18)
attsq	-2.20e-10 (-1.22)	-3.22e-11 (-1.05)	-1.82e-10* (-3.25)
RefTeamNat	-0.0871+ (-1.87)	-0.00417 (-0.35)	-0.0176 (-0.83)
RefTeamANat	-0.128+ (-1.74)	0.185 (1.03)	-0.0606* (-2.07)
RankDiff	0.0749* (3.13)	-0.0128+ (-1.79)	0.0186+ (1.91)
ko	-2.39e-09 (-0.89)	3.83e-10 (0.57)	1.03e-09 (0.96)
attsrank	0.000000263 (0.12)	0.00000152* (2.21)	0.000000188 (0.25)
constant	0.135 (0.76)	-0.0286 (-0.65)	-0.0851 (-1.16)
n	1,356	1,356	1,356
R ²	0.038	0.010	0.028



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Results 3

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Conclusions

- Crowd effects (non linear with PTs)
- Team strength pressurises
- ‘Outlier’ effects....
 - Home team nationality ‘compensate/sympathy’?
 - Away team nationality - bias



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