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Satellite television and football attendance: the not so super effect

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Previous studies of football attendance in England have produced contradictory results as to the effects of live satellite television coverage of football matches on the attendance of the televised matches. Using attendance data of Aston Villa Football Club's home matches in the Premier League from the 1995/96 season to the 2000/01 season, this note estimates a semi-logarithmic function of attendance. The results highlight a significant negative impact on attendance of live satellite television coverage of 7.75%, *ceteris paribus*, and also suggest that the England national team's performances are important in affecting attendance at Premier League games. Despite concentrating on only one club, this investigation brings into question what effect the new television rights just announced for the next three seasons may have on attendance.

I. INTRODUCTION

The determinants of football attendance and the demand for football is a well documented area of economics. Many studies have examined the effects of various factors, from the weather to ticket prices, on attendance at a football match (see for example Hart *et al.*, 1975; Bird, 1982; Dobson and Goddard, 1992; Simmons, 1996). One important factor in determining attendance is television coverage. Moving support from one football club to another is very unusual, and so one of the main substitutes to attending a football match is to watch the match at home on television. However, despite its importance as a possible substitute for attending a football match, little attention has been addressed to the effect of live television coverage of a football match on attendance.

To the authors knowledge there are two studies that examine, amongst other things, the effect of satellite television coverage on attendance. Baimbridge *et al.* (1996) and Kuypers (1996) both examine the effect of live satellite television coverage of football matches as well as various other factors for all the premier league matches played in the 1993/94 season. In the former study, Kuypers finds no

significant impact of live television coverage on attendance in any of his estimations. Baimbridge *et al.* (1996) find that although live satellite coverage of a football match played on a Monday night has a significant negative effect on attendance of over 15%, the effect of live satellite television coverage of a football match played on a Sunday afternoon on attendance was not significant. So the two studies, findings contradict and create confusion as to the effect that live satellite television coverage has on attendance.

Despite this, to the author's knowledge, no further attempts have been made to quantify the effect that live satellite television coverage of a football match has on attendance. Also, with the new television package for Premier League games announced for the next three seasons, from the 2004/05 season, it will be of interest to examine just what effect live television coverage has on attendance. As a consequence, this note looks to rectify the situation by examining the attendance of home matches in the Premier League of Aston Villa Football Club for the seasons 1995/96 to 2000/01. While the effect of satellite television coverage found will only be the effect on one club, there are few reasons to expect the effects to be any different for the other football clubs involved.

II. MODEL

The attendances of Aston Villa's home matches in the Premier League for the season's 1995/96 to 2000/01 are used as the dependent variable in a semi-logarithmic function, as used by a majority of the previous studies in this area. The function estimated is of the form:

$$\begin{aligned} \text{Attendance} = & e(\alpha_0 | \alpha_1 \text{RTKT} | \alpha_2 \text{DIST} | \alpha_3 \text{DISTSQ} | \\ & \alpha_4 \text{HSUCCESS} | \alpha_5 \text{ASUCCESS} | \\ & \alpha_6 \text{BANKHOL} | \alpha_7 \text{WEEKEVE} | \alpha_8 \text{LGSTART} | \\ & \alpha_9 \text{SKYTV} | \alpha_{10} \text{FACUP} | \alpha_{11} \text{LGCUP} | \\ & \alpha_{12} \text{EURCUP} | \alpha_{13} \text{ENGQW} | \alpha_{14} \text{ENGQL} | \\ & \alpha_{15} \text{ENGQD} | \alpha_{16} \text{S96/97} | \alpha_{17} \text{S97/98} | \\ & \alpha_{18} \text{S98/99} | \alpha_{19} \text{S99/00} | \alpha_{20} \text{S00/01}) \end{aligned}$$

e is the exponential, and *a priori*,

$$\begin{aligned} \alpha_3, \alpha_4, \alpha_5, \alpha_6, \alpha_{10}, \alpha_{11}, \alpha_{12}, \alpha_{13}, \alpha_{16}, \alpha_{17}, \alpha_{18}, \alpha_{19}, \alpha_{20} &> 0, \\ \alpha_1, \alpha_2, \alpha_7, \alpha_9, \alpha_{14} &< 0. \end{aligned}$$

α_8 and α_{15} could be of either sign.^{1,2}

The economic and demographic factors included in affecting attendance are the natural logarithm of ticket prices deflated by the Retail Price Index (RPI), RTKT, and the distance between the two clubs, DIST, and its square, DISTSQ, which is included to capture the likely quadratic relationship between attendance and the distance between clubs (Baimbridge *et al.*, 1996).

The past number of trophies is included for the home and away side, HSUCCESS and ASUCCESS, to capture supporters who are attracted to successful clubs. Cup run dummy variables with prefix FA for the FACUP, LG for the League Cup, and EUR for a cup run in any European competition is included, as are dummy variables to capture the performance of the England national side in qualifying matches for international tournaments, ENG, with the suffix QW representing a qualifying win, QL a loss, and QD a draw. Dummy variables are also included to capture if the game was played on a bank holiday, on a weekday evening, or if the game was played at the start of the season. SKYTV is a dummy variable indicating when a match was shown live on satellite television. S96/97 to S00/01 are season dummy variables intended to capture an expected positive trend in attendances.³ The omitted season dummy variable is S95/96.

III. RESULTS

Table 1 highlights the results of the multiple regression estimation of the natural logarithm of attendance at Aston Villa home matches in the Premier League. The standard errors are heteroscedastic robust in all estimations. The results indicate that ticket prices do not have a significant effect on attendances, nor does the success of Aston Villa or if the match is played at the start of the season. Attendance is minimised for games where the distance between Aston Villa and their opposition is around 91.5 miles. The success of the visiting club is significant and has a positive effect on attendance. For every trophy a visiting club has won, there is a 0.88% increase in attendance, other things equal. Matches played on a weekday evening will have a 7.1% lower attendance, *ceteris paribus*, than matches played at the weekend. Matches played on a bank holiday will have a 14.3% higher attendance than matches not played on a bank holiday, *ceteris paribus*.

An England win in a qualifying match for an international tournament has a positive and significant effect on attendance of 5.4%. Interestingly, the England national team drawing an international qualifying match has a significant negative effect on attendance, with matches played after an England qualifying draw having 8.8% lower attendances, *ceteris paribus*. Matches involving clubs on a domestic cup run do not have significantly greater league attendances. However, matches involving teams on a cup run in European competition will have 5.8% higher attendances, *ceteris paribus*. Interestingly, the results highlight no significant trend in Aston Villa's attendance in the Premier League. Finally, Table 1 highlights that a game televised live on satellite television will have a 7.75% lower attendance than those games not televised live, *ceteris paribus*. There is a significant negative impact of television coverage on attendance at football matches.

IV. CONCLUSION

Despite the caution that must be taken in reviewing these findings, this note has highlighted the significant negative impact on attendance of live satellite television coverage of Aston Villa home games in the Premier League. The negative impact is around 7.75%, *ceteris paribus*. The effect is significantly large to question whether the new television

¹ Previous studies have found that early games in a season could have a positive or a negative effect on attendance. Wilson and Sim (1995) found significantly increased attendances for the first game of the season in the Malaysian Semi-Professional football league for 1989–1991, while Peel and Thomas (1988) found significantly lower attendances, *ceteris paribus*, in all four professional English leagues for the first two weeks of the 1981/82 season.

² The effect of an England draw in a qualifying match will depend on the quality of the opposition. For example, if England were expected to have beaten the team easily, then this could have a detrimental effect on attendance.

³ Premier League attendance has been rising each season, with more than 12.5m attending Premier League games in the 2000/01 season. (www.4thegame.com).

Table 1. OLS estimation of attendance at Aston Villa home matches (Dependent Variable: LN(Attendance))

Independent variables	Estimated coefficient	t-ratio
RTKT	-1.459521	-0.70
DIST	-0.0012663*	-1.72
DISTSQ	$0.692 \times 10^{-5**}$	2.05
HSUCCESS	0.030817	0.35
ASUCCESS	0.0087761***	9.04
BANKHOL	0.143096***	3.27
WEEKEVE	-0.0711568**	-2.28
LGSTART	0.0075047	0.22
SKYTV	-0.0775127***	-2.93
FACUP	0.0089362	0.17
LGCUP	-0.0057689	-0.14
EURCUP	0.0580814**	2.57
ENGQW	0.054261**	2.07
ENGQL	-0.0157054	-0.35
ENGQD	-0.087769***	-2.73
S96/97	0.148493	0.81
S97/98	0.2646672	0.88
S98/99	0.5038964	0.83
S99/00	0.473099	0.57
S00/01	0.3806819	0.55
Constant	5.674831	1.02
R^2	0.65	
$F(20, 93)$	16.91***	
n	114	

Note: *** - $p < 0.001$, ** - $p < 0.05$, * - $p < 0.1$.

rights just announced for the next three seasons (in which even more games are to be televised live on satellite television) will have detrimental effects on attendances in the Premier League. Further investigation is necessary into

this area, which is of great importance to football clubs, and should involve data of more football clubs.

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