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Local Heroes and Superstars – An Empirical Analysis of Star Attraction in German Soccer

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Abstract

Recent studies of the demand for sports clearly indicate that stars play an important role in promoting fan interest. However, on theoretical grounds it is controversial if a star's talent superiority and/or a star's popularity drive match attendance and hence gate revenues. Using longitudinal gate revenue and match attendance data of all clubs in the first German soccer league in a nine year period, the authors analyze star attraction of both locally rooted heroes and national superstars. We find empirical evidence that these groups differ in the way they attract fans: While local heroes enhance home game attendance, superstars mainly increase attendance on the road. Local heroes attract fans by outstanding field performances, whereas superstars facilitate fan support by mere popularity.

Key words: superstar effect, consumer demand, soccer, talent, popularity

JEL Classification: D 12, L 83

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INTRODUCTION

Team composition plays a fundamental role in facilitating fan support: 69% of the European soccer fans say that their identification with and affiliation to the team is largely determined by the particular players a team engages (Sportfive, 2004). Recent studies in the widely and fast growing literature on the demand for sports[1] clearly indicate that outstanding players – so-called stars – play an important role in attracting fans (see i.e. Hausman/Leonard, 1997; Mullin/Dunn, 2002; Berri et al., 2004). Since soccer fans tend to form attachments to particular teams mostly on the basis of geographic proximity (Szymanski, 2003b), we argue that not only well-known superstars but also "local heroes" may play an important role in enhancing fan interest. Defining superstars as players whose market values are in the top 5% quantile of the league's distribution of market values and "local heroes" as the three most valued players of a team that has no superstars, we want to shed more light on the still quite obscure relationship between star players and match attendance. In the theoretical star-literature it is controversial whether stars drive demand by their talent superiority (see Rosen, 1981; MacDonald, 1988) or simply by their comparably higher popularity (see Adler, 1985). Analyzing longitudinal gate revenue and match attendance data of all clubs in the first German soccer league during the seasons 1995/96 – 2003/04, we explore star attraction by both a star's field performance and his popularity. Furthermore we distinguish between locally rooted heroes and national superstars and we investigate their star attraction both in home games and on the road. Our data shows that local heroes attract fans only in home games, namely due to an outstanding field performance. Superstars, however, facilitate fan support on the road - not because of exceptional talent but rather because of mere celebrity status.

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[1] See Szymanski (2003a) or Borland/MacDonald (2003) for a review.

RELATED LITERATURE

Roger Noll (1974) was first to analyze star attraction by introducing a superstar variable in his match attendance study. This superstar variable captured the effect of stars on attendance beyond their contribution to team victories. However, it was not significant. Gerald Scully (1974) stated that players can influence club revenues in Major League Baseball in a twofold way: "Ability contributions to team performance and victories raise gate receipts. (…) Additionally, it is possible that some players may attract fans over and above their individual contribution through the team" (p. 916). Unfortunately Scully did not include the latter effect in his econometric framework. Using a two-equation model, he only related player specific performance statistics to team success and in a second step team revenue to the team's win-loss record and other market characteristics. Scully did not consider star attraction by sheer popularity in his econometric framework.

Hausman and Leonard (1997) empirically analyzed superstar effects on team revenues in professional basketball.[2] They found that the mere presence of stars had a substantial positive impact on club revenues even after controlling for team quality measured by the number of All-Star players in a team. By analyzing all NBA local and national television ratings as well as match attendances, Hausman and Leonard (1997) singled out that – back in 1993 – the estimated value of Michael Jordan for the National Basketball Association (NBA) was $53 million. The study of Hausman and Leonard (1997), however, does not analyze whether the star's performance and/or his popularity increases team revenues.

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[2] Scott et al. (1985), Brown et al. (1991), as well as Burdekin and Idson (1991) already controlled for the effect of a team's star attraction in their analyses of match attendance in the NBA prior to Hausman and Leonard (1997). However, the existence of a potential superstar effect was not their main focus. Of these studies only Brown et al. (1991) were able to find a statistically significant relationship between match attendance and the number of stars in a team.

Berri et al. (2004) extended the work of Hausman and Leonard (1997) by investigating the two-sided relationship between match attendance and both team performance and the team's mere employment of star players in the NBA. By choosing a multiplicative model, they regressed a team's gate revenue on team performance, star popularity measured with received All-Star votes, franchise and market characteristics. Their results suggest that it is performance on the court, not star popularity, which attracts fans. The study of Berri et al. (2004) treats team wins as exogenously given by the stars' talent. They do not analyze how stars exactly influence team performance.

Mullin and Dunn (2002) define "star quality" in Major League Baseball as the residual in a fit of a player's card prices to performance statistics. They acknowledge that star quality brings fans to the stadium and impacts team revenues in a significant way beyond pure field productivity. Mullin and Dunn (2002) determine a player's marginal revenue product running a three-step process involving the sequential determination of (1) the effect of an individual's performance on team performance; (2) the effect of team performance on winning percentage; and (3) the impact of winning percentage and a player's star quality on attendance and hence on revenues. They found clear evidence that stars may influence gate revenues both by their talent which is translated into field success and by their popularity[3].

CHARACTERISTICS OF GERMAND SOCCER

German soccer enjoys high popularity. According to a representative survey of the Sportfive-company, 77% of the German population are interested in soccer. 39% of them quote that they cannot even imagine a life without soccer (Sportfive, 2004). This high enthusiasm is reflected in hard facts: The financial turnover of the German soccer leagues topped 1.5 billion

[3] Note, that the term "star quality" from above only reflects the popularity aspect of stars.

Euros in the 2004-2005 season (Bundesliga, 2006). At the same time, average match attendance in the first Bundesliga increased to 36’900. No other soccer league in Europe attracts more fans at the gate than the first Bundesliga (Jones/Boon, 2005).

Most football supporters express allegiance to a particular club. Their attendance is largely an expression of support for that club. Spectators who attend out of purely neutral interest tend to represent a minority at soccer matches (Simmons, 1996). Supporters are often organized into supporter clubs, which raise the social component of a sports event. The geographical distribution of fan bases varies largely between different teams of the league. While some are more locally rooted, others have supporter clubs all over Germany (Czarnitzki/Stadtmann, 2002). Bayern Munich for example appeals rather nationally. Only 29% of all Bayern fans actually live in Munich. Hansa Rostock, on the other hand, has strong local roots. 68% of their fan basis lives in Rostock. Even though Bayern Munich had an average home match attendance of 54’882 in the 2003-2004 season, this only represents 9.1% of Munich’s male population. In the case of Hansa Rostock, however, match attendance corresponds to 22.9% of the male population in the home town (see Table 1).

	Bayern Munich	**Hansa Rostock**
Average match attendance	54'882	22'323
Portion of local attendance	29%	68%
Male population	602'708	97'567
Match attendance in percentage of male population	9.1%	22.9%
Number of superstars	7	0
Number of players in national teams	14	4
Number of players nominated for the "Player of the Year"-election	6	0

Table 1: Comparison of Bayern Munich and Hansa Rostock in the 2003-2004 season (Source: Sportfive, 2005, own calculations)

While Bayern Munich had seven superstars with a market value in the top 5% quantile of the league and six players were nominated for the "Player of the Year"-election[4] in the season 2003-2004, Hansa Rostock had none of these superstars. However, supporters of Hansa Rostock are very unlikely to regard a Bayern Munich match as a perfect substitute for watching "their" team. Explanations for this imperfection may be found either in economic reasons like travel costs or in the intangible allegiance or loyalty to a particular team. Therefore, the market for admission to Hansa Rostock home games bears features of a local monopoly. Of course, Hansa competes for spectators with other clubs (including those in other leagues) and with other leisure attractions. No club is a monopoly in an absolute sense (Forrest et al., 2002). However, the high affiliation of local fans leads to a situation, in which Hansa Rostock has discretion over a level of admission prices. And, therefore, outstanding players of small teams, such as Hansa Rostock, may attract fans without having a nationwide appeal. We call them local heroes.

STAR ATTRACTION

The existing theoretical literature on superstars (Rosen, 1981; Adler, 1985; MacDonald, 1988) suggests two main ways how stars attract fans: by outstanding talent and exceptional performance and/or by remarkable popularity.

Star Performance

Sherwin Rosen, who wrote a seminal paper on "The Economics of Superstars" in 1981, derives the existence of superstars from the premise that consumers consider lower quality as an imperfect substitute for higher quality. According to Rosen, spectators want to see the best

[4] The *Kicker* soccer magazine organizes an annual voting for the "Player of the Year". At the end of the 2003-2004 season approximately 3400 sports journalists were asked to vote for any player in the German league or any German player in any other league.

players under the ceteris paribus assumption. Watching a succession of mediocre soccer games does not add up to a single outstanding performance. Therefore, small differences in talent translate into large differences in fan support. In line with Rosen (1981), we postulate that stars attract fans and generate disproportional high gate revenue by their outstanding field performance.

Soccer is a highly interactive game based on the combination of complementary player skills. Together with relatively low scores and limited 'set' plays, the interactivity does not facilitate decomposition, record and measurement (Carmichael et al., 2001). Hence, in soccer we do not have the depth of player performance indicators available for more individualistic North American team sports such as baseball and basketball (Lucifora and Simmons, 2003). However, one performance characteristic that is clearly identifiable and measurable is goal scoring. Since winning depends on a positive goal difference, goal scoring and preventing the opposition to score are the critical success factors of a game. In our empirical study we, therefore, measure field performance by counting the goals and the assists defined as final pass before a goal being scored. In addition, we incorporate a dummy if a team has a local hero or a superstar as goalkeeper.

Star Popularity

In contrast to Rosen, Moshe Adler, stated that stars do not necessarily need to have superior talent. They may just be more popular and attract fans by their high profile and celebrity status. In Adler's logic the appreciation of a star's performance increases with the knowledge the consumer has about the star. The more popular a soccer player is, the easier it gets to accumulate this so-called "consumption capital". According to Adler (1985) there is more than mere quality that attracts fans. Mullin and Dunn (2002) describe the star's popularity of a baseball player as an intangible characteristic that attracts fans who pay to see these stars even when their playing performance is not more than mediocre: "Star quality thus consists of both

reputation based on past performance and charisma above and beyond actual playing ability" (p. 621). Stars may have a "personal appeal" that activates fan interest even after controlling for their team's (increased) quality (Hausman/Leonard, 1997).

To identify the Adler-star effect, we measure a player's popularity by counting how often star players are quoted with name and first name in more than 20 German newspapers and magazines.[5] Of course, press citation rather reflects publicity and is only a proxy of a player's popularity. However, publicity such as coverage in tabloids, magazines or newspapers is strongly related to popularity (Adler, 2006).

ECONOMETRIC FRAMEWORK

Data and dependent variable

The analyzed sample contains data on all 18 clubs in the first German league over nine seasons – beginning with the 1995-1996 season and concluding with the 2003-2004 season. Due to the high profile of the first Bundesliga as the highest German soccer league, we rule out substantial star attraction for players appearing in lower leagues.[6] The composition of European soccer leagues changes annually through promotion and relegation. The three best teams from the second Bundesliga are promoted to the first league in the following year, while the weakest three clubs of the first Bundesliga are relegated.

Since 30% of all matches were sold out, match attendance data alone does not properly reflect consumer demand. The stadium size acts as a constraint on attendance. We try to circumvent this problem by using gate revenues as dependent variable for home games. The underlying

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[5] The used database contains quality nationwide newspapers (including Frankfurter Allgemeine Zeitung, Süddeutsche Zeitung, Stuttgarter Zeitung, Hamburger Abendblatt, Die Welt, taz, Berliner Morgenpost, Financial Times Deutschland) and weekly magazines (including Der Spiegel, Stern, Bunte).

[6] The average match attendance in the second Bundesliga is approximately one third of the match attendance in the first Bundesliga.

assumption is that gate revenues incorporate price adjustments due to rigid supply constraints. Although match attendance is limited by the stadium capacity, gate revenue is not restricted and, therefore, allows for full variation in the dependent variable (Berri et al., 2004). For the analysis of away games only attendance data is available since gate revenue data is not separated into single match days. The bias of censoring, however, is moderated by the fact that, concerning attendance on the road, all clubs face the same capacity constraint (or almost).

To identify the relationship between a team's star performances and a team's star popularity with match attendance, a set of control variables is needed to eliminate alternative explanations such as team or market characteristics.

Controls

Besides the 27 team dummies[7] we also control for a simple time trend, club idiosyncratic factors like a team's reputation (REP20) or the stadium capacity (CAPACITY) and market characteristics. Czarnitzki and Stadtmann (2002), who analyze the determinants of match attendance in the first German soccer league, identified a strong relationship between reputation measured by past field success and match attendance. Teams that enjoyed success in the past are expected to have stronger fan support than other teams which had less success. The measure REP20 takes into account the performance of a particular team over the last twenty years according to the following formula:

$$REP20 = \sum_{t=1}^{20} \frac{18}{x_t \sqrt{t}}$$

[7] Due to promotion and relegation 28 different teams appeared in the first Bundesliga during the considered time-frame. Because FC Koeln's seasonal home gate revenues came closest to the league's average home gate revenues, it was chosen as the reference team. We will come back to our reasoning behind this fixed effects approach in the next subsection.

x_t is the team's final rank in the championship t years ago. In case that the team did not play in the first German league in season t, the corresponding summand is set equal to zero. By weighting the rankings with the square root of the number of years past, the index is constructed to reflect the depreciating effect of time (Czarnitzki/Stadtmann, 2002).

The stadium capacity (CAPACITY) is expected to have a positive impact on a team's gate revenues.[8] The higher a stadium capacity, the more people may attend a game without increasing ticket prices. Berri et al. (2004) found a significant positive relationship of stadium capacity and gate revenues in the NBA.

In addition to the mentioned team characteristics, we also use three variables controlling for specific market characteristics like the male population (MEN) and the unemployment rate (UNEMP) in the home town and the competitive balance of the league (CB).

European football fans typically tend to form attachments to particular teams on the basis of geographic closeness (Szymanski, 2003b). Thus, the size of the population in the potential market for a particular team is expected to positively relate to gate revenues (Borland/MacDonald, 2003; Falter/Pérignon, 2000). Since football is rather a men's game[9], we only count the number of males in town.

Borland and MacDonald (2003) suggest that attendance at sporting events may constitute a social outlet for unemployed persons, so that (other things equal) attendance is higher as the rate of unemployment increases. On the other hand average income, which is positively associated to match attendance, decreases. Therefore, the forecasted effect of the unemployment rate on match attendance is not clear.

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[8] Since the (home) stadium capacity is irrelevant for attendance on the road, the control variable CAPACITY was omitted in our analysis of away game attendance (see Table 3).

[9] Stollenwerk (1996) shows that the share of women among spectators in Bundesliga matches usually varies between 3% and 18%.

In addition, we also control for seasonal competitive balance using the Herfindahl-Index which measures the concentration of points among the participating teams. The higher the Herfindahl-Index, the lower the competitive balance. According to the uncertainty of outcome-hypothesis (Rottenberg, 1956), higher competitive balance increases fan interest. In Table 2 the set of variables as well as descriptive statistics are listed.

		Teams with Local Heroes		Teams with Superstars	
Variable	*Description*	*Mean*	*SD*	*Mean*	*SD*
Dependent variables					
LNREVENUE	Logarithm of gate revenues	15.70	0.56	16.28	0.50
LNATTAWAY	Logarithm of match attendance on the road	13.18	0.09	13.26	0.13
Independent variables					
Star-Performance					
GOALLH	Average goals of local heros within a team	3.99	2.93	—	
GOALSS	Average goals of superstars within a team	—		6.29	4.16
ASSISTLH	Average assists of local heroes within a team	2.73	1.67	—	
ASSISTSS	Average assists of superstars within a team	—		4.15	2.49
GKLH	Local hero goalkeeper (dummy)	0.19	—		
GKSS	Superstar goalkeeper (dummy)	—		0.17	—
Star-Popularity					
MEDIALH	Average citations of local heroes in the German press	76.38	97.00	—	
MEDIASS	Average citations of superstar in the German press	—		217.70	205.55
Control variables					
NUMSS	Number of superstars	—		3.16	3.74
REP20	Reputation by rankings in the first Bundesliga over the past 20 years	12.75	11.77	33.99	24.89
CAPACITY	Stadium capacity (in 1'000)	38.09	16.25	51.09	17.24
MEN	Male population in the hometown (in 10'000)	28.15	26.72	38.14	42.47
UNEMP	Unemployment rate (in %)	12.08	3.74	12.42	3.88
CB	Competitive balance (Herfindahl-Index in %)	5.93	0.11	5.93	0.11

Note: The model also includes 27 team dummies and a time trend which are not reported.

Table 2: Variables and descriptive statistics

Table 2 indicates that teams with superstars generate almost twice the gate revenue of teams with local heroes. Superstars score 58% more goals and give 52% more assists than local heroes on average. Concerning press quotations the difference is even larger: the probability that a local hero is mentioned in the press is almost three times lower than with superstars.

Estimation Approach

Recall from above that our dataset contains all teams, which played in the 1. Bundesliga during the period 1996-2004. It is well known that panel data structures like ours require special econometric modeling, namely fixed-effects or random-effects. As can be seen from Table 2, we have decided to adopt a fixed-effects model in this framework. Let us quickly restate the underlying assumptions of these models, to show why we believe this choice to be appropriate for our analysis.

The fixed effects model assumes the following specification:

$$y_{it} = \alpha_i + x'_{it}\,\beta + \varepsilon_{it}\,,$$

where x_{it} is a K-dimensional vector of explanatory variables.

In comparison to that, the random effects model does not allow the fixed effects (α_i) and the regressors to be correlated, i.e. $\mathrm{cov}(\alpha_i, x_{it}) = 0$; t = 0,1,.., T . However, in our empirical setting, this assumption does not seem reasonable. The fact that Bayern Munich may always have higher revenues from attendance than Hansa Rostock can be expected to be correlated with some regressors. For example, higher revenues might come from a higher degree of continuity in different fan generations. This might well be correlated with the team's reputation. Thus, we expect the fixed-effects model to provide superior performance. This reasoning is supported by our empirical results of the Hausman specification test.[10]

Having determined the correct model specification, we have to deal with another problem in our analysis, namely the potential existence of a sample selection bias. This may result from our distinction between superstars and local heroes and their influence on home and away games: While models 1 and 2 denote home game gate revenue and attendance on the road of

[10] Performing the Hausman specification test (Hausman, 1978), which compares the fixed effects model with the random effects model, we can reject the null hypothesis in three of four models on a 1% level of significance. The Hausman specification test, therefore, confirms that team-level effects are inadequately modeled by a random effects model since they are correlated with the explanatory variables.

teams with local heroes, models 3 and 4 measure star attraction on home field gate revenue and attendance on the road concerning teams with superstars. The four sub samples are unbalanced panels for two reasons: Firstly, some teams do not always play in the first Bundesliga due to promotion and relegation. And secondly, a team's engagement of superstars versus local heroes may change over the seasons. Since the reason why a team leaves a certain sub sample (called attrition) is not random and therefore expected to be correlated with the idiosyncratic error – those unobserved factors that change over time and affect match attendance – resulting sample selection problems can cause biased estimators. However, by our choice of a fixed effects model, this problem is already moderated as fixed effects analysis allows for the attrition to be correlated with the unobserved effect (Wooldridge, 2003). Thus, we explore star attraction only within one team given the existence of a certain type of star players.

Results

Table 3 shows all the β-coefficients, the estimated standard errors as well as the levels of significance of both teams with local heroes and teams with superstars.[11]

[11] Whenever correlational designs are used, concerns about internal validity such as possible reverse causality may be raised. However, since star identification happens in the beginning of a season on the basis of market values while the performance, popularity and attendance data is collected during the season, the issue of reverse causality (impact of revenues on the number of stars a team engages) is appeased by this lag structure.

	Teams with local heroes				Teams with superstars			
	Model 1		Model 2		Model 3		Model 4	
	Home game gate revenue		Attendance on the road		Home game gate revenue		Attendance on the road	
Variable	*β-coef.*	*Std.Error*	*β-coef.*	*Std.Error*	*β-coef.*	*Std.Error*	*β-coef.*	*Std.Error*
GOALLH	0.0210 *	0.0123	0.0000	0.0044	—		—	
GOALSS	—		—		0.0003	0.0082	-0.0053 *	0.0027
ASSISTLH	0.0169	0.0196	0.0006	0.0071	—		—	
ASISSTSS	—		—		0.0262 *	0.0138	0.0018	0.0045
GKLH	0.1586 **	0.0617	-0.0021	0.0223	—		—	
GKSS	—		—		0.0247	0.1278	-0.0543	0.0393
Joint significance of star-performance	Yes* (F-value: 3.61)		No (F-value: 0.01)		No (F-value: 1.76)		No (F-value: 2.04)	
MEDIALH	0.0002	0.0003	0.0002	0.0001	—		—	
MEDIASS	—		—		0.0000	0.0002	0.0002 **	0.0001
NUMSS	—		—		0.0228	0.0202	0.0092	0.0060
REP20	-0.0494 **	0.0103	-0.0004	0.0035	-0.0049	0.0059	-0.0012	0.0020
CAPACITY	0.0247 **	0.0060	—		0.0057	0.0030	—	
MEN	-0.0744	0.0527	-0.0107	0.0191	0.0404	0.0540	-0.0047	0.0178
UNEMP	-0.0116	0.0170	0.0220 **	0.0062	0.0429	0.0250	0.0216 **	0.0082
CB	0.0990	0.2142	0.0926	0.0777	0.1032	0.2678	-0.0229	0.0882
YEAR	0.0380 **	0.0117	0.0228 **	0.0043	0.0582 **	0.0155	0.0106 **	0.0051
Team fixed effects	Yes** (F-value = 12.81)		Yes* (F-value = 1.87)		Yes** (F-value = 3.46)		Yes** (F-value = 3.48)	
adjusted R^2	0.90		0.53		0.85		0.75	
Number of observations	86		86		76		76	

Note: Significance levels: * 5% ; ** 1%; Significance tests are one-tailed for directional independent variables and two-tailed for control variables. Based on the Breusch/Pagan-test for heteroskedasticity (Breusch/Pagan, 1980), no heteroskedasticity was detected.

Table 3: Estimates of a team's star attraction

German soccer enjoys increasing fan interest. Our data delivers a clear and significant positive time trend in all four models. Gate revenues of superstar teams increase 5.8% every year, whereas in smaller teams revenues go up by 3.8%.

Referring to star performance joint significance is found only in model 1: Exceptional talent of local heroes clearly increase home game attendance and hence home team gate revenues. Superstars, however, attract fans mainly on the road and basically by their popularity and not by their talent. Superstar goals even decrease away game attendance at about 0.5%. Concerning local heroes the popularity effects are not significant.

The high adjusted R-square should not attract too much attention, since the team dummies explain a lot of the variance in the dependent variable (except in model 2). The team fixed effects are significant in all four models. Concerning the control variables we see that the unemployment rate in the home town is positively related to attendance on the road. It seems that the lower opportunity costs of unemployed persons dominate over the negative income effect.

DISCUSSION

The home team generally activates more fans than the away team.[12] Therefore, team-specific star attraction depends on where the game is played, at home or on the road. Let us first consider the star influence on home field gate revenues. Our results show that the actual field performance increases revenues only in the case of local heroes. Goals or assists of superstars, however, have no joint significant impact on gate revenues. The more balanced talent distribution in top teams could offer an explanation for that finding: Bayern Munich for example engaged 4 to 12 (!) superstars, while other clubs have one or two outstanding players, and the other team mates are in charge of the "donkey-work". While highly talented stars in mediocre teams may quite easily stick out and become local heroes, stars in top teams even have to compete to be in the starting squad. The career of a star player generally starts in locally rooted amateur clubs, where a truly talented player easily predominates the field. The higher a player climbs the career ladder, the more difficult it gets to maintain performance records. It seems that rising star players have to first prove their superior talent (which clearly attracts fans in lower-level teams). By moving to top teams and reaching superstar status, their talent looses its distinctive feature to differentiate them from the rest of the team.

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[12] Since the audience is generally dominated by the home team fans, Knowles et al. (1992) found that attendance is maximized in MLB when the probability of home team winning was 60%.

According to Hausman and Leonard (1997) star attraction is mainly determined by a positive externality on the match attendance figures of other teams in the league. A study of home game gate revenues alone does not properly incorporate this positive externality. Instead, the true power of a star may lie in his ability to enhance attendance on the road (Berri et al., 2004). Our results show that star attraction clearly differs between home games and away games. As already said, match attendance in German soccer is generally dominated by home team supporters. These spectators want "their" team to win.[13] Star players of the away team therefore have an ambiguous fan impact. On the one hand, home team supporters are excited to watch "their" team playing against famous soccer celebrities. On the other hand, high star performance of the opposite team decreases attendance since the fans are quite certain of a negative outcome for their favored team. In the case of superstars (model 4) we exactly found this twofold relationship. Superstar goals decrease away game attendance because this makes potential giant-killing more unlikely. A superstar's popularity, however, attracts fans on the road. Superstars would need to be quoted over 26 times on average to equalize the negative impact by scoring one goal per superstar. Since superstars have 218 quotes and 6.3 goals on average, the net effect is still expected to be positive. Even though the home team is less likely to win due to the outstanding talent of opponent star players, home team supporters will still not miss watching the celebrities. As expected, local heroes though do not have a nationwide appeal. They do not significantly influence attendance on the road.

CONCLUSION

Analyzing gate revenue and match attendance data we find evidence for star attraction in the first German soccer league. However, the exact channel of generating this attraction (by field

[13] Borland and MacDonald (2003), who did a literature review of the demand for sports, state that there is overwhelming evidence that attendance is positively related to home-team performance. Winning percentage of the home-team clearly increases home game match attendance.

performance or popularity) largely differs depending on firstly whether a player is a nationwide superstar or a local hero and secondly whether home field revenue or attendance on the road is investigated. Since match attendance is generally dominated by the home team supporters, away team stars have ambivalent appeal. Fans fear their goals; as a result, they reduce the home team's winning probability and decrease, therefore, match attendance on the road. Popularity of superstars, however, attracts fans. To them, it seems to be a special excitement to watch "their" team playing against well-known soccer celebrities.

Concerning home games we fail to discover significant star attraction by superstars. Neither star performance nor star popularity exercise major impact on gate revenues. Local heroes of lower-level teams, however, attract fans by their exceptional field performance. We show that the home team's gate revenues increase by 2.1% if the local heroes score one more goal on average. Popularity is of no concern referring to local heroes.

Even though our study provides new evidence on different types of star attraction in German soccer, we do not explicitly address transitions between local heroes and superstars. We are not able to link individual career paths with the team's financial or field success. Thus it still remains to be examined how player specific star attraction changes as rising stars climb the ladder.

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