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on the

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– Empirical evidence from Germany –

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Abstract:

The demand for football tickets in European top-leagues has been subject of several studies within the last years e. g. in France, England and Germany. These papers focussed mainly on single matches and the significance of factors like uncertainty, performance of the clubs or date and time of a competition. In contrast this paper tries to build up a simple model to estimate the average number of visitors in the course of a whole season. Moreover the market entrance of a second club is considered. While in stage one an old-established club represents a regional monopolist, in stage two another club qualifies itself for playing in the first division what breaks up the old monopolistic position. Finally the model assumptions are compared to empirical findings from Germany and its major league.

JEL Classification: *L, R*
Key Words: *sport economy, professional sport leagues, market entry*

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1. Introduction

Working on sport economy one cannot avoid to deal with football[1], too. It is known to be the most popular sport in Europe as well as in wide areas of the rest of the world. Beside the world championship (every four years) and the tournaments which identify the champions of each continent (e. g. Copa America, European Championship) the national leagues are the most important institutions of worldwide football.

Regarding the first German division (Bundesliga) it can be stated, that more than 99% of the German population know the 'product" and nearly 35,000 jobs are depending on the football league (DFL, 2008). Regarding England, the Premier League was able to reach nearly three billion people in more than 200 territories worldwide only in the last season. More than 1,700 hours of match coverage was broadcasted each week (Premier League, 2007). Similar facts that demonstrate the economic importance of national leagues could be given as well for other countries like Spain, France and Italy.

In a sports league each team finds itsself in a – from an economic point of view – unusual situation. On the one hand it has to cooperate with a number of other teams e. g. in creating a playing schedule and implementing a system for player tranfers, on the other one each team is involved in a contest for the championsship. So-called rat races depict a specific danger for sport leagues (Franck/Müller, 2000) and result from the fact that only one match could be responsible for the future of a complete sports club. In a case where only one team gets into financial trouble the whole league is endangered because of the incertitude if a running season can be completed. This is why most sport associations try to ensure the reliability of the clubs by a license system. For being licensed each sports club has to prove a balance between earnings and expenses.

In this context the present paper is going to deal with earnings generated by selling tickets. Beside ticketing income is mainly generated by three other groups which are sponsoring, selling TV-rights and merchandising. In European countries the importance of these groups is differing. During the last years the Bundesliga was known to be the only league where each group was responsible for about one fourth; in other countries the percentage of income by selling TV-

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[1] The expression *football* is used in this paper for European football as well as for soccer in the US-American sense.

rights can be significant higher. The major question discussed here should not be what drives a potential spectator to visit the stadium. A short overview about the most popular surveys dealing with this question can be found in chapter 2, followed by some aspects explaining the organization of Germany's football leagues and the economic importance. In chapter four we ask for the potential influence of a new club appearing in a city where another club is established since a couple of years and assume a model which bases upon a standard Hotelling-model to show the effect of a second club arising and breaking the regional monopoly. Finally the theoretical findings are compared with a short study from Germany covering the last decades (chapter 5). The paper ends with a critical examination of the results.

2. The demand for tickets in sport economy: Findings from other investigations

Sport economy can look back on history of more than fifty years. Three important papers which should be named here are the works of Rottenberg (1956) who was the first who realized the uncertainty of outcome to be important for a sports match attendance, Neale (1964) who worked out the famous Louis-Schmeling-Paradox and showed that it is not the aim of a sports club to become too dominant in a league[2] and finally El-Hodiri/Quirk (1971) building up a formal model to explain under what conditions a league shows a tendency toward equalization of playing strengths.

During the last years the demand for tickets was analyzed in a constant growing number of papers which obviously shows a rising interest in this field of sport economy. Most popular have been the US Major Leagues and European football leagues. But beside this focus there can be found studies for a couple of other sports including a panel study on the attendance of Australian Rules football (Borland/Lye, 1992), British rugby (Jones/Schofield/Giles, 2000), cricket (Paton/Cooke, 2005) or Korean baseball (Lee, 2006) to name just a few.

Concentrating on the question what drives the European football fan to visit the stadium there are studies for France (Falter/Pérignon, 2000), Switzerland

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[2] A second, maybe even more important but less popular aspect, is the fact that Neale was the first one who introduced the term of the firm not for each single club but for the complete league. Some critical aspects of this idea can be found at Noll (2003)

(Baranzini/Ramirez/Weber, 2008), England (Bird, 1982, Peel/Thomas, 1992, Simmons, 1996, Forrest/Simmons, 2006), Spain (García/Rodríguez, 2002) and of course Germany (Czarnitzki/Stadtmann, 2002).

One of the main differences (beside the discipline) that are stated in literature about ticket demand is the question if the study covers only a short period (one up to five seasons) or if it covers a longer term (up to several decades). In the first case factors like day and time of the match or weather effects are considered to analyze the ticket demand while in the second case these aspects can be left out. Instead factors like total consumer expenditures, unemployment rate or the long-term success of each team are included.

Disregarding the question of what period is analyzed there can be detected several main fields of interest which are: the importance of uncertainty in a match or a season, price elasticity and the effect of TV-coverage on attendance figures. Moreover a lot of club specific factors such as win probability of a team, goals per match, and a superstar playing for the team or a "derby-factor"[3] are considered.

Looking at the uncertainty the general assumption can be summed up as follows: The more uncertain the outcome of a match, the higher is the demand for tickets. It might be surprising that this statement is not be verified in all studies. Czarnitzki and Stadtmann (2002) e. g. conclude "that uncertainty plays only a minor role in explaining attendance figures in the first German football league". Forrest and Simmons (2006) even failed to deliver any significant effect of uncertainty on a 10% significance level[4].

Dealing with the question of the price elasticity one has to decide if whether or not the ticket price should be regarded as an exogenous variable. Peel and Thomas (1992) e. g. left it out saying that the price is endogenous. Garcia/Rodriguez (2002) point out that most empirical surveys do not include the price. Beside the question if it is an endogenous variable or not, researchers are faced with several problems concerning the data if they decide to consider the ticket price. First one has to realize that there is no uniform price for all tickets. Rather all clubs use price discrimination to make a difference between standing

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[3] This expression describes a match between two clubs which are located very near to each other or teams which are competitors since a long period. In this case the demand for tickets is much higher than for *normal* matches.

[4] On contrast to the results of these studies regarding football, Knowles/Sherony/Haupert (1992) could state that the uncertainty of outcome is a significant determinant of attendance for baseball in the US.

room and business seats for example. Not all kinds of tickets are offered by all clubs which makes a comparison even more difficult. Moreover one has to find a solution how to deal with season tickets which are known to be cheaper than tickets for a single match. One of those surveys including pricing worked out that there is no uniform income elasticity of demand for football in England. Instead it could be shown that the demand is less elastic for the first than for other divisions (Bird, 1992). Moreover football tickets (in England) seem to be inferior goods (ibid). In contrast this fact could not be confirmed by Simmons (1996). Finally it has to be stated that the findings regarding price and price elasticity seem not to be very robust in general.

A last popular aspect is the effect of TV-coverage on the demand for tickets. Although some studies find a negative impact of live broadcasting on gate attendance Forrest and Simmons (2006) once again could not prove a general adverse effect of broadcasting of a match and its attendance.

Nearly all authors used a restricted model to analyze the demand. A restriction is necessary if a match is reported full capacity. In this case it is not possible to realize if the demand for tickets was just at the capacity of the stadium or if thousands of tickets could have been sold above this level.

Ending up it can be said that most of the findings of the named surveys can be regarded to be quite robust because of a big number of observations; only one season in a European top league provides about 300 matches. An aspect which has not yet been considered as far as we know is, if there are any significant differences between the different European top leagues.

3. The Bundesliga and its economic importance

The following chapter should give some short information about Germany's first division, the Bundesliga and the economic consequences.

The league itself was founded in 1963; until the season of 1962/63 Germany's top clubs were structured in four different leagues in the western part and separate division in Western Berlin. The season of 1991/92 was the first one in which clubs from the reunified Germany played in a single division (18 from Western Germany and two from the former GDR). Today 18 professional clubs are representing the first division. As it is a so-called open league these clubs are changing from year to year. During the last years three clubs from the second

division substituted the last three clubs from the premier league every year. From the topical season on games will take place relegation again, so that there might be less than three "new" clubs joining the first division[5]. Today the champion is detected by a round-robin system, where every club has to play twice against all other clubs. A victory scores for three points, a draw is benefited with a single point. Up to now there are no play-offs or any kind of final series known or planned. Before 1963 a kind of play-offs was in use as it is known from the US major leagues. The different "conferences" determined the best club of a complete season on their own. The national champion was played out in some final matches between those regional champions.

Analyzing the ticket demand in Germany one has to use a restricted model as a lot of matches are sold out. The average number of visitors was nearly 39,000 during the last season what corresponds to a total number of 12 million visitors[6]. Respecting this figure the Bundesliga has to be acknowledged to be the most successful league in Europe which might depend on entrance fees that are quite low in comparison to England or Italy. Regarding TV-coverage every single of 306 season matches are visible live on pay-TV in Germany. Moreover there are several free-TV shows broadcasting the most important scenes from every match in the evening. Weekday and time of the matches have changed for several times during the last years. In general most of the matches start on Saturday afternoon. Moreover there are matches on Friday and Sunday evening; however intra-week matches are quite rare.

In this context only these few aspects are named. Those readers who are interested in the history of the league should be referred to Giersberg (2003) who is giving an overview of 40 years national first division. A more general approach can be found at Pyta (2004) who analyzes the history of German football for more than 100 years. Both publications are only available in German language.

The economic influence of sport events in a region or country has been subject of several studies especially in Germany after the 2006 FIFA World Cup.

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[5] In early times it was possible to qualify for the Bundesliga without showing an appropriate sport performance. Famous is the case of Tasmania Berlin, a club that was invited to the league because of political reasons: A club from Berlin should be playing in the Western Germany premier league. Until today Tasmania is well-known as the worst team ever that joined the Bundesliga in more than 40 years.

[6] For this data and many more see http://www.bundesliga.de/de/statistik/, the online data bank in German language.

Most of them are just dealing with short-term effects on employment, income and taxes. The German Football Association points out that 3.4 billion EUR have been invested in infrastructure and stadiums; 1.3 EUR billion additional taxes have been paid by foreign visitors and those Germans who stayed within the country during the World Cup ('Home Stayer') in 2006. But up to now there are no scientific studies dealing with the long-term effects of so-called mega-sports-events like Olympic Games; the assessment is regarded to be very difficult in the long run (Stettler, 2000).

For the case of single football clubs we do not know any scientific study explicitly dealing with the economic impact on the region. But it is obvious that there has to be any influence. Regarding the latest study European top clubs are able to be responsible for revenues of more than 300 million EUR p. a. which are increasing since years (Deloitte, 2009). In fact European major players like Real Madrid or Chelsea London are nothing else than companies with the aim of maximizing their profits – a development which is known from the US since decades (Hübl/Swieter, 2002). Beside their own economic activities (ticketing, merchandising etc.) we are able to realize two aspects implementing monetary effects for the region/city. First, this is an effect on tourism caused by fans travelling to see their club. This aspect might be neglected in the case of the Bundesliga for two reasons: Most of the fans are living in the city itself or in the surrounding area (with only few exceptions) and those who are travelling to the match are usually going by bus driving back after the match instead of staying for a second day. A major league football match differs from an international championship in this case.

Secondly and more important there is an effect on the local infrastructure. Most stadiums have been brought up to date within in last years and in nearly no case the costs have been paid only by the club. Normally the local government covers a fixed percentage of the costs to support the club and the region. The effect of investments like this on income and employment is not undisputed. While a couple of studies come to the conclusion that infrastructure projects create a surplus of social welfare, Dietl/Pauli (1999) state that costs are underestimated in a lot of cases. Moreover several authors neglect the fact that money invested in sport stadiums cannot be spent for other projects (e. g. for supporting schools etc.).

A last aspect which cannot be quantified is the work of sports clubs in general regarding youth work. But the major role in this context is played by thou-

sands of amateur clubs all over the country and not by a couple of 'football companies'.

So far it can be summed up that the influence of major sports clubs in a city or a region can be considerable although not all aspects can be quantified and the welfare effects cannot be regarded to be positive in all cases.

4. The model

The standard Hotelling-model (Hotelling, 1929) assumes a two-dimensional market such as a street or a beach. Salop (1979) extended this model to a circular market where the market price as well as the number of producers is endogenous. In the case of football clubs we emanate from two clubs $i = 1,2$ which are positioned in the same city. The only possibility for a consumer to enjoy the matches live is to visit the stadium whereas the distance between the two stadiums is scaled to 1. The inhabitants are living uniformly distributed over the whole city. Listening to the radio or watching TV is not regarded to be an appropriate substitute. In contrast to the standard model we consider the geographical position of the suppliers of football as fixed; under normal conditions a club is not able to relocate its stadium in the short-run. Consumers realize no difference between the two clubs in general; this is why we should not define them as fans but as consumers who are just looking for a high quality level. If both clubs are playing in the same division, it can be derived that the quality of the product is identical. Only if one club is joining a minor league, consumers realize a difference in the performance what leads to a decreasing willingness to pay for entrance fees. The aim is to show the effect of a club rising from a minor league to a major league and thus breaking the regional monopoly for the product "major league football" of the old-established club.

Stage one: Two clubs playing in different leagues

In a first stage the two clubs are playing in different leagues. Although both are offering a "football match" as their product, these products are no perfect substitutes. The quality of a match (measured e. g. by speed or professionalism of the athletes) in a minor league is of course lower than in a major league like the German Bundesliga. This is why two different levels of utility are introduced, in

which the utility from a first division football match is depicted as $U(\overline{\Theta})$ and the second one from a minor league match as $U(\underline{\Theta})$. In the first stage we consider club 1 to play in the major league and club 2 to play in the minor league. For simplicity the price is not considered explicitly but is reflected in the utility levels[7]. The benefit of each consumer (spectator) is lowered by the transportation costs T which have to be brought up to reach the stadium. This leads to a welfare that can be defined as $U(\overline{\Theta}) - T$ (for a match in the first division) respectively $U(\underline{\Theta}) - T$ (for a match in the minor divison). Furthermore T is defined as tD respectively $t(1-D)$ with t as a linear cost factor for transportation to the match and D as the distance.

Each customer is estimated to be individual utility maximizing. Personal preferences are – as already mentioned – left out of the model[8]. Moreover the utility function is just respecting the objective quality of a match that corresponds the division in which the clubs are playing. The whole market can be designed like this:
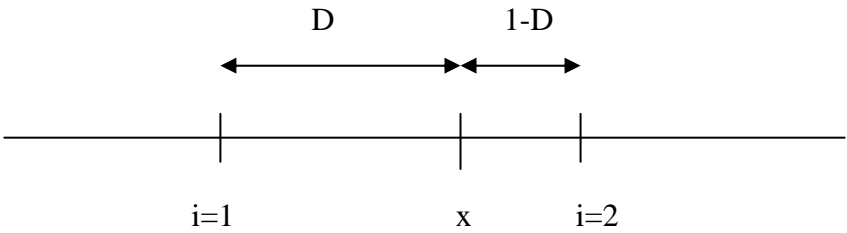
In this case x is the indifferent consumer. At this position the excess-costs for transportation T are exactly compensated by difference between $U(\overline{\Theta})$ (visiting the major league match) and $U(\underline{\Theta})$ (visiting the minor league match). All possible consumers on the left hand of the stadium of the major league club 1 are in favor of visiting matches there, while all sports-interested that are located right of stadium number 2 (of the minor league club) are going to buy a ticket for this location. In theory it is possible to have the indifferent person x not between the two stadiums but on the right hand of the second (minor) club. But as this is not going to change up the outcome and is only relevant for stadiums which are located very near to each other or for clubs which are playing within leagues with a big difference in performance, this aspect should be left out at this stage.

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[7] For more detailed information about the importance of ticket prices see chapter 2.
[8] This implies that only one part of the demand for tickets can be considered as the majority of fans are paying the ticket price independent of the topical standing or performance.

Setting $U(\overline{\Theta}) - tD = U(\underline{\Theta}) - t(1-D)$ we get the position of the indifferent costumer x at

$$D* = \frac{U(\overline{\Theta}) - U(\underline{\Theta})}{2t} + \frac{1}{2}.$$

As expected the indifferent ticket buyer is located right of the center between 1 and 2 as the match of the first division team is more attractive and worth spending more transportation costs.

Stage two: Two clubs joining the same league

In the second stage we assume the team number two to go up in the first division. In this case there is no longer a difference in the utility level which is generated by visiting one of the matches. As the transportation cost is still the same, the new $D*$ can be found in the middle between the two clubs ($D* = \frac{1}{2}$). In other words: Both teams attract the same number of visitors from the area between the two sports fields as the population is assumed to be uniformly distributed. Regarding the possible visitors right of stadium two and left of stadium one, no changes can be realized (under the simplified conditions).

Conclusion

Under the restrictive assumptions of the model we have to expect a declining number of visitors for an old-established club if a second club in the same city (or region) starts to play in the major league. The other way round the upcoming club is benefiting from an increasing demand for tickets in the first division season. In formal terms this is shown by the expression

$$\frac{U(\overline{\Theta}) - U(\underline{\Theta})}{2t} + \frac{1}{2} > \frac{1}{2}$$

valid for every $U(\overline{\Theta}) > U(\underline{\Theta})$. In the next step we will check this proposition by analysing the German Bundesliga and its number of visitors during the last decades.

5. Empirical evidence from the German Bundesliga

The survey

As mentioned this paper is only concentrating on the question if the attendance is changing if a second club from the same city enters the first division. A process like this can be investigated like a new entrant offering a substitute for at least one year. In fact it is impossible that the second club – the new one – disappears from the market playing less than a complete season. The force of offering 17 matches to the customers can be considered as some kind of exit barriers[9]. In the German Bundesliga we find six cities where more than one top club is (was) located since 1963. The six relevant cities presentig two clubs in the first division at the same time mentioned above are (in alphabetical order):

- Berlin,
- Bochum,
- Cologne,
- Hamburg,
- Munich and
- Stuttgart.

Munich has to be regarded as special case in this list because it is the only city that was home town for more than two first division clubs at the same time. From 1998 to 2001 three clubs (Bavaria Munich, Munich 1860, SpVgg Unterhaching) were able to present themselves in the Bundesliga. One problem is represented by the expression "city". In fact Unterhaching is not a part of Munich but has to be taken into account as a suburb which justifies considering it in the list. Despite this fact we did not consider the Ruhr area to be one city. In this case there would be a couple of clubs which are located in this megalopolis which creates a situation that is similar to the English Premier League where numerous clubs are located in London. This makes the use of the described two stage model impossible.

The regression that we are going to use in the model is as easy as it can be in this context. The average attendance of the old-established team which joins the league for a couple of years is estimated by using the average attendance of the previous season and the number of entrants which may appear in the long

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[9] In the context of exit and entry barriers see e. g. Porter (1979) and Porter (2008).

run. The model we want to estimate by ordinary least squares can be described as

$$spec = \alpha spec_{PS} + \beta ent$$

whereas *spec* is the average number of spectators during the current season, *spec$_{PS}$* indicates the average visitors during the previous season and *ent* indicates the number of new entrants represented by a new club playing in the same division and the same city. The parameter α can be interpreted as the development of spectators in general. For $\alpha > 1$ we can realize an increasing interest in tickets of each club while $\alpha < 1$ indicates a long term decreasing interest. As attendance figures in the Bundesliga have not been constant through the years (but rising in the long run), α will be compared to the general development of the number of spectators during the observation period. Because some of the cities have to cope with special conditions, each of it should be analysed of its own. In general we are going to analyze the number of visitors four years before a second club joins the first division as well as the interest in tickets during the period where at least two clubs are playing parallel and two years after the arranged club regains its monopoly position (because the weaker team had to go to the second division). In some cases we have to change this arrangement for several reasons which will be shown in detail.

Berlin

Berlin is not only Germany's biggest city and capital but also the only town which was hometown for four first division football clubs since 1963. But only two of them joined the Bundesliga at the same time. These teams were Hertha BSC and Tennis Borussia Berlin during the 1974/75 and 1976/77 seasons. On this basis we are going to have a closer look at the time from 1970 to 1979. During this period Hertha BSC was a constant member of the first division while Tennis Borussia in the role of the entrant had to go down to the second division for two times after playing only one season in the major league. The table below shows the outcome of regression on the basis of 9 observations.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SPECPS	0.787550	0.091283	8.627541	0.0001
ENT	11695.11	6012.499	1.945133	0.0928

These figures are surprising for two reasons. First, it indicates decreasing attendance figures for the old-established club in the 1970s, a period in which

the average number of spectators in the whole league rose by 4.4 % p. a. Beyond question is the fact that the number of spectators in the previous season is highly significant and has a strong influence on the current season.

Second and in contrast to our model assumptions the appearance of a second club (which ends up the regional monopoly) does not cause a decreasing but increasing number of visitors on a 10% significance-level. These aspects cannot be harmonized with the used model. Hence other, local factors like the performance of both teams had to play an important role for the development.

Bochum

Bochum, positioned in the Ruhr area in Western Germany, is the first case where we have to modify the procedure. Regrettably both teams from this city are known to be inconstant regarding their performance. In the beginning 1990s VfL Bochum could join the first division until 1993 and from the season 1994/95 on. Wattenscheid 09, the entrant and the second local club, played in the Bundesliga from 1990 to 1994. This is why we cannot observe a two season's period after the weaker club dropped out of the first division. Instead we have to concentrate on the time from 1986 to 1993.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SPECPS	1.045326	0.082634	12.65004	0.0001
ENT	826.2764	2182.404	0.378608	0.7205

In contrast to the case of Berlin, here we find increasing attendance figures although the performance of the VfL Bochum was quite weak during the observation period. This rise is approximately according to a general increase of visitors by 5.4 % per season during the observation period. The appearance of a new entrant is connected with an increasing interest in tickets, too, but the t-statistic shows no significance of this outcome. Because of this and the small number of observations the findings cannot be regarded as robust. The extraordinary situation of this case (the established club has to play in a minor league for one year) supports the idea of the coefficient *ent* to be zero.

Cologne

The case of Cologne is very simple. The most successful club of the city, 1. FC Köln, was a member of the Bundesliga during the complete 1970s. Only for one

season (1973/74) a second club called Fortuna Köln could qualify for the first division, too. After only one year they had to play in a minor league again. According to the general model, this leads to only seven observations once again.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SPECPS	0.960370	0.096243	9.978576	0.0002
ENT	4887.398	4927.724	0.991817	0.3668

The outcome is quite similar to the findings from Bochum: A significant influence of the attendance in the previous season on the one hand and a positive influence of an entrant breaking the regional monopoly which is not significant on the other one. The only difference in this case is a decreasing number of visitors which contrasts the general development during the early 1970s. So far the first division time of Fortuna Köln, the entrant, can be depicted to be a single event. Up to now there is only little chance of a new period where more than one club is playing in the first division.

Hamburg

For the case of Hamburg we expect findings which tend to be more robust because of a higher number of observations. Beside the Sports Club Hamburg (HSV), which is the only club that joined the Bundesliga from 1963 on until today, the Football Club St. Pauli was able to play in the major league for six seasons between 1977 and 2002. For this reason we consider a period from 1973 to 2004 which leads to a total number of 31 observations. The outcome of the regression shown in the next table is surprising.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SPECPS	1.016148	0.037270	27.26475	0.0000
ENT	148.6688	2605.206	0.057066	0.9549

As we realize a highly significant coefficient of the ticket demand of the previous season once again, the variable "entrant" is obviously zero. This is not only basing on a t-statistic of 0.05 but is also going along with the fact that 150 visitors are only representing 0.5 % of the whole ticket demand of about 30,000 visitors. In the case of Hamburg the model assumptions are obviously too strict to explain any part of attendance figures.

Munich

Munich is not only famous in international football for presenting the most successful German football club (Bavaria Munich), but also, as already mentioned, for being the only city ever that could present three first division clubs at the same time. Looking back in history it can be regarded that Bavaria Munich was not playing in the Bundesliga from 1963 but from 1965 on. In contrast the second popular club, Munich 1860, joined the national first division from the beginning on but had to play in a minor league for several years. This is why we consider Bavaria Munich to be the established club in the first stage of the model. On this basis we can observe the development of the demand for tickets in a period from the beginning 1970s on. For two seasons (1999 to 2002) a third club (Unterhaching) from Munich played in the major football league. As this is a single event which is unique in German professional football we do not change up the model but assume two new entrants for these years. In fact, the findings from Munich seem to fit with the model as it can be seen in the following table.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SPECPS	1.042140	0.026859	38.80057	0.0000
ENT	-1569.387	1577.899	-0.994606	0.3270

Once again the ticket demand in the previous season is highly significant (and shows slightly increasing sales according the the development considering the league as a whole[10]), whereas the number of entrants seems to have a negative effect on the attendance figures, although this effect is not significant for any common level.

Stuttgart

Stuttgart, home of the last years champion VfB Stuttgart, presented a second top club (Stuttgarter Kickers) in the seasons of 1988/89 and 1991/92. The Kickers had to go down to the second division each time after only one season of major league experience. Today Stuttgart has no chance of presenting a second top club within the next years. These facts offer the possibility of analyzing 10 observations in the years 1984 to 1994. Once again the findings are presented in the table below.

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[10] As the Bundesliga denotes an average rise by 2.1 % p. a., the better value in the case of Bavaria Munich could be caused by a remarkable performance.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SPECPS	0.937532	0.059264	15.81963	0.0000
ENT	4466.370	3560.014	1.254593	0.2450

As expected the outcome of this last analysis is not surprising any more. In fact the regression shows itself to be quite similar to the regression in the case of Cologne (positive effect of an entrant regarding the demand for tickets which is not significant, decreasing ticket sales over the whole period in contrast to the general situation in the league).

6. Conclusion

The paper aimed at showing the effect of a second football club offering major league football and breaking the regional monopoly of an established club positioned in the same city. For this purpose a modified Hotelling-model was used to describe the demand for tickets and for the case of the German Bundesliga we could compare empirical findings with the model assumptions.

In fact no empirical evidence could be given for the thesis of a decreasing ticket demand in the case of a new entrant entering the market. Only for the case of Munich a negative coefficient could be regarded although this was not significant. In all other cases we had to realize positive effects (which were not significant in most cases, too). So far it can be said that only the number of visitors shows a highly significant relationship to the topical demand. On this basis it can be concluded that the complete demand for tickets in professional football seems to be quite long-term oriented. In a case where a second club enters the same division the market seems to grow. A growing market because of an increasing general interest in football would at least explain the positive coefficients which appeared in five of six cases. Following this approach the use of a modified Hotelling model cannot explain the demand for football tickets in Germany. For the future it will be interesting if this finding is true for other European major leagues or other disciplines. In the case of the USA it could be interesting not only to analyze a single major league but to collect data from all leagues. The effect of a basketball club moving to a city where a football club is already located could be worked out by doing so.

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