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An Analysis of Expansion and Relocation Sites for Major League Soccer

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Abstract

Major League Soccer (MLS) began with ten teams in 1996, and plans to expand

to twenty teams. Where should those teams be located? A probit analysis is used

to create a forecast of likely successful locations for MLS teams. The results

indicate that the ten current MLS franchises are located in the top thirteen

markets, as predicted by the model. Importantly, the two teams that were

contracted by MLS are predicted to have a very difficult time supporting a

franchise. The model also shows that two cities currently without franchises,

Minneapolis and Philadelphia, could sufficiently support a team.

Professional Soccer in the United States

One of the premier sporting competitions, the World Cup, occurs every four years and captures an international audience. The United States last hosted the World Cup in 1994; its selection by the Fédération Internationale de Football Association (FIFA) was conditional upon the establishment of a Division I soccer league within the U.S. A Division I league is a top professional league in a country that could compete against other country's Division I clubs in international competitions. Such leagues had previously existed within the U.S., however, the last Division I soccer league, the North American Soccer League (NASL), had been disbanded in 1985. In accordance with its agreement with FIFA, in December of 1993 the chairman of World Cup 1994, Alan Rothenberg, announced the formation of a United States Division I soccer league, to be known as Major League Soccer (MLS) (Litterer, 2004).

In hosting World Cup 1994, domestic interest for soccer was incited within the U.S., the fervor from which the U.S. parlayed its launch of MLS, which officially commenced play in April, 1996. The league started with ten teams, expanding to twelve in 1998.[1] In January 2002, the Miami and Tampa Bay teams were contracted due to financial duress, leaving the league with 10 teams (Litterer, 2004).

MLS is not the only professional soccer league based in the U.S. The United Soccer Leagues (USL) is another domestic soccer organization, which was

formed in 1986 as an indoor league, but which expanded into outdoor competition three years later and was eventually granted Division II status in the 1997 season by the United States Soccer Federation (USSF). Division II teams are beneath Division I clubs in terms of status, quality of play, and finances. In its current state, the USL is comprised of several different men's and women's leagues, both professional and amateur. Its professional leagues include the A-League (Division II) and the D3 Pro League (Division III), each comprised on 18 teams. Both leagues have affiliations with MLS, serving as a player development system for MLS since its formation in 1996. This relationship is similar to that of each of the minor league baseball teams with its Major League parent club ("Sizzlin With The Select," 2004).

Over the last six seasons, the MLS has achieved modest success. With average attendance for 2001, 2002, and 2003 hovering around 15,000 fans, teams have begun to build and operate their own facilities. In 1999, Columbus Crew Stadium opened to become the first soccer-specific stadium in the U.S. In 2003, the Home Depot Center in Los Angeles opened as the home site for the Galaxy. The Dallas Burn broke ground on a soccer-specific facility to be opened in 2005.

Billionaire Philip F. Anschutz has been a primary investor in the league and has provided more than $100 million to maintain the league's operations. His company, Anschutz Entertainment Group, is the investor/operator of 6 of the 10 teams. The league is a single entity, and therefore does not have true team

owners. Instead, each team has an investor/operator that provides financial and

logistical management for the club and is compensated partially based on the

club's success and the league's overall success. Despite the fact MLS has lost

revenue in each of its first six seasons, MLS Commissioner Don Garber believes

that MLS ownership is continually committed to its investment in Major League

Soccer for the long term. As a young league, the growth of MLS is anticipated to

be slow, however Commissioner Garber believes the financial support of Mr.

Anschutz gives the league long-term credibility (Sweet, 2002a). League officials

and team executives noted the outlook for professional soccer in the United States

has never been better (Carney, 2002). Although the league recently contracted,

there are hopes the league will be able to expand in the near future, with

Commissioner Garber expressing his intent to expand MLS to 20 teams over the

long term (Sweet, 2002b).

Literature Review

Research pertaining to MLS expansion is limited; therefore, other leagues

were examined based on their expansion processes. The National Football

League (NFL) outlined the base requirements for a possible expansion city. NFL

spokesperson Greg Aiello pointed out that an expansion candidate should have a

population above 1.6 million, possess per capita income near the national average,

and for expansion to take place during a period of overall economic health and

stability (Zelenko, 1992). The NFL, which limits its number of expansion teams, further dictates certain requirements for a city to be considered, such as economic and preferred demographics, and approval by a ¾ majority of NFL owners.

Besides the demographic composition of a locale, professional leagues look at more specific characteristics of a potential expansion city. The National Hockey League (NHL) noted that a reason for expansion back into Minnesota was because there are more registered amateur hockey players in Minnesota than any other state, and more female participants than all other states combined (Muret, 1997). This points out a very important aspect of expansion: cities with strong youth and amateur support usually translate into major league support, and accordingly present an opportunity for potential profitability.

A research project investigating the possibility of a new sports arena in downtown Sacramento further illustrates the importance of market demographics. This report compares current National Basketball Association (NBA) markets to Sacramento, California, indicating the city's strengths and weaknesses in comparison to other markets. According to Perna (2002), overall population, age demographics, income and spending characteristics, and depth of corporate base are some of the major market and competitive traits in assessing the potential to support a professional team. This report creates a baseline for selection of important economic factors of professional sport cities.

Expansion research has primarily been based on market comparisons, but not through traditional economic measures. Rascher and Rascher (2002) conducted an in-depth study of possible NBA relocation or expansion cities within the U.S. The study examined the economics of each city and ranked which cities would be ideal candidates for relocation/expansion. A location model and a financial model were created that used data from existing markets to generate a forecast of the likely cities for expansion and the expected financial success of the teams in those cities. Their study uncovered the major financial, economic, and demographic factors affecting the probability of a city acquiring and supporting an NBA team. Bruggink and Zamparelli (1999) developed a location model for MLB teams based on similar factors used here, but opted for a linear regression statistical model.

With expansion of the league a priority for MLS, there are four criteria for granting an expansion franchise. According to Courtemanche, Vice President of Communications for MLS, the four qualifiers are: (1) a history of support for professional soccer; (2) high participation level in the sport; (3) an existing stadium equipped for soccer; and (4) investors in place ("MLS To Decide," 2001)

Need for Study

MLS has recently contracted franchises, and it is imperative that the expansion process infiltrates "soccer" markets that can support an MLS franchise.

Currently no research has been published which utilizes economic analysis for determining potential expansion markets for MLS that is as thorough as Rascher and Rascher's (2002) NBA study.

The purpose of this study is to create a model that can rank current and potential MLS cities based on their financial promise and market characteristics. Investigation will revolve around market characteristics that influence a city's "success" in supporting a team, economic factors affecting success, and factors that caused failures in other cities that have folded as MLS franchises.

The theory is based on a franchise model similar to that of Klein (1995). Franchises of the same company have the incentive and desire to locate at least some minimum distance away from each other, but want to maintain similarity in terms of quality and products offered so that uncertainty is reduced for customers. For instance, Domino's Pizza franchises are not allowed to locate near each other unless they are owned by the same franchisee. The location of franchises or teams ought to be based on a similar underlying structure.

The authors have created a location model that will rank the best locations for MLS expansion or relocation. The location model examines the economic and demographic conditions of the ten current MLS franchise cities (as of 2003), as well as that for the next 39 largest U.S. cities. In essence, the location model examines the common underlying factors and economic conditions of current MLS locations to extrapolate the potential for the cities without MLS teams. This

approach is similar to that set forth by Rascher and Rascher (2002). The model in

this study creates a comparison of the non-MLS cities and current MLS cities, and

the resulting model allowed for a ranking based on the likelihood, determined

from the chosen factors, of a city being able to support a team.

The primary assumption of the analysis is that teams are located based on

some underlying structure of market feasibility. The study aims to empirically

understand the underlying structure and use it to sort through possible expansion

or relocation sites for MLS teams. Further, the assumption itself is tested by the

analysis.

All data collected is cross-sectional and consists of 49 U.S. city

observations, including the ten MLS cities and 39 cities without MLS franchises.

The dependent variable is an indicator variable. A probit location model is

created. A probit model is chosen over a logit model because the sample is small

and it is based on normal distributions. As Studenmund (1997) noted, this makes

the model sounder when using normal distributions, but this advantage would be

negated if the sample size were much larger. This approach differs from

Bruggink and Zamparelli (1999) where a linear regression model was used.

When looking at potential markets for any business, an analysis of these

prospective locations must be performed. Different factors play a role in selecting

a city as a possible expansion or relocation site. Trying to target certain markets

for MLS expansion entails looking at a variety of demographic information. This

demographic information can be broken down into six factors: (1) city population; (2) Metropolitan Statistical Area (MSA) population; (3) population growth rates; (4) percentage of male residents ages 18-34; (5) income levels of those MSAs; and, (6) the percentage of the MSA population that is Hispanic or Latino. Previous research has shown that population is an important contributor to sports franchise success (Rascher and Rascher, 2002), and that race can impact sports league decision-making (Burdekin and Idson, 1991). Moreover, this information is readily available from the U.S. Census Bureau.

Population factors will have a direct effect on potential attendance at soccer matches and therefore will be a reliable indicator of whether or not a market is suitable. Factors examined in determination of markets include city population in 2000, MSA population in 2000, as well as the growth rates for city population 1990-2000. Percentage of male residents 18-34 is also used, based on the knowledge that this population segment currently represents 47 percent of overall MLS attendance ("Major League Soccer," 2001). From the population factors, it is expected that the markets with the higher population figures and greater growth rates will be better potential expansion locations.

Because sports teams are likely to draw from surrounding areas in addition to the primary "home" locale, MSA population gives a more accurate indication of potential fan interest. Growth rates may be an important factor in determining if MLS expansion is possible. The city growth rate utilized was the change in city

population between 1990 and 2000. By looking at the city growth rates for these years, consistent patterns of growth can be determined. Income levels are also tested as a factor in determining expansion possibility, since larger incomes generally mean more disposable income on entertainment, such as professional sports.

Targeting the correct demographic is one key to the success of any product or service, including professional sport (Kotler, 2002). The United States Youth Soccer Association (USYSA) is the largest youth organization in the country. It ranks higher in participation than the Boy Scouts as well as the Girl Scouts, Pop Warner Football, and Little League Baseball (B. Billips, personal communication, October 11, 2002). One of the reasons the NHL wanted to expand back to Minnesota was that it had the largest youth and female population of hockey players in the country (Muret, 1997). The variable examined in this study is the youth participation numbers in the USYSA for each individual state. Some states had two state associations. For the purpose of this study, the multiple numbers were combined when looking at a city within that particular state.

Another variable created to measure soccer support within a city is a tabulation of the number of professional soccer teams within the city, excluding MLS franchises. Other professional leagues include WUSA (although now defunct), A-League, D3, W1, W2, WISL, and MISL. If a city hosts a larger number of teams, it is possible that the MLS franchise will have a more difficult

time attracting fans. Alternatively, this could also mean that soccer is a popular spectator sport in the area and MLS, being the only Division I league, could compete effectively against these other leagues. Besides other professional soccer leagues, the big four (NHL, MLB, NBA, NFL) franchises are also categorized as direct competition. Therefore, a measurement of the number of big four teams is created. This variable identified the impact direct competition with other non-soccer professional sports has on the probability of a city having an MLS franchise.

As mentioned by Garber, the MLS seeks out markets with a strong corporate base (Sweet, 2002b). MLS teams needed an investor/operator to operate under the league's single-entity structure. In addition, corporate sponsorships are a large part of a team's non-game day revenue (E. Austin, personal communication, December 14, 2001). Therefore, this study accounts for the number of Fortune 500 companies that reside within a particular market. Although an investor/operator and/or corporate sponsorships may not come from this index, it is an indication of a strong corporate presence within that particular city.

The last two variables include a cost of living index and recreational asset score, both of which were retrieved from the 2000 edition of *Places Rated Almanac* (Savageau and D'Agostino, 2000). This cost of living index gives higher scores for a lower cost of living.[2] A score of 100.0 would represent the

least expensive place to live in America, and expensive locations would yield

rankings closer to zero. A higher cost of living area translates into less money

available as discretionary income – income used for entertainment. The final

variable of this study, recreational asset score, measures the amount of

recreational opportunities available within the major city of the MSA.[3] This

provides an indication of the amount of recreational alternatives citizens have

access to besides professional sports.

Results

The dependent variable is an indicator variable denoting "1" if the city has

an MLS team and "0" otherwise. Therefore, a probit model is used to analyze the

data. Table 1 outlines the results of two probit models. The first model, labeled

"Full Model", includes factors even if they are not all significant. It had a

significant probability value of .999 (Chi-Square) with a Wald Chi-Square

statistic of 34.15. The second model, "Parsimonious Model", only includes

factors that are statistically significant utilizing structural econometrics.[4]

A robust estimator of the variance was used to correct the standard errors.

The results in both models indicated that as MSA population and local income

increase, the probability increases of a city being able to support an MLS team.

This is consistent with sports economics theory that the larger the market, the

greater chance of attracting fans and creating a fan base (Downward and Dawson,

2000). Also, cities with less expensive standards of living have an increased

probability of supporting an MLS franchise. The combination of higher local

income and lower cost of living shows, not surprisingly, that the more disposable

income people have, the more likely the community can support an MLS team.

According to the model, there is a higher likelihood that a city will have

an MLS team when the percentage of the population that is in the target market of

18-34 year old males is relatively smaller. Also, the greater the number of

Fortune 500 companies in the area, the smaller the likelihood of a city being

similar to current MLS cities. Both of these factors are highly correlated with

population and because of this multicollinearity, are likely to have problems with

the signs of the coefficients.[5] Multicollinearity affects the interpretation of

coefficients, but does not bias the forecasting ability of the model. Thus, the

forecasts of which cities are likely to be successful in hosting an MLS team are

not impacted by the findings for the individual factors.

The percentage of the MSA population that is Hispanic or Latino has a

positive impact on the location of MLS franchises.[6] The remaining factors are

not statistically significant individually, but overall add significance to the model

based on an F-test of exclusion.

TABLE 1: Probit Analysis of MLS Indicator Variable		
Model:	Full Model	Parsimonious Model
Dependent Variable	MLS	MLS
Wald Chi^2	34.15	25.48
Prob > Chi^2	0.0003	0.0001
Pseudo R-squared	0.6221	0.4366
Number of Observations	49	49
Independent Variables:		
Constant Term	-52.75**	-44.61***
	(-2.13)	(-3.01)
Log of the MSA Population	3.49**	2.32***
	(1.93)	(2.72)
Per Capita Income of the MSA	0.00051***	0.00041***
	(3.37)	(2.74)
Percentage of Male Residents in the Target Market	-77.89***	-56.79**
	(-2.73)	(-2.39)
Growth rate of the City Population	0.65	
	(0.22)	--
Youth Participation in Soccer	-0.78	
	(-1.20)	--
Number of Fortune 500 Headquarters	-0.11**	-0.095**
	(-2.19)	(-2.09)
Number of Other Major Professional Sports Teams	-0.27	
	(-0.48)	--
Recreational Index Ranking	-0.014	
	(-0.36)	--
Cost of Living Index	0.056**	0.046*
	(2.00)	(1.82)
Number of Other Soccer Teams	0.25	
	(0.83)	--
Percentage of MSA Population that is Hispanic	0.096***	0.059**
	(3.10)	(2.00)
Significance: * - 10% level; ** - 5% level; *** - 1% level.		

The goal of this research project is to create a probability index for a city's ability to support an MLS franchise based on the underlying structure of current MLS cities. Obtaining the predicted values from the probit model creates a probability index. Table 2 shows the forecasted estimates from both models. As shown, the results indicate that the ten MLS franchises are located in the top 17 markets as predicted by the model. Importantly, the two teams that were contracted from MLS after the 2001 season, Miami Fusion and Tampa Bay Mutiny, are predicted to both have a very difficult time supporting an MLS franchise. In fact, the ranking of Tampa Bay and Miami, in terms of which cities would be best in supporting a franchise, were 21 and 22, respectively. The model also shows that two cities currently without MLS franchises, Minneapolis and Philadelphia, could sufficiently support an MLS team.

TABLE 2: Forecast for Location Model Predicting Probable MLS Cities

City/Team (sorted by Model 2)	Forecasted Probability (Model 1)	Forecasted Probability (Model 2)
San Francisco	1.000	0.900
Washington-Balt	1.000	0.829
Chicago	0.977	0.669
Boston	0.976	0.996
New York	0.894	0.996
Los Angeles	0.892	0.914
Minneapolis	0.577	0.158
Philadelphia	0.549	0.618
Dallas	0.524	0.296
Hartford	0.384	0.058
Phoenix	0.364	0.184
West Palm Beach	0.340	0.072
Columbus	0.299	0.133
Atlanta	0.286	0.101
Kansas City	0.275	0.068
San Antonio	0.153	0.026
Denver	0.140	0.112
Houston	0.130	0.072
St. Louis	0.093	0.159
Seattle	0.087	0.312
Miami	0.052	0.366
Tampa	0.043	0.225
Detroit	0.013	0.288
Portland	0.011	0.173

Notes: Bolded MSAs are those an MLS team as of 2003.

The Tampa and Miami MSAs, italicized and bolded, are the two contraction cities for MLS.

The Salt Lake City MSA, italicized, has recently been awarded an MLS expansion franchise.

A second MLS franchise has been awarded to Los Angeles.

Conclusion and Discussion

Based on the location model, the MLS has a higher probability of succeeding with teams in Philadelphia and Minneapolis, compared to other large markets. The model predicts the current locations of MLS teams with very high accuracy, placing all ten teams in the top thirteen markets (as ranked by the model). The location model also reaffirms the league's decision to contract the franchises in Miami and Tampa Bay, as both scored very low.

Columbus, Kansas City and Denver scored below the desired .500-point, questioning their franchise stability. However, Kansas City and Denver have been around since the inception of the league, and Kansas City won the MLS Cup in 2000 while Denver led the league in attendance in 2002. In addition, Kansas City has Lamar Hunt as its investor/operator. Mr. Hunt has been willing to financially support MLS even though it has lost money in each year of its existence. Therefore, it is not clear whether the Kansas City team is truly viable or simply being underwritten by Mr. Hunt. Moreover, Columbus has its own soccer-specific stadium making it more lucrative because it gets to keep a higher percentage of the revenues than in other markets.

The initial hope of MLS is to expand to six new cities by the end of the decade (Sweet, 2002b). Our research indicates that three cities are viable candidates for expansion, with the forecast of adding another three being a great deal less optimistic.   As most leagues enjoy an even number of teams for

scheduling and playoff purposes, Phoenix would be the choice for expansion

beyond Philadelphia, Minneapolis, and Hartford, bringing the league to 14 teams.

In July 2004, MLS announced that it was expanding into Salt Lake City and

adding another team in Los Angeles. Salt Lake City is not rated high in either

model and will likely struggle to find a fan base. However, it was announced that

it would be building its own facility.

MLS has currently identified eight cities as possible targets for expansion

(Trecker 2002). Minneapolis and Philadelphia are two, which, according to the

analysis, have a high probability of supporting a team based on the market's

economic and demographic characteristics. MLS should concentrate its efforts on

these two cities and possibly avoid expansion in targeted cities such as Houston or

Oklahoma City.

Excluded from this study are measurements of the political desire to help

fund soccer-specific stadiums and whether there are potential owners in each city.

The financial burden of playing in non-soccer stadiums is tremendous.[7]

Locational models, such as this, can be adapted as useful tools for leagues

throughout the world. The results here indicate that there are common underlying

factors that affect the success of sports franchises. Weighing the importance of

each factor and determining location is vital for all leagues' success.

References

Bruggink, T. H. & Zamparelli, J. M. (1999). Emerging Markets in Baseball: An

Econometric Model for Predicting the Expansion Teams' New Cities. In

J. Fizel, E. Gustafson, and L. Hadley (Eds.), *Sports Economics: Current*

Research (pp. 49-59). Westport, CN: Praeger Press.

Burdekin, R.C.K. & Idson, T.L. (1991). Customer preferences, attendance and

the racial structure of professional basketball teams. *Applied Economics,*

23(1), 179-187.

Carney, S. (2002, March 25-31). New TV deal gives MLS hope in pivotal year.

Street & Smith's SportsBusiness Journal, 4(49), 23.

Downward, P. & Dawson, A. (2000). *The Economics of Professional Team*

Sports. (1st ed.). London: Routledge.

Gilbert, C. L. (1989). LSE and the British approach to time series econometrics.

Oxford Economic Papers, 41(1), 108-128.

Hendry, D.F. (1993). *Econometrics: Alchemy or Science?*. Oxford: Blackwell.

Klein, B. (1995). The Economics of Franchise Contracts. *Journal of Corporate*

Finance, Contracting, Governance, and Organization, 2(1), 9-37.

Kotler, P. (2002). *Marketing management*. (11th ed.). Upper Saddle,

N.J.: Prentice Hall.

Litterer, D. (2004, February 24). *An overview of American soccer history*.

 Retrieved July 17, 2004, from

 http://www.sover.net/~spectrum/overview.html

Major League Soccer fan demographics. (2001, November 12-18). *Street &*

 Smith's SportsBusiness Journal, 4(26), 27.

MLS to decide expansion plans by end of season. (2001, July 28).

 SportsLine.com Wire Sports. Retrieved September 22, 2002 from

 http://tennessean.com/sii/00/05/22/mldbox22.shtml

Muret, D. (1997). NHL expansion teams return to twin cities, new markets.

 Amusement Business, 109(26), 17.

Perna, L., (2002, March 15, 2002). *Analysis of a New Sports & Entertainment*

 District in Sacramento. A consulting report for Maloof Sports &

 Entertainment.

Rascher, D. A. & Rascher, H. (2002). *Examining the viability of various cities for*

 NBA expansion or relocation. Paper presented at the 17th Annual North

 American Society for Sport Management NASSM Conference, Canmore,

 Alberta, Canada.

Savageau, D. & D'Agostino, R. (2000). *Places Rated Almanac*. (Millennium ed.).

 Foster City, CA: IDG Books Worldwide, Inc.

Sizzlin with the select. (n.d.). Retrieved July 17, 2004, from

 http://www.uslsoccer.com/aboutusl/history/53784.html

Studenmund, A.H. (1997). *Using econometrics*. (3rd ed.). New York: Addison-

Wesley.

Sweet, D. (2001, November 12-18). Can we have business that succeeds?

SportsBusiness Journal, 4(26), 25.

Sweet, D. (2002a, March 25-31). Anschutz has soccer world at his feet: media-

shy billionaire ups stake in struggling league that folded 2 franchises.

Street & Smith's SportsBusiness Journal, 4(49), p. 21, 24.

Sweet, D. (2002b, September 30). MLS examining Sooner State sites.

SportsBusiness Journal, 5(23), 19.

Trecker, Jamie (2002, December 2-8). Cup and cuts brighten the outlook for

MLS: closing Tampa, Miama saved $10M, figures show. *SportsBusiness

Journal, 5*(32), 5.

Zelenko, L. (1992). Mid-size cities blitz NFL for new franchise. *American

Demographics, 14*(1), 9-10.

Footnotes

[1] The initial ten teams in the MLS included franchises in Washington D.C. (D.C. United), Tampa Bay (Mutiny), Boston (New England Revolution), New York (MetroStars), Columbus (Crew), Los Angeles (Galaxy), Dallas (Burn), Kansas City (Wizards), San Jose (Clash), Colorado (Rapids). The 1998 expansion occurred in Miami (Fusion) and Chicago (Fire).

[2] To rank metro areas' cost of living, the costs of nine items in a typical four-person household's annual expenses were examined: 1) state income taxes, 2) state and local sales taxes, 3) property taxes, 4) home mortgage, 5) utilities, 6) food, 7) health care, 8) transportation, and 9) recreation.

[3] The factors accounted for within the Places Rated Almanac were 1) amusement and theme parks, 2) aquariums, 3) auto racing, 4) college sports, 5) gambling, 6) golf courses, 7) good restaurants, 8) movie theater screens, 9) professional sports, 10) protected recreation areas, 11) skiing, 12) water areas, and 13) zoos.

[4] See Gilbert (1989) or Hendry (1993) for more information on structural econometrics.

[5] The Pearson correlation coefficient between the number of Fortune 500 companies and city population is 0.88 and is statistically significant at the 0.1%

level. The correlation coefficient between the target market percentage and

population is –0.41 and is significant at the 1.2% level.

[6] We thank a reviewer for noting a possible link between race and the

location of MLS franchises.

[7] Reports indicate Chicago pays $70,000 per game and the New York/New

Jersey franchise pays more than that to play at the Meadowlands (Trecker, 2002).