Sports organizations engage in pricing on at least five levels:

1. Tickets
2. Concessions, merchandise, and parking
3. Stadium advertising, signage, and experiences
4. Naming rights of stadiums, webpages, jerseys, and/or events
5. Broadcast rights to events and games.

The first two generate revenues from spectators at the gate and the venue. The final three generate revenue through media and sponsors. Media revenue clearly dominates for NFL teams. This is not surprising, since the NFL has maintained the highest television ratings of all spectator sports, followed by NASCAR. Interestingly, the average gate revenue for teams in each of these four major sports leagues is relatively similar. In fact, the average gate revenue per team for the NHL, MLB, and NBA are not significantly different from each other. The NFL, which has far fewer games, generates a slightly lower level of gate revenues. This is, of course, offset by massive media revenues. Based on this fact, one might deduce that having fewer games (where each game’s outcome has relatively greater effects in league standings) helps maintain strong television ratings. Conversely, note the difficulty that MLB has had with TV ratings as televised games proliferated on super channels (WGN, TBS, etc.) and regional networks.

This chapter focuses primarily upon prices offered to spectators. We first look at aggregate economic factors that explain the occurrence of steadily increasing prices in virtually all professional sports. Next, we present theoretical and practical guidance in price setting for spectator events and related venue sales.

A Model of League Attendance & Price Setting (MLB)
Economic models explaining and predicting attendance at sporting events are plentiful. Most economic attendance models\textsuperscript{1} include metropolitan population, team winning percentage (or other measure of performance), per capita income in the metro area, a dummy variable for a new stadium, a measure related to star players (BA, HR, RBI), and average team ticket price as independent variables predicting attendance.

Eckard’s (2001) study of MLB attendance from 1903-1993 finds that diminishing returns occur for those teams that have a streak of three or more years where they contend for the title and when they win the title. Once the team achieves the goal (World Series Champions), fan expectations have been met and attendance drops the following year. Based on Eckard’s model, if a MLB team averaged 3 million during streak years, attendance would be expected to drop 51,000 following a pennant year. As a contributing factor, the costs and benefits to free agency (since 1976) motivate MLB teams to do less to resign star players. The result has been greater competitive equity in the past 25 years. Eckard’s study, however, does not attempt to account for the fact that teams may raise ticket prices following championship years, thereby dampening some of the excessive demand created by the previous year’s performance.

Understanding aggregate predictors of attendance is important for price setting. While prior economic studies have modeled average ticket price as an independent variable explaining attendance, more recent market conditions suggest that professional sports attendance is more likely to predict prices. That is, successful teams build attendance as more fans are drawn to see a winning team. Due to rising payroll costs of superstars who led the team to the championship, high demand for tickets, and limited capacity, teams tend to raise prices following successful campaigns. Further, although it is well recognized that new stadiums have positive effects on attendance, one can observe that vintage stadiums with great traditions (e.g., Wrigley Field, Fenway Park) also attract fans. This suggests a curvilinear effect, such that fans appreciate older stadiums (pre 1950) and newer stadiums (post 2000), but are unlikely to highly value those stadiums constructed in the concrete dome

\textsuperscript{1} We trust that you have fond memories, and at least a bit of knowledge, of your statistics classes.
era (1960s-80s).

In an earlier edition, we tested a model analyzing data from MLB for one decade (1991-2000) to predict attendance, which in turn predicts ticket price. We do so again for the period 2000-2009, but with a few interesting twists.²

We use attendance figures based on each team’s attendance as a percentage of stadium capacity as the dependent variable in the first stage of this equation. The independent variables predicting attendance in the model are the annual figures representing:

1. **Current team winning percentage**: number of wins divided by total games played for the current season.
2. **Prior team winning percentage**: number of wins divided by total games played for the last season.
3. **Team player payroll**: total salaries paid to players each year.
4. **Stadium quality**: the absolute value of the median of range of stadium construction (1912 to present year) minus the year the stadium was built.
5. **Fan Cost Index (FCI)**: the average cost of four tickets (two adults + two children) + four small soft drinks + two small beers + four hot dogs + two programs + parking + two adult-size caps.
6. **Income per capita**: the average annual income in the metropolitan statistical area (MSA)
7. **Population Franchise Index (PFI)**: (population/NYC population) + (franchises in city/8) + (2 if two MLB teams; 0 if only 1)

To account for the value of old and new stadiums, we computed a Stadium Quality variable (#4 above) that is based on the absolute value of the year the stadium was built minus the median year of construction for all stadiums each season. Considering the attendance data for the 2000 season, this means that the oldest stadium, Boston’s Fenway Park (built in 1912) has the same value (44) as Houston’s Minute Maid Park built in 2000 (formerly Enron Field). The lowest stadium quality value (SQ = 3) for 2000 was Milwaukee’s County Stadium, built in 1953 (see pictures; note—County Stadium was replaced in 2001). Each independent variable is expected to produce positive effects on attendance. The specific relationships are outlined below.

² At this point, it would be a good idea to order the old book so you can compare the results.
Fans are likely to be attracted to those teams that perform well.

Prior season winning % influences attendance in current year since season tickets are sold based largely on previous year’s performance.

Player payroll acts as a surrogate for the presence of star players.

Population, multiple pro franchises, and two MLB teams are all positively correlated with attendance. The index score accounts for these positive effects while mitigating multicollinearity problems.

Attractive stadiums (vintage or newer) lead to higher attendance.

In pro sports (prestige goods), prices reflect the popularity of the team.

More personal income should lead to better ability to buy tickets.

The resulting model (below) explains 57.7% of the variance in MLB attendance during the last decade. Each of the independent variables has a significant effect in the expected direction. The effects of current year prices (FCI) and per capita income are weak. An examination of the standardized betas for each variable gives us an idea of the weight or strength of the relationship with attendance. In order, the strongest effects are generated by stadium quality ($B = .302$), payroll ($B = .241$), current season winning % ($B = .215$), previous season’s winning % ($B = .190$), population/rivalry ($B = .154$), current FCI prices ($B = .107$), and per capita income ($B = .085$).

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Hypothesis</th>
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<tr>
<td>Fans are likely to be attracted to those teams that perform well.</td>
<td>Winning % Current $\rightarrow$ Attendance</td>
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<td>Prior season winning % influences attendance in current year since season tickets are sold based largely on previous year’s performance.</td>
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<td>Player payroll acts as a surrogate for the presence of star players.</td>
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<td>Population, multiple pro franchises, and two MLB teams are all positively correlated with attendance. The index score accounts for these positive effects while mitigating multicollinearity problems.</td>
<td>Population &amp; rivalry $\rightarrow$ Attendance</td>
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<td>Attractive stadiums (vintage or newer) lead to higher attendance.</td>
<td>Stadium quality $\rightarrow$ Attendance</td>
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<td>In pro sports (prestige goods), prices reflect the popularity of the team.</td>
<td>FCI $\rightarrow$ Attendance</td>
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<td>More personal income should lead to better ability to buy tickets.</td>
<td>Per Capita Income $\rightarrow$ Attendance</td>
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<th>Dependent Variable: Attendance as % of MLB Stadium Capacity 2000-2009</th>
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<td>Independent Variables</td>
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<td>Stadium Quality</td>
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<td>Payroll (Current Yr)</td>
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<td>Winning % Current Year</td>
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<td>Winning % Previous Year</td>
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<td>Population+franchises+2 teams</td>
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<td>Fan Cost Index: Current Year</td>
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<td>Income Per Capita</td>
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Explained Variance ($R^2$) for Attendance = 57.7%

Explained Variance ($R^2$) of Attendance for next year’s prices (FCI) = 37.8%
Using the predicted value of attendance in a two-stage least squares regression model, attendance, in turn, explains 37.8% of the following season’s ticket prices. The results from this model have important implications for price setting.

**Stadium quality.** First, just as it did in the 1990s, stadium quality explains the most variance in attendance, which in turn allows the team to charge a higher price. This finding follows widely-held beliefs by sports owners and marketers, as well as anecdotal evidence found in the media, regarding the need for sports teams to build new stadiums. Milwaukee opened its new stadium in 2001, experiencing an increase in attendance of 74%, despite a .420 winning percentage (see picture, right). Ticket prices increased 50% over the prior year’s prices, although largely fueled by high end luxury boxes. Unfortunately, the increase in attendance was short-lived as the Brewers followed up with winning percentages (2002 = .346; 2003 = .410, 2004 = .416) that would try the patience of even the most comfortable fan.

One of the main reasons that the stadium is so important to baseball is that season tickets to a MLB team means that the ticket holder might spend upwards of three hours at the venue for 81 games over the course of six months. That is a lot of time to spend in a place—so, it better be more than just tolerable. The stadium may be less important for sports where fewer games are played (e.g., football), but it still plays a prominent role in determining attendance.³

The media often report on team owners demanding a new stadium or threatening to move the team. The data from MLB over the past decade supports team owners’ convictions. “Build it and they will come” is more than just a famous line from the movie “Field of Dreams.” It is the gospel truth in baseball. Of course, it never hurts to put good

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“This is one of my favorite chapters."
players and a good team on the field.

**High payroll star players.** The presence of high payroll star players is the second strongest influence on attendance in this model, similar to the previous decade. This finding reinforces our view that attractive players have a significant effect on team identification. The Cincinnati Reds, operating at 48% of stadium capacity, saw attendance increase 25% in 2000 following the signing of Ken Griffey, Jr., despite the fact that the team performed worse with Griffey (.524) than the previous year without him (.589). Similarly, the Rangers’ signing of Alex Rodriguez was followed by an attendance increase of nearly 10%, despite the fact that Texas was already operating at 70% of stadium capacity. However, the revenue from the additional 31,000 fans at the Ballpark in Arlington hardly began to cover the $22 million salary A-Rod received in 2001. An interesting question is the relative trade-off when considering resigning popular star players, such as the Yankees and Derek Jeter after his 10-year contract expires in 2010.

Other revenues are generated through star players via increased media coverage and merchandise sales. Interestingly, the presence of a star player like A-Rod (in the absence of winning) was apparently not enough to warrant keeping him on the team. Furthermore, with respect to their standing in the American League West Division, it was clear that the Rangers could not do any worse as a team than they did with A-Rod. If you are starting to wonder whether or not we (dis)like A-Rod, you might be on to something.

**Winning.** While many think that winning is everything, it apparently comes in third for MLB (in both of the last two decades). Winning can make fans forgive a multitude of sins. However, the results of this model suggest that teams with new ownership would be better off doing everything they can to get a new facility and bring a few major stars to draw the fans. In particular, owners might note that the effects of winning are short-lived. For example, Miami won the World Series in 1997 and then unloaded high payroll players. The chart to the right illustrates the effect on the Marlins’ attendance.

Winning in the previous season generally helps generate additional fans for the team and reinforces identification of current fans. Expectations for future performance are largely based on last season’s

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performance. Accordingly, since season tickets are sold primarily in the off-season and form the foundation for the current season attendance, the previous season’s winning percentage will have an effect on attendance.

With respect to those teams that have an inferior stadium and few star players, winning can help, some. But, consider the plight of Tampa Bay and the Florida Marlins. Just how many fans will go sit in an uncomfortable stadium with narrow seats and a bad view of a baseball game with few notable stars on the field in south Florida—which leads the league in humidity and mosquitoes? Apparently the answer is, on average, about 16,290 people during a championship season. Similarly, in case you think they just need to take care of the heat, humidity, and mosquitoes, just how many will show up in the austere confines of Tropicana Park to see the team clinch a spot in the playoffs? Apparently so few that Tampa Bay players began calling out fans in the city to show at least a little bit of love for the team.\footnote{Go here to read: http://floridaindependent.com/8905/amid-debate-over-tampa-bay-rays-future-in-st-pete-players-complain-about-low-fan-turnout} Returning to our Miami example, following their World Series Championship in 2003, the Marlins were only able to sell 5000 season tickets by the following February (2004). So, winning will help attendance, but not independent of other factors.

**Population and rivalry.** Cities with substantial population bases, but limited professional sports teams, are likely to offer good franchise opportunities due to the lack of direct competition from other professional sports team. In the NBA, San Antonio and Oklahoma City are two teams that draw well, benefiting from no other major league teams. Major cities such as New York, Los Angeles, and Chicago have plenty of other sources of entertainment apart from professional sports that provide indirect competition for leisure dollars.

Based on the assumption that larger cities have more direct and indirect forms of competition, previous studies have indicated that population has a negative effect on attendance. What we find from our data is that each of the following has positive relationships with attendance in MLB in the past decade:

- population \(r = .272\),
- the number of MLB, NFL, NBA, and NHL franchises in the metropolitan area \(r = .280\), and
- having two rival MLB teams in the city \(r = .379\).
Apparently, previous economic prediction models did not account for the fact that these variables are highly correlated with each other. We call that *multicollinearity* in the wide world of statistics. To account for this problem, we computed an indexed score that accounts for each of these variables together. In so doing, we find that attendance increases in those cities with large populations, with multiple pro franchises, and when there is a rival MLB team.

Recounting that having rival teams has the strongest correlation with attendance \((r = .379)\) among these three variables, the results suggest that rivalry is good for attendance. This makes sense, as fans are motivated to identify with a particular team. For instance, you can’t really like both the Cubs and the White Sox. Fans line up on the side of one team or the other (recall in-group/out-group effects). With the onset of interleague play, which has helped attendance overall, we can see how these rivalry games are a boost to attendance.

**Pricing.** This model demonstrates that higher prices lead to attendance in MLB. Recall from Chapter 5 that we learned that fans have higher perceived value for higher priced tickets. Obviously, teams can’t just charge higher prices and attendance will go up. However, the results here suggest that teams able to charge premium prices are not hurting attendance. In fact, prices are positively associated with attendance. That said, the effect of current season prices, as well as per capita income in the market, explain only a moderate amount of the variance in attendance. The fact that per capita income is only weakly associated with attendance suggests that, for MLB, the general market conditions are a factor in determining attendance—but not nearly as important as all of the other factors. Put differently, it’s the weakest effect in the model.

**Overall.** This model explains factors that lead MLB teams to charge higher ticket prices. The implication is that as teams become more successful in building attendance, prices for all related consumption items tend to increase to take advantage of consumer surplus (see Chapter 1).

**Why do teams offer discounts?**

Sports organizations are able to charge higher prices when they have quality venues, star players, winning teams, recent post-season appearances, and limited direct competition. So, which organizations are bound to be charging lower prices? The short answer is: Organizations with lousy products in poor venues in
highly competitive markets. Put differently, sports organizations offer frequent discounts due to poor strategic
marketing planning. Strategic marketing planning includes:

- **Analyzing the environment** (competition, laws/regulations, society/culture, technology, and the
economy),
- **Determining target markets**, and
- **Designing marketing mixes** (product, price, promotion, place) to meet the needs/wants of target
markets.

The core **product** for sports teams is the team and its players. The **place** is the event venue (stadium,
racetrack, arena, etc.). The **promotion** positions the team in the minds of fans. **Prices** should be set consistent
with the other marketing mix variables. Organizations that offer frequent discounts (or always have free tickets
available) are basically telling the customer or fan, “We miscalculated the worth of our product.” Obviously, the
sports marketer’s strategic marketing planning needs to **ADD** up.

Although sports marketing may differ in many respects to typical goods and services marketing, the
basic concepts that spell success for sports retailing are no different from other types of retailing. Consider local
retailers (restaurants, clothing stores, etc.) that have failed or that attract few patrons. These retailers target
undesirable segments, offer poor products or service, have inferior venues, poorly position themselves in the
minds of consumers relative to competition, and are unable to attract enough patrons to at least break-even at
the prices offered. Hence, it is typically little mystery as to why sports organizations fail. We expect the United
Football League (UFL) to meet the same demise as the XFL. Before you and your fellow investors decide to
start yet another failed professional football league, consider the XFL strategy as a blueprint.

### The Rise and Fall of the XFL

Television viewers showed up for the first Saturday night on NBC. Then the TV audience faded faster than Ricky Williams’ NFL career. Why did the XFL fail?

There is no mystery here. First, the XFL targeted a relatively narrow target market: Championship Wrestling Fans who were dissatisfied with NFL and NCAA football. Vince McMahon, owner and creator of the XFL, claimed that the XFL would go where the NFL was afraid to go. McMahon assumed that everyone agreed with his premise that the NFL was boring.
Who knew that the NFL had and continues to have the highest TV ratings of any sport? During the fall of each year, the NCAA dominates the airwaves on Saturday afternoons, followed by the NFL on Sundays and Mondays. The XFL clearly overestimated the demand for more football and miscalculated the competition.

Second, and worse yet, the XFL offered an inferior product with misguided hype. Where perhaps the most entertaining aspect of the XFL product was players with nicknames on their jerseys like “He Hate Me,” the play on the field was no better than the NCAA—despite the fact that uninformed announcers such as Jesse Ventura (Governor of Minnesota and ex-wrestling star) proclaimed every tackle as being a huge collision, fully supported by the on-field microphones turned to maximum volume.

Third, promotional positioning of the XFL attempted to appeal to fans’ more base desires. Apparently overlooked by the XFL was the fact that TV already offers a wide variety of scantily-clothed women and salty language on other programming. At least they have the good taste to not mix those elements with bad football.

Fourth, venues used by the XFL were located in either already saturated markets (like Los Angeles), weak markets (like Birmingham), or weak markets with bad stadiums (like Memphis). On the positive side, the XFL’s failure indicates that you can only sell so much trash to Americans. Eventually we draw the line and say, “No more!” Of course, this does little to explain why Americans continue to watch Survivor, except that perhaps the competition is better.

Conclusion

The data analysis of MLB attendance establishes the fact that organizations with sound marketing strategies including good places (stadiums) and good products (players and teams) can charge higher prices. This is not really earth-shattering news. The three most important aspects of retailing have always been location, location, and location. Can a great product or creative promotion overcome a bad location? Well, there’s a reason that McDonald’s strategy is to place franchises in prime locations or not at all in each market. That said, not everyone is dealt a good hand and must make sound pricing decisions considering all of the variables.

Thankfully, we have help coming to you in the form of the next chapter on building value through pricing and promotion strategies.

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5 McDonald’s also owns all of its properties and rents to franchises, making its realty holdings and leases a major part of its success.