

What Variables Predict Ticket Prices of NBA Franchises? A Review

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ABSTRACT

We examine the academic literature to determine main predictors of ticket pricing for NBA franchises over the course of a single season. Our paper follows two main sections: demand factors affecting ticket prices of NBA franchises and supply factors affecting ticket prices of NBA franchises. Related to these sections, we also map strategies NBA teams can use to extract surplus, including dynamic pricing (i.e., price discrimination) and monopoly profits. It is important to consider team specific differences (the variability that exists between teams) as well as consider factors of pricing that affect all teams the same but may change over time (e.g., the state of the economy in the country). Although we shed light on these issues, our paper cannot possibly account for all factors.

Introduction

Ticket pricing for regular season NBA games is a function of demand and supply factors to which teams respond. Unlike commodity markets for which perfect competition dominates, most NBA markets can be characterized by imperfect competition (i.e., organizations have some agency to determine their own prices). Under imperfect competition, organizations set prices as a function of variables – external events (e.g., COVID 19 pandemic may have affected markets differently, influencing demand for games across teams), marketing (e.g., creating a social or family environment), and superstar talent – that influence the demand structure they face. In this paper, we explore both external factors (i.e., COVID 19 and the NBA lockout) and internal factors (i.e., marketing and star talent on which NBA organizations make business decisions) affecting ticket prices. Moreover, we examine variation among NBA teams in their ability to set prices to different consumer types, which is correlated with profit generation.

Section 1: Demand Issues

1a: The impact of COVID on demand for tickets

Covid significantly affected ticket pricing as the NBA had to suspend its season for several months, and when they did resume it, there was less fan attendance, over 4.9%¹. As a result, many teams had to refund tickets as the fans could not attend games, and teams needed to reduce ticket prices as the demand was less since there was a lack of fans. In total, the NBA lost around 500-700 million dollars' worth of ticket sales because of the Covid shutdown². After fans were allowed back in, restrictions such as capacity limits and social distancing rules were implemented. Because of these factors, ticket demand grew as fewer people could watch each game live. Star players getting sick would also cause significant concerns for ticket prices. From March 2020 to today, over 100 NBA players have tested positive for covid³. This would cause the loss of millions of dollars as fans want to see their favorite NBA player play and not be sick. If severe enough could also lead to teams needing to postpone games and quarantine players for up to 2 weeks, disrupting games and players in the process.

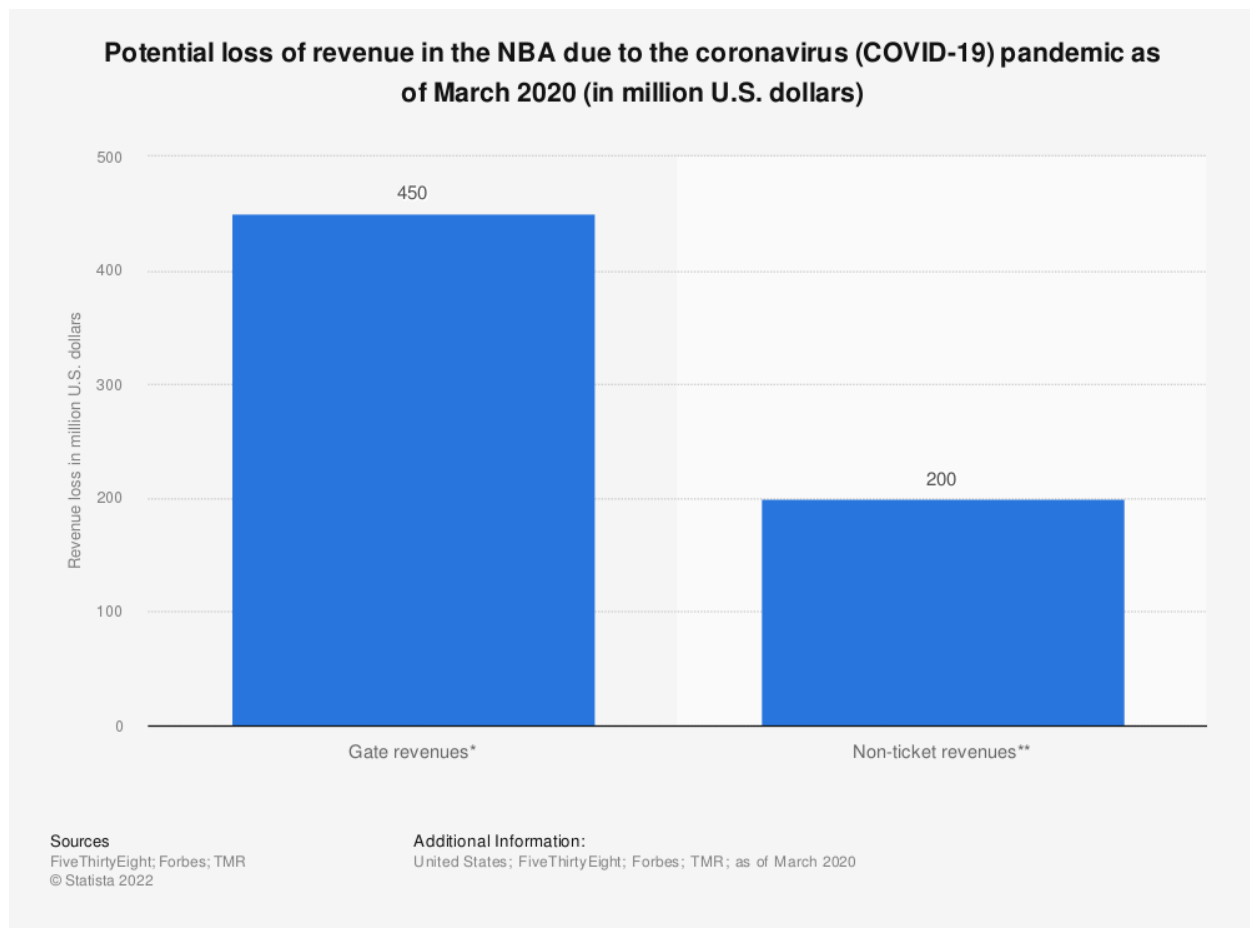


Figure 1. Projected loss in revenue due to COVID for NBA teams⁴

1b: The influence of social factors on demand for tickets

Attending a live sports event can be a social experience where fans, family, and friends gather with each other to cheer for their favorite team. This can create a sense of community and shared experience, leading to people purchasing more tickets for the game and can cause fans to want to attend more games as well. Sports events often have a certain atmosphere, with music, food, and other activities increasing social experience. This environment can draw many fans as they want a memorable experience. The social aspect of sports can also be a factor in creating a sense of exclusivity and prestige around attending live events. Fans may feel that by attending games, they are the group that supports their team the most, in which this sense of exclusivity can create a desire to attend more games and purchase premium tickets to enhance the social experience even further. The league also encourages fan interaction through social media, such as the All-Star Game voting and the NBA draft.

1c. Do substitutable goods affect ticket prices?

Basketball is a form of entertainment for which it competes with other goods and services to gain customers. Consumer theory suggests that substitutable goods and services exist when an increase in price of one good leads to reduced demand (shift of demand curve left) for another good. Intuitively, we suspect goods and services from which consumers derive entertainment value would be considered substitutes for live NBA games. For example, these may include goods like video games, movies, and shows, all of which compete for consumers of entertainment. However, cross

price effects may be different depending on the marginal value of each good. Microeconomic theory suggests the additional satisfaction we derive from a good decrease as we use more of it. Hence, video games which are bought with a fixed fee compared to a per-unit cost of going to an NBA venue would yield lower utility to the average consumer per game (i.e., per game of a video game) played compared to watching an NBA game at the stadium. This value differential exists because watching an NBA game at the stadium is more scarce than playing one game of a video game. We also argue that greater use of streaming services has driven down prices for shows and movies. Theory suggests this price decrease for movies and shows due to streaming services like YouTube and Netflix drives down demand for live entertainment if we assume they are substitutable goods. Future research should examine how reduced prices for digital entertainment have affected demand for live entertainment. This question is outside the scope of our project.

1d. Do high value players missing/resting games affect demand for tickets?

The NBA is highly driven by superstars, but when they have injuries or are “resting,” it can cause drastic changes in the fan experience to the quality of games. NBA Stars are defined as someone who are both highly skilled and popular. Superstars get sponsorships, have huge social media influence, get their own shoes, and get in the all-star games. Research done in 2019 states that whenever star players like Steph Curry, Kyrie Irving, or Anthony Davis do play, it can cause ticket prices to drop from 7-25% (\$9-\$25)⁵. Over time, if the player misses multiple games, it can add up to millions of dollars lost because the star player did not play. Star players missing games can also be bad for the away team and people wanting to see their superstar face against the opposing team. On the other hand, players who are skilled yet do not have as high of a super status, like Jrue Holiday or Tyrese Maxey, do not make much of a difference if they do not play. Star players playing with other stars can help ticket prices not drop as much. If one of the players is injured, then people can just watch the other superstar. Additionally, play style might have a significant effect on ticket prices. Teams that have higher three-point attempts have higher average ticket sales, though this correlation does not suggest causation. A paper explored a similar question and determined that gross average revenues are expected to decrease by 0.1% when the three-point attempts increase by 1%, all else equal⁶.

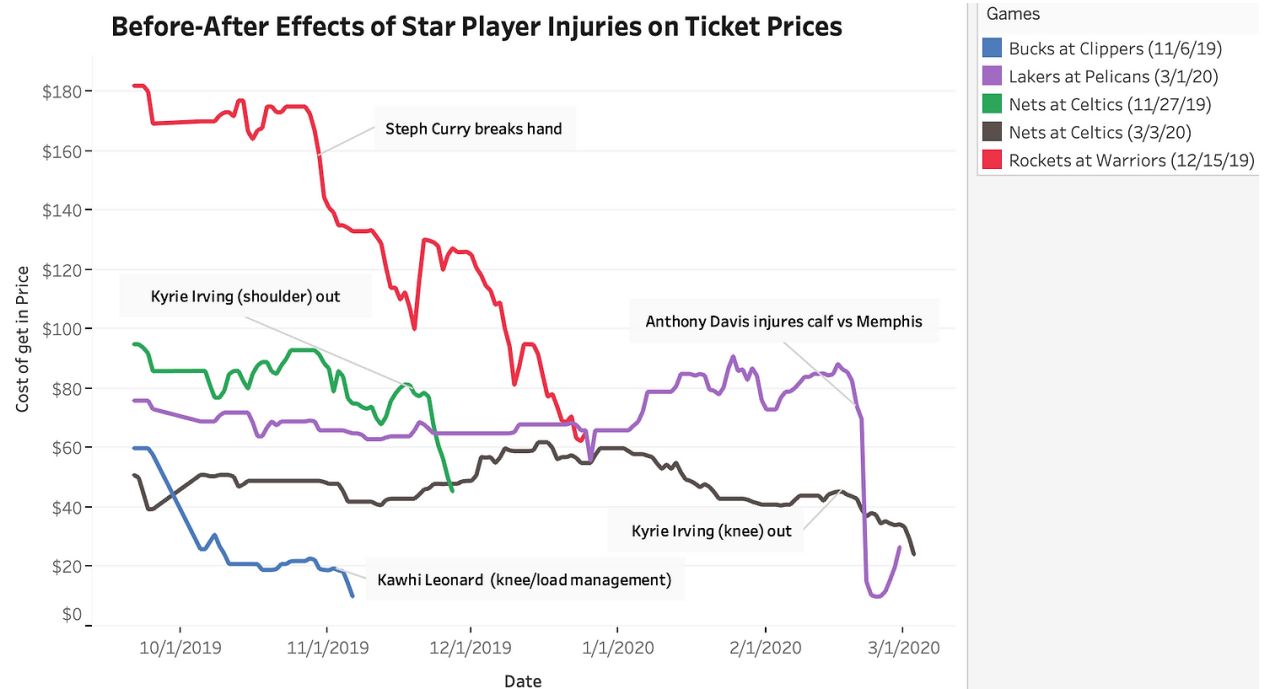


Figure 2. Ticket prices fluctuating due to star players getting injured⁷

1e. The relationship between economic recessions and demand for ticket prices

Entertainment expenses are generally affected by the income of consumers. If they have more disposable income, they will spend more on entertainment. Consumers with a more limited budget would instead save their money for more essential items. The NBA heavily relies on fan support, and when fans cannot support their team anymore (e.g., going to games), it can significantly hurt a team's revenue causing teams to come up with ideas to convince the fans to go to their games⁷. For example, Lisecki & Welton, 2014 describes that during the most recent recession in the United States some teams reduce the price of the tickets to fill up seat numbers. Additionally, the New Jersey Nets (the now Brooklyn Nets) fans who were unemployed received free tickets in order to draw fans and try to maintain profits.

On the other hand, in contrast to the 2008 recession ticket sales for some NBA teams decreased during the recession 2004 recession, contributing to declining profits for sports franchises⁸. Surprisingly, the decrease in revenue experienced by teams is chiefly due to reduction in volume of sports attendees as a result of higher sports ticket prices. Because sports tickets can be assumed to be normal goods and NBA firms face a downward sloping demand curve (i.e., as price increases, less consumers demand the good), consumers consider tradeoffs with their discretionary income that can be described by substitution and income effects. When the prices of tickets rise, consumers switch to less costly alternatives (substitution effects) forms of entertainment like Netflix streaming, etc. (however, understanding substitutable goods is outside the scope of this paper). Additionally, higher prices of tickets reduce the real income consumers can spend on all basket of goods in the economy. The income effects are exacerbated by the recession as equity in the stock market and housing market declined. One mechanism teams have used to overcome this barrier is by price discrimination in the form of offering corporate consumers different prices than core consumers as a result of their different demand curves⁸. Presumably corporate purchasers are willing to pay more than core individual consumers, so as long as the firm can pay their variable costs, it would make sense to charge different prices.

Section 2: Supply side issues

NBA teams operate in a high fixed cost and low marginal cost environment. This means the additional cost of selling an additional ticket is relatively small compared to the upfront cost associated with variables like capacity (e.g., the number of seats in a stadium) and upkeep of the stadium. Thus, the primary economic problem owners face is whether the additional revenue followed by expansion (i.e., increased capacity) is greater than the additional cost associated with that expansion. Moreover, unpredictable events like the NBA lockout or a volatile factor labor market dually affect demand and supply tickets. For example, a hot labor market could lead to higher input prices for contract workers responsible for food vending and maintenance, which would lead to an increase in semi-fixed costs.

2a. How the NBA Lockout affects supply of tickets

NBA lockouts are significant events that disrupt the league's operations and have implications for ticket supply. Lockouts occur when the league and the players' union fail to reach a collective bargaining agreement, leading to a work stoppage. During lockouts, regular season games may be canceled or postponed, resulting in a reduced supply of tickets. This scarcity can affect ticket prices, as the limited availability of games increases demand for the remaining games once the lockout is resolved. The uncertainty surrounding lockouts can also create fluctuations in ticket prices as fans may be hesitant to purchase tickets until the labor dispute is resolved.

2b. Stadium Capacity

The capacity of the stadiums and the availability of the venue are crucial in determining the supply of tickets. Each team has a stadium that can only have a capacity of a certain number of people, setting the maximum number of tickets that can be sold in a game. As stadium spectators applaud, boo, and chanting is a crucial product offered to the consumers⁹, a higher amount of people will also lead to direct needs of the sport's external stakeholders, including broadcasters and sponsors that all benefit from an enhanced stadium atmosphere¹⁰. And on the other hand, an unutilized stadium can lead to fewer future visits by the consumer, instead watching the game on their tv.¹¹

Section 3: Dynamic Pricing

In monopolistic competition, firms are able to set prices for their services and goods above what they would be able to do in a market with several competitive firms selling the same or similar product. Under certain conditions, firms facing minimal competitors can increase their profits through discriminating across consumers, for which each consumer pays close to their reservation price or max willingness to pay (WTP). In non-economic terminology, this means firms charge a higher price to consumers who value the good more than consumers who value the good less, as long as the minimum sale price is above the firm's marginal cost. This allows the firm to generate greater profits than they would if each consumer was charged the same price. The airline industry is a market for which price discrimination is common (e.g., consumers pay different prices depending on whether they want to sit in first class or economy) as well as sport events. NBA franchises charge customers different prices depending on how much they value seat location, amenities, etc.

The ability of an NBA team to price discriminate is a function of the market in which they operate. For example, teams in cities with less competition like San Antonio or Sacramento might have a greater ability to charge higher ticket prices on average relative to teams in a city like Los Angeles or Boston. However, bigger markets are correlated with demand, so we expect average prices to be greater in these cities, though possibly with less ability to raise prices to the level they want. Moreover, on average, sports teams price their tickets less than optimal (increase price would drive up revenue) because of ancillary services that they can make money on (i.e., concessions, etc.)¹² as well as to sell out expensive seats to prevent consumers purchasing cheaper tickets from migrating to high priced seats.

Section 4: Other issues affecting ticket prices

Other factors to consider include fans pre-ordering tickets days in advance, people watching from their tv, what day the game is aired, etc. Fans pre-ordering tickets days in advance will affect ticket costs as it will be cheaper as most teams market up the prices usually a couple of hours before the game. People watching from TV cause tickets to be affected as it is hard to track the number of people watching, and viewing on tv is cheaper than going in person, making the fan much more inclined to look at their TVs instead. What day the game is aired can be a massive reason for ticket prices. Most people have jobs and other things to do, so if a game is on a Tuesday, it will usually generate less revenue than a game on Saturday as most of the demographic age watching is between 18-34⁴, the working class. Teams "tanking" or "rebuilding" can also fluctuate ticket prices. When teams tank or rebuild, they will lose games on purpose to acquire high draft picks, the reasoning being that the more games you lose, the higher the draft pick you will get, gaining more ticket sales in the future and, in doing so, forgoing short term-profit, assuming that losing teams causes sales of tickets to lower. In this case, the marginal revenue will be less than the marginal cost. Profit maximization occurs where marginal revenue is equivalent to the marginal cost.

Conclusion

In conclusion, ticket pricing for NBA games is influenced by a variety of factors, including external events such as the COVID-19 pandemic and the NBA lockout, as well as internal factors like marketing and star talent. The COVID-19 pandemic had a significant impact on ticket pricing as the suspension of the NBA season and restrictions on fan attendance resulted in reduced demand and the need for ticket price adjustments. The social dimension of attending live sports events, including the sense of community and shared experience, plays a role in driving ticket demand—the availability of substitutable goods and services, such as video games and streaming entertainment. Star players resting or injured can reduce cause concern for ticket prices to decrease. Additionally, an economic recession can cause fans to want to spend their money on more important things, such as bills and groceries can affect the demand for live NBA games.

Dynamic pricing strategies are employed by NBA teams, allowing them to set prices based on consumer willingness to pay and differentiating ticket prices based on factors such as seat location and amenities. However, the ability to price discriminate depends on the market in which teams operate, with teams in less competitive markets potentially having more pricing power.

On the supply side, the occurrence of NBA lockouts can also impact ticket pricing and availability, and since there are fewer games in a lockout, it can increase ticket prices. Stadium availability also affects the supply side as a stadium can hold a certain number of seats, resulting in a set amount of tickets that can be given, causing prices to change based on the number of people wanting to see the game. Limitations such as pre-ordering tickets, television viewership, and the day of the game airing can affect ticket costs. Additionally, teams "tanking" or rebuilding can influence ticket prices as they prioritize long-term success over short-term profits.

In summary, ticket pricing for NBA games is a complex interplay of demand and supply factors, external events, marketing efforts, star talent, and the ability to price discriminate. Understanding these factors is crucial for NBA organizations to make informed business decisions and maximize their profits while providing an enjoyable experience for fans. Further research can delve into specific pricing strategies, the effects of various marketing initiatives, and the long-term implications of factors such as the COVID-19 pandemic on ticket pricing and fan behavior.

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