IJHSR
ijhighschoolresearch.org
■ RESEARCH ARTICLE

# Should NBA Teams Sell the Farm for Superstars? Distribution of Player Investment and its Impact on Competitive Outcomes

Brent A. Dsouza

Deira International School, Al Badia Blvd, Dubai Festival City, Dubai, 79043, United Arab Emirates, brent25may@gmail.com
Mentor: Mr. Samuel Boysel

ABSTRACT: Teams need more ability to invest due to luxury taxes and revenue sharing. Recruiting a star player involves a high opportunity cost to the franchise in the form of diminished cap space or sacrificing future assets like draft picks and possible role players. Therefore, resources must be allocated in a way that would maximize their competitive performance and intern revenue. This research collects archival data from twenty-four teams over thirty-two seasons (1990-2022) and utilizes it to estimate how the allocation of player investment affects a team's competitive outcome. The research uses a panel data regression to analyze the relationship between specific control variables and the outcome variable of interest. The findings of this paper show that marginally increasing the share of salary allocated to the top player increases the regular season winning percentage by 24.35. However, the study finds a weak correlation between paying higher for star-caliber players and a team's postseason performance/ likelihood of winning a championship.

KEYWORDS: Behavioral and Social Sciences; Sports Economics; NBA; Salary Allocation; Competitive Performance.

## ■ Introduction

At the start of the 2020-2021 season, James Harden, 2018 MVP (Most Valuable Player) and six-time All-NBA First Team superstar, signed with the Brooklyn Nets. Harden joined forces with two fellow superstars: Kevin Durant and Kyrie Irving, to form the 'Big 3'.[1] The franchise paid them a whopping $115 million combined that year, more than 60% of the entire roster salary.[2] Hence, high expectations were set for the team that season, with some reports even citing them as favorites to win the 2020 championship. However, they crashed out of the playoffs in the second round of the Eastern Conference and, in the following season, were swept four-zero by the Boston Celtics in the first round.

On the other hand, were the 2003-04 Detroit Pistons. The team ranked 17th in spending in the league that year, with only $53 million spent on players. Yet, despite not having a highly-paid superstar, the team marched into the playoffs, having secured an impressive 54-28 in the regular season.[3] The Pistons eventually clinched the title after defeating several notable teams, including the Spurs with Tim Duncan, the Lakers with Shaquille O'Neal, and the Timberwolves with Kevin Garnett. (The three stars have been inducted into the Naismith Memorial Basketball Hall of Fame, arguably the greatest achievement of a basketball player.)

These examples highlight alternative team-building strategies employed by NBA franchises to maximize competitive performance. (It is important to note that competitive performance may not be the franchise's sole objective. While not the direct empirical focus of this paper, the franchise might also employ a specific team-building strategy to maximize game attendance[4], ticket sales, and merchandise revenue.) One is to recruit a small number of high-salaried, "blue chip" players. This leaves less cap space to pay the remaining players on the roster. The other is to find better value players, perhaps finding undervalued veterans or developing young players from the draft, and to allocate cap space more evenly across the squad. This paper aims to answer the following questions: what is the return, in terms of competitive performance, to spending a greater share of team salary on top-tier players? Does spreading out investment like the Pistons always pay off? Would better allocation of the Nets' financial resources have enabled them to succeed?

To address these questions empirically, we use data from 24 NBA teams across 32 seasons to explore the relationship between salary allocation to top players and competitive performance (i.e., regular and postseason wins, playoff appearances, and NBA championships). Like any other financial entity, NBA franchises are driven by a profit motive. Using this research's conclusions, teams can identify the best way to utilize resources and available cap space to improve competitive outcomes.

The paper is organized as follows. Section 2 of the introduction covers the background information on various details of the NBA player labor market. Section 3 and section 4 of the introduction review the literature's relevant strands and briefly describe the data, respectively. Section 5 introduces the empirical methodology, and section 6 presents the estimation results and interprets them. Finally, we conclude with discussions and offer suggestions for further research in Section 7.

## ■ Background

The NBA consists of 30 teams in the Eastern and Western Conferences. Every season, teams in the league compete to win as many games as possible in the regular season. Teams who finish with a regular season record in the top eight of each conference then face off in the playoffs, where teams are



DOI: 10.36838/v5i6.5

In addition to competitive outcomes, NBA franchises are owned by private citizens and seek to turn a profit. The 2021 season witnessed the NBA generate its highest revenue of $10 billion, with most teams increasing their valuation.[5] The question arises: Wouldn't richer teams of the league be able to recruit more skilled workers, i.e., more basketball players and more productive ones? Moreover, how exactly should teams combine players of different skill levels and, therefore, different salaries to maximize competitive performance?

We begin with some details on the labor market of the NBA. Teams can acquire new players through the annual draft, free agency[6,7], through trades, and signing up players in the G-league.[7] Teams get their draft picks out of 60 available players based on their previous season's performance. Through the drafts, they could acquire talent and develop rookies into potential championship players for the team. In addition, teams could strive to have NBA veterans who can help guide the team. Alternatively, teams can settle for recruiting proven superstars to maximize their chances of winning in the season.

While wages have grown for both the highest and lowest-paid players, the distribution of salaries remains highly uneven. For example, the minimum salary for the 1990-1991 season was $120,000, while the highest-paid player, Patrick Ewing, received $4.25 million.[8] When these figures are compared to the 2021-2022 season, where $925,000 is the minimum salary, and $45.8 million was the maximum,[9] it is clear that the pay has skyrocketed, and so have the payment differentials.

A few rules and guidelines have been set to combat this, namely, the Salary Cap, which was reintroduced from the 1984-1985 season onwards.[10,11] The cap is a "soft" one, which means that teams are not totally restricted by the cap space and will be allowed to exceed it provided they pay a luxury tax ($1.5-$4.25) per dollar on the amount exceeded. The salary cap for the 2021-2022 season was $112.4 million, with the luxury tax threshold at $136.6 million.[12]

Another policy put into place is the NBA revenue sharing. As part of this, teams are obliged to contribute a percentage of annual revenue to a league-wide pool which is then divided equally among all teams. Revenue sharing aims to bridge the revenue generated by larger market teams, such as the Los Angeles Lakers, and small market teams, like the Cleveland Cavaliers, for instance. The revenue pool is divided equally between each team regardless of their contribution to the pool. The league considers a team a revenue recipient if its contribution is below its average payroll. The revenue given to receiving teams is funded by teams that contribute more than the average payroll.[13]

## Literature Review

We analyzed some of the peer-reviewed literature on sports economics to give context to our study of the optimal team-building strategy in the NBA. First, concerning how team investment aligns with the profit-maximization objective of the NBA franchise, previous research has found that NBA players are paid approximately their marginal revenue product.[14,15] In other words, more productive players tend to bring more value to the franchises' bottom line and therefore are compensated with bigger paychecks.

Liu's[15] key findings show that a team earns 300k more for every win in the regular season and 600k more if the season ends with the team as champions. In addition, teams can earn 5k more annually for every additional seat added to the stadium. It also found that teams earned $898,070 more for every additional million dollars spent on their roster.

Li[16] uses a regression model to find the relationship between star power, team quality, and attendance. The author finds that for the 2015-16 and 2016-17 seasons, the presence of even one superstar at a game significantly boosted ticket sales, regardless of if the player was on the home or visiting team. This was especially evident in low-level, small-market teams. For example, LeBron James playing against the Milwaukee Bucks would lead to a larger boost in ticket sales when compared to if he were to play against the Miami Heat, a more popular team.

However, this study is most similar in scope to Hatcher,[17] which focuses on the impact of superstars on their team's valuation, wins, and revenue. The top 40 players with the highest player-efficiency rating (PER) were selected and analyzed over five seasons. PER considers field goals, free throws, three-pointers, assists, rebounds, points, steals, missed shots, turnovers, and personal fouls. Like Li,[16] Hatcher finds a great advantage for teams when one superstar plays. However, adding subsequent superstars has only modest marginal benefits. Having more than two superstars on a particular team increases the number of wins but plays a smaller role as a factor in a franchise's revenue or valuation. The lesson learned from this work is that team-building is likely a combinatorial problem: finding the right mix of talent is more important than simply loading a squad with superstars. This study differs from Hatcher's because it examines a franchise's relative salary allocation to top players instead of the player's competitive ranking.

Other work, such as Nourayi's,[16] finds a strong relationship between attendance and winning percentages. Hence, using these results, it can be concluded that teams must aim for a strong performance in the regular and postseason to earn higher revenues. This paper will build on Nourayi's work by seeing if teams can attain these higher records by allotting their financial resources in a particular way.

## Methodology

Regression is a (1) empirical (2) statistical model: we specify a relationship between variables and then use statistics to estimate the strength and direction of the relationship using real-world data. Our objective is to define a model that captures the relationship between key variables of interest and, given our research question and data at hand, estimate the parameters using statistical techniques. This will inform us of the nature of the relationship between the variables of interest: a team's player investment strategy and the team's competitive performance. Panel Data Regression is a specific class of regression model that uses data varying by entities (e.g., teams) and time (e.g., seasons). This approach has the distinct advantage of allowing us to control for both (1) time-invariant differences between NBA franchises and (2) time-varying in-


DOI: 10.36838/v5i6.5

fluences that impact all teams. These are commonly known as individual fixed effects and time-fixed effects, respectively.

Let i denote a particular team and t denote season. Let $y_{it}$ denote the outcome variable of interest for team i in season t (e.g., regular season or postseason winning percentage). Let $x_{it}$ denote the explanatory or exogenous variable of interest for team i in season t (e.g., the percentage of team salary allocated to top n players). Our panel data regression model is as follows:

$$y_{it} = \alpha x_{it} + \beta w_{it} + \delta_i + \gamma_t + \varepsilon_{it}$$

In this formulation, α is the effect of increasing the salary allocation towards the highest-paid player on a team's winning percentage, on average, holding all other factors constant. $w_{it}$ is a vector of time and team-varying covariate controls that can potentially explain the competitive outcome. Therefore $\beta$ is the vector of coefficients associated with covariate influence. Depending on the exact outcome measure considered, the covariates might include current season total team salary expenditures, previous season salary share allocated to the top player, and competitive performance in the previous season, including regular season winning percentage, postseason appearances, and whether the team won the NBA championship last year or not. Finally, $\delta_i$ and $\gamma_t$ are the team and time-fixed effects, respectively. Hence our estimation strategy attempts to control for as much variation in the outcome as possible when estimating the impact of salary allocation, using a combination of covariate controls and fixed effects. Finally, $\varepsilon_{it}$ represents all remaining unobserved influences that might possibly drive a team's winning percentage.

We estimate a set of models that follow the panel data econometric specification stated above. In addition, we consider several distinct outcomes: regular and postseason winning percentage, regular and postseason net wins, whether the team made a playoff appearance, and whether the team won the NBA championship that season. For each of the outcome variables, we estimate a sequence of increasingly complete specifications, starting with a bivariate regression using the outcome and the explanatory variable of interest (i.e., the share of team salary allocated to the top player) and subsequently adding covariate controls, team fixed effects and season fixed effects. Our covariate controls include total salary, total salary paid last season, pay paid to the top player last season, regular season winning percentage last season, and whether the team made playoffs or won the championship last season. We include these controls to reduce the possibility of omitted variable bias, which occurs when factors that drive the outcome variable are not included in the regression and lead to incorrect estimates of the effect of the key explanatory variable.

## ■ Data

The data was collected from multiple sources, including Hoopshype,[2] Basketball Reference,[3] ESPN,[10] and Spotrac.[12] This included data from 24 NBA franchises over 32 seasons (twelve teams selected randomly from each of the two conferences). The observable metrics that we gather are player salary; regular season wins, regular season losses; postseason wins and losses, total postseason games played, whether the team made an NBA finals appearance, and whether the team won the NBA finals. From this data, we construct our key explanatory and outcome variables of interest. Specifically, our key explanatory metric is the percentage of total team salary taken up by the top 'n' players (where 'n' is some integer n = 1, 2, …) for a given team. Similarly, we construct our outcome metric as a team's regular season and play-off winning percentage.

One interesting phenomenon in our data is that most variables we consider are relatively symmetric in distribution (Table 1). In other words, the means are similar to their respective medians. While this precludes variation across teams and seasons, it suggests that there are few outlying teams concerning these metrics. In other words, teams are employing slight variations in the player investment strategies with differing results.

**Table 1:** Summary statistics outline the sample data collected.

| Variable | Mean | S.D | Min | Median | Max |
|---|---|---|---|---|---|
| Total Salary | $63,495,769 | $35,834,502 | $7,532,000 | $61,616,409 | $178,980,766 |
| Share of the team salary paid to the top player | 0.226 | 0.0650 | 0.0992 | 0.219 | 1 |
| Net regular season wins | 2.16 | 24.8 | -62 | 4 | 64 |
| Regular season winning percentage | 0.514 | 0.154 | 0.122 | 0.524 | 0.890 |
| Postseason appearance | 0.583 | 0.493 | 0 | 1 | 1 |
| Net postseason wins | 0.203 | 3.74 | - 4 | -1 | 15 |
| Postseason winning percentage | 0.408 | 0.207 | 0 | 0.429 | 0.941 |

## ■ Results and Discussion

Our core result finds that spending a greater share of team salary on star players significantly impacts regular season winning percentage. The results for a set of regressions in which team salary share allocated to the top player is regressed on the regular season winning percentage is contained in Table 2. In our preferred specification (Column 5 of Table 2, a model with fixed effects and covariate controls), we find that for the average team, marginally increasing the share of salary allocated to the top player increases the regular season winning percentage by 24.35 However, there is not a strong relationship between paying for star-caliber players and postseason performance (Table 3), postseason appearance (Table 4), or the likelihood of winning a championship (Table 5).

Our analysis uncovers some interesting empirical facts to complement our core results. First, a championship won last season improves the chances of winning in the current season. Second, a postseason appearance last season actually negatively impacts your chance of a championship in the current season. Finally, a franchise has a greater chance of being in the postseason this year if they won last year's title. These results suggest that teams who go deep into a postseason likely carry over strong players into the next season but winning a championship still needs to be achieved.

**Table 2:** Summarizes the coefficient estimates from a regression of regular season winning percentage on the share of a team's salary paid to the highest-paid player for our sample of franchises and season-level outcomes-present alternative specifications with different combinations of fixed effects for each column.

| | Regular Season Winning Percentage | Regular Season Winning Percentage | Regular Season Winning Percentage | Regular Season Winning Percentage | Regular Season Winning Percentage |
|---|---|---|---|---|---|
| Intercept | 0.3921*** (0.0235) | 0.1633*** (0.0267) | | | |
| Share of salary for the highest-paid player | 0.5421*** (0.1025) | 0.2480* (0.1014) | 0.2225* (0.1070) | 0.2700* (0.1073) | 0.2435* (0.1145) |
| Total salary | | 2.12e-9*** (5.11e-10) | 2.22e-9*** (5.78e-10) | 2.75e-9*** (6.31e-10) | 3.07e-9** (8.59e-10) |
| Share of salary for the highest-paid player last season | | -0.0433 (0.1040) | -0.0673 (0.1409) | -0.0396 (0.1124) | -0.0616 (0.1551) |
| Total salary last season | | -2.31e-9*** (5.43e-10) | -2.39e-9*** (5.56e-10) | -2.56e-9*** (6.39e-10) | -2.49e-9*** (4.83e-10) |
| Regular season winning percentage last season | | 0.5846*** (0.0496) | 0.5282*** (0.0576) | 0.5710*** (0.0574) | 0.4996*** (0.0552) |
| Postseason appearance last season | | 0.0099 (0.0154) | 0.0153 (0.0158) | 0.0097 (0.0182) | 0.0159 (0.0154) |
| Reigning champions | | 0.0093 (0.0189) | 0.0119 (0.0154) | 0.0077 (0.0185) | 0.0109 (0.0152) |
| Team Fixed Effects | No | No | Yes | No | Yes |
| Season Fixed Effects | No | No | No | Yes | Yes |
| Observations | 767 | 742 | 742 | 742 | 742 |
| R Squared | 0.03984 | 0.43434 | 0.44898 | 0.44391 | 0.46012 |

**Note:** This Coefficient estimate standard errors are presented in parentheses below the coefficient. Statistical significance codes at the 1- level: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1.

**Table 3:** Summarizes the coefficient estimates from a regression of postseason winning percentage on the share of a team's salary paid to the highest-paid player for our sample of franchises and season-level outcomes-present alternative specifications with different combinations of fixed effects for each column.

| | Postseason winning Percentage | Postseason winning Percentage | Postseason winning Percentage | Postseason winning Percentage | Postseason winning Percentage |
|---|---|---|---|---|---|
| Intercept | 0.2431*** (0.0382) | -0.0033 (0.0623) | | | |
| Share of salary for the highest-paid player | 0.7139*** (0.1580) | 0.4192* (0.1647) | 0.3302 (0.2221) | 0.4419* (0.2004) | 0.2852 (0.2670) |
| Total salary | | 6.4e-10 (1.07e-9) | 5.58e-10 (1.12e-9) | 5.52e-10 (1.17e-9) | 4.93e-10 (1.53e-9) |
| Share of salary for the highest-paid player last season | | 0.2437 (0.1642) | 0.1822 (0.1712) | 0.2561 (0.1413) | 0.1709 (0.1900) |
| Total salary last season | | -6.9e-10 (1.14e-9) | -5.65e-10 (1.2e-9) | -1.2e-19 (1.34e-9) | -1.51e-9 (1.34e-9) |
| Regular season winning percentage last season | | 0.4737*** (0.1141) | 0.4273** (0.1154) | 0.5159*** (0.1302) | 0.4865*** (0.1170) |
| Postseason appearance last season | | -0.0282 (0.0328) | -0.084 (0.0381) | -0.0362 (0.0066) | -0.0176 (0.0386) |
| Reigning champions | | 0.0685 (0.0435) | 0.0388 (0.0406) | 0.0623 (0.0481) | 0.0341 (0.0429) |
| Team Fixed Effects | No | No | Yes | No | Yes |
| Season Fixed Effects | No | No | No | Yes | Yes |
| Observations | 448 | 432 | 432 | 432 | 432 |
| R Squared | 0.03999 | 0.13413 | 0.17942 | 0.15075 | 0.19862 |

**Note:** Coefficient estimate standard errors are presented in parentheses below the coefficient. Statistical significance codes at the 1- level: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1.

**Table 4:** Summarizes the coefficient estimates from a regression of a postseason appearance on the share of a team's salary paid to the highest-paid player for our sample of franchises and season-level outcomes-present alternative specifications with different combinations of fixed effects for each column.

| | Postseason appearance | Postseason appearance | Postseason appearance | Postseason appearance | Postseason appearance |
|---|---|---|---|---|---|
| Intercept | 0.4125*** (0.0858) | -0.2155* (0.0861) | | | |
| Share of salary for the highest-paid player | 0.7535* (0.3748) | 0.2933 (0.3214) | 0.2933 (0.2189) | 0.3846 (0.3225) | 0.3341 (0.2622) |
| Total salary | | 4.52e-9** (1.46e-9) | 4.53e-9** 1.42e-9 | 6.98e-9*** (1.86e-9) | 7.09e-9** (2.45e-9) |
| Share of salary for the highest-paid player last season | | -0.2815 (0.3353) | -0.3927 (0.4331) | -0.2354 (0.3311) | -0.3473 (0.4425) |
| Total salary last season | | -4.93e-9** (1.52e-9) | -4.96e-9*** (1.28e-9) | -5.53e-9** (1.79e-9) | -5.66e-9** (1.59e-9) |
| Regular season winning percentage last season | | 1.430*** (0.1668) | 1.483*** (0.1734) | 1.385*** (0.2080) | 1.427*** (0.1786) |
| Postseason appearance last season | | 0.0934 (0.0592) | 0.0500 (0.0649) | 0.0888 (0.0636) | 0.0475 (0.0651) |
| Reigning champions | | 0.0160 (0.0426) | 0.0196 (0.0555) | 0.0095 (0.0396) | 0.0170 (0.0596) |
| Team Fixed Effects | No | No | Yes | No | Yes |
| Season Fixed Effects | No | No | No | Yes | Yes |
| Observations | 769 | 744 | 744 | 743 | 743 |
| R Squared | 0.00985 | 0.29996 | 0.32009 | 0.31128 | 0.33123 |

**Note:** Coefficient estimate standard errors are presented in parentheses below the coefficient. Statistical significance codes at the 1- level: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1.

**Table 5:** Summarizes the coefficient estimates from a regression of a championship on the share of a team's salary paid to the highest-paid player for our sample of franchises and season-level outcomes-present alternative specifications with different combinations of fixed effects for each column.

| | Championship | Championship | Championship | Championship | Championship |
|---|---|---|---|---|---|
| Intercept | -0.0792 (0.0416) | -0.1754** (0.0541) | | | |
| Share of salary for the highest-paid player | 0.5339** (0.1958) | 0.2625 (0.1645) | 0.2000 (0.2110) | 0.2851 (0.1587) | 0.2139 (0.2152) |
| Total salary | | 9.18e-10 (6.16e-10) | 8.55e-10 (5.54e-10) | 1.27e-9 (7.51e-10) | 1.01e-9 (8.1e-10) |
| Share of salary for the highest-paid player last season | | 0.0684 (0.1674) | -0.0119 (0.1244) | 0.0823 (0.1539) | -0.0114 (0.1214) |


DOI: 10.36838/v5i6.5

| | | | | | |
|---|---|---|---|---|---|
| Total salary last season | | -1.05e-9 (6.08e-10) | -9.85e-10 (6.27e-10) | -1.04e-9 (6.95e-10) | -1.13e-9 (8.17e-10) |
| Regular season winning percentage last season | | 0.3259*** (0.0838) | 0.3392** (0.1198) | 0.3187*** (0.0790) | 0.3399* (0.1269) |
| Postseason appearance last season | | -0.0535** (0.0191) | -0.0524* (0.0212) | -0.0524* (0.0200) | -0.0537* (0.0222) |
| Reigning champions | | 0.2345** (0.0844) | 0.1748 (0.1020) | 0.2330* (0.0947) | 0.1749 (0.1040) |
| Team Fixed Effects | No | No | Yes | No | Yes |
| Season Fixed Effects | No | No | No | Yes | Yes |
| Observations | 767 | 742 | 742 | 742 | 742 |
| R Squared | 0.02372 | 0.13259 | 0.17416 | 0.13528 | 0.17604 |

**Note:** Coefficient estimate standard errors are presented in parentheses below the coefficient. Statistical significance codes at the 1- level: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1.

## Discussion

The research results demonstrate a superstar's positive impact on a franchise's regular season record. This effect seems likely to operate over a longer stretch of games, as the player over the regular season would generate higher points per game, assists, and rebounds for the team. However, as teams face off in the postseason, multiple factors come into play. Perhaps it is the fact that postseason success is harder to come by as there are fewer opportunities, there is an increased level of competition, and likely many outcomes come down to chance. It might also be the case that the offensive prowess of superstars is limited in the postseason as teams increase defensive pressure. We find only a weak relationship between increasing the top player's salary and postseason success. Interestingly, there also isn't a strong correlation between star players and postseason appearance. This might be attributed to several factors, including injuries, load management, teams tanking to get better draft picks,[20,21] and constantly changing rosters.

This study has limitations. Firstly, this research utilizes a limited number of control variables. Additional control variables which can be taken into consideration and may influence the results of the regression include the experience of the coach, the number of years the players have played together (a team's chemistry), investment into facilities, how experienced players are, and the percentage of the roster which is healthy.

The results of this study motivate further research into team building and the economics of sports. First, it would be interesting to delve deeper into the factors that influence the likelihood of postseason performance. What components of team composition increase the likelihood of winning a championship? This kind of research would pair well with the regular season results documented here, as to make it into the postseason, a franchise needs to perform well in the regular season first. Second, the effectiveness of superstars is likely to vary across different professional basketball leagues or even across different sports. Do we still see a positive impact of paying for high-caliber players in leagues outside the NBA? Moreover, do superstars strongly impact competitive performance in other sports where team sizes, player roles, and the nature of the game are different? We could easily bring our methodological framework to bear on these different empirical settings.

## Conclusion

This paper fulfills the objective of finding the best way for franchises to maximize their on-court performance by influencing the distribution of salary allocation of players. Given a team's limited ability to invest, paying for superstars provides the greatest marginal utility for a team in terms of competitive performance. Thus, if a team struggles to make the playoffs, one of the better courses of action would be to allocate a greater percentage of cap space to the top one or two players. This can be done by extending the contract of an existing star-caliber player or acquiring a new player through trades. In addition, teams can also take advantage of increased revenue from a superstar, as shown by Li.[16] While teams not star-studded still win championships occasionally, they are much rarer, and the outcome is less predictable. This study, however, did not find a significant correlation between player investment and postseason performance, indicating that teams may not be able to improve their chance at a championship only by changing their spending patterns alone.

## Acknowledgments

I want to thank Mr. Samuel Boysel from the University of Southern California for mentoring me. With his constant support and guidance, this paper is possible.

## References

1. Nets, B. Brooklyn Nets acquire James Harden. https://www.nba.com/nets/news/2021/01/14/brooklyn- nets-acquire-james-harden (accessed Oct 15, 2022).
2. HoopsHype. NBA rumors, News, salaries. https://hoopshype.com/. (accessed Oct 17, 2022).
3. Basketball Reference. Basketball Statistics and History | Basketball-Reference.com https://www.basketball-reference.com/.
4. Humphreys, B. R.; Johnson, C. The Effect of Superstar Players on Game Attendance: Evidence from the NBA. *SSRN Electronic Journal* 2017.
5. NBA reveals record US$10bn revenue for 2021/22 https://www.sportspromedia.com/news/nba-revenue-2021-22-season-adam-silver/#:~:text=The%20National%20Basketball%20Association.
6. Scully, G. W. Player Salary Share and the Distribution of Player Earnings. Managerial and Decision Economics 2004, 25 (2), 77–86.
7. Free agency explained. https://www.nba.com/news/free-agency-explained (accessed Dec 17, 2022).
8. NBA Trade Rules Overview. https://cbabreakdown.com/trades#:~:text=Each%20season%2C%20teams%20may%20trade,players%2C%20like%20international%20soccer.) (accessed Dec 17, 2022).
9. Daubs, K. The Highest-Paid Players In The 1990-91 NBA Season: Patrick Ewing Earned The Most, Michael Jordan Was Just 8th With $2.5 Million https://fadeawayworld.net/nba/the-highest-paid-players-in-the-1990-91-nba-season-patrick-ewing-earned-the-most-michael-jordan-was-just-8th-with-2-5-million.
10. ESPN https://www.espn.com/nba/.
11. Stanek, T. Player Performance and Team Revenues: NBA Player Salary Analysis. CMC Senior Theses, 2016.
12. NBA2021 Luxury Tax Tracker. https://222.spotrac.com/nba/tax/2021/#:~:text=NBA%20Team%20Luxury%20Tax%20Tracker.
13. Pearce, A. NBA Revenue Sharing: Small-Market Teams to Benefit from New Sharing Structure https:// bleacherreport.com/art

icles/1039092-nba-revenue-sharing-small-market-teams-to-benefit-from-new-sharing-structure#:~:text=It%20works%20like%20like%20this%3A.
14. Li, H. True Value in the NBA: An Analysis of On-Court Performance and Its Effects on Revenues. Undergraduate Honor Thesis, 2011.
15. Liu, Y. The Star Effect on Sport Team Revenue: Evidence from the National Basketball Association. MSc Thesis, 2012.
16. Li, Z. The Impact of Star Power and Team Quality on NBA Attendance. Thesis, 2018.
17. Hatcher, T.; Michael Seeborg, F. A. What Is the Superstar Effect for an NBA Franchise? *John Wesley Powell Student Research Conference* 2015.
18. Nourayi, M. M. Profitability in Professional Sports and Benchmarking: The Case of NBA Franchises. Benchmarking: An International Journal 2006, 13 (3), 252–271.
19. Hausman, J. A.; Leonard, G. K. Superstars in the National Basketball Association: Economic Value and Policy. *Journal of Labor Economics* 1997, 15 (4), 586–624.
20. Taylor, B. A.; Trogdon, J. G. Losing to Win: Tournament Incentives in the National Basketball Association. *Journal of Labor Economics* **2002**, 20 (1), 23–41.
21. Price, J.; Soebbing, B. P.; Berri, D.; Humphreys, B. R. Tournament Incentives, League Policy, and NBA Team Performance Revisited. *Journal of Sports Economics* **2010**, 11 (2), 117–135.

## Author

Brent Dsouza is an IB student at the Deira International School in Dubai. Over the years, he has received several national and international awards. He is a multifaceted individual who loves playing music, creating innovative projects, and researching the NBA as an avid basketball fan.


DOI: 10.36838/v5i6.5