

# Three points Tendency of NBA

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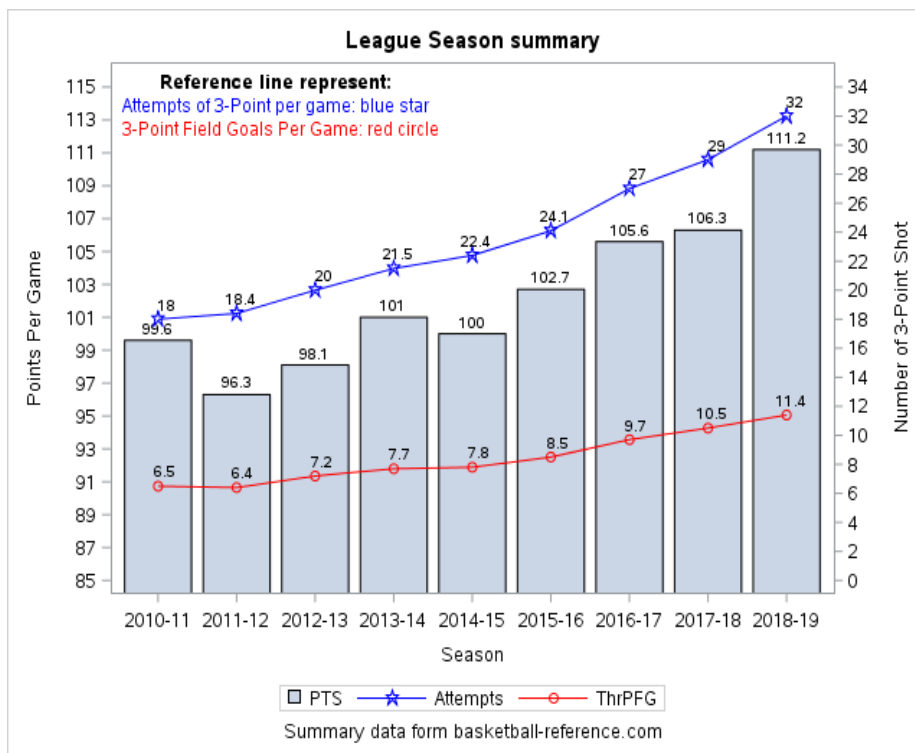
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## Introduction

As a big fan of Basketball, I have been watched NBA games over a decade. I found the three points tendency of NBA become more popular than before over these years. We saw the best three-point shooter whose name is Steph Curry lead his team won three champions in four years. And I am wondering whether we should forbid the traditional basketball strategies, like big center and great defense. As a result, I will use season statistics for the whole league to find the macroscopic tendency. In addition, I have noticed that powerful team must have a powerful weapon to win the game in last season, like rebounds, 3-points and so on. And I concern about higher three-point attempt rate or three-point field goal percentage whether are important factors for winning game or not. Then I will use team statistic from last season to analyze the microscopic tendency.

## Macroscopic Tendency

I used the summary data form basketball-reference.com. The data set contains the league



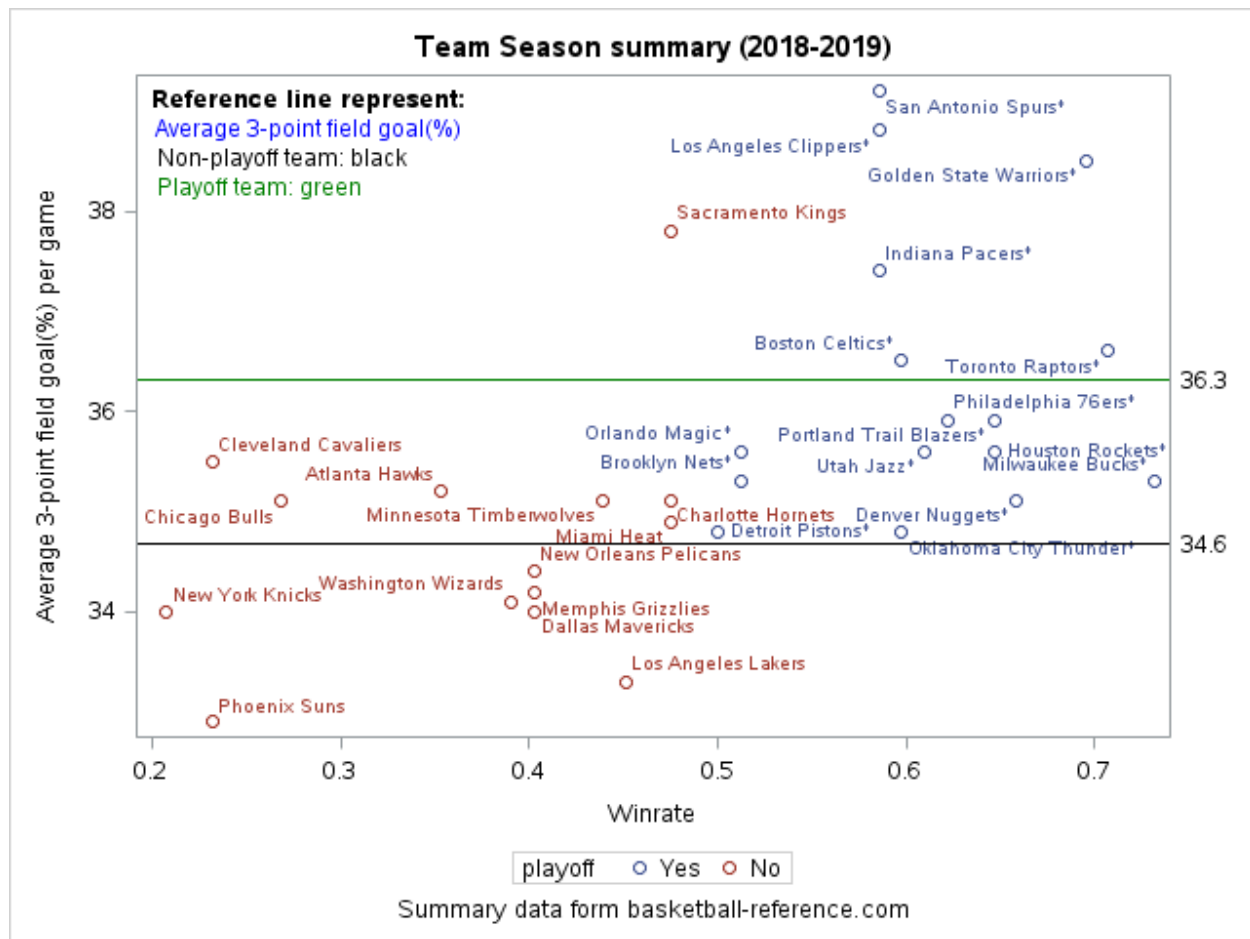
summary of nine seasons, from 2010 to 2019. Seasons are independent variable which is x-axis. Left side of y-axis is points per game which is the measurement for vertical bar. The other side is number of three-point shot that is the measurement for series lines. Red line with circle marks represent

the number of three-point field goals per game. Blue line with star marks represent the number of three-point shot attempting. According to the graph, we can see average three-point shot

attempting has been increased in every season. Most of game points and three-point field goals has increasing tendency. Especially, season of 2018-2019 has increased almost five points per game than the previous season. In my opinion, NBA is not only a basketball sport league, but it is also a business organization. As an audience perspective, I would rather to see more beautiful scoring but not great defending. Then business leader will change the league to operate more dunks, three-point shots to attract the audiences. More time that the audiences spend on watching games will affect that the business leader will obtain more investment contracts than before. I think that is called win-win situation for both audiences and League, which it also explains the reason of higher point tendency and more three-points shot tendency.

### Microscopic tendency

The second graph is made by average team statistic per game form season of 2018-2019. First, I separated team to two groups, playoff teams and non-playoff teams. Secondly, I calculated the mean percentage of three-point field goals for each group. Then I made a scatter plot to compare the average percentage of three-point field goal for different group of each team. I set the wining rate to be the independent variable, because I want to see how important the three-point shot that effect the game. (Higher winning rate represent higher ranking. Top eight rank teams can join in playoffs.) Green reference lines represent the mean percentage of three-point field goals for playoff teams. The other reference lines represent the mean percentage of three-point field goals for non-playoff teams. According to the graph, we can obviously see all points of playoff teams' three-point field goals percentage is higher than the line of non-playoff average. In addition, there is only one non-playoff team that has three-point field goals percentage that higher than the line of playoff average. That shows three-point shot already became a major factor for NBA games which also claims the microscopic tendency of NBA is having more three-point field goals.



## Conclusion

After the analyzation, I can see the improvement of three-point shot is becoming to a major factor for both macroscopic and microscopic tendency. Having more three-point shots can make more points than slam dunks. Three-point shots is also a great way to avoid body competition. I think avoiding body competition means less risk for injury, which is the reason for player to make more three-point field goals during these seasons. In addition, higher percentage of three-point field goals will caused higher winning rate, which will collect more attentions from the audience than other teams, that could help team business leader have more investment contracts than other teams. As a result, I summarized that having more three-point field goals and attempting will be the most important way to have win-win situation in both macroscopic and microscopic tendency.