

# **Fast Start:**

**Improving Offense Execution in 1<sup>st</sup> Quarter  
Gameplay**



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## Introduction:

Transforming data into useful information is vital for a NFL team's ability to implement strategies and make key football related decisions. This is why with much research and analysis I have put together this case study to address areas of improvement in the execution of the Philadelphia Eagles' offense.

The Eagles' offense struggled mightily within the first quarter of regular season games during the 2016 season. The goal of this case study is to address those issues by analyzing last season's play by play data and find solutions to the shortcomings that occurred during the beginning of games last season. I will reveal how play selection has had a strong impact on the team's ability to score touchdowns throughout the sequence of a game, and how it is applicable to finding solutions that will put Carson Wentz and the Eagles' offense in the best situation to have a more efficient 1<sup>st</sup> quarter of game performance.

## 1st Quarter Offensive Touchdowns (NFL)

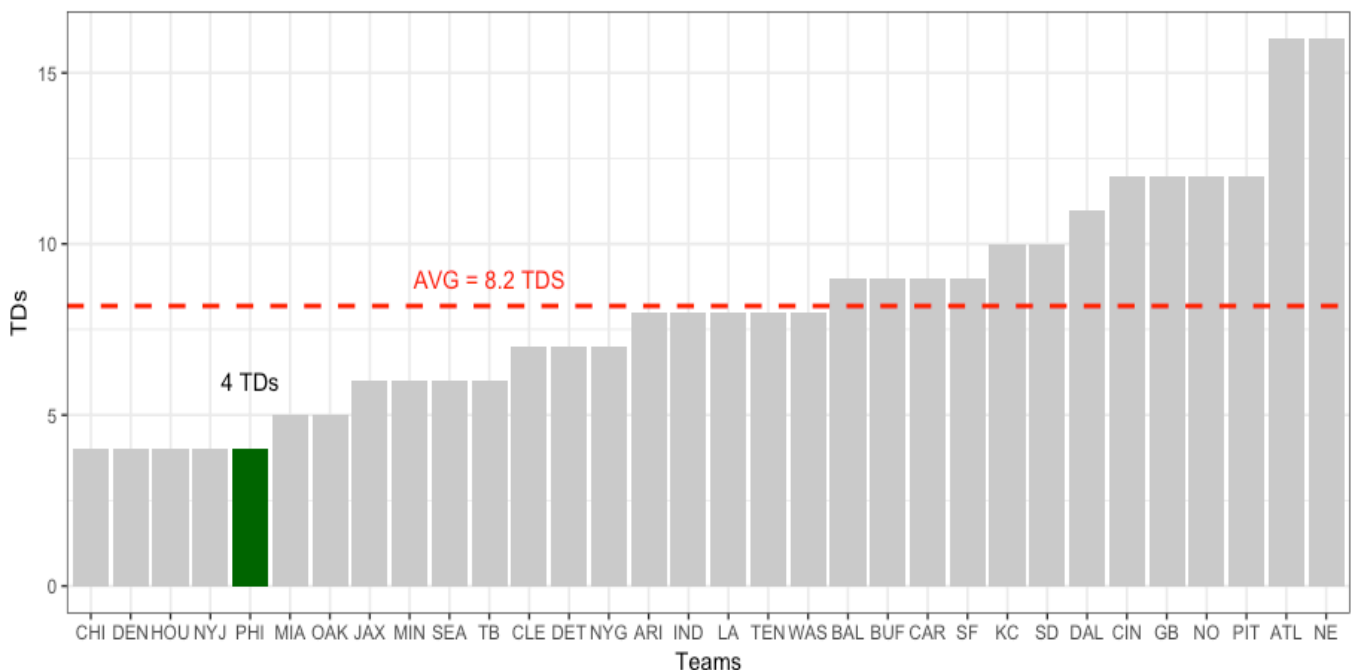
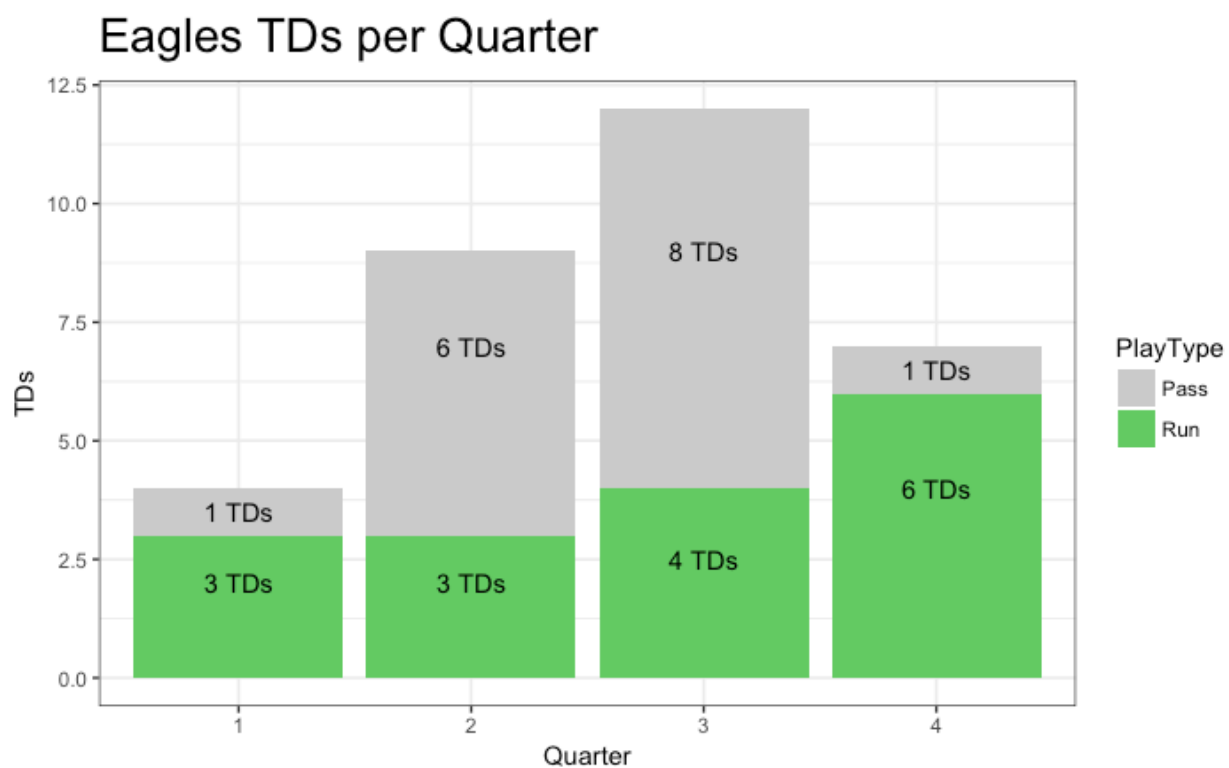


Figure 1

Above you will see the total touchdowns scored during the 1<sup>st</sup> Quarter of regular season games throughout the 2016 NFL season. The Eagles were at the bottom of the NFL with only 4 offensive touchdowns being scored in the 1<sup>st</sup> quarter of games; far off from the league average of 8.2 touchdowns. Let's take a look at the Eagles' 1<sup>st</sup> quarter offensive touchdown efficiency compared to the other three quarters.



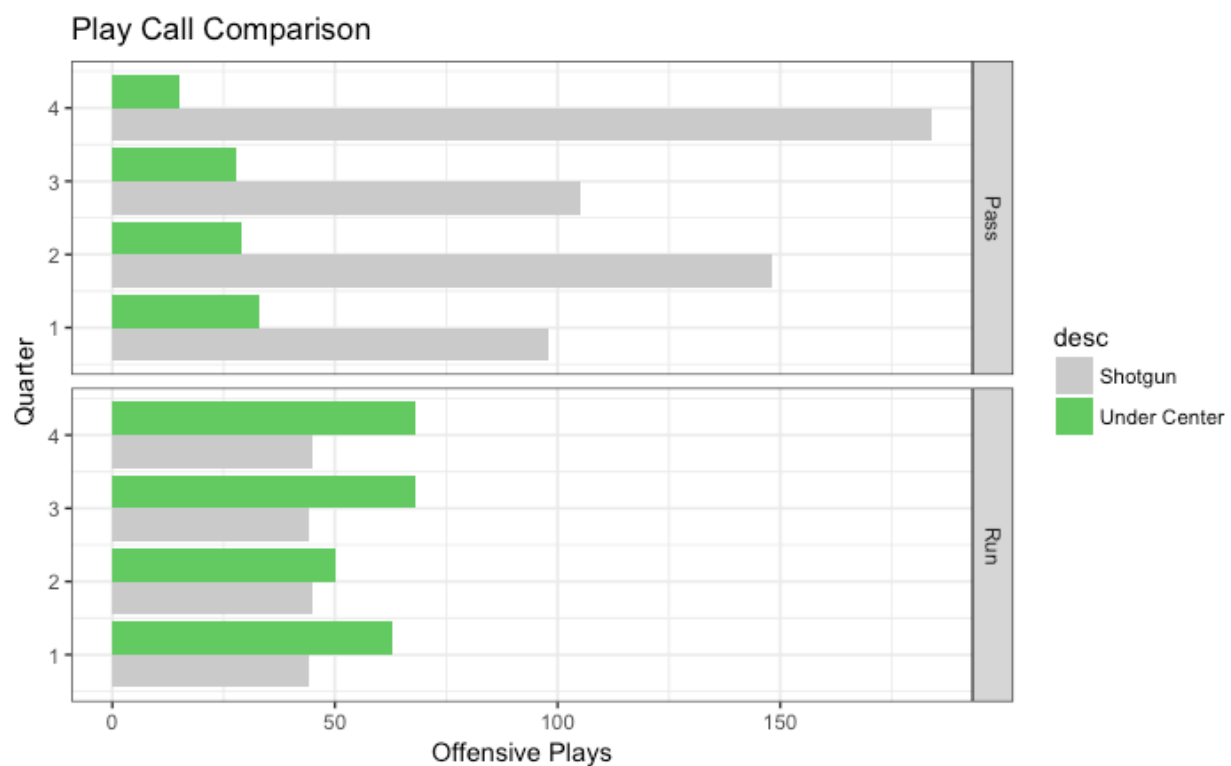
**Figure 2**

The graph above provides a look at the Eagles' offensive scoring efficiency per quarter. It is shown that team's offense is more efficient scoring the ball utilizing the passing game during the 2<sup>nd</sup> and 3<sup>rd</sup> Quarter resulting in 14 passing touchdowns, while only 2 passing touchdowns coming out of the 1<sup>st</sup> and 4<sup>th</sup> Quarter. Running the ball in the 4<sup>th</sup> quarter helped improve the overall scoring efficiency in the quarter with a total of 6 rushing touchdowns. The

1<sup>st</sup> quarter clearly appears to be the quarter where the team has the most difficulties scoring touchdowns.

### Play Selection Analysis:

We will now take a look out how play calling changes through the course of the game to identify any correlation between formation selection and scoring touchdowns in each quarter of the game.



**Figure 3**

The above chart shows how play selection differs through the course of the game. The 1<sup>st</sup> quarter had the least amount of offensive plays with only 14.9 offensive plays per game. The volume of running plays ran out of the shotgun formation and under the center appear to be consistent throughout the quarters of the games, however there appears to be a lot of volatility when it comes passing plays out of the shotgun formation. The team had a higher percentage

of plays (**%40**) come from under center in the 1<sup>st</sup> quarter vs. all other quarters of the game illustrating the lack of aggressiveness in 1<sup>st</sup> quarter play calling. Play selection however only tells half of the story, which is why below I have provided analysis on the effectiveness of plays out of each formation.

### Formation effectiveness:

#### Yards Gained Per Play (Quarter)

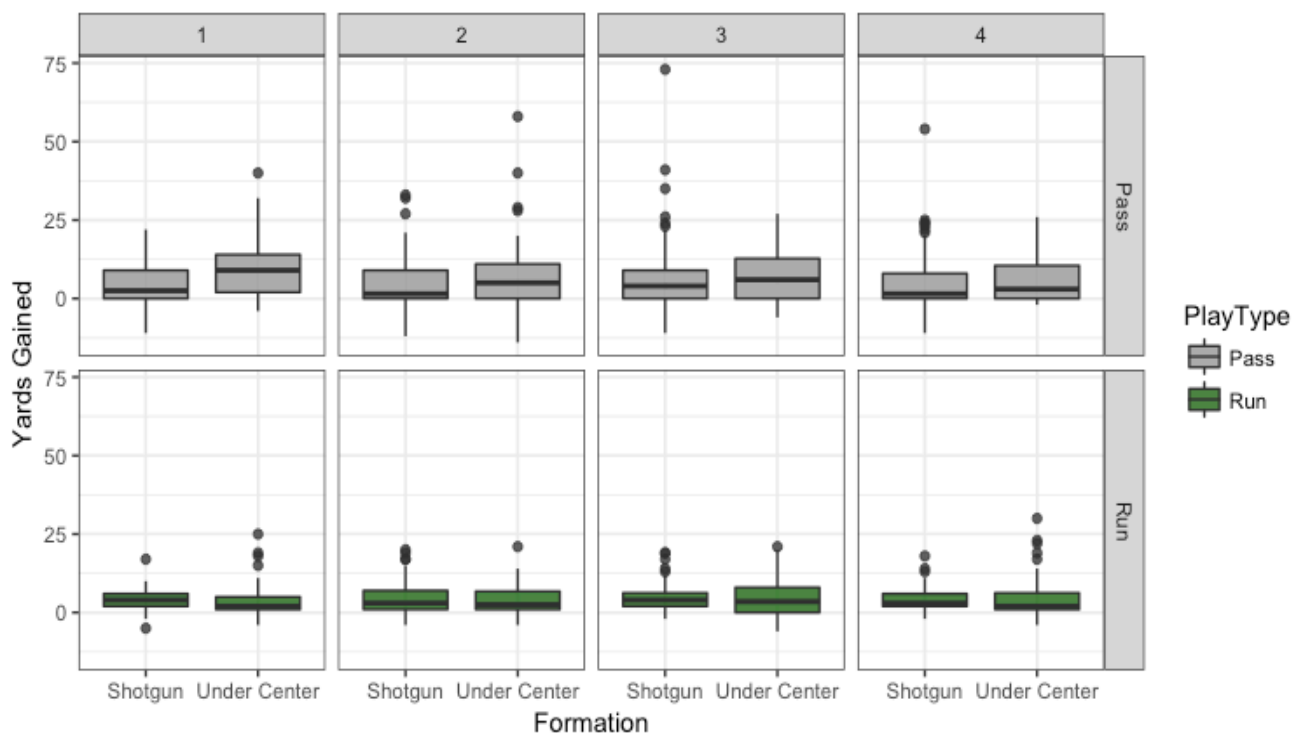


Figure 4

In figure 4 you will see that the Eagles' offense had the greatest average yards gained when the ball was passed from under center and the ball was ran out of shotgun formation. Contrary to that information, the quarters in which the eagles scored the most touchdowns (**2<sup>nd</sup> and 3<sup>rd</sup> Quarter**) and had the largest offensive gains (**represented by the outlier points on boxplot**) came from passing the ball out of the shotgun formation. The aggressiveness of the eagles play call in the 2<sup>nd</sup> and 3<sup>rd</sup> quarter show to increase the teams chance of scoring

touchdowns even though the average yards per passing play is lower in those quarters compared to the 1<sup>st</sup> quarter.

### **Final Analysis and Conclusion:**

The Philadelphia Eagles have the potential be a top NFL offense in this coming season. The offseason acquisitions on offense (Alshon Jeffery, Torrey Smith, and Legarrette Blount) and the dominance of the team's offensive line will play a key role in assisting Carson Wentz's development as a second year quarterback. The team will be able to set the tempo in the 1<sup>st</sup> quarter with more aggressive play calling by giving Carson Wentz more opportunities to throw the ball down field during early possessions resulting in more scoring opportunities. Hopefully this case study can be used to help the offense evolve in the 2017-2018 season and ultimately bring the franchise another Super bowl championship.