

Comparing the Pittsburgh Steelers under Bill Cowher vs. Mike Tomlin

STAT184 Final Project

JJ Steinbugl and Sammit Bal

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Introduction

The Pittsburgh Steelers are one of the most famous franchises in NFL history, known for their iconic players, championship success, and leadership. Over the past three decades, the team has been shaped by two head coaches: Bill Cowher and Mike Tomlin.

Bill Cowher, who coached the team from 1992 to 2006, is known for his strong defensive-minded strategies, and running focused offence. Under his leadership, the Steelers reached the Super Bowl twice, winning in 2005. Following Cowher's tenure, Mike Tomlin took the reins in 2007, becoming the youngest head coach to win a Super Bowl in 2008.

In this report we will compare the Steelers' performance under Cowher and Tomlin, exploring their impact on the franchise through various metrics, including win-loss records, playoff consistency, and average offensive and defensive rankings. Additionally, we will consider how changes in the NFL's playstyle may have influenced their respective coaching tenures.

This analysis aims to answer a few critical questions about who has been the better coach, who demonstrated greater consistency, and who achieved more success during their time at the helm of the Pittsburgh Steelers?

Methodology

This analysis compares the performance of the Pittsburgh Steelers under Bill Cowher (1992–2006) and Mike Tomlin (2007–present). The following outlines the approach taken to gather, analyze, and interpret data, as well as the methods used to account for changes in NFL playstyles over time.

Data was gathered from Pro Football Reference, and Statista, this data includes win-loss records, divisional rankings, offensive and defensive rankings, and points scored and allowed.

After the data was gathered we cleaned and merged the data sources in order to consolidate our data and make it easier to work with in the future. The data also meets the FAIR principles as it can be easily found, it is accessible and free to download, it can be easily interpreted in CSV format, and it can easily be reused.

We recognize that football is an ever evolving sport and understand how NFL rule changes can affect a teams playstyle. Over the years we have noticed the shift toward pass-heavy offenses and rule changes favoring offensive play and player safety. To address these changes, the analysis will consider and address these recent trends/changes before any type of conclusion is made.

Research Questions:

- Who is the better coach for the Pittsburgh Steelers?
- Who is more consistent in their rankings during their tenure?
- Who was more successful during their tenure?
- How does the evolving NFL playstyle affect the statistics?

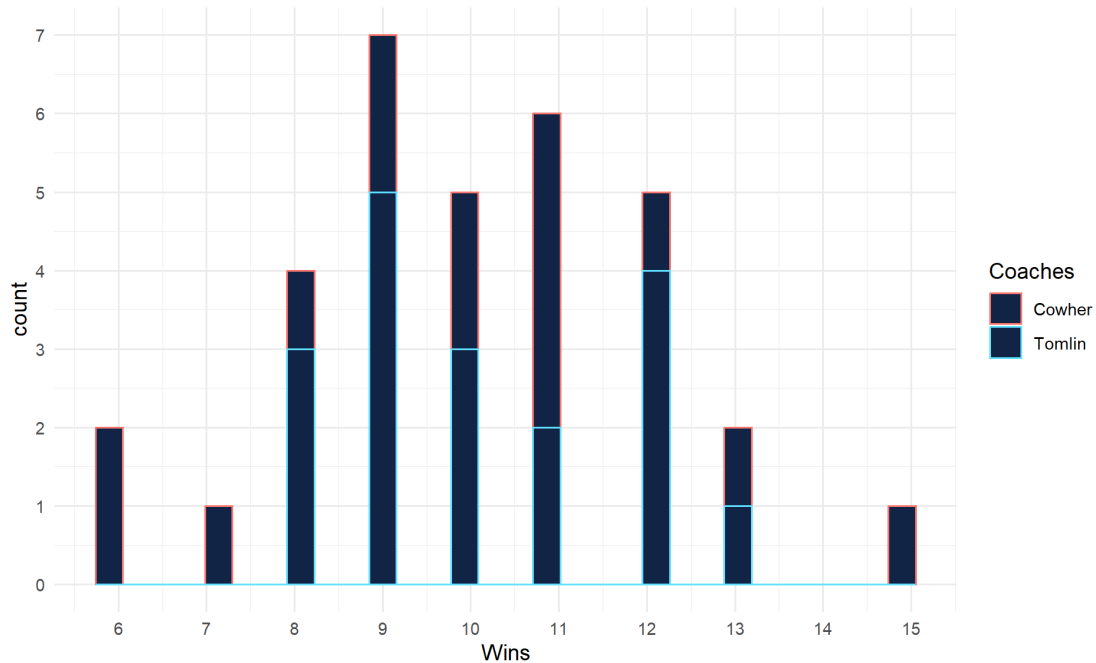
Analysis:

Graphical Comparisons: Include and interpret the graphs you created. Break these down by tenure, rankings, success metrics, and consistency. Evolving NFL Playstyle: Discuss trends in the league (e.g., changes in offensive/defensive styles) and their possible impact on the coaches' statistics. Discussion:

Address each research question in detail, supported by the data and insights from the graphs. Discuss any limitations in your analysis,

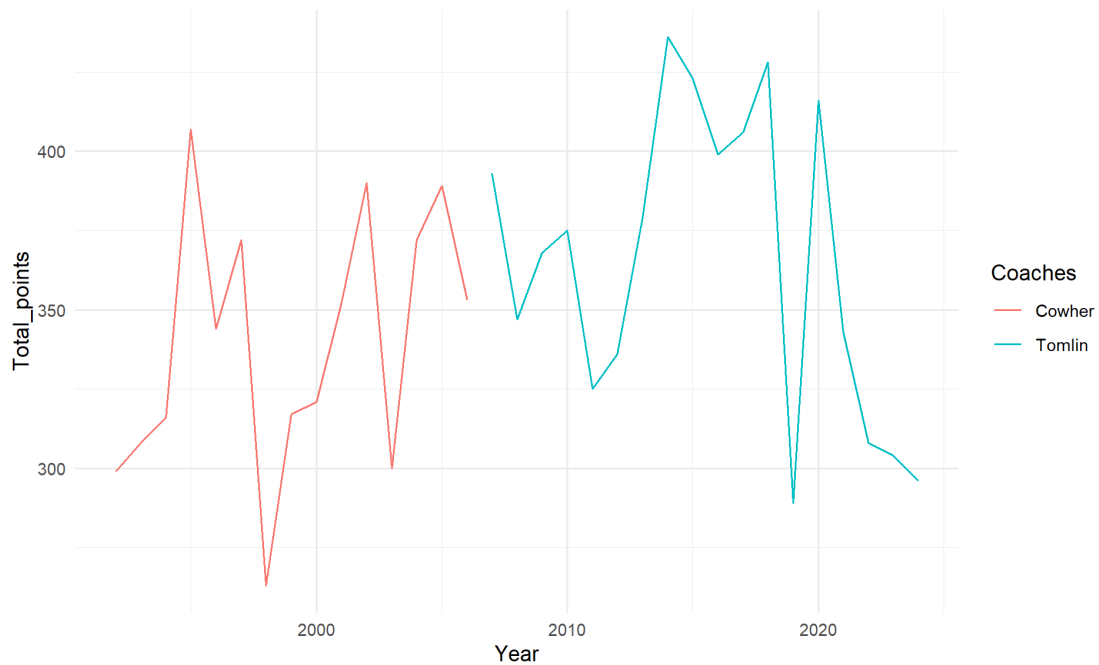
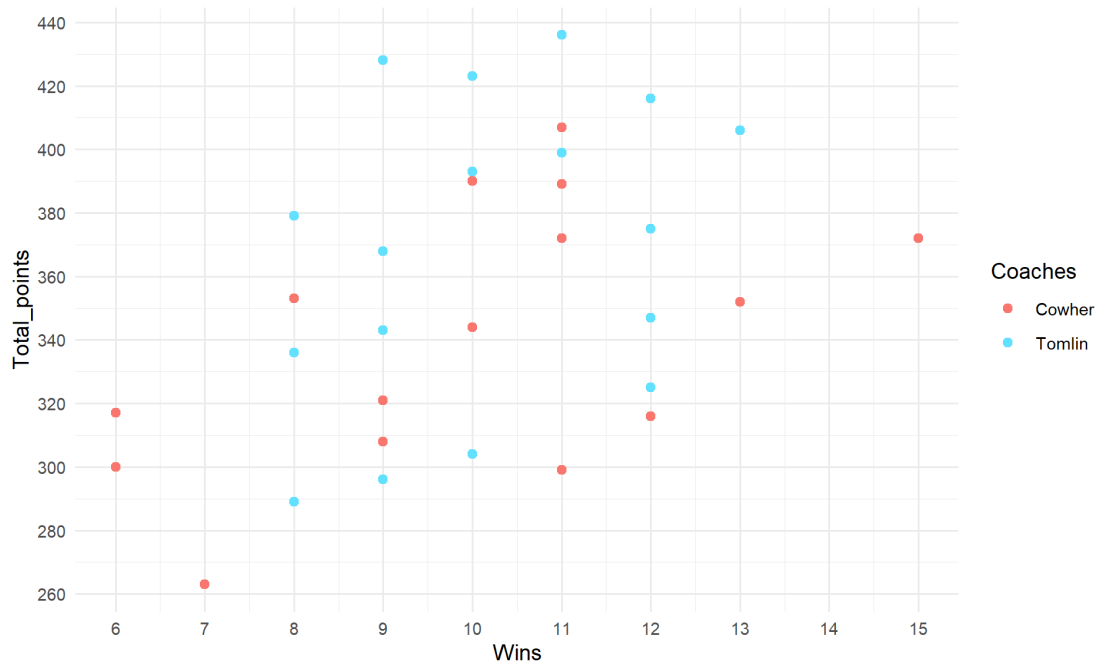
- Who is the better coach for the Pittsburgh Steelers?

This is the obvious question to ask in this analysis, but is indeed the overarching question. We will first analyze wins and losses, as it is the first thing you think of when you think of a coach.



This is a graph that shows through their time as a coach how many times Coaches Cowher and Tomlin got a certain amount of wins. These counts range from 6 to 15, with Cowher taking the lowest and highest. We see that Mike Tomlin has been very consistent from the 8 to 13 win range, but Bill Cowher has had more variety in his win columns. An important note to consider here is that When Cowher coached, there were only 16 games in the season, as opposed to Tomlin who has 17 games in each season. We interpret that Tomlin has been much more consistent with winning, but we are aware of the uneven game amounts.

The next category we analyzed was each coaches total points scored in terms of both their wins and their points scored. The graph comparing points scored to wins is on the left, and the one comparing points scored to the year is on the right.



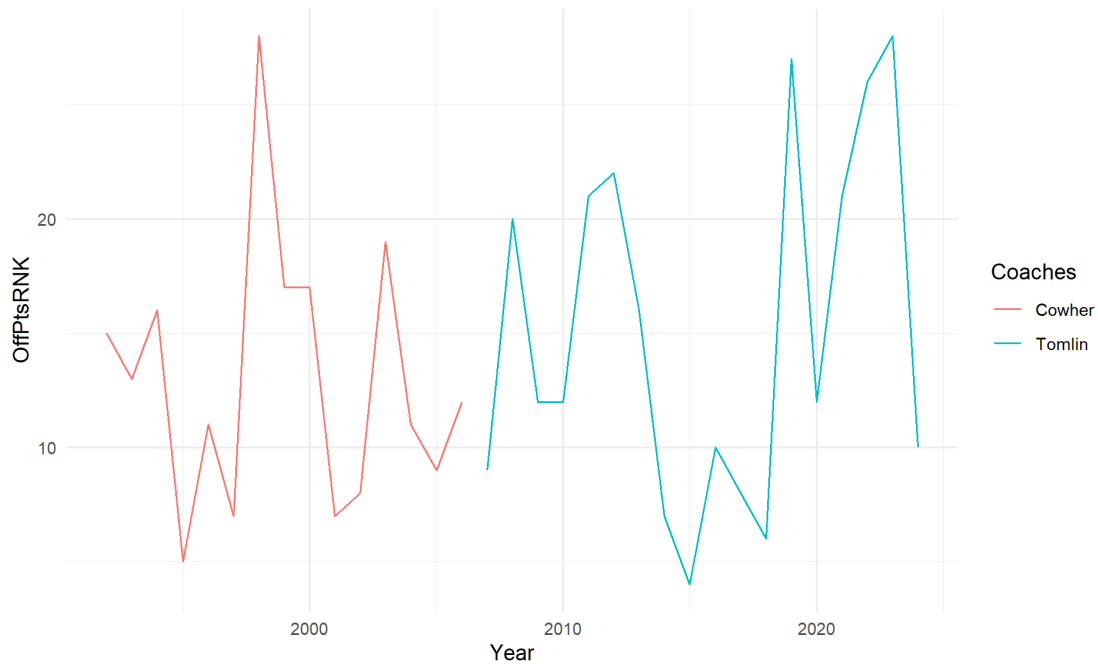
As you can see, the graph on the right once again favors Tomlin, as he is much more consistently scoring points, which by correlation is going to contribute to winning more games, as we saw in the graph above. But, a trend that has appeared in the more recent years of the NFL is that NFL football is a much higher scoring game than in years past.

This is easily seen in the graph on the right, as Tomlin is easily scoring more points than Cowher, even in his seasons with less wins.

- Who is more consistent in their rankings during their tenure?

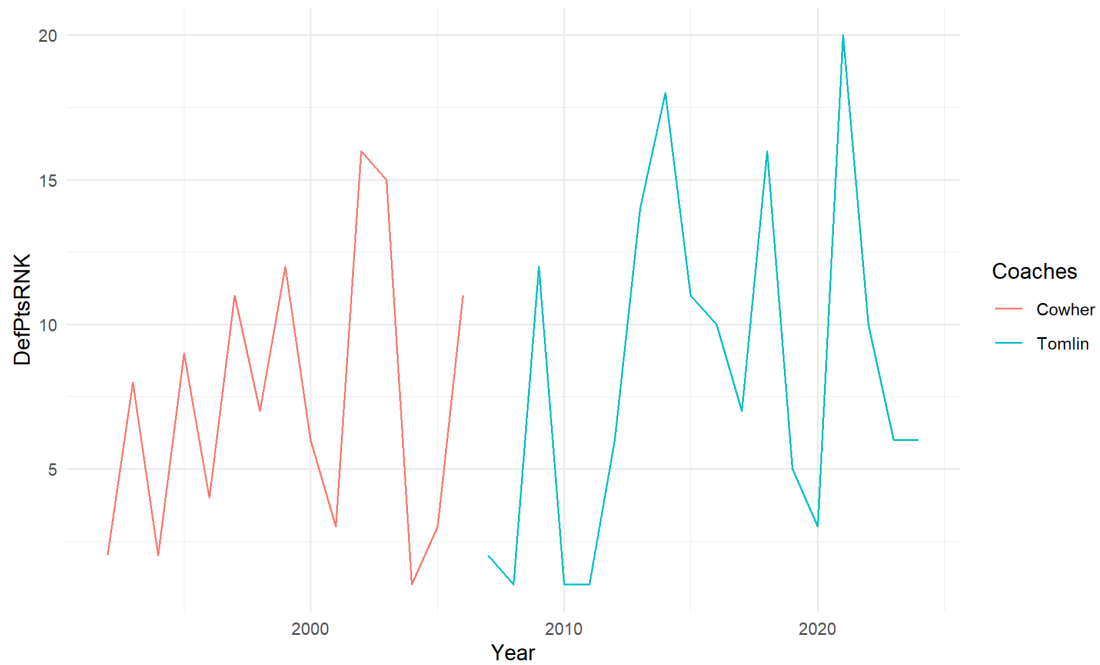
The next thing we can look at is how these two coaches compared to their colleagues throughout their time coaching. We will analyze graphs comparing their ranks in all categories, offensive and defensive.

The first visualization we made was comparing the offensive points scored ranking of the coaches each year they coached. In terms of ranking, number 1 is the best, so the lower the line is, the better the coach was ranked in that year.



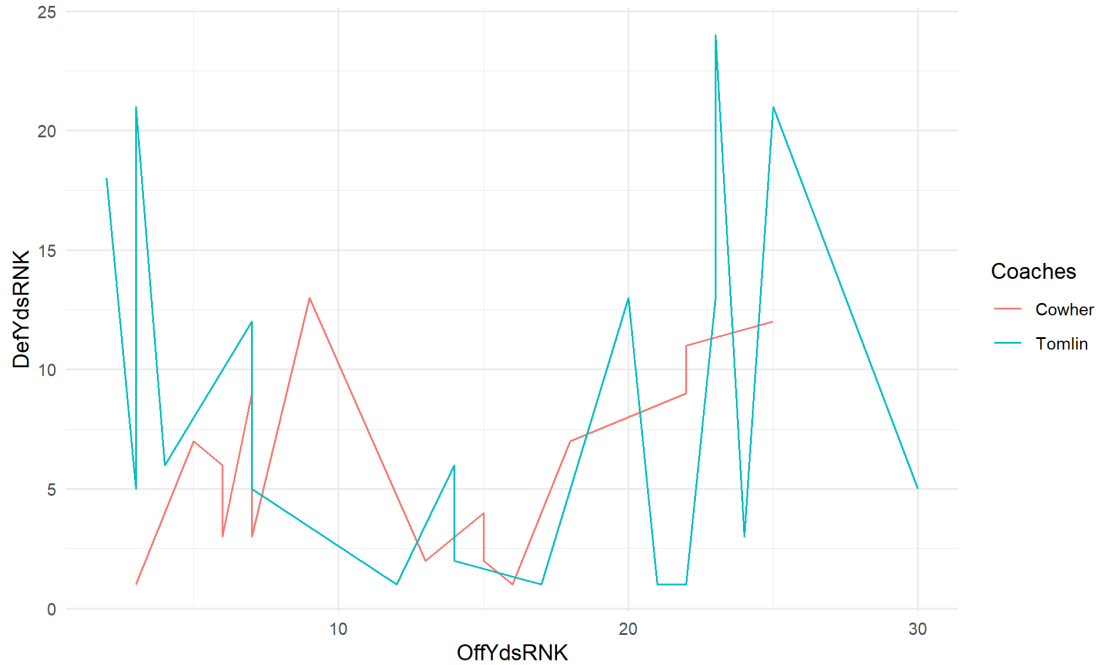
In the graph we can see that Mike Tomlin is much more variable, having multiple spikes in rank up in the 20's, but a few short years close to 2 or 3. Coach Cowher is more consistent, only having one big spike up in the high 20's, but other than that having a consistent rank of around 8.

We then did the same for defensive points scored rank. The same rule that lower is better applies to this graph as well.



From this graph we can see that Mike Tomlin is very sporadic with his rankings, some very high, and some very low, whereas Bill Cowher is much more consistent, with far less spikes than Tomlin.

The next graph shows the coaches rank in terms of offensive and defensive yards. In this particular graph, the further in the bottom left the coach is, the better their ranks were.

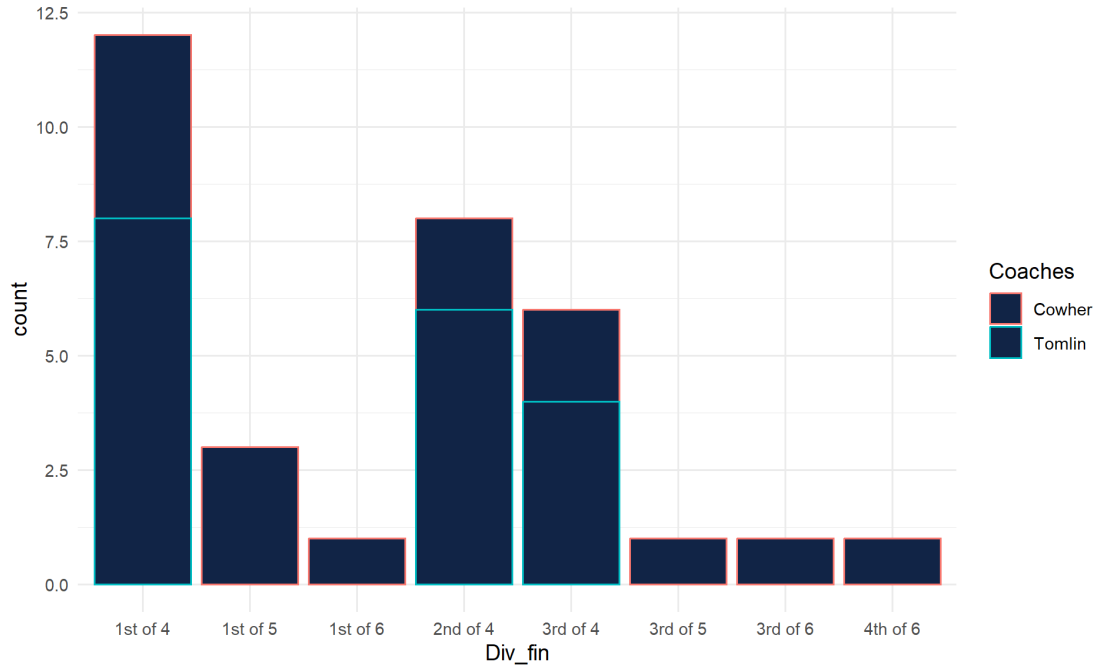


We can see that Coach Cowher was able to acquire much lower ranks in both offensive and defensive yards. We can also see that he was much more consistent in his time, keeping all of his ranks low whereas Mike Tomlin had years with very high ranks.

- Who was more successful during their tenure?

When determining success, one of the most common standpoints to view success is by end of the season ranks, as well as playoff runs. We will compare both of these to see the success level of each coach.

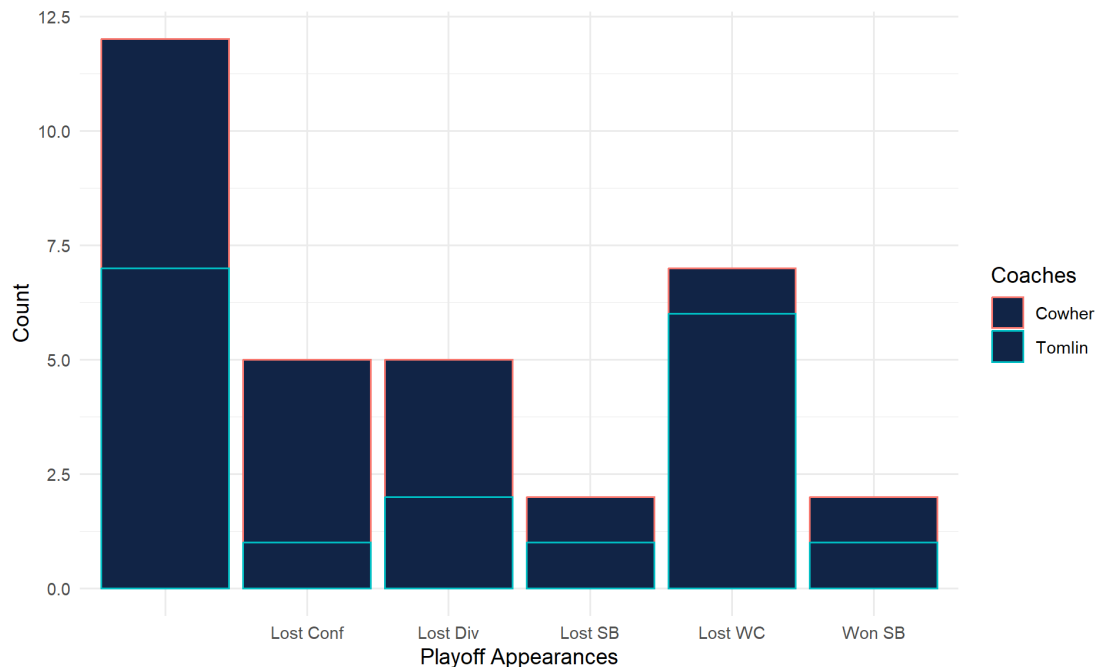
Our first graph is comparing the divisional finishes. One thing we have to be aware of is that in Cowher's time, there were 5 and 6 teams in the playoff, compared to the modern day 4 teams.



Here we can see that accounting for the different amount of teams between the two time frames, the coaches are pretty even. Each coach has finished first about 7 times, and they have each finished second and third the same amount of times. This tells us they were both very successful, but nothing too prominent to distinguish them from one another.

Now we can compare their playoff appearances, and to what level they got to. The order in terms of least important to most important is as follows:

- No Appearance
- Lost WC
- Lost Div
- Lost Conf
- Lost SB
- Won SB

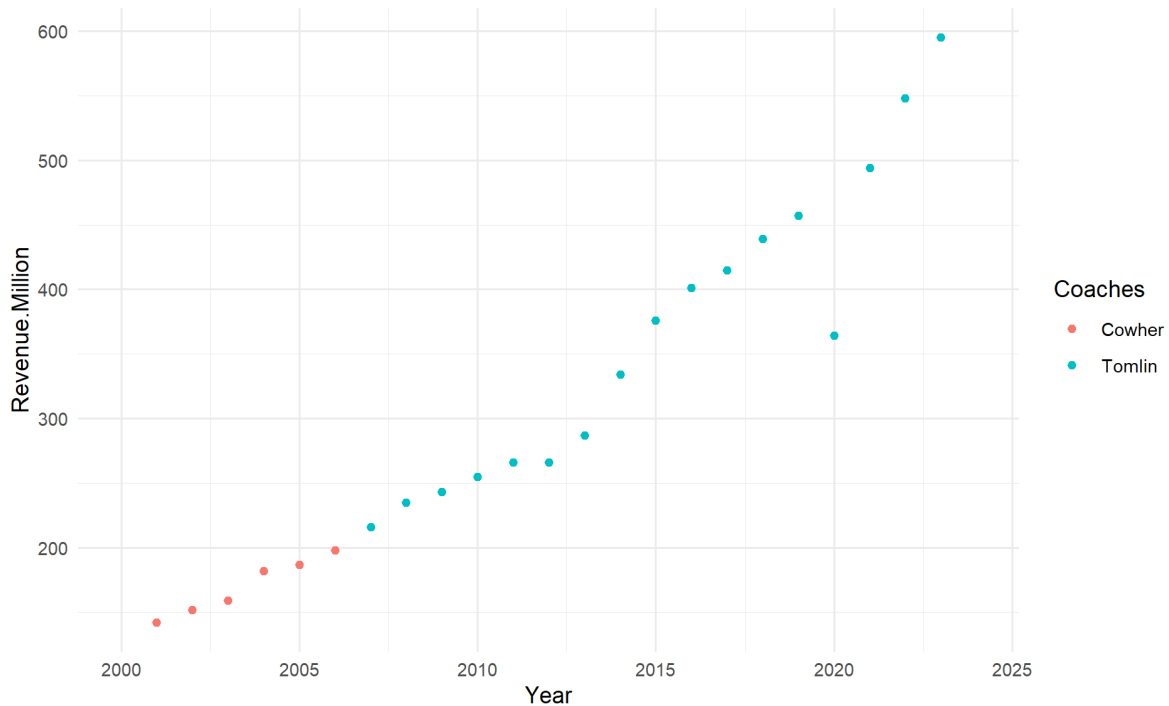


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We observe that in terms of the most important appearance, the Superbowl, both coaches have won one and lost one, so there is no significant difference there. But, we do see that coach Cowher is leading in both the Lost Conf and Lost Div columns, meaning that he was able to get further in the playoffs a lot more often than coach Tomlin. From this we determine that Bill Cowher was more successful in the playoffs.

- How does the evolving NFL playstyle affect the statistics?

Earlier we discussed how the NFL gameplay has changed in terms of being higher scoring, as well as the changing of the divisions and how that might have some effect on how a coach's success is viewed. But the most underlying bias we found was in a metric some people might forget about when talking about football: money. Many people determine success on how much revenue a coach can bring in during their time.



At first glance, when looking at this graph, one might think that Tomlin has blown Cowher out of the water in terms of revenue. In reality, if we account for the underlying change in the way the NFL makes money as well as the inflation rate in recent years, we actually find that Cowher made more revenue per year than Tomlin when accounting for inflation.

Conclusion

When taking all of these graphs and conclusions into account, we discover a couple things: In terms of winning and points scored, we see that Mike Tomlin edges out Bill Cowher, even when accounting for a higher scoring NFL and a different game than past years. But, in terms of consistency, especially in rankings, Bill Cowher is miles ahead in almost every metric. In terms of success, both coaches have done very well in their tenures, but Bill Cowher was able to finish just a little higher than Mike Tomlin in both division finishes and playoff runs.

We understand that deciding who is the better coach is an objective question, and at the end of the day an opinion, so the interpretations of our graphs are laid out for the reader to make their own judgement. Nevertheless, through our analysis, we conclude that Bill Cowher was overall a better coach for the Pittsburgh Steelers.

References

Include all references used in report and analysis.

Research Questions:

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