

# MLS: Through The Years

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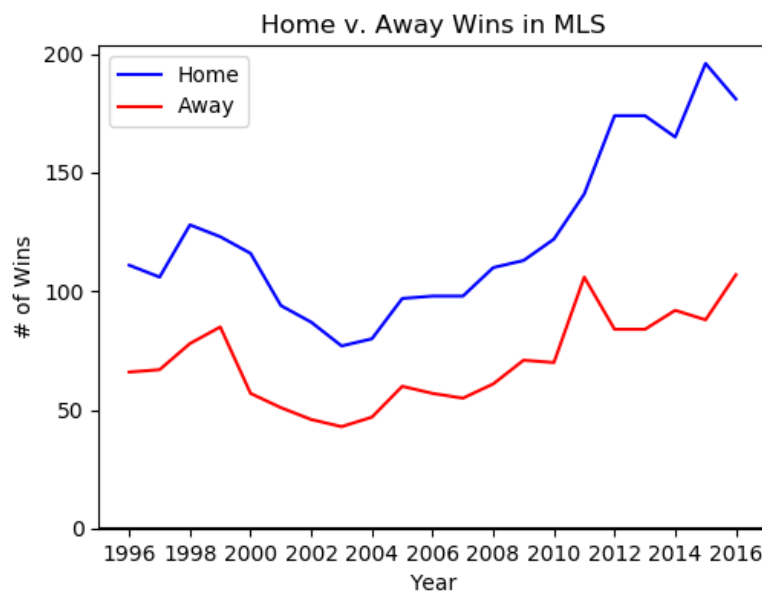
Today we are examining a dataset about Major League Soccer (MLS) games since the inception of the league in 1996. This contains info about when every game was played, who the home and away teams were, the number of goals scored, and additional nuggets about goals in playoff games and extra time. There are some common stereotypes about American soccer that I wanted to explore with this data, to whatever extent I could.

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## ***Home Field Advantage***

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First, teams in MLS are thought of as having a home field advantage, more than other soccer leagues in the world. Since most soccer leagues are confined to a single country the travel burden is defined by the size of the country. Since the United States spans four time zones it can be a much larger physical burden to constantly readjust to new time zones, affecting away teams play. In addition, MLS teams are limited in the number of chartered flights they can take per year. You may just find yourself on the same flight as Zlatan or David Villa, vying to avoid the middle seat as they wait to board with the rest of us.



**Figure 1**

In **Figure 1** it is easy to see home teams tend to win consistently more often than away teams over the past 21 years. Why are both home and away wins increasing? Teams have entered and left the league while season length has ranged from 26 games in 2001 to the current maximum of 34 games. Since its inception the league has over doubled in size from 10 teams to 23 teams, with three more on the way (FC Cincinnati, Miami, and Nashville), accounting for the total increase in games. **Figure 2**

shows the differential between home and away wins, as well as ties. Wait a minute...there were no ties until 2000?! If you pay any attention to soccer around the world you'll know that draws are commonplace, including the much maligned 0-0 draw. It turns out the league didn't *allow* ties in the regular season until 2000, at which point it abolished its Americanized shootout rules that ensured every game ended with a winner.

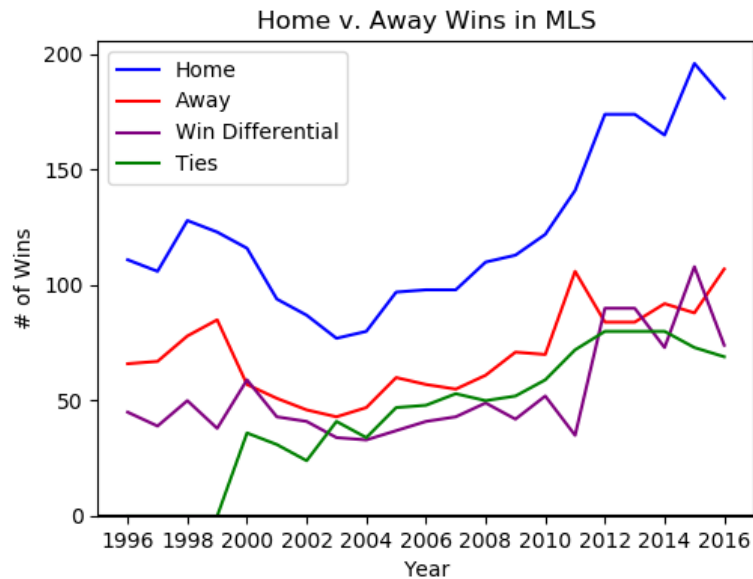


Figure 2

At first glance it may seem that the home field advantage problem is getting worse as the win differential has gotten larger, approximately doubling from 50 to 100 games each year. However, a quick calculation unveils that the number of games has also approximately doubled, making this result unsurprising. The same rough trend can be said for home and away goals in **Figure 3**.

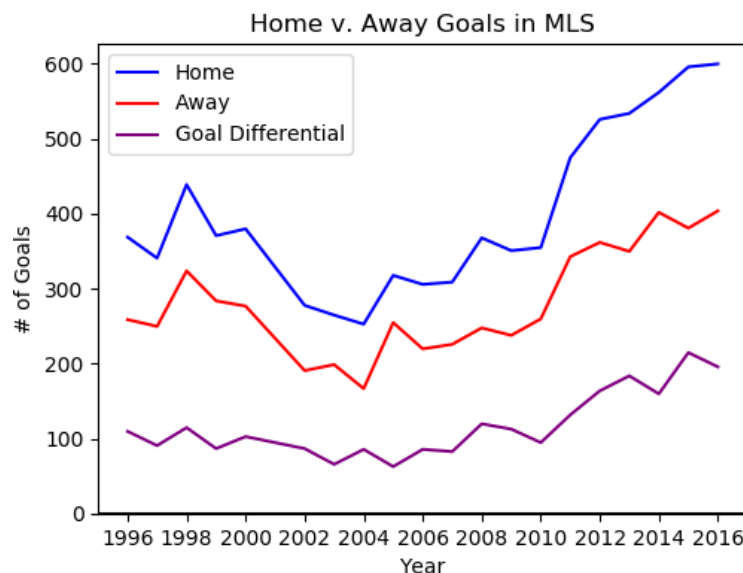


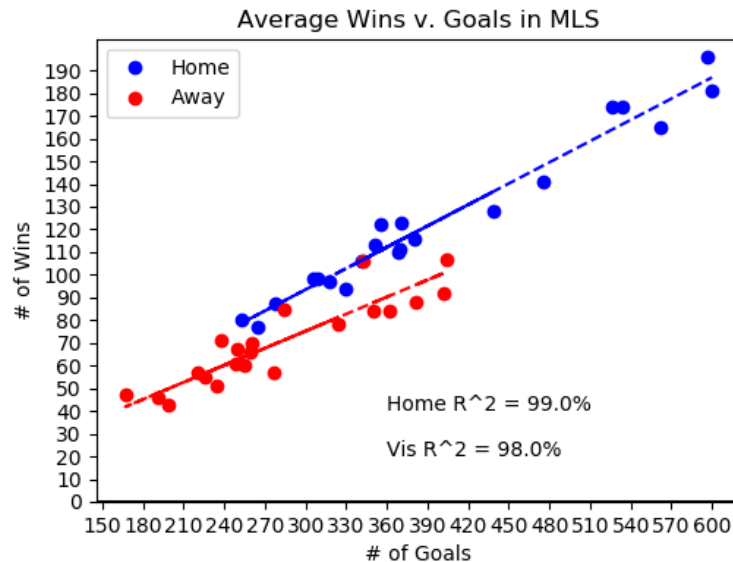
Figure 3

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## The Defense Dilemma

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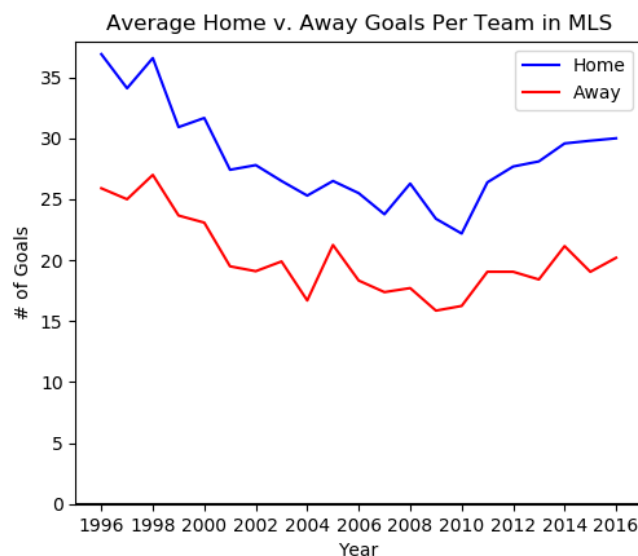
Additionally, MLS is sometimes criticized for poor defense relative to its offense, generally considered to occur because owners are much more interested in investing millions into flashy goal-scorers than solid defenders. An obvious relationship arises in **Figure 4**: Goals Win Games. Each point



**Figure 4**

represents an entire season, and with such large  $R^2$  values it's apparent that regardless of whether you play home or away, teams tend to win more when they score. An audible eye-roll is in order on par of that due a football announcer realizing "They're going to need to get more touchdowns if they want to win the game."

So are defenses getting worse? We would expect to see an increase in goals over time, as in **Figure 3**, but we will need to control for more teams entering the league. The average home/away goals



**Figure 5**

per team yields a more applicable graph from which to draw conclusions. **Figure 5** shows that on average, teams are scoring less than when the league began until it reached an all-time low in 2009 and more recently there is an increasing trend. This suggests that MLS defenses were improving, perhaps based on higher investment in them, until more recently where there has been another splurge in big spending on star-studded attackers. Perhaps its time for teams to seek out higher-grade defensive players to counter this current trend.