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Tempo's Impact on Statistics Part 2

Last month, we explored how tempo impacts a team's production. But these "per game" numbers are not always indicative of a team's efficiency and can even be misleading. This month, we analyzed Division-1 college basketball teams over the last four years and examined how tempo can have a direct effect on team efficiency. Specifically, we looked at how offense is impacted by tempo. Coincidentally, Ken Pomeroy came up with a new statistic he calls "average possession length" (For those of you who don't know we get a lot of our stats off kenpom.com Ken Pomeroy's website- a tremendous source for basketball analytics). Every team has an average possession length for offensive and defensive. The offensive number is how long (in seconds) the team's average offensive possession lasts, and the defensive number is calculated the same way.

We concerned ourselves with how a team's offensive average possession length affected different offensive categories and overall offensive efficiency. The tables below should help put a face to the statistics.

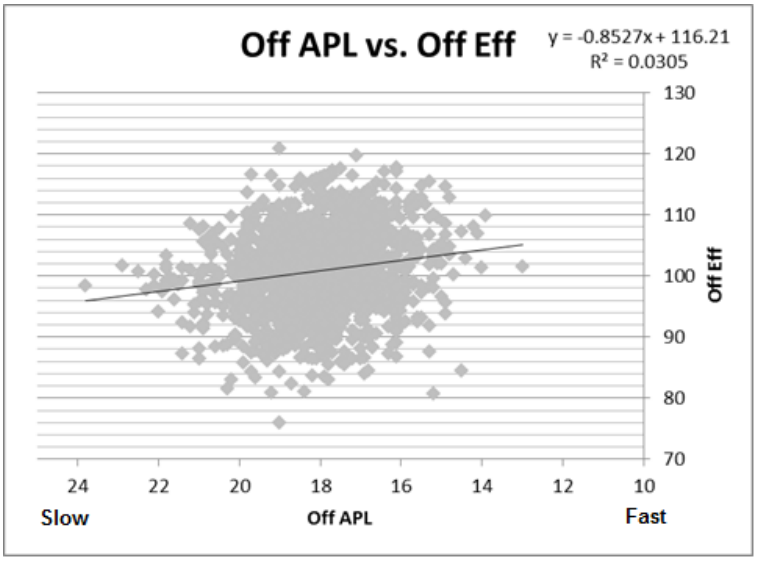
2012-2013 Fastest Offensive Teams

Team	Off. APL	Rank
BYU	14.2	1st
Northwestern St.	14.8	2nd
Illinois St.	15.0	3rd
Central Arkansas	15.2	4th
UMass	15.2	5th
VMI	15.2	6th
Texas St.	15.3	7th
Arkansas	15.6	8th
NC Greensboro	15.7	9th
Indiana	15.7	10th

2012-2013 Slowest Offensive Teams

Team	Off. APL	Rank
Northern Kentucky	21.9	347th
Wyoming	21.8	346th
Western Illinois	21.8	345th
Stephen F. Austin	21.8	344th
American	21.6	343rd
Eastern Illinois	21.4	342nd
Denver	21.2	341st
Delaware St.	21.1	340th
Rhode Island	21.0	339th
Samford	20.9	338th

The reason why I didn't put the offensive efficiency of the teams listed above is because I did not want anyone to make a false assumption off the results of 20 teams. This is not enough of a sample size. The charts below do a better job of explaining the impact "offensive average length of possession" has on offense. These charts represent every Division 1 team over the past four years (1,384 teams).

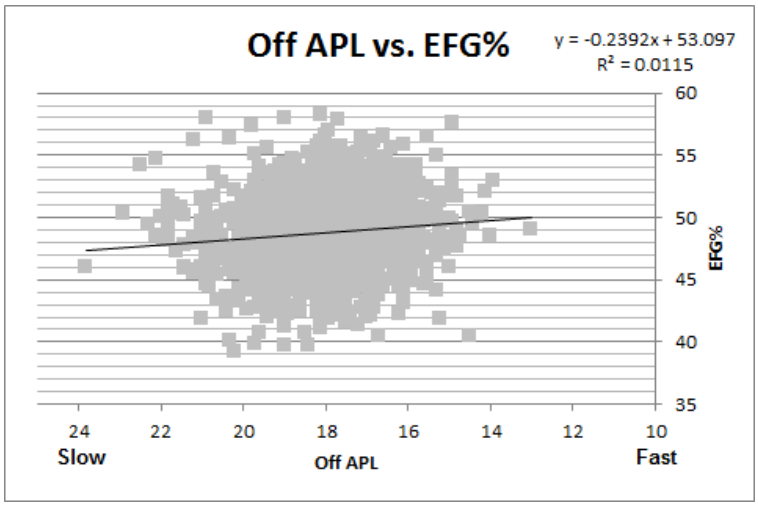


Off APL= Average Seconds Per Offensive Possession
Division 1 Average APL= 18.1 secs

Off Eff= Points Per 100 Possessions
Division 1 Average Eff=100.4

The chart above shows Offensive Average Possession Length and Offensive Efficiency. Offensive APL is the x axis (left and right) and Offensive Efficiency is the y axis (up and down). The regression line explains the correlation between the two statistics. The upward slope of this line indicates that as the Off APL goes up

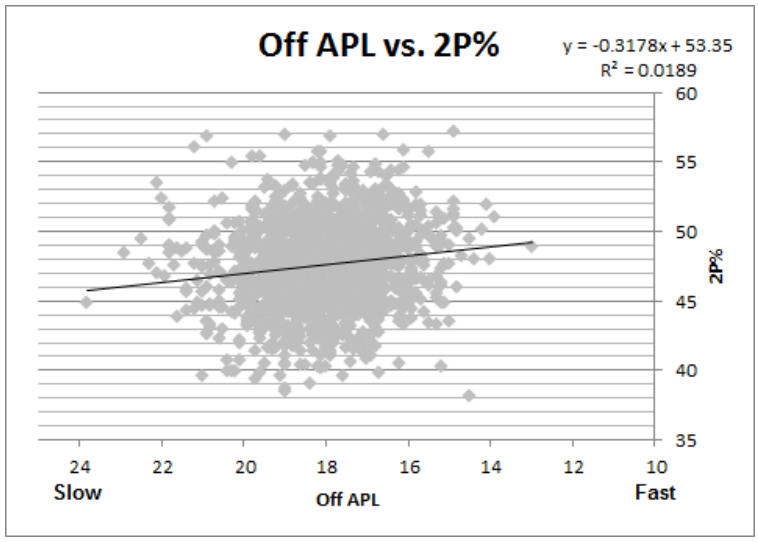
(faster=less seconds) the Offensive Efficiency goes up as well. This seems to indicate that faster play leads to more efficient play on offense, but it's not as simple as it seems. As discussed in last month's newsletter, there are fast teams who are *not* offensively efficient and slow teams who *are* offensively efficient (Wisconsin). Below we will break down specific offensive statistics and how tempo impacts them.



Off APL= Average Seconds Per Offensive Possession
Division 1 Average APL= 18.1 secs

EFG%= (FGM + 0.5*3PM)/FGA
Takes into account the extra value of the 3 point shot (Points per shot)
Division 1 Average EFG%= 48.6%

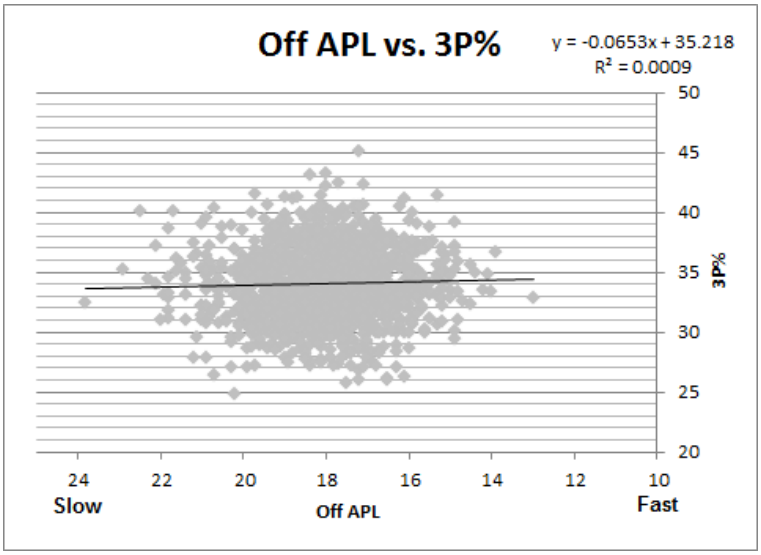
As you can see, on average, fast-paced offensive teams boast a high EFG% and are seemingly getting better looks. It is slight but as you can see from the chart the average 13 second Off APL team has an average EFG% of 50%. At the other end of the spectrum, 23 second Off APL team has an average EFG% a little over 47%. When considering that more than 1,300 Division-1 teams were sampled, a 3% difference in EFG% is sizeable.



Off APL= Average Seconds Per Offensive Possession
Division 1 Average APL= 18.1 secs

2P%=2PM/2PA
Division 1 Average 2P%= 47.5%

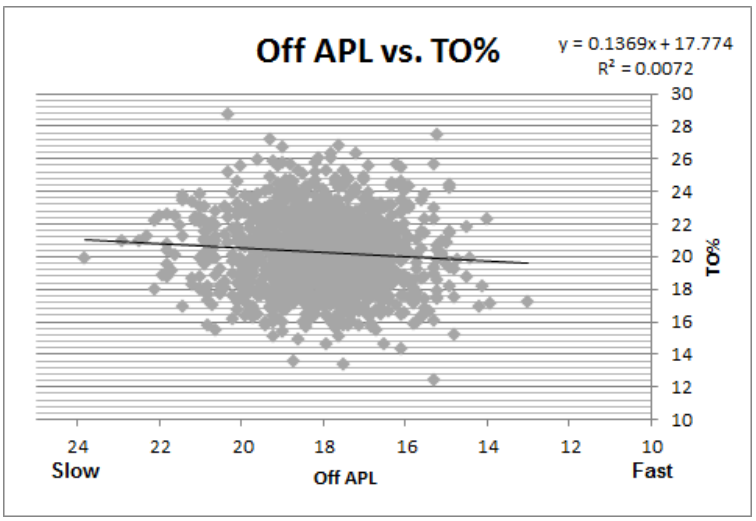
You may ask, does pace necessarily determine this difference in EFG%. The answer lies in 2 point field goal percentage (2P%). Fast-paced teams are better 2P% teams than slow-paced teams. Teams pushing the ball offensively are trying to get to the basket. Having the goal of getting a layup as soon as possession is gained ends up leading to a better 2P%. The defense is not always ready for this initial pressure allowing easier baskets. You will also see tempo play a role when we discuss FT Rate. Another factor in 2P% is a team's defense efficiency. Specifically, teams that force a lot of turnovers on defense are faster offensive teams, and these turnovers lead to excellent 2 point field goal opportunities (dunks/layups). Both of these factors (tempo and defense) lead to more efficient 2 point shots.



Off APL= Average Seconds Per Offensive Possession
Division 1 Average APL= 18.1 secs

3P%= 3PM/3PA
Division 1 Average 3P%= 33.9%

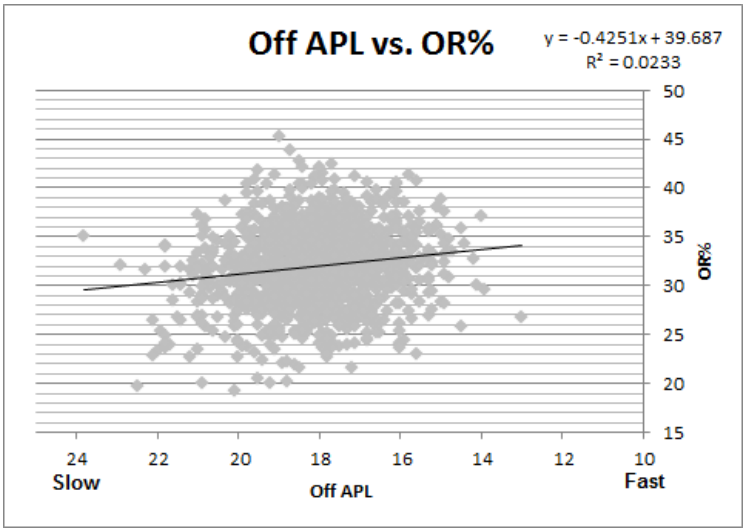
The chart above shows that fast-paced teams have a slightly better 3P% than slow-paced teams. So slight, that there is really no difference between fast and slow teams. Tempo has little impact on teams' 3P%. This finding supports our discussion in the July newsletter, which said that 3P% rarely changes regardless of the situation, because 3 point field goal attempts are, for the most part, uncontested shots.



Off APL= Average Seconds Per Offensive Possession
Division 1 Average APL= 18.1 secs

TO%= Turnovers/Possessions
Division 1 Average TO%= 20.0%

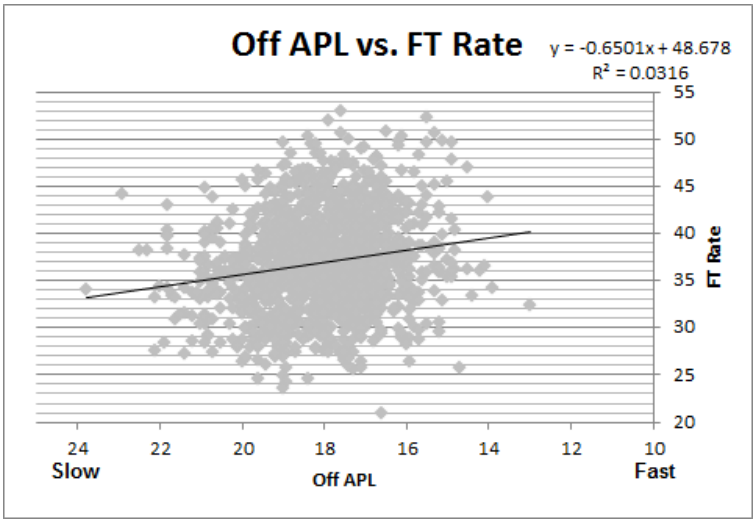
Unlike all of the other charts you have seen, where an upward slope is a positive for fast-paced teams, this chart's downward slope is a positive. TO% is a stat that the offense, obviously, wants to keep low. As is visible in this chart, the faster the pace, the lower the TO%. This is pretty easy to explain. Teams that have short offensive possessions don't give themselves enough time to turn the ball over. Although this may sound bad, in that other areas will suffer, as you can see other areas of offense are not suffering because of a faster pace they are actually doing well.



Off APL= Average Seconds Per Offensive Possession
Division 1 Average APL= 18.1 secs

OR%= the percentage of offensive rebounds grabbed out of the total opportunities. (OR/(OR + DR))
Division 1 Average OR%= 31.8%

The correlation between OR% and Off APL is a strong one. The faster the pace for the offensive team the better their OR% is. This is interesting because Off APL= average seconds per offensive possession. Remember that an offensive rebound extends the possession, making the Off APL number larger and slowing down the team's pace. (Ken Pomeroy plans on, in the future, accounting for this by removing the seconds after an offensive rebound from the Off APL). So the fact that faster teams still show up as great OR% teams is incredible considering the stats are actually working against each other.



Off APL= Average Seconds Per Offensive Possession
Division 1 Average APL= 18.1 secs

FT Rate= FTA/FGA
Division 1 Average FT Rate= 35.9%

We saved our strongest correlation for last. Fast-paced teams get to the free throw line at a much higher rate the slow-paced teams. The answer to this question can be achieved by the explanation given in the 2P% section. The pressure put on the defense by a fast paced offense will cause the defense to foul more (especially around the basket) leading to FT attempts.

The information above shows that all of the offensive four factors are impacted in a positive way by having a fast-paced offense. There are many different reasons and beliefs for this correlation. Coincidentally, Dave Joerger (new Memphis Grizzlies Head Coach) was at the broadcaster table during a summer league game a couple months back and mentioned something that I found interesting regarding tempo. Joerger went on to talk about what up tempo meant. He said that up tempo did not necessarily mean shooting the ball in the first seven seconds of the shot clock,

but instead putting pressure on their opponent to defend for all twenty-four seconds of the shot clock (thirty-five in college) starting with second number one, even if that meant running offense and taking a shot late in the shot clock. He went on to say that every second a team walks the ball up the court is a second the defense does not have to guard. I really liked this thought process and think that went put to use will lead to better opportunities early in the clock.