The Impact of the Crowd on Referee Bias: Evidence from the NBA Bubble

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Finance/Economics - Economics (Professional Sport)  
20-minute oral presentation (including questions)  
Session: Live Q&A for Finance/Economics (Asynchronous)  

This study aims to analyze how the absence of the crowd may affect referee bias in sports. Referee bias takes place when referees make biased decisions in competitions (Deutscher, 2015). A range of studies concluded that referee bias is a part of home advantage (Dohmen et al., 2016). That is, referees may consciously or subconsciously favor home teams when officiating games. Such favoritism may be reflected in more penalties against away teams, longer injury time for home teams, etc.

While overwhelming evidence suggests that referee bias is a source of home advantage, it is important to understand where the referee bias comes from. One possible factor is social pressure from fans. With spectators cheering for home teams, referees may feel pressure and then make biased decisions that favor local teams (Garicano et al., 2005).

Despite a strong research interest in the crowd effect on referee bias, prior studies lag in three areas. First, the existing studies mainly examined the number of penalties to determine whether referees favor home teams. Yet, the difference in penalties may result from players competing at home or on the road, not referee bias (Pettersson-Lidbom, 2010). Second, most referee bias research focused on studying whether home teams receive fewer penalties than away teams (Nevill et al., 2002). However, it is unclear where the favoritism comes from. For example, referees bias may stem from more wrong foul calls against visiting teams or missed foul calls against home teams, or both. Third, the majority of prior studies employed game attendance to quantify crowd noise. To draw clearer evidence of the crowd effect on referees, games without fans need to be considered (Endrich et al., 2020).

In this study, I use a natural experiment and officiating data to address the above concerns. Due to Covid-19, the NBA created an isolation area, the NBA Bubble, to host some games in the 2019-2020 season. All games played in the Bubble were without regular fans in the stands. In addition, the availability of the NBA last-two-minute referee reports allows me to identify whether referee bias comes from wrong calls or missed calls, as the reports assess late game plays with one of the following labels, Correct Call (CC), Incorrect Call (IC), Correct Non-Call (CNC), and Incorrect Non-Call (INC). This data also directly reflects the referee’s judgment, eliminating the possibility that more penalties against away teams are the result of player behavior change rather than referee bias.

I follow previous studies of referee bias and use the difference-in-differences method to investigate whether the likelihood of referees making wrong calls (CC and IC) or missing calls (CNC and INC) on home and away teams will change with or without fans (Fischer et al., 2020). The results may not only provide evidence on crowd noise as a source of referee bias in North American professional sports leagues, but also offer significant managerial implications in controlling favoritism in competitions.