Drafting Errors and Decision Making Theory in the NBA Draft

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Finance/Economics - Economics (Professional Sport) **Thursday, June 7, 2018**
20-minute oral presentation (including questions) **4:05 PM**
Abstract 2018-115 **Room: Sable D**

In each of the four major North American professional sports (NBA, NFL, MLB, NHL), nearly all incoming amateur players enter the professional ranks through the amateur player draft. However, throughout history, drafting productive players has proven difficult for decision makers in each of these leagues (Koz et al., 2011). Even as teams stress the importance of the draft, decision makers in the NFL (Massey and Thaler, 2013; Berri and Schmidt, 2011; Hendricks et al., 2003; Kitchens, 2015), MLB (Spurr, 2000; Burger and Walters, 2009), and NHL (Hurley et al., 2013; Voyer and Wright, 1998) struggle because they rarely evaluate and pick players according to the statistics and factors that actually predict success at the professional level. While mistakes of this kind have negative consequences for teams in any league, the draft takes on an even more important role in the NBA, as individual players can have a larger impact in basketball than in any other sport (Sanderson and Siegfried, 2003; Berri, 2010). The heightened importance of the NBA draft is further evidenced by empirical research regarding 'tanking' in the NBA, as teams tend to lose more games when they are incentivized to do so in order to acquire a higher pick in the upcoming draft (Pryce et al., 2011; Soebbing and Mason, 2009; Taylor and Trogdon, 2002). However, even as teams have focused more on the draft and more information and statistics have become available, NBA decision makers have still struggled to evaluate talent and select productive players (Coates and Oguntimein, 2010; Berri et al., 2010). This research therefore looks to examine whether this is still the case, by determining whether the statistics and factors that predict where a player will be drafted are the same as those that predict future NBA performance for all NCAA players drafted to the NBA between 2006-2013. Moreover, in the event that these predictors do not align, this analysis will examine what specific errors NBA teams are making, and how these errors relate to general decision making theory and biases.

This research focuses specifically on NBA drafting of NCAA Division I basketball players, as these players represent the largest cohort of amateur players who enter the draft (Sukup, 2017). This sample of players was also chosen because it examines recent drafts, while still allowing for a proper assessment of players' NBA performance after they have been drafted. Only a player's final college season preceding their entry into the NBA draft is used in this analysis; draftees can play between 1-4 years of NCAA basketball before entering the draft, and therefore in order to evaluate players in a consistent way, all players are evaluated according to the same final year timeframe. This final season is also used because it is the most important year of evaluation for NBA decision makers (Berri et al., 2010). In terms of the statistics and player factors used in the analysis, percentage based metrics are used in place of traditional counting box score statistics (i.e. assist percentage instead of assists per game), and all statistics and player factors are adjusted for the position of the player. This is once again done in order to standardize the way all players are evaluated and analyzed, as these adjustments reduce the effect that position, playing style, pace of play, or other factors out of a player's control can have on draftees' performance statistics and physical characteristics. Contrary to previous research, players are divided by position as a Big, Wing, or a Point Guard rather than into one of the five traditional basketball positions.

Linear regression models are then specified for each player's draft position and NBA performance. In the draft position model, draft number is used as the dependent variable while in the NBA performance model, relative win shares per game – a statistic that measures a player's overall effect on their team's performance and chances of winning – is used as the dependent variable and as a proxy for NBA performance. The draft position and NBA performance models are both specified using the same NCAA performance and pre-draft factors, in order to assess whether the factors that NBA decision makers believe to be important for NCAA players are in fact the factors that predict future performance. A Heckman (1971) sample selection correction is also applied to the NBA performance model in order to correct for the model's non randomly selected sample. The NBA performance model sample necessarily excludes drafted players who do not play a sufficient amount in the NBA and therefore cannot have their NBA production properly assessed. The Heckman (1971) correction controls for this non-randomly selected sample

by estimating the likelihood of a drafted player playing in the NBA and thus being part of this selected sample to begin with. Both the draft position and NBA performance models are specified for the entire dataset (N = 372, N = 280) as well as for subsets by position (Bigs, Wings, Point Guards) and conference size (Big Conference, Small Conference).

The results of these analyses show that NBA decision makers continue to base their draft selections on factors that do not actually predict future NBA success, such as scoring, size, and college conference. Many of the decisions made by NBA decision makers relate to Heath and Tversky's (1991) competence hypothesis, as front offices forego the use of reliable distributive data and select players according to their perceived knowledge. This is evidenced by their faulty perception of Big Conference players as generally better NBA prospects, linked with decision makers' greater perceived knowledge of these players. NBA decision makers also display risk averse behavior (Kahneman and Tversky 1973) and an insistence on sticking with the status quo (Samuelson and Zeckhauser 1988) in their decisions, as they continue to evaluate players according to the same criteria that have led them to mistakes in the past. Higher scoring statistics and taller players both receive a boost in the draft, even though these factors do not predict future NBA performance. The value that NBA decision makers place on size as well as youth also demonstrates a preference for potential over past performance when evaluating draft-eligible players.
In terms of the specific metrics that do impact future NBA performance, rebounding percentage, turnover percentage, and free throw rate were all indicators of future NBA performance, though none of these statistics had any effect on draft position. This could likely be explained by the availability heuristic (Kahneman and Tversky, 1973), as ball control (rebounding, turnovers) and efficiency (free throw rate) are not memorable or noticeable skills and can therefore be overlooked, even though they are of the utmost importance to winning basketball games (Berri and Lee, 2008; Page et al., 2007). Interestingly, the Bigs only model demonstrated the same undervalued importance of rebounding and free throw rate. The Point Guard-only model also yielded interesting results regarding the importance of NCAA win shares. This all encompassing, win based statistic was by far the strongest predictor of success at the NBA level, which makes sense given the overall leadership role Point Guards are asked to play, where their worth is often derived from their ability to effect their teammates and the game in general rather than from their individual statistical success.

The findings in this research can be used in a variety of different ways. On a more micro level, they can effect the specific statistics and player factors that NBA decision makers examine when evaluating draft-eligible players. On a more general level however, the results of this analysis shed an interesting light on decision making as a whole. NBA front office members, like their peers in other industries, exhibit many of the same decision making biases and flawed thinking as their peers in other industries when evaluating and prospecting for future employees. With this knowledge, NBA decision makers as well as those in other professional and non professional sports can reexamine their own decision making processes, in order to properly account for the biases and decision making errors that all people fall prey to.