March Madness in June: An Analysis of the NCAA Tournament and Its Impact on the NBA Draft from 2004 – 2008

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Abstract:

In 2006, the National Basketball Association and the National Basketball Players Association decided to adopt provisions which funnel most high school graduates into the college ranks. With so many talented players now entering the college ranks, the NCAA Division 1 Men's Basketball Tournament raises its profile and attracts a variety of fans, including NBA scouts and personnel. This paper analyzes the probability of getting drafted as well as draft placement for all NCAA Division 1 Men's Basketball players who formally declared for the NBA Draft from 2004 – 2008. The findings of this paper show that an increase in the difference in scoring between the regular season and the NCAA Tournament positively affects the probability of getting drafted, while also causing a player to be selected earlier in the NBA Draft. The data used in this paper also show that college seniors benefit greatly from increases in statistical production during the NCAA Tournament. Team level data analysis found that playing on a team that exceeds its expected number of NCAA Tournament wins also increases the probability of getting drafted and causes a player to be selected earlier in the NBA Draft. This paper concludes by suggesting possible extensions to the research and implications of this paper.

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I. INTRODUCTION

Professional sports have evolved into the ideal environment for labor economists to test various hypotheses and theories. As Lawrence Kahn (2000) alludes to in his article "The Sports Business as a Labor Market Laboratory," professional sports produce a great deal of information about players, ranging from personal attributes to performance characteristics. Further incentive for study by labor economists arises due to major rule changes in the structure of these leagues or in the labor market rules governing these leagues. While Kahn (2000) addresses the issues surrounding professional sports draft and other forms of player movement, he does so from the perspective of understanding free competitive balance. A great deal of research is devoted to understanding the markets for athletes, but not as much time and effort is spent studying drafts and player entry into these leagues. Hence, there may be reason to investigate the relationships that exist between professional leagues and amateur sports leagues.

This paper will analyze the statistical production of college basketball players who have entered the National Basketball Association's Amateur Draft, with the goal of determining whether or not the National Collegiate Athletic Association's Division 1 Men's Basketball Tournament has a significant impact on a player's draft potential. The first section of this paper will review previous literature about labor market decisions made by firms and individuals and explain how the literature relates to this work. The second section will outline the NBA Amateur Draft and explain how it functions. The third section will discuss the empirical work of this paper while providing a summary of the data. The fourth section will present the results of the empirical models. The fifth section will explain the results with respect to the influence of particular variables on the dynamics of the NBA Draft. The final section will summarize the conclusions of this paper while discussing the implications of the findings.

II. PREVIOUS LITERATURE

A. Player Entry into Professional Sports

The four major professional sports in the United States are very unique from one another with respect to how decisions are made regarding drafts and labor market issues. Professional baseball's influence within the United States and Latin America has established a labor market where players are able to sign professional contracts while they are still young teenagers. Amateur players are permitted to enter multiple drafts, potentially allowing players to be selected by different clubs each year. This is a very common phenomenon, as many high school prospects are drafted but then choose to forgo their immediate professional careers for the chance to play baseball in college. During the offseason, general managers and scouts from Major League Baseball (MLB) franchises will scatter throughout Central and Latin America to find talented players who have not yet reached the major leagues. Young American baseball prospects are usually evaluated during the early part of the MLB season, with very talented players making their way into professional farm systems by early or mid-summer. While there may be procedures to entering the market for professional baseball, baseball represents the league with the fewest and most flexible barriers to entry.

Professional hockey is similar in structure to professional baseball, with hockey players in the National Hockey League (NHL) traditionally coming from the United States, Canada, and Europe. The primary sources of drafted hockey players are Canadian junior leagues and NCAA hockey.[1] Elite Canadian junior leagues are commonly filled with Canadian and American prospects under the age of 21, with teams being allowed a few players over the age of 21.

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[1] "Draft FAQs." Hockey's Future.com. 12 Dec 2008. <http://www.hockeysfuture.com/draft_faq_2/>.

NCAA hockey programs consistently recruit and develop players from "tier-2" Canadian, American, and European hockey leagues who are looking to make it to the NHL. While many NHL teams look to NCAA hockey as a resource for players, many International players are drafted from elite amateur leagues once they meet the proper age requirements.

The National Football League (NFL) organizes an amateur draft that is very strict and regulated. American born players must be three years removed from their high school graduation before they are eligible for the NFL Draft.[2] This is one of the many NFL draft rules mentioned in the 2006 Collective Bargaining Agreement (CBA) signed between the NFL Players Association (NFLPA) and the NFL Management Council. Similar to other professional sports leagues, the majority of the NFL's CBA is directed at defining and clarifying the financial terms for all parties involved in the NFL. In funneling potential NFL players through the college football system, college football fulfills the role of an efficient sorting and talent evaluation system. The NFL is also able to protect itself from the possibility of physically immature players entering a professional sports environment where high-speed collisions can result in life-threatening injuries. A guaranteed college career means that a player could play anywhere from 24 to 50 games before being eligible to play in the NFL. Essentially, the NFL guarantees each of its clubs that players considering the NFL Draft have played (and survived) at least two or three full seasons of college football, and thus could be mentally and physically ready to handle the rigors of the NFL game.

[2] NFL Players Association. "NFL Collective Bargaining Agreement 2006-2012." NFL Players: Official Website of the NFL Players Association. 13 Dec 2008. <http://www.nflplayers.com/images/fck/NFL%20COLLECTIVE%20BARGAINING%20AGREEMENT%202006%20-%202012.pdf>.

The National Basketball Association (NBA) organizes an amateur draft that has changed significantly over time. In 2005, the National Basketball Player's Association and the NBA team owners agreed upon the current Collective Bargaining Agreement which stipulates that domestic high school graduates be 19 years of age and one year removed from their high school graduation before they are eligible for the NBA Draft.[3] International players must be at least 19 years of age before they are eligible for the NBA Draft. Up through the 2005 NBA Draft, high schools seniors were able to enter the NBA Draft regardless of their age as long as they graduated from high school. However, beginning with the 2006 NBA Draft, the NBA decided to stop the massive migration of high school players who were making "the jump" from high school to the pros. Essentially, the National Basketball Players Association and the NBA executives were indirectly forcing players from high school to wait one year before entering the NBA Draft and potentially earning NBA salaries. (This is regardless of the fact that many of the NBA's current superstars- Kobe Bryant, Kevin Garnett, Dwight Howard, LeBron James, and Amare Stoudemire- were drafted straight out of high school.) While there are a few alternatives for high school graduates, the most common response has been for these players to attend a Division 1 college or university with an elite Division 1 basketball program.

From a simple glance at professional sports leagues and their standard methods of player entry, it is clear that the draft is a rather significant event from the perspective of both players and teams. Yet, regardless of how a league may choose to conduct its decisions regarding player entry, one must wonder what methods are used to evaluate these players. Sure, every player produces statistics of some sort, and of course there are interviews, public workouts, and

[3] "Article X: Player Eligibility and NBA Draft." NBPA.com: Official Website of the NBA Player's Association. 11 Dec 2008. <http://www.nbpa.com/cba_articles/article-X.php>.

individual private training sessions. Even if a player is not on an elite college basketball team that might play regularly on national television, an NBA team can still get game film on a player or send scouts to evaluate players in person. But how can a team truly estimate a given player's future production based on past observations in a competitively inferior league? Do teams really know how players will respond to the increased pressure that they may face at the professional level?

If players are evaluated based on in-game production, who decides which games might matter more than other games? This is a very popular scenario that arises during and after NCAA football bowl games, where a player's NFL Draft prospects can rise and fall dramatically as a result of their performance in a post-season bowl game. One example of this is Vince Young, who was the star quarterback of the University of Texas Longhorns when they defeated the University of Southern California Trojans in the 2006 Rose Bowl National Championship Game. Despite his outstanding performance from that game, there were still people who were undecided regarding how they felt Young would project as an NFL quarterback due a regular season which exposed many of his flaws. Many NFL analysts and critics raved about Young's speed, strength, and eye-popping athleticism while likening him to successful mobile quarterbacks of the NFL such as Randall Cunningham and Donovan McNabb. Others cared to focus on his lack of throwing mechanics and potential inability to run the complicated offensive schemes that dominated the NFL landscape.[4] Young did attend the NFL combine and completed a barrage of tests, yet people still questioned his ability to be a productive quarterback in the NFL. When it was all said and done, Young was selected by the Tennessee Titans with the

[4] Jeffri Chadiha. "No Sure Thing." Sports Illustrated. 1 March 2006. 8 Dec 2008. <http://sportsillustrated.cnn.com/2006/writers/jeffri_chadiha/03/01/young.take/index.html>.

number 3 overall pick and proceeded to win the 2006 Associated Press NFL Offensive Rookie of the Year.

Bowl games are often followed by a few Senior Bowls and All-Star games- a few of which permit players from non-traditional football powerhouses to show their wares for scouts and NFL coaches. For the week or weeks leading up to these showcases, NFL coaches are permitted to work directly with these players. Hence, an NFL coaching staff is able to evaluate a large number of players under practice and game conditions. These post-season showcases might have an impact on a player's draft stock if one values last impressions that can be made before the NFL Draft. However, the common rhetoric against these games having an impact is that NFL teams have more or less determined what players will be drafted as well as where in the draft a player might be selected by an NFL team. By the time a college football player becomes eligible for the NFL draft, NFL scouts have already gathered, reviewed, and analyzed film from a player's previous seasons. One must also consider that many of these all-star games are geared towards producing offensive showcases, with defensive prohibitions in place to prevent injuries to skilled players such as quarterbacks. In the case of the NFL, one must be aware of the significance of the NFL Draft Combine as well as the private workouts conducted by NFL teams, college football programs, and even individual players.

A similar scenario can be said to exist for college basketball players who may plan on playing in the NBA. Instead of bowl games, NCAA Division 1 college basketball programs prepare for the NCAA Men's Basketball Tournament- more commonly known as "March Madness" or "Tournament" or the "Tourney." While players and teams are focused on winning, it is rather hard for anyone to ignore the presence of NBA and professional scouts, sports agents, and media personnel hovering around these players at open practices and during games. Most notably, the Tournament is the last major competitive basketball event for college basketball players until the pre-draft workouts begin in mid-April. Hence, the Tournament represents one of the few remaining opportunities for players to leave a positive impression on NBA scouts and teams, which leaves open the possibility of the Tournament having an impact upon a player's draft stock or probability of getting drafted.

Because of the wealth of information that may exist for a given player at any point in their basketball career, one may wonder if the Tournament could have a legitimate impact on the NBA Draft. First, let us examine the potential reasons for the Tournament having a significant influence on the Draft. While the regular season may consist of a large number of games, the Tournament's pressures cannot be simulated. Regardless of the opponent, a single loss brings to an abrupt end a team's journey towards winning a national championship. Before advancing onto the next Tournament round, teams must navigate their opponents while only having one day off to actually prepare.[5] With such rapid-fire scheduling, a team's overall mental focus and physical fitness are tested. In the midst all of this preparation and rest time, players and coaches must find time to answer the seemingly infinite media requests. The media's full coverage extends from all-access practices to live TV and online broadcasts. This type of coverage means that players and coaches are liable to having their every move and word subject to scrutiny and criticism.

Counter-arguments to Tournament significance would largely stem from the amount of player exposure and information gathered by NBA scouts during a college player's most recent college season. Combine that information with previous college seasons, high school game

[5] Games are played in pairs of Thursday-Saturday or Friday-Sunday. In either scheduling possibility, teams have only a single day between games to rest and prepare for their next opponent.

tapes, elite basketball camps, all-star and All-American games, and NBA scouts might already have more information than they may even care to know. In a given regular season of college basketball, a player could play anywhere from 30 to 35 games. While a significant number of these games are conference or league games, there are increasing opportunities for teams to participate in popular and competitive early season and holiday tournaments. Talented players also make for exciting games, thus attracting a media frenzy that could result in more games getting moved to national television. In many cases, coaches with exciting young talent will schedule high profile non-conference games with the hope of increasing program interest while impressing the NCAA Tournament Selection Committee. With non-conference scheduling also utilized by some coaches to actual simulate the Tournament's high-pressured environment, one might contend that the Tournament does not have any uniqueness that would make it significant to NBA scouts.

Another significant counter-argument to Tournament significance revolves around the various NBA Pre-Draft Camps and workouts organized by NBA teams and individual players. In these camps, players are measured quantitatively in terms of physical attributes as well as qualitatively in terms of their performance in basketball related drills. While a few of these workouts may be open to the public, the majority of the workouts are held behind closed doors allowing coaches to conduct the workouts however they see fit. These private workouts allow coaches to evaluate players in different ways that could be unique to the team and in unquantifiable ways not immediately obvious to other teams. While these counter-arguments may seem rather significant, one must acknowledge the possibility of the Tournament playing a role in determining a player's draft prospects.

Regardless of the arguments for and against Tournament significance, the reality of the situation is that high school basketball players are being driven to play college basketball at the highest levels. With potential NBA stars now competing in the intense and rigorous environment of college basketball, NBA teams are able to gather more information on these players while these players are allowed time to grow physically and improve upon various fundamental skills of the game. While some people may question the financial motives of the NBA by implementing these new NBA Draft requirements, the question at hand is concerned with understanding the reality of the present situation facing basketball players considering the NBA Draft. And right now, the reality is that college basketball is evolving into an unofficial training ground for the NBA.

B. Economic Theory

Before one can come to any conclusions regarding the significance of the Tournament with respect to the NBA Draft, a review of relevant economic literature is necessary in order to gain proper theoretical and empirical perspective. As an employee sorting and selection system, the NBA Draft has properties that are similar to normal or traditional labor markets. However, there are several economic models which are crucial to understanding draft decisions made by players and teams. The primary economic theories and models revolve around issues of risk, human capital, option value, and market unraveling. While market unraveling, human capital and option value are all important economic models, they each hinge upon the notion of risk and its applications in labor markets.

i. Risk and Option Value

Edward Lazear's "Hiring Risky Workers" (1995) is a theoretical paper that focuses on issues of variance and option value translate from financial markets to labor markets. Lazear (1995) begins by constructing a model of hiring and pay decisions made by firms facing uncertainty. Given the realistic assumption of uncertainty and imperfect information, Lazear (1995) contends that workers are assumed to embody variance in their productivities. This variance in worker productivity produces two groups of workers: "risky" workers and "safe" workers. A risky worker is defined as a worker whose individual production deviates significantly from the average production of general population. A safe worker, on the other hand, is defined as a worker whose production does not deviate greatly from the average production of the general population. Risky workers provide employers with what Lazear (1995) calls "option value," since these workers may have significant upside with respect to production. Risky workers receive relatively higher wages than safe workers because the "ex post distribution of output is higher than the ex ante distribution of output" (Lazear, 1995). In other words, risky workers are paid more over time because they might have the capability to produce more than they had been expected to produce. While riskiness may be rewarded, risky workers can also face initial financial penalties or lessened earnings due to their unknown potential.

Lazear's second contention addresses firing costs and a consistent preference for risky workers (Lazear, 1995). In this case, the author notes that risky workers can be no less valuable than safe workers since all workers would be worth no less than the average wage. This notion comes from the understanding that when averaged together, a randomly selected worker will be worth the average wage regardless of their ability. Thus, in firing a randomly selected worker, the worker's value will not be less than the average wage. Lazear's third contention regarding the risky worker premium builds upon the second contention of firing costs (Lazear, 1995). "The premium that the newly hired risky worker receives over the safe worker increases in the length of the work life. Furthermore, the premium decreases as the duration of the probation period increases." (Lazear, 1995) Stated another way, the value of a worker's upside increases as the amount of time a firm has to collect its returns to worker investment increases. Hence, as the length of a risky worker's potential work life increases, so increases their equilibrium wage.

Lazear (1995) then uses these contentions to explain several firm hiring practices. First, he addresses a firm's preference for young workers over old workers (Lazear, 1995). Young workers are more likely to have a higher variance in worker productivity as well as having longer potential work lives. These two characteristics result in younger workers having higher option value, with firms being more willing to pay a premium for that option value. Along these lines, Lazear (1995) concludes that firms in declining industries will prefer safe, older workers, while firms in potentially unstable or short-term industries will prefer risky, younger workers. Lazear (1995) also uses his contentions to explain firm preference for males over females. In this case, Lazear cites IQ tests which exhibit higher variance estimates for males than for females. This higher variance in test scores is interpreted as higher riskiness, thus causing males to be considered risky workers.

While firms make decisions based on variance, Lazear (1995) contends that firms will inform themselves about workers as much as possible in order to truncate the lower tails of the distribution of worker variance. In eliminating those workers at the lower end of the distribution, the mean of a firm’s worker variance distribution is raised, resulting in an increase in average wages. The desire to collect information lends itself to Lazear's fourth proposition, which suggests that option value can only exist where a firm has an informed advantage over its competitors (Lazear, 1995). While Lazear (1995) does not expand upon this particular contention, one can assume that he is referring to firm specific information which makes a worker uniquely significant to that firm. This information advantage over competitor firms may cause a worker to be under-valued by one firm and simultaneously over-valued by another firm.

ii. Human Capital Model

The human capital model has long been used to explain human returns to investment in education as well as in the health care industry. In "Investment in Human Capital: A Theoretical Analysis" (1962), Gary Becker outlines the model of human capital as well as its theoretical implications. Becker (1962) defines 'investments in human capital' as "activities that influence future real income through the imbedding of resources in people." There are many ways that an individual can invest in human capital, and each type of investment may differ in its effects, the amount of resources, the returns, and the connections between the investment and the return. However, Becker (1962) makes it clear that any investment in human capital which improves the physical and/or mental abilities of an individual enables them to potentially increase their real income. However one may qualify and quantify these investments, Becker (1962) makes it clear that an emphasis on intangible factors might lead to understanding income inequalities among people.

Becker (1962) classifies types of human capital investment as being either "on-the-job", schooling, or "other knowledge." On-the-job training raises the future productivities of workers at the cost of having to first train those workers who enter a firm with very little training. Within on-the-job training, there exist general and specific training methods which have varying implications for firms and workers. Becker (1962) contends that firms usually prefer general training, since the individual bears the costs of the training by receiving wages that are below their marginal products and also below competitive wages offered by other firms. In "completely general" training, an individual learns skills that are transferable to any firm. Specific training is training that increases worker productivity within the firm that provides the training. In "completely specific" training, a worker's training would lead to no productivity in other firms. Realistically, the two training methods work in tandem, with "rational firms paying generally trained employees the same wage and specifically trained employees being paid a higher wage than they could get somewhere else." (Becker, 1962) This would give specifically trained employees less incentive to quit, thus reducing turnover for the types of positions that would require this specific training.

Becker (1962) also contends that schooling merely specializes in training either a single skill or a large set of diverse skills. Although schooling is time consuming and takes away from potential earnings, the development of a set of skills requires actual experience combined with a specialized education. As skills learned on-the-job increase in their demand, schools are opened to specialize in that particular type of training, which allows firms to choose employees from a better trained population of workers. Becker (1962) assumes that schooling shares implications with on-the-job training in that both steepen the age-earnings curve. In addressing other types of knowledge that promote human capital, Becker (1962) is simply referring to information about economic systems that is gained from understanding real social or political climates.

Besides analyzing how human capital affects wages and a firm's decisions, Becker (1962) also addresses the incentives to investing in human capital. The potential length of a worker’s career heavily influences an individual's decision to invest in human capital. Simplified, the longer the length of time that a worker or a firm has to recoup the returns to their investment, the more likely they will be to invest in human capital. One prime example of this is a college student, who may have forty to fifty years to collect the returns to their undergraduate education should they choose to enter the labor market. Compare this situation to a thirty year old professional who could attain a higher degree, but would not have as long of a time to see the maximum benefit of that degree. In the case of either young or old workers, Becker contends that the incentive to specialize and invest in human capital increases as a given market expands, and decreases as a given market declines. This follows the logic that specialization is necessary only when a market fulfills an established niche which requires a specialized set of skills. Hence, it makes no sense to specialize and limit one's options when a market's ability to grow is limited. The role of risk and uncertainty is significant since the actual returns to human capital may differ greatly from the expected returns. For example, two people might have identical investments in human capital, but the realization of those investments may differ because of unforeseeable events or circumstances. Most notably, general uncertainty issues such as length of life, ability, and unpredictable events make it very difficult for an individual or a firm to accurately predict returns to investments.

Becker (1962) concludes with the idea that most investments in human capital serve to raise long-term earnings while decreasing short-term earnings. Hence, an individual takes short-term losses in exchange for potential long-term gains. When an individual's own ability is accounted for, Becker contends that these "abler" persons are more likely to invest in themselves- thus increasing the difference of potential earnings between the "abler" and "less-able" individuals. The differentiation of "abler" versus "less able" permits human capital to pertain to an individual's tangible and intangible qualities, which make it plausible to believe that human capital investments would affect people differently.

iii. Market Unraveling

As a theoretical model, market unraveling can be a very complicated concept. Wing Suen's "A Competitive Theory of Equilibrium and Disequilibrium Unraveling in Two-Sided Matching" (2000) provides a great deal of analytical insight and proof of the model's existence, while Alvin Roth and Xiaolin Xing's "Jumping the Gun: Imperfections and Institutions Related to the Timing of Market Transactions" (1994) provides basic theoretical and empirical analysis. Suen (2000) suggests that market transactions are made based on information gathered by market participants, with a lack of information causing some decisions to be made with a certain amount of risk. The first proposition explored in this work is that in a market with risk neutral workers, no workers can gain anything by contracting early (Suen, 2000). Since markets are rarely in perfect equilibrium, all firms are better off when the market permits early contracting to occur (Suen, 2000). This is largely because workers will compete with each other, thus driving down wages in an attempt for workers to secure their position within the labor market.

Suen (2000) also discusses the phenomenon of market unraveling as either unraveling from the top or from the bottom. Unraveling from the top is often characterized by high quality firms consistently increasing their offers in attempts to get matched up with higher quality workers. As more firms follow this trend, the number of original high quality firms shrinks, thus causing mediocre firms to follow suit as they move towards becoming relative high quality firms. Unraveling from the top also reveals itself through the presence of higher quality firms having higher opportunity costs of market patience. Since waiting could mean lost future production, higher quality firms have increased incentive to make early offers. Unraveling from the bottom is often characterized by low quality firms offering early contracts in an attempt to gain an advantage on high quality firms. In offering early contracts, the low quality firm exposes itself to increased risk due to the lack of information about the workers in the market. Hence, while worker production could have been assessed at a defined level, low quality firms would offer early contracts with the hope of hiring a worker with an above average production level. Suen (2000) contends that unraveling from the bottom can have devastating effects on a market, which may suggest why many firms will have a collective interest in putting a ban on early contracts. While it may be a collective decision, there would still exist some very high-quality firms that would have a significant interest in preventing unraveling from the bottom.

In their work examining market unraveling in several types of markets, Roth & Xing (1994) portray a simple model of market unraveling where market participants- either individuals or firms- seek to gain an advantage on the competition. According to Roth & Xing (1994), markets unravel in stages, wherein market decisions become more difficult to regulate. Initially, a market begins to unravel when a growing market faces hiring appointments that are progressively early. The second stage of market unraveling occurs when market participants begin to evade and circumvent rules regarding the dates before which offers can be made. The third stage of market unraveling pertains to draft mechanisms in which employers select from a pool of employees. In this case, unraveling creates problems in matching workers with firms since firms and/or workers may evade the procedures of the draft mechanism. For Roth & Xing (1994), the final round of market unraveling occurs as market participants become more informed about each other and attempt to gain an advantage before a draft or another market clearing procedure.

The previously mentioned economic models are presented in order to understand general economic behavior. However, sports presents itself as an indirect application of these models since as Kahn (2000) says, professional sports is essentially a business. More specifically, these models are integral to understanding the economic implications surrounding drafts and methods of player entry into a particular professional sports league. Lazear (1995) is concerned with general firm hiring practices, with the primary contention that older, more known workers face stiff employment competition from younger, lesser known workers. Becker (1962) addresses the human capital model, which is a concept very relevant to draft decisions made by players and professional sports teams. A college basketball player considering the NBA Draft must compare potential development in the college ranks to potential development in the NBA. On the flipside of this decision-making process are the NBA teams, who are usually unwilling to bear player development costs that can be covered by the NCAA. Market unraveling is a procedure that relates directly to drafts in professional sports. The key concept is that firms look to hire employees or players at earlier and earlier dates. When firms must adhere to a set date for making employment offers, firms then look to make offers to younger and younger workers, with the hope of maximizing the work life of those workers. In all, the economic models and theories that are commonly used to explain employment decisions made by firms and employees can be used to explain draft and employment decisions made by teams and players.

C. Empirical Studies

The theories of risk, option value, human capital, and market unraveling have been used to explain various labor market phenomena in professional sports as well as in other types of labor markets. In "Uncertainty, Hiring, and Subsequent Performance: The NFL Draft," Hendricks et al. (2003) approach the issues of risk and uncertainty through the notion of signals. A signal is determined during a firm's attempt to gain information about a particular individual. As tests are administered and information is collected, firms find that some individuals have "noisier," or more varied, signals than other individuals. In classifying NCAA Division 1-A players as safe and non-Division 1-A players as risky, Hendricks et al. (2003) create two groups with very different aggregate signals. In this particular study, Division 1-A football players are compared to non-Division 1-A football players in terms of their draft positioning, professional career achievements, and career statistics. The data set used in this study consisted of the 4,765 players that were drafted into the NFL between 1979 and 1992, as well as the 958 un-drafted players who played in the NFL during the same time period.

Hendricks et al. (2003) present various conclusions which are rather interesting. Players from less-visible college football programs who are selected in the earlier rounds of the NFL Draft often go on to have better careers than players from more-visible college football programs that are also drafted early in the NFL Draft. However, the lack of program visibility results in these players paying a penalty, which may result in these players receiving smaller signing bonuses than players from more-visible programs. Also, as the draft continues, the visibility of a player's program loses its significance- thus reducing the barriers for entry for talented non-Division 1-A football players. Hendricks et al. (2003) also contend that a hastened contract negotiation timeframe could result in teams drafting players that have known levels of productivity, and thus less option value. The authors contend that this could ultimately result in a decrease in demand for unknown players with tremendous upside. When the notion of riskiness is considered in this context, it is rather clear that Hendricks et al. (2003) would contend that NFL teams prefer a sort of calculated risk which presents incredible upside and limited downside.

Bollinger and Hotchkiss (2003) provide empirical research which is very similar to that of Hendricks et al. (2003) Although Bollinger and Hotchkiss (2003) study baseball, their empirical research also supports Lazear's (1995) theory regarding general firm preference for hiring risky workers over safe workers. This particular study looks at the salary compensation, team-level statistics, and season and career statistics for all non-pitchers who appeared on a 25-man roster in the spring of any season between 1987 and 1993. Their research found that a one standard deviation increase in the variance of player performance, ceteris paribus, will raise the player's salary by 7%. Support for Lazear's second contention of younger worker's receiving higher earnings was also found, as a result of uncertainty surrounding the production of younger players as well as the potentially longer work lives of younger players. While the conclusions were similar to Hendricks et al. (2003), the consistency across two very different sports allows for one to question whether or not these conclusions would hold for basketball.

Market unraveling is an economic concept largely associated with markets where early contract offers can put a firm or an individual in a competitively advantageous situation. Related empirical research from Roth & Xing (1994) discusses the market of law school graduates and American law firms. Roth & Xing (1994) allude to several problematic issues concerning this market: salary wars and market unraveling. Salary wars are usually the result of larger law firms making large contractual offers to successful law school graduates in order to lure them from other firms. This resulted in huge salary increases during the 1980s, with the median starting salary at the largest New York firms being quoted at $83,000 (Roth & Xing, 1994).

The salary wars led to firms and individuals attempting to gain an advantage on one another. Much market unraveling was attributed to the growth of summer internships, where firms would be able to hire promising summer interns and slot them into entry-level positions. Hence, the summer internship concept has become largely used by many firms as a feeder or development system for hiring new workers. While summer internships began with firms arranging on-campus interviews with soon-to-be law school graduates, firms have recruited law school students earlier and earlier in their law school careers (Roth & Xing, 1994). By the 1980s, firms were arranging on-campus interviews with first and second-year law students. While there were attempts made at regulating this particular market, the recession of the early 1990s exposed the negative effects of market unraveling. Since firms were not able to hire new workers, law school graduates who had "secured" jobs waiting for them were informed that they were fired (Roth & Xing, 1994).

There are quite a few related empirical studies which are integral to understanding how firms make labor market decisions as well as whether or not drafts are significant indicators of professional success. In terms of the NBA Draft, Groothuis et al. (2007) presents the economic models of market unraveling, human capital, and option value with particular notice to how these models relate to the NBA Draft. In this particular case, market unraveling reveals itself in how younger players have sought earlier entry while firms (or teams) have sought to draft younger players. In the case of the player or the team, market participants constantly try to circumvent the rules or the expected decisions. Most recently, this circumventing has been carried out in the form of players going to prep schools after high school or even going overseas to avoid the rigors and responsibilities associated with college basketball.

In an attempt to further understand decisions made by players and teams, Groothuis et al. (2007) inject the competing human capital and option value models. The option value model outlined in this study is simply an extension of the argument made by Lazear (1995), which contends that variance in player output allows firms to make decisions favoring those workers who would normally be considered risky. The human capital model is commonly associated with player decisions, since players are making the decision to enter the draft based on potential wages in the current period versus potential wages after one or more additional years of experience at the college level. The idea here is that players who attend college improve their skills and theoretically increase their human capital, thus making them more attractive. The human capital model can also be used to explain a team's decision, since a player going to college results in an NBA team not having to bear any of the immediate costs incurred during the development of a player.

In looking at all NBA players from 1997 and 2002, Groothuis et al. (2007) assert that the draft is an efficient method of sorting talent. The analysis shows that players who entered the NBA earlier improved quicker than their peers that have had more college experience. Young college basketball players understand the accelerated rate of development and training that occurs within the NBA, and attempt to get to the NBA as soon as possible in order to receive payment and profit from said training. Teams also witness the progression of young high school players in the NBA environment, and are quick to try and collect the best possible talent. On this same end, teams capitalize on the rookie scale by limiting superstar salaries through use of the salary cap, thus exploiting a player's economic rent. In other words, while a player is playing under their rookie contract, the team is likely to be profiting from a very good young player playing for a relatively cheap price.

III. NBA AMATEUR DRAFT

The NBA's first draft was held in 1947, while the league (which was then known as the Basketball Association of America) was still attempting to find its niche in a professional sports market that had competition from several other basketball leagues. Although the league had been functioning for several years, the summer of 1949 saw the National Basketball League fold into the Basketball Association of America, which then renamed itself the National Basketball Association. The first era of the NBA Draft, from 1947 to 1965, was characterized by teams receiving draft picks in the virtually uncapped number of draft rounds. This era was also characterized by the opportunity for teams to select players using territorial picks, or players from within that team's geographic region, in order to boost regional popularity.[6] The first major change in the NBA Draft came in 1971, when the U.S. Supreme Court ruled in favor of Spencer Haywood in the case of *Haywood v. National Basketball Association*.[7] In this case, Haywood challenged the NBA's draft eligibility requirements, which required that all college basketball players graduate from college before being eligible. In winning this case, Haywood opened the door which permitted high school graduates and collegiate underclassmen to be eligible for the NBA Draft.

From 1966 through 1984, the team that selected the first overall draft pick was determined by a coin flip, with the remaining teams picking in the inverse order of their win-loss record. This was subject to change in 1985, when the NBA instituted the NBA Draft Lottery. This lottery was setup to determine the draft order for those teams who did not make the

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[6] "Evolution of the Draft and Lottery." NBA.com. 10 Dec 2008. <http://www.nba.com/history/draft_evolution.html>.
[7] Assocated Press. "Haywood: Age limit 'would give players time to develop.'" ESPN. 13 May 2005, 12 Dec 2008. <http://sports.espn.go.com/nba/news/story?id=2059767>.

playoffs. Prior to the lottery system, teams would benefit greatly by deliberately losing games in order to gain better draft picks. The lottery system initially gave teams that did not make the playoffs an equal opportunity to win the number one overall draft pick. However, the system was "flawed" greatly as the marginally talented New York Knicks won the 1985 NBA Draft Lottery and selected Patrick Ewing, a very talented center from Georgetown University. The Draft Lottery has undergone several changes since its initial inception in 1985. In 1987, the NBA Board of Governors agreed that the team with the worst regular season record would receive no worst than the number three draft pick. In 1990, the NBA Board of Governors instituted the weighted lottery system, which gave teams with the worst records a better chance of winning the number one overall pick than those lottery teams with better losing records. These weighted probabilities have changed over time, since the league has expanded from 27 teams to its current size of 30 teams.

The number of rounds in the NBA Draft has also changed over time. As mentioned earlier, the NBA Draft used to have as many as 21 rounds, as it did in 1960.[8] While the number of rounds decreased to 10 by 1974, the Board of Governors agreed to limit the 1989 NBA Draft (and subsequent drafts) to two rounds. This decreases the number of total drafted players, but also allows un-drafted players to attend open tryouts and workouts for various NBA teams. Whereas many might see this as a roadblock to a professional basketball career, many un-drafted players make their way onto NBA rosters or those of elite European basketball clubs.

Financial compensation for NBA Draft picks is all based on the NBA Rookie Salary Scale, which decreases salaries for players selected later in the draft. The Rookie Scale applies

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[8] "Evolution of the Draft and Lottery." NBA.com: Official Website of the National Basketball Association. 10 Dec 2008. <http://www.nba.com/history/draft_evolution.html>.

only to first round draft picks, while contracts for second round draft picks are negotiated between the teams and the players. Under the current NBA Collective Bargaining Agreement, the rookie contract is guaranteed for two years, with team options for the third and fourth years.[9] In other words, when a player is entering their third or fourth seasons as professionals, the team has the option to either keep or cut the player with minimal financial penalties. After a player has played through their rookie contract, they are eligible for free agency- which usually results in desirable players receiving longer and more lucrative contracts.

Under the current Collective Bargaining Agreement, potential draft picks have several dates to keep an eye on for the 2009 NBA Draft. While the NCAA Tournament is over by early April, the Early Entry Eligibility Deadline for the 2009 NBA Draft is April 26, allowing underclassmen to attend several workouts and camps conducted by the NBA.[10] Early Entry Entrants have until June 15 to withdraw from the NBA Draft, which means that Early Entrants have roughly 9 weeks to figure out their draft stock and decide whether or not they are going to enter the draft. With the official 2009 NBA Draft being held on June 25, there are almost 12 weeks between the end of the NCAA Tournament and the NBA Draft.

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[9] "Article X: Player Eligibility and the NBA Draft." NBPA.com: Official Website of the National Basketball Players Association. 3 Dec 2008. <http://nbpa.com/cba_articles/article-X.php>.
[10] "NBA Key Dates, NBA Deadlines." Insidehoops.com. 8 Dec 2008. <http://www.insidehoops.com/calendar.shtml>.

IV. EMPIRICAL WORK

A. Data Description

The empirical work for this paper uses data made up of every basketball player who explicitly declared for NBA Drafts held between 2004 and 2008. This time period was selected for various reasons. First, it was during this time period that high school Seniors were no longer eligible to declare for the NBA Draft immediately following graduation. Second, there is not much public information available regarding those players who decided to declare for the NBA Draft before 2004. In total, the data consists of 554 observations from the 5 years over which it spans. The core of the data is based on declared player lists offered by DraftExpress.com and MyNBADraft.com. Although NBA.com does offer a list of selected player profiles for a few contemporary NBA Drafts, it was necessary to use alternative sources to compile a complete list of those players who had declared for the Draft. There are numerous independent variables that determine whether or not a player is drafted and for the purposes of this paper, a great number of these variables have been considered.

This paper focuses on those draft eligible players who have formally declared for the NBA Draft. Explicit declarations are required for all eligible players except for college Seniors, who are automatically eligible upon completing their senior year. (Technically, all college Seniors are automatically eligible for the NBA Draft.) Due to this amount of inclusion, one would likely assume that the list of seniors would include more seniors than those who are included in this data. However, the seniors listed in the official Draft pool are those players who have made known their intention to play in the NBA. In other words, the seniors included in the draft pools are those seniors who were likely significant contributors to very good teams, or were possibly standout players at smaller Division 1 institutions. There are cases when non-Division 1 players have explicitly declared for the NBA Draft, but these players have rarely been drafted.

There are several types of variables within this data set which are intended to capture the dynamics of each individual player. First, there are individual characteristics of players, such as height, weight, age, and whether or not a player is left-handed. The next set of variables is dedicated to addressing what part of the world the player is from. These physical and background attributes are listed for all 554 observations in this data set.

In an attempt to capture a player's decision regarding where to attend college, there is a variable which denotes a player's high school ranking at the end of their senior year. It is a common trend for players ranked near the top of their respective senior classes to attend colleges and universities with tremendous basketball programs that also happen to succeed well within the Tournament. The high school rankings for applicable players come from the Recruiting Services Composite Index, which is more commonly referred to as the RSCI. This index combines the rankings given by high school basketball experts from various sources such as Hoop Scoop, Prep Stars, ESPN, and Scouts Inc.[11] The initial RSCI for a class of high school seniors is published in the June preceding the beginning of senior year. This gauges where a player stands before the barrage of elite summer camps and national tournaments. The RSCI is then recalculated in September, which reflects how that player performed during the summer season. The final RSCI for a senior class is then produced in May, as high school seniors have finished their winter basketball seasons and are either making or finalizing their selections regarding which colleges they will choose to attend after graduation.

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[11] Recruiting Services Composite Index. RSCIhoops.com. http://rscihoops.com/. Accessed 15 March 2009.

The next set of important variables concerns player production at varying points during the college basketball season. For all Division 1 players, statistical per game averages were calculated for all games preceding the NCAA Tournament. This includes regular season per game averages for points, rebounds, assists, blocks, and turnovers. The next set of player statistics concerns player production during the NCAA Tournament. NCAA Tournament statistics were only calculated for those players who played in the Tournament immediately prior to declaring for the NBA Draft. These statistics also included per game averages for points, rebounds, assists, blocks, and turnovers. Another important set of variables was generated to reflect the differences in statistical production between the NCAA Tournament and the regular season. Constructed by subtracting regular season production from Tournament production, this set of constructed variables directly addresses the question surrounding this empirical research.

Players who had attended college in the United States presented little difficulty in terms of finding production statistics. Statsheet.com, a comprehensive online statistical database for a variety of sports, was used in conjunction with ESPN.com to compile and compute statistics for players. The game-by-game breakdown on Statsheet.com made it easy to distinguish between regular season games and NCAA Tournament games. Statistical production figures were calculated for regular season games played during the college basketball season immediately prior to the NBA Draft. Once these regular season figures were calculated, the player's NCAA Tournament production was then calculated contingent upon their participation in the Tournament.

Another important variable is one which reflects an NCAA team's wins in the NCAA Tournament relative to the average number of wins experienced by previous teams with similar seed numbers. This variable is based upon the Performance Against Seed Expectations statistic, or the PASE.[12] This statistic measures the average number of wins experienced by each seed in the NCAA Tournament since the Tournament expanded to 64 teams in 1985. By subtracting expected wins given a team's NCAA seed from actual wins, I can measure the performance of a team in the NCAA Tournament not predicted by season performance.

Variables pertinent to multiple aspects of the NBA Draft are also included in this data set. There is a variable addressing what point in the draft a player is drafted, as well as the player's first year salary according to the NBA Rookie Scale.[13] Also included in this group of observations is the previous year winning percentage for the team that signs a player. There are also dummy variables addressing whether or not the player was signed by a team that was in the Eastern Conference as well as whether or not the player was signed by a team that made the NBA Playoffs in the previous year. This group of variables could be useful in possibly understanding contentions regarding what players are selected by different types of teams.

B. Methodology

The empirical work in this paper focuses on whether or not the difference between Tournament and Regular Season statistical production has a significant impact upon the probability of a college basketball player getting drafted in the NBA Draft. This paper uses each college player's actual statistics and not related conglomerations such as player efficiency ratings, which are commonly used to describe NBA players. More specifically, the primary empirical

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[12] Tiernan, Peter. "Performance Against Seed Expectations." ESPN.com. Published 10 March 2009. http://sports.espn.go.com/ncb/news/story?id=3286167. Accessed 12 March 2009.

[13] Some International players selected during the NBA Draft chose not to pursue immediate NBA careers- and thus had no actual first year salaries. For players selected in the first round, they were assigned first year salaries equal to 120% of the rookie scale value, since all first round draft picks can (and usually do) sign for 120% of what the rookie scale allows. For these players signed in the second round, they were assigned the rookie minimum since that is what the majority of second round rookies sign for.

model uses regular season per game averages of points, rebounds, assists, steals, blocks and turnovers in conjunction with the differences of NCAA Tournament and regular season per game averages of the same statistics in order to predict the probability of being drafted and subsequent draft pick number if drafted. The primary model used for the empirical work in this paper is given below in Equation 1:

$$(1)\ \text{drafted}_i = \beta_1 + \beta_2\mathbf{X}_i + \beta_3\mathbf{Z}_i + \beta_4\mathbf{J}_i + \beta_5\mathbf{K}_i + e_i$$

The dependent variable ‘drafted’ is a dummy variable equal to 1 if the player is selected in the NBA Draft. Although Equation 1 could list each of the individual independent variables, it would be more sensible to truncate the equation by grouping the independent variables. Each of the independent variables belongs to a vector. The ‘X’ vector includes variables measuring personal characteristics, including height, weight, age, etc. The ‘Z’ is a vector of dummy variables for conference affiliation. The ‘J’ vector is a set of variables measuring regular season production, while the ‘K’ vector measures production in the NCAA Tournament.

Equation 1 is run on the entire sample of players and then exclusively on seniors. The rationale behind running the analysis only on seniors is that a senior’s decision to declare will be less affected by NCAA performance since they have no cost of declaring and not being picked. Underclassmen that declare and stay in the draft past a certain date are ineligible to continue their college basketball career, so their decision may be affected by performance in the NCAA Tournament. Also, seniors may have the greatest incentive for playing well in the Tournament, since they do not have the option of returning to school to sharpen their skills and subsequently improve their draft stock. While it would be nice to test this for freshmen, sophomores, and juniors, the samples for each of those respective classes are not large enough to estimate accurate regressions. (See Appendix Table 1.2 for breakdown of Tournament participation by year of schooling, i.e. freshmen, sophomores, juniors, and seniors.)

Another regression model used in this empirical analysis uses the same structure as Equation 1, but changes the dependent variable to the draft pick number with which a player was selecting during the NBA Draft. Whereas the primary regression analysis was intent upon determining the probability of a college player getting drafted, this secondary model is focused on determining at what point in the NBA Draft a college player might be selected. While this second regression model could be estimated over the entire sample, too much of the variation would be picked up by non-drafted players. Therefore, we should learn more about draft picks by just looking at drafted players. This secondary model, which is given below, uses all of the same independent variables as Equation 1:

(2) $\text{picknum}_i = \beta_1 + \beta_2\mathbf{X}_i + \beta_3\mathbf{Z}_i + \beta_4\mathbf{J}_i + \beta_5\mathbf{K}_i + e_i$

Although this secondary model could produce draft pick values outside the range of accepted values, it may provide an alternative interpretation of the independent variables presented in both the first and second Equations.

A tobit regression model has also been estimated in this empirical analysis. This model is added to deal with the selection process on the part of the NBA general managers and team executives. A tobit model is necessary if we believe that the NBA executives assign a potential productivity to each player who declares for the draft and then pick the remaining player with the higher productivity value when it is a manager's turn to pick a player. Here, all players who declare have a productivity rating which maps into a specific draft pick number where those not picked are given a draft number of 61. The draft pick number maps into the productivity ranking, but is truncated at the bottom by one and at the top by 61. The observed pick number then represents expected productivity and a tobit regression is estimated to see how personal, team, and tournament performance affect expectations about productivity. The introduction of a tobit model into this analysis is important because of the limiting nature of the OLS model used in Equation 2. Equation 2 focused on estimating coefficients for independent variables, while the dependent variable was the draft pick number used to select a player. Thus, only those players who were drafted were included in that particular model. The tobit estimation in Equation 3 includes all college basketball players who played in the NCAA Tournament, regardless of whether or not they are drafted. This model, which is given below, uses the same independent variables as those used in Equations 1 and 2:

$$(3)\ picknum_i = \beta_1 + \beta_2\mathbf{X}_i + \beta_3\mathbf{Z}_i + \beta_4\mathbf{J}_i + \beta_5\mathbf{K}_i + e_i$$

In using a tobit estimate, one is expecting for number of observations in each particular estimate to be consistent with those of the probit Equation in Equation 1. It is predicted that the tobit model will increase the magnitudes of the slope coefficients relative to those estimated using the ordinary least squared model.

V. RESULTS

A. Data Summary Analysis

Appendix Table 1.1 provides a basic summary of the variables listed within this paper. Table 1provides a summary of those variables which focus on describing the data set. In looking at the sample as a whole, 54% of all players ended up getting drafted. This table shows that roughly 30% of the entire draft pool is made up of International players. The individual BCS Conference variables are also rather balanced, with nearly 70% of the Division 1 NCAA players coming from these "power" conferences. Of the actual Division 1 players, 60% played in the Tournament immediately prior to the NBA Draft. This table also shows that only 62% of all players declaring for the NBA Draft participated in the NCAA Tournament. It is also important to note that seniors make up roughly 48% of the entire sample used in this empirical analysis, although only 37% of seniors in the sample were actually drafted. The summary statistics for all of the variables used in this analysis are presented in Appendix Table 1.1.

Table 1: List of Variables, Means, and Standard Deviations Relevant to Analysis

Variable Name	n	Mean	S.D.
drafted	554	.5397112	.498871
picknum	554	44.53971	19.85424
age	554	21.39711	1.39142
intl	554	.3032491	.4600773
fresh	554	.0505415	.2192575
soph	554	.066787	.2498784
junior	554	.1245487	.3305049
senior	554	.4801444	.5000571
div1	404	.9678218	.176692
bcs	391	.6982097	.4596229
acc	391	.1304348	.3372127
big10	391	.0767263	.2664977
big12	391	.1355499	.3427485
bigeast	391	.1355499	.3427485
pac10	391	.1150895	.3195388
sec	391	.1023018	.303433
ncaabid	391	.6189258	.486273

A priori expectations have been made based on observations made from watching college basketball as well as NBA games. In the model predicting the probability of being selected in the NBA Draft, one should expect player height, regular season performance statistics, and Tournament games played to each have significant positive impacts. However, one should expect player age to be significant and negative, since the majority of NBA teams would want a younger player who might be able grow and develop within that team's system or style of play. When looking at coefficients for Equation 2, one should expect player height, regular season performance statistics, and Tournament games played to have a significant negative impact. Likewise, we should expect player age to have a significant positive effect upon the draft pick number used to select that player. These two Equations have separate dependent variables, which should result in the coefficients having differing interpretations. Equation 3 is very similar to Equation 2, in the sense that we should impose the same expectations. However, given the nature of tobit estimates, we should expect for Equation 3 to produce higher coefficients for variables.

B. Regression Results

Appendix Table 2 gives the coefficients for the key regression results from estimating Equation 1 using a probit model, where the dependent variable is *drafted* or whether or not the player is drafted. All coefficients are converted to the change in the probability of getting drafted given a 1 unit change in the independent variable.

Column A shows that for every one year increase in age, the probability of getting drafted decreases by 19 percentage points. This column also shows that being an international player decreases the probability of getting drafted by 12 percentage points. Each of these coefficients proved to be statistically significant within this model, while the other variables lacked any significance. In Column B, the high school rank variable is added to the model. Observations that did not have values for high school ranking were dropped from this model. For every one 1-unit increase in high school ranking, the probability of getting drafted decreased by .1 percentage points. (In the high school rank system, players are ranked 1 through 100, with better players being ranked closer to 1.) Player age remains negative and statistically significant in this model, although the coefficient decreases 17.7 percentage points. Also, the number of observations decreases since the high school rankings do not apply to the many international players who did not play in U.S. high schools. In Column C, the Division 1 variable is added to the model, although it proved to be statistically insignificant. The presence of the Division 1 variable results in the loss of several observations since players from International leagues were not considered to be eligible for participation at the NCAA Division 1 level.

Columns D and E of Appendix Table 2 introduce variables regarding player conference and regular season performance into the regression model. Each of these models includes variables based solely on participation at the Division 1 level, which causes the loss of additional observations. Column D introduces the BCS variable and regular season statistics. The BCS variable, which is statistically significant, indicates that playing in a BCS conference leads to a 20 percentage point increase in the probability of getting drafted. Of the regular season statistics, points per game, assists per game, and steals per game are positive and statistically significant. For every 1 point increase in regular season points per game, the probability of getting drafted increases 2 percentage points. For every 1 unit increase in regular season assists per game, the probability of getting drafted increases 8 percentage points. For every 1 unit increase in regular season steals per game, the probability of getting drafted increases by nearly 13 percentage points. Joint hypothesis testing for the regular season coefficients proved that the coefficients were statistically significant. A chi-squared test on the regular season variables produces a chi-squared value of 21.05 and a p-value of 0.0018. The coefficient on player height remained positive and statistically significant while the coefficient on player age remains negative and statistically significant.

The model in Column E of Appendix Table 2 replaces the BCS variable with dummy variables for each of the actual BCS conferences while including the regular season statistics. The Big East and SEC were the only BCS conferences with insignificant coefficients. The coefficients on the remaining conferences- the ACC, the Big 10, the Big 12, and the Pac 10- are each positive and statistically significant. The omitted group in this case consists of players who did not play at BCS schools. Playing in the Pac 10 resulted in a 31 percentage point increase in the probability of getting drafted, while playing in the Big East resulted in a 15 percentage point increase in the probability of getting drafted. The remaining conferences had positive coefficient values which fell in between those listed for the Pac 10 and the Big East. Joint hypothesis testing on the coefficients for the BCS dummy variables proved that the coefficients were statistically significant. A chi-squared test on the BCS dummy variables produces a chi-squared value of 13.34 and a p-value of 0.0380. Of the regular season statistics, points, assists, and steals were each positive and statistically significant. The coefficients on player height remained positive and statistically significant while the coefficient on player age remained negative and statistically significant.

Table 2 gives the coefficients on models which include Tournament variables, which are the prime focus of this paper. In Column 1, the coefficient of 0.112 on the Tournament games variable means that for every game played in the NCAA Tournament, the probability of getting drafted increases by 11 percentage points. Interestingly, the variable denoting left handedness gains significance, resulting in left-handedness decreasing the probability of getting drafted by

Table 2: Coefficients of Variables Relevant to the NCAA Tournament Estimated Using Probit Estimation Technique

Variable Name	1	2	3	4	5	Seniors
tgames	.112987*** (.0205)	(replaced)	.1421513*** (.0290)	(replaced)	(replaced)	(replaced)
games0		-.4774583** (.2114)	(replaced)	(replaced)	(replaced)	(replaced)
games1		-.4703704** (.1891)	(replaced)	(replaced)	(replaced)	(replaced)
games2		-.397591 (.2181)	(replaced)	(replaced)	(replaced)	(replaced)
games3		-.2357933 (.2565)	(replaced)	(replaced)	(replaced)	(replaced)
games4		-.0058761 (.2691)	(replaced)	(replaced)	(replaced)	(replaced)
games5		(dropped)	(replaced)	(replaced)	(replaced)	(replaced)
games6		.2111265 (.2228)	(replaced)	(replaced)	(replaced)	(replaced)
avgseedwins					.1475696*** (.0410)	.1682728*** (.0600)
pasediff				.1153855*** (.0334)	.1174232*** (.0339)	.1042333** (.0472)
dppg			.0187413** (.0083)	.0211701** (.0084)	.0195401** (.0083)	.0338199*** (.0122)
drpg			-.0097304 (.0196)	-.0149717 (.0200)	-.0089952 (.0197)	-.0104753 (.0276)
dapg			.0371477 (.0318)	.0406 (.0323)	.0396175 (.0317)	.035448 (.0422)
dspg			-.0244209 (.0504)	-.0103765 (.0498)	-.0262564 (.0505)	.023368 (.0699)
dbpg			.0329974 (.0608)	.0332027 (.0607)	.0364962 (.0606)	.065249 (.0808)
dtopg			.0155524 (.0292)	.0021575 (.0287)	.0156201 (.0293)	.0206934 (.0378)
n	373	373	229	229	229	145
LR chi^2	147.52 (19)	152.06 (24)	108.33 (25)	95.08 (25)	108.46	55.42
Pseudo R^2	0.2869	0.2957	0.3551	0.3116	0.3555	0.2773

23 percentage points. Of the BCS conferences, the SEC was the only one to not reach statistical significance. The regular season statistics maintained similar magnitudes and significance levels from previous models. Column 2 replaces the Tournament games variable with dummy variables representing each of the possible six Tournament games played. The dummy variable representing five tournament games played is dropped during the calculation of the coefficients,

thus making that particular variable the omitted group. Relative to the variable representing five Tournament games played, not making the Tournament results in a 48 percentage point decrease in the probability of getting drafted. However, relative to playing four games in the NCAA Tournament, playing one game in the Tournament results in a 47 percentage point decrease in the probability of getting drafted. For the sake of analytical consistency, playing in six Tournament games results in a 21 percentage point increase in the probability of getting drafted. Joint hypothesis testing on the Tournament game dummy variables indicates that the dummy variables are indeed statistically significant. A chi-squared test on the Tournament games variables produces a chi-squared value of 32.03 and a p-value of 0.0000.

Columns 3, 4, and 5 of Table 2 introduce the statistics reflecting the difference between Tournament and Regular Season production while controlling for Tournament games played in a variety of ways. As Tournament variables are included in the model, a significant number of observations are dropped since there were many players who were not in the NCAA Tournament. In Column 5, the production difference statistics are added to the model while including the singular variable representing the number of Tournament games. When including these new variables, there are several important changes in variable significance and magnitude. The coefficient on player height increases, while the coefficient on player age decreases. The left-handed variable loses its significance. Of the BCS variables, only the Pac 10 variable is positive and remains statistically significant. The variables reflecting regular season averages of points, assists, and steals remain positive and statistically significant. The Tournament games variable is positive and statistically significant.

In light of the NCAA Tournament statistics, the coefficients on regular season points, assists, and steals each increased while remaining significant. The variable reflecting the difference in points per game between the Tournament and the regular season proves to be positive and statistically significant. For every 1 point increase in the point per game difference between the Tournament and the regular season, the probability of getting drafted increases by nearly 2 percentage points. However, joint hypothesis testing for each of the "difference in production" variables indicates that collectively, the variables are not statistically significant. A chi-squared test produces a chi-squared value of 7.36 and a p-value of 0.2884. In this model, player height remains positive and statistically significant while player age remains negative and statistically significant.

Column 4 represents a model in which one accounts for the difference between a team's actual Tournament wins and a team's expected number of wins given their seed number, while omitting the number of Tournament games played. The coefficient on the PASE difference means that for every 1 game won above the team's expected number of Tournament wins given their seed, the probability of getting drafted increases by 12 percentage points. Values for each the other variables in the model are similar to those in Column 3 in terms of their magnitudes and significances. The inclusion of the PASE difference variable causes the overall explanatory power of the model to decrease from the previous model.

Column 5 adds to the regression estimation a variable controlling for the average number of wins given a team's seed in the NCAA Tournament. This particular model is very similar to the previous models that included Tournament productivity, yet the variable for average number of wins by seed proves to be positive and significant. For every 1 game increase in the number of games a team was expected to win- based on its seed in the NCAA Tournament- the probability of getting drafted increases by nearly 15 percentage points. The PASE difference coefficient remains similar to the value found in Column 4 of Table 2. The variable reflecting the difference between Tournament and regular season points per game lost the statistical significance that it had maintained in each of the previous models. The pseudo R-squared for this model was the highest of all the models. Thus, regular season performance is reflected in Tournament seeding, with Tournament performance potentially having an entirely separate effect on the NBA Draft.

The final column of regression results listed in Table 2 focuses on seniors and how performance in the NCAA Tournament impacted their probability of getting drafted. As stated before, college seniors do not have the option to "test the NBA draft waters" and decide to return to school. A senior who flashes the ability to exceed their past production might be able to show NBA teams that they have not yet peaked and that they still might able to improve their skills at the NBA level. For seniors, height is significant and positive, while age loses the significance that it held in previous models. The coefficients on regular season points per game, assists per game, and steals per game remains positive and significant, with each increasing in their actual values. The coefficients for average seed wins and PASE difference remain positive and significant, yet the values change from what was seen in Column 5. The value of the average seed win variable increases, while the value of the PASE difference variable decreases. Interestingly, joint hypothesis testing for the variables reflecting differences in production between the Tournament and the regular season shows that those variables are more significant than in the previous models. In Column 5, the "difference" variables were significant at the 25% significant level. However, in the senior column, the "difference" variables are collectively significant at the 15% significance level. A chi-squared test produces a chi-squared value of 10.24 and a p-value of 0.1151.

Appendix Table 3 gives coefficients from the regression results from Equation 2, which is based upon an ordinary least squares model. The initial models show that the coefficient on player age was positive and statistically significant. Controlling for high school rank in Column B eliminates all significance from the variable denoting whether or not a player was from the United States. The inclusion of the Division 1 variable in Column C only serves to increase the magnitude of the age coefficient. When regular season statistics are added to the model in Column D, player height's negative coefficient becomes significant. F-test calculation produces an F-statistic of 5.42 and a p-value of 0.0000. Among the regular season statistical measures, points per game, assists per game, and blocks per game are each negative and significant. Regular season turnovers per game proved to be positive and significant. None of the conference variables prove to be significant in Column E.

Table 3 gives coefficients on the Tournament variables in the OLS regression Equation used to explain draft pick number. In Column 1, player height increases in its significance, while the variable for regular season turnovers per game lost its significance. The Tournament games variable has a negative and significant coefficient, with one additional game in the Tournament causing a player to be selected 3.7 draft picks earlier in the NBA Draft. The model in Column 2 replaces the Tournament games variable with dummy variables reflecting each game played. The dummy variables representing the zero, one, and two Tournament games played are positive and significant, with the variable representing four games being omitted from the analysis. However, the coefficients reflecting playing in the Final Four have a negative (albeit insignificant) coefficient. Joint hypothesis testing of the Tournament game dummy variables show that the variables are indeed significant. F-test calculation produces an F-statistic of 9.86 and a p-value of 0.0000.

In Column 3, the model includes the variables representing the difference between Tournament and regular season production. Joint hypothesis testing on the "difference" variables prove that the difference variables were collectively insignificant. F-test calculation produces an F-statistic of 0.50 and a p-value of 0.8070. Player height loses significance, although player age remains positive and significant. The coefficients on regular season points and blocks per game remain negative and significant.

Table 3: Coefficients of Variables Relevant to the NCAA Tournament Estimated Using Ordinary Least Squared (OLS) Estimation Technique

Variable Name	1	2	3	4	5	Seniors
constant	60.55996	41.59488	27.35421	-14.38868	23.56284	73.86658
tgames	-3.676318*** (.4867)	(replaced)	-3.701406*** (.7111)	(replaced)	(replaced)	(replaced)
games0		16.32921*** (3.435)		(replaced)	(replaced)	(replaced)
games1		14.80846*** (3.988)		(replaced)	(replaced)	(replaced)
games2		10.16125*** (3.792)		(replaced)	(replaced)	(replaced)
games3		2.293524 (4.173)		(replaced)	(replaced)	(replaced)
games4		(dropped)		(replaced)	(replaced)	(replaced)
games5		-1.69165 (5.110)		(replaced)	(replaced)	(replaced)
games6		-3.653991 (3.897)		(replaced)	(replaced)	(replaced)
avgseedwins					-5.092261*** (1.134)	-5.277815*** (1.854)
pasediff				-2.855594*** (.9610)	-1.927502** (.9133)	-2.539099 (1.840)
dppg			-.1678305 (.2757)	-.2764515 (.2940)	-.1973028 (.2728)	-.565983 (.4533)
drpg			-.2061383 (.6332)	-.3165108 (.6778)	-.186002 (.6282)	.4593671 (.9956)
dapg			1.608258 (1.049)	1.555551 (1.124)	1.383443 (1.042)	2.419182 (1.595)
dspg			-.2091887 (1.657)	-.7817066 (1.771)	-.1304486 (1.646)	-1.857041 (2.393)
dbpg			-.2608751 (1.583)	-.6468881 (1.693)	-.3477482 (1.569)	-3.192487 (2.346)
dtopg			.1525054 (1.092)	.4364509 (1.169)	.2423731 (1.083)	.4839574 (1.387)
n	203	203	141	141	141	66
R^s	0.5125	0.5201	0.5635	0.4992	0.5745	0.6309

Columns 4 and 5 introduce variables reflecting Tournament expectations versus Tournament realizations from the team aspect. In Column 4, the PASE difference variable is negative and significant. However, the R-squared for this particular model decreases from that of Column 3. In Column 5, the model includes the variable reflecting the historical average of wins for a given seed as well as the PASE difference variable. This "average wins per seed" variable is negative and significant, while the PASE difference variable remains negative and significant. For every game won that was unexpected, the draft pick number falls by 1.9 places. The regular season points per game variable remained significant, although regular season blocks per game lost its significance. Despite an increase in the R-squared of the regression model, the variables reflecting the differences in production remained insignificant.

Similar to the final column in Table 2, the last column in Table 3 also focuses on college seniors. The age variable loses significance, whereas regular season blocks per game increases in its negative magnitude and regains statistical significance. While the average number of seed wins remains significant, the PASE difference variable loses significance and is only significant at the 20% significance level, or at the 10% significance level using a one-tailed test. F-test calculation produces an F-statistic of 1.29 and a p-value of 0.2857. These variables could still be significant considering the rather substantial drop in the number of observations. Either way, the coefficients of the difference variables in the column for seniors have rather large magnitudes which should not be ignored, especially in the context of the results in Column 5. When compared to Column 5, each of the relevant variables becomes increasingly significant- except for the variable reflecting the difference in points per game. Thus, one may be able to form a conclusion similar to that of the senior Column in Table 2, which is that the Tournament has a greater effect on seniors when it comes to the NBA Draft.

Appendix Table 4 gives the coefficients for all variables estimated using the tobit estimation described in Equation 3. Instead of calculating variable coefficients for the eleven models used in the probit and OLS models, it makes more sense to only calculate coefficients for the models most relevant to this empirical study. Column 1 of Appendix Table 4, which is similar to Column 5 of Tables 2 and 3, represents the coefficients estimated for all players from the sample who were in the NCAA Tournament. For these players, a one-inch increase in height causes a player to be selected 2.6 picks earlier in the NBA Draft. This coefficient was significant at the .01 significance level. The age variable had a significant coefficient of 9.45, meaning that a one-year increase in age causes a player to get picked 9 or 10 picks later than those a year younger than him. The coefficients on left-handedness, International status, and high school ranking are all statistically insignificant.

The next set of variables in this particular model consists of the BCS conference variables. All else held constant, playing in the Big 10 conference was significant, and results in being selected 11 picks before those who did not play in the Big 10. All else held constant, playing in the Pac 10 was also significant, and also results in being selected 11 picks before those who did not play in the Pac 10. While none of the other conferences reach statistical significant, joint hypothesis testing of the BCS conference variables produced an F-statistic of 2.25 and a p-value of 0.0399.

Table 4 gives the estimated coefficients on the Tournament variables from the tobit regression Equation used to explain draft pick number. In Column 1 of Table 4, regular season statistics are more important than in previous models, with points, assists, steals and blocks all achieving significance. A one-point increase in regular season points per game causes a player to be selected 2 to 3 picks earlier in the NBA Draft. A one-unit increase in regular season assists per game causes a player to be selected almost 5 picks earlier in the NBA Draft. A one-unit increase in regular season steals per game causes a player to be selected 8 to 9 picks earlier in the draft. A one-unit increase in regular season blocks per game causes a player to be selected nearly 7 picks earlier in the draft. Although rebounds and turnovers are important statistics during the regular season and the Tournament, they did not reach significance in this particular model. Joint hypothesis testing on the regular season statistics produced an F-statistic of 11.78 and a p-value of 0.0000.

Table 4: Coefficients of Variables Relevant to the NCAA Tournament Estimated Using Tobit Estimation Technique

Variable Name	1	Seniors
constant	148.2303** (71.76)	425.8449*** (129.4)
rsppg	-2.562053*** (.4298)	-3.676072*** (.6401)
rsrpg	.9490942 (1.0445)	1.833745 (1.725)
rsapg	-4.915796*** (1.591)	-6.294106** (2.439)
rsspg	-8.549986** (3.500)	-9.998009* (5.598)
rsbpg	-6.82246** (2.739)	-7.150923 (4.483)
rstopg	-.5903318 (3.277)	-.7310381 (5.182)
avgseedwins	-8.48192*** (1.486)	-11.27643*** (2.529)
pasediff	-4.7974*** (1.169)	-5.3144** (2.140)
dppg	-.7651255** (.3347)	-1.719237*** (.5327)
drpg	-.110395 (.7855)	.3435079 (1.247)
dapg	-.5852682 (1.273)	-.3557616 (1.879)
dspg	-.0525075 (2.071)	-2.548478 (3.017)
dbpg	-.414656 (2.118)	-2.567245 (3.235)
dtopg	-.7931198 (1.268)	-1.603497 (1.699)
n	229	145
Pseudo R^s	0.1246	0.0982

The Tournament variables included in the model, which are portrayed in Column 1of Table 4, allow us to draw conclusions similar to those drawn from the OLS model. All else held constant, a one-point increase in the difference between Tournament and regular season scoring averages results in a player being selected almost 1 pick earlier. Joint hypothesis testing produced an F-statistic of 1.18 and a p-value of 0.3177. Thus, the full set of variables reflecting differences in production between the regular season and the Tournament proved to be collectively insignificant.

The variables reflecting team performance are also consistent from the previous OLS model used in this analysis. These two variables- average seed wins and PASE difference- are highly significant in this particular model. For every one-win increase in the average number of seed wins, a player is selected 8 to 9 picks earlier. For every one-win increase above the team's expected number of wins, a player was selected nearly 5 picks earlier.

The Seniors column in Table 4 reflects some of the trends seen in the other Equations used in this analysis. Player height and weight both increase in their respective magnitudes, although player height loses some of its significance. Player weight, however, does manage to become significant at the 10% significance level. The player age variable loses all significance, as do the BCS Conference variables. In fact, joint hypothesis testing for the BCS variables produced an F-statistic of 0.79 and a p-value of 0.5766. Each of the coefficients on measures of production during the regular season also increase in their magnitudes, with points, assists, and steals per game remaining significant. Joint hypothesis testing on these variables produces an F-statistic of 7.77 and a p-value of 0.0000.

The Tournament section of the Seniors column indicates that the Tournament matters a great deal more for seniors than it does for the general sample used in this analysis. The coefficient on the difference in points per game variable increases to -1.719237, meaning that a one-point per game increase in scoring in the Tournament causes a senior to be selected nearly 2 picks earlier than if he had not increased his scoring at all. Although the remaining production measures are insignificant, joint hypothesis testing on the difference measures produced an F-statistic of 2.29 and a p-value of 0.0393. The variables reflecting team success- average seed wins and PASE difference- also increase in their magnitudes while not losing a great deal of their significance.

VI. ANALYSIS

The NCAA Tournament is reflected in each of the three models used in this empirical analysis. The success of the individual is captured in the variables which reflect the differences in statistical production between the NCAA Tournament and the regular season. Team success is captured in both average wins per seed variable and the PASE difference variable. Each of these variables is included in the three models, with each model allowing us to interpret and analyze the variables differently with respect to the NBA Draft. In Equation 1, positive coefficients on variables result in an increase in the probability of a player getting selected in the NBA Draft. However, in Equations 2 and 3, positive coefficients should be interpreted as increases in pick number, which is "bad." Hence, it should be expected that the variables with positive coefficients in Equation 1 also have negative coefficients in Equations 2 and 3.

At the level of the individual, it was found that the NCAA Tournament does help to inform NBA teams about a player’s ability. The results from Equation 1 indicate that all else held constant, production during the NCAA Tournament does have a significant impact on the probability of a player getting drafted. Most notably, the significance of the variable reflecting the difference in points per game shows that scoring above the expected regular season rate increases the probability of getting drafted. This makes sense, especially if recognizes that the mean of the variable representing the difference in points per game is negative. Thus, on average, players who played in the Tournament usually scored fewer points than they did during the regular season. Maintaining scoring from the regular season to the Tournament would be commendable, while scoring more in the Tournament would be extraordinary.

The OLS and tobit models also provide information regarding the significance of the NCAA Tournament production variables. According to Column 5 of Table 3, production during the NCAA Tournament does not have a significant impact upon where a player was picked during the NBA Draft. However, the tobit model indicates that an increase in points per game from the regular season to the NCAA Tournament does indeed have a significant impact. Consistent with the assumption of increased magnitudes in tobit estimates, the variable's coefficient is indeed greater than its OLS counterpart.

The average seed wins variable and the PASE difference variable combine to inform us greatly about the impact of team success during the NCAA Tournament on the entire sample and for seniors. The average seed wins variable is a reflection of NCAA Tournament seed number, which is a function of regular season success. Based on each of the three equations used in this analysis, the quality of a player's team has a significant impact on whether or not a player is drafted as well as where in the draft he is selected. As expected, the coefficient for the average seed wins variable was bigger in the tobit model than it was in the OLS model.

The PASE difference variable is a reflection of observed NCAA Tournament success relative to the expected level of a team's success in the NCAA Tournament success. The positive and significant coefficient on this variable in the probit model indicates that while team success during the regular season is important, exceeding expectations during the NCAA Tournament only serves to enhance a player's profile and increase the probability of a player getting drafted. A great deal of this might have to do with NBA teams seeing players as leaders on their respective teams or possibly as contributing role-players able to fit into a successful system. Either way, NBA teams would value players who could contribute greatly as individuals while also contributing to the success of their respective teams. Additionally, the PASE difference coefficient is smaller than the average seed wins variable. This is a sensible realization, since one would expect for the regular season to be more important to NBA teams than the NCAA Tournament.

The NCAA Tournament proved to benefit college seniors more than the general sample. Each of the models used in this empirical analysis produced in higher coefficients for several of the variables reflecting the difference in production variables. The general increase in coefficients shows NBA teams that these players are able to adjust and contribute within pressurized situations. Equation 1 saw significant increases on the magnitude on the points, rebounds, and blocks variables. Equations 2 and 3 saw significant increases in the magnitudes on each of the difference variables, despite only the difference in scoring variable being statistically significant. Although most of the difference variables remained statistically insignificant as one moved from the general sample to the college senior sample, the significance levels did actually increase. Assumedly, the increase in the point difference variable reflects the ability of seniors to combine their experience and ability to rise to the occasion of playing in the NCAA Tournament. The magnitude on the blocks variable probably results from seniors being more in tune with their defensive assignments and also the game plans of other teams.

The average seed wins and PASE difference variables also saw changes between the college seniors and the general sample. In Equation 1, it was seen that the magnitude on average seed wins increases while the magnitude on PASE difference decreases. Thus, performance during the regular season is weighed more than the "surprise" factor of Tournament performance. This does not rule out the significance of Tournament production since a player could simply be on a team that performs at its expected level. Equation 2 results in slight increases in the magnitudes of the average seed wins and PASE difference variables, while Equation 3 produces more significant increases in the magnitudes. In the case of Equation 3, there are significant increases average seed wins and PASE difference variables, thus supporting the notions regarding the regular season and the Tournament.

For college seniors, it was seen that the NCAA Tournament potentially serves as a platform upon which these seniors can greatly impact their future basketball career. The primary variables to focus on are those reflecting the differences in production between the NCAA Tournament and the regular season. In particular, the tobit model shows that while differences in production may not be significant for the entire sample, those differences are significant for seniors. The increase in magnitude of the difference in points per game is so great between the two models that one could conclude that a scoring increase during the Tournament would benefit a senior more than an underclassman.

Although this paper presents an empirical argument regarding the NBA Draft, there may be ways to improve upon the methodology used in this analysis. First, the sample of players could have included all college basketball players from a given season and not just those who have declared for the NBA Draft. This would allow for one to see if players who perform well in the Tournament are more likely to declare for the NBA Draft. From there, one might choose to follow an empirical methodology similar to that which is laid out in this empirical analysis. Secondly, personal characteristics could be expanded to include performance in the NBA Pre-Draft Combine. Performance measures at the Pre-Draft Camps might include arm length, bench press strength, agility tests, and vertical leap tests. Controlling for these kinds of variables might reduce the magnitude of variables commonly associated with these tests. Collecting data for each of these potential measures may seem like a daunting task, but it may prove useful in attempting to understanding the NBA Draft from a purely quantitative perspective.

VII. CONCLUSIONS

The NBA Draft has transformed greatly since its inception in 1947. As the game of basketball has grown in the United States and throughout the world, players from various backgrounds have perceived the NBA to be the world's premier basketball league. The growth of the game has necessitated the presence intermediary leagues meant to sharpen player skills. Recent changes in the NBA's Collective Bargaining Agreement have caused the NCAA regular season and Tournament to attract more attention from NBA teams since high school graduates are no longer eligible to declare immediately for the NBA Draft.

The analysis of NBA Draft eligible players from 2004 -2008 reveals several interesting findings regarding the significance of the NCAA Tournament. First, there are separate impacts of regular season and the NCAA Tournament. The NCAA Tournament proves to be significant from the perspective of the individual and the team. Individually, an increase in scoring in the NCAA Tournament has a profound impact upon the probability of getting drafted and draft placement. From the perspective of team-level success, regular season success impacts draft potential greatly whereas success during the NCAA Tournament serves to supplement that regular season success.

The analysis subset of seniors indicates that seniors are incredibly impacted by the NCAA Tournament. The increases in coefficients for the Seniors models lead one to believe that Tournament success would increase draft probability while also causing seniors to be selected earlier and earlier in the NBA Draft. Thus, college seniors would profit the most from individual Tournament success, since production above expected measures would increase their perceived riskiness.

In the end, the NCAA Tournament was found to provide NBA teams with new information with which the teams can evaluate players. However, regular season production and regular season team success serve as the primary factors in the NBA Draft. Although the NCAA Tournament does provide players with an opportunity to play on national television during primetime broadcasts, it is very possible that the NCAA Tournament acts as a small piece to the NBA Draft decisions made by NBA teams. Essentially, NBA teams consider information collected from the regular season, the NCAA Tournament, NBA Draft Camps, and private workouts. College players considering entering the NBA Draft have probably gotten feedback informing them that they could play in the NBA. Thus, these players may end up playing harder come the NCAA Tournament and the accompanying NBA scouts. Although NBA teams may have "finalized" draft possibilities before the NCAA Tournament, it is possible that an excellent Tournament performance in March could be beneficial to a player when the NBA Draft rolls around in June.

VII. APPENDIX

Appendix Table 1: List of Variable Names, Means, and Standard Deviations of All Variables Used in Estimation of Coefficients

Variable Name	n	Mean	S.D.
drafted	554	.5397112	.498871
picknum	554	44.53971	19.85424
htinch	554	79.1083	3.497222
weight	554	219.9711	26.24655
age	554	21.39711	1.39142
left	554	.0703971	.2560463
intl	554	.3032491	.4600773
hsrank	401	82.17456	58.14395
fresh	554	.0505415	.2192575
soph	554	.066787	.2498784
junior	554	.1245487	.3305049
senior	554	.4801444	.5000571
div1	404	.9678218	.176692
bcs	391	.6982097	.4596229
acc	391	.1304348	.3372127
big10	391	.0767263	.2664977
big12	391	.1355499	.3427485
bigeast	391	.1355499	.3427485
pac10	391	.1150895	.3195388
sec	391	.1023018	.303433
rsppg	391	15.5977	4.001137
rsrpg	391	6.284015	2.424529
rsapg	391	2.469821	1.649743
rsspg	391	1.187212	.5492094
rsbpg	391	.916624	.9490372
rstopg	391	2.369565	.6823561
ncaabid	391	.6189258	.486273
tgames	391	1.7289	1.864144
seed	242	5.086777	3.791877
twins	242	1.867769	1.78487
avgseedwins	242	1.728017	1.087498
pasediff	242	.1397521	1.227612
games0	242	.3810742	.486273
games1	242	.1534527	.3608851
games2	242	.1790281	.3838671
games3	242	.1048593	.3067646
games4	242	.0792839	.2705275
games5	242	.028133	.1655646
games6	242	.0741688	.2623811
tppg	242	14.7655	5.684033
trpg	242	5.912397	3.102644
tapg	242	2.423967	1.990184
tspg	242	1.056612	.8302237
tbpg	242	.6533058	.9601659
ttopg	242	2.322314	1.295955
dppg	242	-.3737603	4.789917
drpg	242	.0140496	2.1261

dapg	242	-.1623967	1.193599
dspg	242	-.164876	.7454188
dbpg	242	-.1181818	.7121355
dtopg	242	.0871901	1.192108

Appendix Table 1.2: Number of Players from 2004 to 2008, sorted by Status

Status	2004	2005	2006	2007	2008	Total
HS Senior	8	8	n/a	n/a	n/a	16
Freshman	3	1	2	8	12	26
Soph.	2	7	9	5	8	31
Junior	8	11	13	14	8	54
Senior	23	17	20	20	21	101
Non Div. 1	1	2	0	0	0	3
INTL Early	6	7	9	5	3	30
INTL Reg	8	7	7	8	8	38
Total	59	60	60	60	60	299

Appendix Table 1.3: Number of College Players Who Participated in the NCAA Tournament, sorted by Status

Status	2004	2005	2006	2007	2008	Total
Freshman	1	1	2	7	9	20
Soph.	1	5	9	3	5	23
Junior	6	12	8	10	7	43
Senior	29	35	36	29	27	156
Total	37	53	55	49	48	242

Appendix Table 2: Coefficients of All Variables Estimated Using Probit Estimation Technique

Variable Name	**A**	**B**	**C**	**D**	**E**
htinch	.0021277 (.0096)	.0089488 (.0124)	.0098551 (.1280)	.0399468** (.0160)	.039092** (.0165)
weight	.000266 (.0012)	-.000973 (.0016)	-.0008911 (.0016)	-.0004893 (.0020)	-.0002556 (.0020)
age	-.1926379*** (.0200)	-.1771295*** (.0255)	-.1850212*** (.0276)	-.165564*** (.0292)	-.1628561*** (.0300)
left	-.0846609 (.0910)	-.1584946 (.1036)	-.1609104 (.1042)	-.1835499 (.1095)	-.1970235* (.1099)
intl	-.1232811** (.0510)	-.0902704 (.1490)	-.0321117 (.1544)	.0578899 (.1545)	.0710857 (.1511)
hsrank		-.001124** (.0005)	-.0010311* (.0005)	-.0009446 (.0006)	-.0008411 (.0006)
div1			.282084 (.1708)	(dropped)	(dropped)
bcs				.2005281*** (.0719)	(replaced)
acc					.2143739** (.0879)
big10					.2652748** (.0903)
big12					.2096402** (.0874)
bigeast					.1517573 (.0884)
pac10					.3139006*** (.0766)
sec					.1865566* (.0935)
rsppg				.019327** (.0085)	.0201871** (.0087)
rsrpg				.0080246 (.0207)	.0086799 (.0208)
rsapg				.0834815*** (.0295)	.0867995*** (.0301)
rsspg				.1280406** (.0624)	.1403633** (.0636)
rsbpg				.0382538 (.0445)	.0510077 (.0456)
rstopg				-.0714764 (.0543)	-.075393 (.0556)
n	554	401	383	373	373
LR chi^2	119.29 (5)	100.69 (6)	87.82 (7)	107.68 (13)	113.76 (18)
Pseudo R^2	0.1560	0.1826	0.1661	0.2094	0.2213

*** indicates significant at the .01 level, ** indicates significant at the .05 level, * indicates significant at the .1 level

Appendix Table 2: Coefficients of All Variables Estimated Using Probit Estimation Technique (continued)

Variable Name	1	2	3	4	5	Seniors
htinch	.044912*** (.0172)	.0461738*** (.0175)	.0574681** (.0240)	.0488113** (.0235)	.0569777** (.0242)	.0808423** (.0342)
weight	-.0008207 (.0021)	-.0007118 (.0021)	.0025865 (.0030)	.0025074 (.0030)	.0025017 (.0030)	.0060125 (.0042)
age	-.1474649*** (.0310)	-.1476479*** (.0313)	-.1399521*** (.0379)	-.1442321*** (.0376)	-.143066*** (.0380)	.0096307 (.0692)
left	-.2338506** (.1136)	-.2430185** (.1158)	-.1657108 (.1578)	-.153058 (.1515)	-.1711861 (.1582)	-.1226031 (.1704)
intl	.037822 (.1582)	-.000528 (.1667)	.0256767 (.2145)	.0852907 (.1939)	.0421727 (.2061)	.2252724 (.2943)
hsrank	-.000657 (.0007)	-.0006103 (.0007)	-.0006318 (.0008)	-.0006243 (.0008)	-.0005416 (.0008)	-.0005522 (.0011)
div1	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)
bcs	(replaced)	(replaced)	(replaced)	(replaced)	(replaced)	(replaced)
acc	.2464866** (.0850)	.2558105*** (.0839)	.0888006 (.1271)	.1753922 (.1079)	.0718911 (.1357)	.1788791 (.1967)
big10	.2616109** (.0889)	.2716331** (.0860)	.1256602 (.1133)	.1896036 (.0989)	.1236803 (.1158)	.184723 (.1880)
big12	.2107498** (.0865)	.20517** (.0882)	.0588288 (.1256)	.1287466 (.1094)	.0393367 (.1314)	.11376 (.1893)
bigeast	.1944709** (.0867)	.1896912* (.0882)	.1088207 (.1124)	.1683974 (.1015)	.1005107 (.1189)	.133568 (.1857)
pac10	.3238784** (.0751)	.3343426*** (.0738)	.2537384** (.0813)	.2997068*** (.0740)	.2447217** (.0862)	.4428233** (.1495)
sec	.1933562* (.0941)	.2147031** (.0918)	-.0836855 (.1487)	-.0230803 (.1408)	-.1079956 (.1545)	.1585728 (.1991)
rsppg	.0314447*** (.0093)	.0325406*** (.0094)	.0402412*** (.0113)	.0335433*** (.0108)	.0404213*** (.0113)	.0602848*** (.0162)
rsrpg	.021795 (.0217)	.0233759 (.0217)	-.0040833 (.0280)	-.0114748 (.0281)	-.0028935 (.0280)	-.0394632 (.0422)
rsapg	.0840962*** (.0309)	.090254*** (.0314)	.1108389*** (.0426)	.1175073*** (.0424)	.1086174** (.0426)	.1414602** (.0568)
rsspg	.127898** (.0651)	.1325533** (.0655)	.1825933** (.0896)	.1893844** (.0903)	.183622** (.0897)	.272926** (.1361)
rsbpg	.0714583 (.0481)	.0636731 (.0485)	.0566099 (.0818)	.0895898 (.0802)	.0575441 (.0819)	.0883082 (.1128)
rstopg	.015483 (.0581)	.007795 (.0588)	-.0148567 (.0830)	-.0908379 (.0819)	-.0147661 (.0832)	-.040595 (.1161)
tgames	.112987*** (.0205)	(replaced)	.1421513*** (.0290)	(replaced)	(replaced)	(replaced)
games0		-.4774583** (.2114)	(replaced)	(replaced)	(replaced)	(replaced)
games1		-.4703704** (.1891)	(replaced)	(replaced)	(replaced)	(replaced)
games2		-.397591 (.2181)	(replaced)	(replaced)	(replaced)	(replaced)
games3		-.2357933 (.2565)	(replaced)	(replaced)	(replaced)	(replaced)
games4		-.0058761 (.2691)	(replaced)	(replaced)	(replaced)	(replaced)
games5		(dropped)	(replaced)	(replaced)	(replaced)	(replaced)
games6		.2111265 (.2228)	(replaced)	(replaced)	(replaced)	(replaced)

avgseedwins					.1475696*** (.0410)	.1682728*** (.0600)
pasediff				.1153855*** (.0334)	.1174232*** (.0339)	.1042333** (.0472)
dppg			.0187413** (.0083)	.0211701** (.0084)	.0195401** (.0083)	.0338199*** (.0122)
drpg			-.0097304 (.0196)	-.0149717 (.0200)	-.0089952 (.0197)	-.0104753 (.0276)
dapg			.0371477 (.0318)	.0406 (.0323)	.0396175 (.0317)	.035448 (.0422)
dspg			-.0244209 (.0504)	-.0103765 (.0498)	-.0262564 (.0505)	.023368 (.0699)
dbpg			.0329974 (.0608)	.0332027 (.0607)	.0364962 (.0606)	.065249 (.0808)
dtopg			.0155524 (.0292)	.0021575 (.0287)	.0156201 (.0293)	.0206934 (.0378)
n	373	373	229	229	229	145
LR chi^2	147.52 (19)	152.06 (24)	108.33 (25)	95.08 (25)	108.46	55.42
Pseudo R^2	0.2869	0.2957	0.3551	0.3116	0.3555	0.2773

*** indicates significant at the .01 level, ** indicates significant at the .05 level, * indicates significant at the .1 level

Appendix Table 3: Coefficients of All Variables Estimated Using Ordinary Least Squared (OLS) Estimation Technique

Variable Name	**A**	**B**	**C**	**D**	**E**
constant	-47.67685	-29.6198	-34.46559	14.83952	12.9802
htinch	-.2627323 (.3703)	-.4964036 (.4416)	-.6887684 (.4836)	-1.069881* (.5518)	-1.049924* (.5721)
weight	.0019651 (.0474)	.016271 (.0580)	.0521317 (.0646)	.0248274 (.0724)	.0187662 (.0741)
age	4.602637*** (.6918)	4.424307*** (.8423)	5.706317*** (.9491)	5.529353*** (.9484)	5.524223*** (.9793)
left	-3.318685 (3.625)	-3.931224 (4.211)	-4.68389 (4.398)	-5.293993 (4.193)	-5.557086 (4.271)
intl	10.079*** (2.089)	9.091018 (6.461)	7.260715 (6.497)	.6861978 (6.671)	1.154713 (6.796)
hsrank		.0146608 (.0218)	.0074993 (.0219)	.0118217 (.0221)	.0135085 (.0224)
div1			-15.10702 (9.342)	(dropped)	(dropped)
bcs				-2.582809 (2.859)	(replaced)
acc					-1.636485 (3.769)
big10					-1.998395 (4.387)
big12					-2.066099 (3.828)
bigeast					-1.610037 (3.890)
pac10					-3.015705 (3.807)
sec					2.137903 (4.060)
rsppg				-1.302819*** (.2928)	-1.262097*** (.2995)
rsrpg				.7173355 (.6957)	.6960566 (.7099)
rsapg				-2.597251** (1.019)	-2.523639** (1.061)
rsspg				-2.979462 (2.237)	-3.200396 (2.335)
rsbpg				-5.408998*** (1.538)	-5.350303*** (1.616)
rstopg				3.801092* (1.999)	3.89894* (2.046)
n	299	222	206	203	203
R^2	0.2168	0.2027	0.2444	0.3559	0.3606

*** indicates significant at the .01 level, ** indicates significant at the .05 level, * indicates significant at the .1 level

Table 3: Coefficients of Variables Relevant to the NCAA Tournament Estimated Using Ordinary Least Squared (OLS) Estimation Technique

Variable Name	1	2	3	4	5	Seniors
constant	60.55996	41.59488	27.35421	-14.38868	23.56284	73.86658
htinch	-1.138702** (.5010)	-1.139991** (.5072)	-.7332019 (.6369)	-.6375077 (.6817)	-.7698448 (..6318)	-.0224914 (1.094)
weight	.0101931 (.0649)	.0085662 (.0668)	-.0007915 (.0868)	.0376215 (.0925)	-.0052321 (.0861)	-.0399081 (.1242)
age	4.938127*** (.8609)	5.023687*** (.8834)	5.22893*** (1.123)	5.557428*** (1.203)	5.582612*** (1.114)	1.395389 (2.427)
left	-4.557041 (3.741)	-3.894987 (3.842)	-1.834877 (4.305)	-2.548306 (4.610)	-1.684522 (4.272)	-8.714448 (6.848)
intl	1.094704 (5.950)	2.079576 (6.142)	1.910138 (8.124)	1.665309 (8.747)	-1.318257 (8.125)	4.418824 (10.30)
hsrank	.0023206 (.0197)	.0080809 (.0209)	-.0004831 (.0250)	.0035942 (.0268)	-.0139532 (.0251)	-.0385138 (.0336)
div1	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)
bcs	(replaced)	(replaced)	(replaced)	(replaced)	(replaced)	(replaced)
acc	-3.351818 (3.307)	-2.937944 (3.399)	-3.411334 (4.228)	-3.649117 (4.545)	-1.903757 (4.226)	-.9067217 (6.797)
big10	-4.229485 (3.852)	-5.127012 (3.946)	-5.353143 (4.592)	-5.053608 (4.934)	-4.705763 (4.569)	-3.598262 (7.062)
big12	-1.568701 (3.352)	-1.00201 (3.402)	-.5816992 (4.178)	-1.419104 (4.470)	.0777557 (4.152)	-2.415785 (6.799)
bigeast	-4.034715 (3.420)	-3.970494 (3.466)	-6.760708 (4.522)	-7.31278 (4.904)	-4.66955 (4.578)	-9.869113 (7.842)
pac10	-4.040294 (3.336)	-3.367318 (3.523)	-2.568133 (4.004)	-1.063783 (4.272)	-2.668872 (3.971)	-.0906806 (7.046)
sec	.0007806 (3.566)	-.2142092 (3.646)	1.889956 (4.452)	3.656393 (4.763)	2.152909 (4.422)	9.57908 (7.832)
rsppg	-1.71934*** (.2691)	-1.630143*** (.2812)	-1.791305*** (.3340)	-1.561436*** (.3536)	-1.796494*** (.3315)	-2.334766*** (.4697)
rsrpg	.3888758 (.6228)	.2743361 (.6417)	.7430489 (.7706)	.8885358 (.8249)	.7922022 (.7640)	1.055106 (1.191)
rsapg	-1.821248* (.9336)	-1.753233* (.9509)	-1.670875 (1.236)	-1.810329 (1.324)	-1.547966 (1.227)	-.274824 (1.831)
rsspg	-3.107246 (2.044)	-3.165555 (2.078)	-3.263284 (2.781)	-3.108887 (2.979)	-3.376127 (2.758)	-.285478 (4.506)
rsbpg	-5.08293*** (1.415)	-4.71076*** (1.451)	-6.221568*** (1.953)	-7.209869*** (2.077)	-6.2613 (1.934)	-7.550389*** (3.168)
rstopg	.0544336 (1.862)	-.2524504 (1.896)	-1.093289 (2.553)	.6834586 (2.702)	-1.591248 (2.552)	-3.662008 (4.186)
tgames	-3.676318*** (.4867)	(replaced)	-3.701406*** (.7111)	(replaced)	(replaced)	(replaced)
games0		16.32921*** (3.435)		(replaced)	(replaced)	(replaced)
games1		14.80846*** (3.988)		(replaced)	(replaced)	(replaced)
games2		10.16125*** (3.792)		(replaced)	(replaced)	(replaced)
games3		2.293524 (4.173)		(replaced)	(replaced)	(replaced)
games4		(dropped)		(replaced)	(replaced)	(replaced)
games5		-1.69165 (5.110)		(replaced)	(replaced)	(replaced)
games6		-3.653991 (3.897)		(replaced)	(replaced)	(replaced)

avgseedwins					-5.092261*** (1.134)	-5.277815*** (1.854)
pasediff				-2.855594*** (.9610)	-1.927502** (.9133)	-2.539099 (1.840)
dppg			-.1678305 (.2757)	-.2764515 (.2940)	-.1973028 (.2728)	-.565983 (.4533)
drpg			-.2061383 (.6332)	-.3165108 (.6778)	-.186002 (.6282)	.4593671 (.9956)
dapg			1.608258 (1.049)	1.555551 (1.124)	1.383443 (1.042)	2.419182 (1.595)
dspg			-.2091887 (1.657)	-.7817066 (1.771)	-.1304486 (1.646)	-1.857041 (2.393)
dbpg			-.2608751 (1.583)	-.6468881 (1.693)	-.3477482 (1.569)	-3.192487 (2.346)
dtopg			.1525054 (1.092)	.4364509 (1.169)	.2423731 (1.083)	.4839574 (1.387)
n	203	203	141	141	141	66
R^s	0.5125	0.5201	0.5635	0.4992	0.5745	0.6309

*** indicates significant at the .01 level, ** indicates significant at the .05 level, * indicates significant at the .1 level

Table 4: Coefficients of All Variables Estimated Using Tobit Estimation Technique

Variable Name	1	Seniors
constant	148.2303** (71.76)	425.8449*** (129.4)
htinch	-2.62007*** (.8440)	-2.959214* (1.305)
weight	-.0938702 (.1104)	-.3218061 (.1699)
age	9.453313*** (1.418)	1.638558 (3.100)
left	4.961275 (5.413)	-.2799968 (8.3427)
intl	-2.367342 (9.683)	-4.249349 (14.133)
hsrank	.0100163 (.0313)	.0011332 (.0451)
div1	(dropped)	(dropped)
bcs	(replaced)	(replaced)
acc	-2.398483 (5.574)	-3.600084 (8.683)
big10	-11.42823* (5.960)	-8.464002 (8.729)
big12	-1.543245 (5.311)	-3.679394 (8.447)
bigeast	-5.249765 (5.619)	-6.895321 (8.423)
pac10	-10.80714** (5.280)	-14.12951 (8.774)
sec	5.745239 (5.488)	2.502158 (9.116)
rsppg	-2.562053*** (.4298)	-3.676072*** (.6401)
rsrpg	.9490942 (1.0445)	1.833745 (1.725)
rsapg	-4.915796*** (1.591)	-6.294106** (2.439)
rsspg	-8.549986** (3.500)	-9.998009* (5.598)
rsbpg	-6.82246** (2.739)	-7.150923 (4.483)
rstopg	-.5903318 (3.277)	-.7310381 (5.182)
tgames	(replaced)	(replaced)
games0	(replaced)	(replaced)
games1	(replaced)	(replaced)
games2	(replaced)	(replaced)
games3	(replaced)	(replaced)
games4	(replaced)	(replaced)
games5	(replaced)	(replaced)
games6	(replaced)	(replaced)
avgseedwins	-8.48192*** (1.486)	-11.27643*** (2.529)
pasediff	-4.7974*** (1.169)	-5.3144** (2.140)
dppg	-.7651255** (.3347)	-1.719237*** (.5327)
drpg	-.110395 (.7855)	.3435079 (1.247)

dapg	-.5852682 (1.273)	-.3557616 (1.879)
dspg	-.0525075 (2.071)	-2.548478 (3.017)
dbpg	-.414656 (2.118)	-2.567245 (3.235)
dtopg	-.7931198 (1.268)	-1.603497 (1.699)
n	229	145
Pseudo R^s	0.1246	0.0982

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