

Does the NCAA Coaching Carousel Hamper the Professional Prospects of College Football Recruits?

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Abstract

College football recruits choose their schools partly for the opportunity to play for a specific coach. It is not unusual for the coach who recruited the player to leave before the end of the player's career. This article investigates whether these departures affect a player's National Football League (NFL) draft prospects. Regression results indicate that, for players drafted, a coaching change drops the average draftee's position nearly two thirds of a round, potentially costing the player hundreds of thousands of dollars in guaranteed money. This harmful effect holds regardless of why the coach left, such as being fired or accepting a new position elsewhere.

Keywords

coaching carousel, college football, NFL draft, NCAA

Introduction

It has become an annual rite of passage that upon completion of a National Collegiate Athletic Association (NCAA) college football season, a host of college coaches are either fired by their universities or voluntarily resign to move to more rewarding situations. This coming and going of coaches has been popularly dubbed the "Coaching

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Carousel.”¹ Over the 10 year span, 2000-2009, 190 head coaching changes were recorded for teams (currently 120) belonging to the NCAA’s Football Bowl Subdivision (formerly known as Division I-A). The number of changes range from a high of 25 following the 2000 season to a low of 11 following the 2005 season, with the median number falling between 18 and 22.²

One case of a departing coach that garnered considerable media attention is that of Lane Kiffin, who resigned as head coach of the University of Tennessee in January of 2010 to take a job opening at the University of Southern California (USC). The USC job itself became available after its coach, Pete Carroll, resigned to become head coach for the National Football League’s (NFL) Seattle Seahawks franchise. What makes the Kiffin case notable is that he had been with Tennessee for only one season prior to accepting the USC job.

Critics of the coaching carousel argue that it is unfair to players who commit to a given program with the desire to play for the coach who recruited them, only to see that coach leave early in their college career. Under NCAA rules, a player who signs a Letter of Intent with a Football Bowl Subdivision (FBS) program, and then transfers to another FBS school, must sit out a year before he is eligible to play for his new team.³ Coaches are therefore free to move and colleges are free to replace them but player mobility is restricted. A player who chose a school predominantly on the basis of its coach must now decide to remain under a coaching regime not of his choice, perhaps follow the original coach (assuming he has a new position), or hope to land on some team that was not his first choice. In the latter two cases, the player must also pay the 1-year penalty.

The transfer rule itself is viewed by some as one manifestation of NCAA cartel behavior.⁴ In the context of departing coaches, the rule diminishes the incentive to bid away another school’s coach, hoping his star recruits will follow. Others see the rule as either (a) promoting competitive balance where lightly recruited players, who sign with weaker programs but then blossom, cannot easily transfer to traditional powers or (b) protecting a school’s investment in players they train and provide with athletic scholarships.⁵ Regardless of motive, the rule potentially harms players who have their coaches leave. Even in the absence of the transfer rule, many players might reluctantly choose to stay with their new coach out of loyalty to teammates or to avoid the search, moving and other transaction costs linked to transferring.

When a coach is replaced, his recruits may not get the full measure of what they bargained for in committing to the university. For many players, the consequences may simply be a less satisfying collegiate experience. For players with professional football aspirations, however, college is a training and proving ground in which to launch their pro careers. For these players, the matching of player, coach, and school may be important in realizing their professional goals.

This article seeks to determine whether coaching changes affect recruits’ professional careers by focusing on player success in the NFL draft. Specifically, the article examines the impact coaching changes have on the probability of players being drafted and for those who are drafted their position in the draft. Only weak evidence

of an adverse affect is found on draft probability itself. However, for those drafted, a coach departure is associated with a fall in the draft of nearly two thirds of a round. This is particularly important to drafted players, as their money compensation is predominantly determined by draft position. Indeed, calculations based on estimated regression coefficients indicate a loss of over \$270,000 in guaranteed money for the average player drawn from a sample of major conference programs.

The Impact of a Coaching Change

Losing a coach can be detrimental to a player's career in several ways, the most important being playing time. The new coach having made no commitments to his predecessor's players may be more inclined to go with his own recruits. A new coach might also have a different coaching philosophy, emphasizing defense over offense or the run over the pass. For example, a wide receiver recruited into a pass-oriented offense might see limited opportunities in a run-oriented attack. Similarly, a tight end's blocking ability is much more important in a run-oriented offense. A new coach also typically brings his own system (terminology and plays) that older players need to learn. And finally, some players might simply be more responsive to the coaching style of one coach over another.⁶ Many of these factors are amplified if, as is typical, the hiring of a new head coach precipitates wholesale changes among the assistant coaches, requiring a player to adapt to a new position coach as well.⁷

There does exist a possibility, however, that in some instances a coaching change may be beneficial to a player. Most obviously, in a world of uncertainty, some players will unexpectedly find themselves in a bad situation, and a new coach affords a fresh start. More generally, playing under different coaching regimes may provide a broader range of experience and skills, and a demonstrated ability to adapt to change, all of which could enhance a player's pro prospects.

Discounting the importance of the coach-player match is a study by Durmond, Lynch, and Platania (2008), who present a multinomial choice model of a high school football player's college selection drawn from the set of Division I-A schools that had made him a scholarship offer. The major determinants of player choice were found to be college distance from the player's home, team performance, conference affiliation, playing time opportunities, facilities, and the school's academic reputation. In a more parsimonious model, a team with a new head coach was found to reduce the probability of a player selecting that program by 2.48%, but the statistical significance disappeared when additional explanatory variables were added. The effect of coaching changes was not the focus of their article, but an inference that can be drawn is that the average player is indifferent between playing for the coach who initially recruited him and the replacement coach.

Anecdotal evidence on the importance of the coach in a player's decision comes from coaching changes made prior to national signing day. National signing day, the first Wednesday in February, is the deadline by which college recruits must sign

their Letter of Intent, committing them to a particular school. Players may make nonbinding oral commitments prior to this date or simply express a strong interest in a given school. When a coach moves on at the end of a season, speculation begins as to whether the school can hold on to his recruiting class. In the case of Lane Kiffin, at least seven of his highly rated recruits opted for other schools, including one who was within hours of enrolling at the Tennessee campus and another who followed Kiffin to USC.⁸

Even if a particular coach–player match is not of paramount importance to a recruit, the disruption caused by a coaching change may still have consequences for the player’s career. Although it will not be possible to disentangle matching versus disruption effects, the overall empirical impact of a coaching change is addressed below.

Empirical Model and Data

The sample consists of 7,366 players who were recruited to major college football programs during the 5-year period 2002–2006. Majors are defined here as teams belonging to conferences with automatic berths in Bowl Championship Series (BCS) bowl games, of which there are 66 such teams in the sample.⁹ It is presumed that the vast majority of players seeking pro careers would be drawn to teams in these major conferences. Indeed, the majority of drafted players are drawn from these teams (e.g., in the 2010 draft, 76% of the players chosen). The recruiting data were obtained from the Rivals.com website, which provides archival data beginning with the 2006 recruiting year. Rivals.com is a major provider of recruiting information on college football (as well as other college sports) frequently cited in the sports media.¹⁰

Under NCAA rules, a player has 4 years of college eligibility. Players, however, can be “red shirted” their freshmen year, delaying their clock until the start of their sophomore year (National Collegiate Athletic Association [NCAA], 2009). Under NFL rules, a player is first eligible to be drafted 2 full years after high school. Typically, only top-tier players choose to enter the draft early.¹¹ Given these rules, a player recruited in 2002 could appear in the 2004, 2005, or 2006 NFL draft. Given that the last draft year observed in the sample is 2010, some red-shirted players recruited in 2006 may yet still be drafted in 2011. As of the 2010 NFL draft, 786 (10.7%) of the sample’s players had been drafted by an NFL team.¹²

To assess the effect of a coach departing on draft prospects, two dependent variables were created for use in a subsequent regression analysis:

NFL is a dummy variable equal to 1, if a player was drafted into the NFL.

Draft Pick is, for those drafted, their overall selection position (1–255) in the year drafted.

Several variants of a coach change variable are used in the analysis. Initially three dummy variables were created taking the value 1, if the coach who recruited the

player departed following the player's first, second, or third season, respectively.¹³ Because the departure variables are defined in terms of the recruiting coach, some miscoding may be introduced into the sample for players that transferred to other teams prior to the coach leaving. For example, a player might have transferred after his freshman year, but the recruiting coach did not depart until after what would have been the junior year. The reason for the miscoding is that given the large sample size, it is not feasible to identify all transferring players. The number of transfers is not expected to be large, however, given the NCAA transfer rules. The problem, if any, can also be mitigated somewhat, by focusing on coaches that depart after the player's first year. One could also argue that a first year coaching departure would have more of a disruptive effect on a player's NFL prospects, than a change later in the player's career, a change after the player has had some time to establish his playing credentials.

In a second specification, the three dummy variables were replaced by a composite variable, equaling 1 if the coach left after any season prior to the recruit's senior year. And finally, to assess whether cause of departure affects NFL prospects, the single departure variable was replaced by two dummy variables depending on whether the coach left voluntarily or was fired. The distinction between fired and not fired may be important if a fired coach signifies a program in disarray, rather than simply a break in the coaching continuity of a recruit's college career. A coach was coded as fired (40 departures), if he was reported fired by the media or "resigned" with a losing record.¹⁴ Non-fired coaching departures in the sample were predominantly due to a coach moving to a more attractive coaching position (17 departures), with the remainder being retirements from coaching (3) and deaths (2). If a coaching change adversely affects pro prospects, the coefficient should be negative in the *NFL* equation and positive in the *Draft Pick* regressions. Conversely, if in some instances a coaching change enhances pro prospects, the expected coefficient signs would be mitigated or reversed.

Table 1 provides sample proportions for the coach departure variables for both the full sample and the subset of drafted players. Nearly one quarter of the full sample saw their head coach depart, with about 10% losing their coach after their first year in the program. These numbers drop to 20 and 7% of players drafted. In each case, the null that the sample proportions are the same is rejected at the 1% level. With respect to cause of departure, the drafted recruits were less likely to have their coach fired, but no statistical difference exists for voluntary departures.

The overriding determinant of whether a player makes it to the NFL is of course innate talent. Rivals.com rates prospective recruits qualitatively on a five-star basis.¹⁵ Five stars denote a prospect within the top 25 to 30 of all players in a given recruiting year. Four stars denotes within the top 250 to 300 and three stars within the top 750. A two-star prospect is projected at the "mid major" conference level, although many two-star players sign with major conference teams. One star means unranked, of which there were only a handful in the sample. Dummy variables were created for five-, four-, and three-star recruits. Players who were not rated at all by

Table 1. Sample Means for Selected Variables

	All Recruits (N = 7,366)	Drafted Recruits (N = 786)
Coach replaced	0.245	0.198
Coach replaced after first year	0.104	.0712
Coach replaced after second year	.0747	.0636
Coach replaced after third year	.0660	.0636
Coach fired	0.159	0.109
Replaced coach not fired	.0866	.0891
Three-star recruit	0.424	0.366
Four-star recruit	0.193	0.359
Five-star recruit	.0253	.0954
Juco transfer	.0914	.0662
Sagarin computer rating	76.9 (9.32)	81.4 (8.92)

Note: Standard errors in parentheses for continuous variables.

Rivals.com were omitted from the sample. Not surprisingly, the proportion of four- and five-star players represented in the subsample (Table 1) is more than double that in the full sample. Three-star players, however, are underrepresented in the subsample.

Although all the teams in the sample are “major” programs, there is still a lot of variation in program quality. Players recruited to high-quality programs might be expected to fare better in the draft for a number of reasons: (a) winning programs may afford players greater visibility, (b) player assessments from their coaching staffs may carry greater weight with NFL scouts, and (c) good players might be production complements (a passing quarterback to be successful needs good receivers and a good offensive line).¹⁶ A possibility also exists that highly recruited players, who choose to play for a low-tier major, may have less interest in pursuing a pro career than a player choosing a traditional college power. To control for program quality, the well-known Jeff Sagarin *USA Today* computer rating (Sagarin, 2010) is used. The Sagarin ratings provide an index based on a team’s won–loss record and the won–loss records of its opponents. For the *NFL* equation, the Sagarin rating in what would be the recruit’s senior year is entered. For the *Draft Pick* equation, the Sagarin rating used was for the year the player entered the draft.¹⁷

Approximately, 9% of the sample consists of players who were recruited from Junior Colleges (Jucos) or small non-FBS schools. Typically, such players have 2 years of college eligibility remaining. Because of their limited careers playing for better programs, it is expected that these players will fare worse in the draft. Additionally, as with players who have their coaches depart, these transfer students will undergo a coaching disruption that may adversely affect their pro prospects. Of course, unlike the other players, the transfers still have a say in selecting their new coach. Transfers from Jucos or small non FBS schools are represented by the dummy variable, *Juco Transfer*.

The remaining variables are dummy variables for the recruit's playing position and year of recruitment. The positions are quarterback, running back, wide receiver, tight end, defensive lineman, linebacker, defensive back, kicker, and athlete. The latter is a designation provided by Rivals.com to a multipurpose player. The omitted variable is offensive lineman. Year dummies were created for 2003-2006. Among other things, year dummies control for quality of players from non-BCS conference schools, who were eligible during a given draft year. A greater availability of other high-quality players may reduce the probability of marginal major-conference players being drafted or adversely affect players' draft positions. The 2006 year dummy is particularly important as that year's recruits would be in their fourth of college as of the 2010 draft. Consequently, players returning for a fifth year could not be drafted until 2011.

The *NFL* equation was estimated using a logit specification, *Draft Pick* by ordinary least squares (OLS). Because there are repeated observations by team, there is a potential for clustering at the team level. In an initial specification, team fixed effects were tried, but based on the standard *F* test, their exclusion could not be rejected in the *Draft Pick* equation (p value = .97).¹⁸ In attempting to estimate a random effects model for *Draft Pick*, the within-group correlation coefficient, ρ , was calculated to be zero. As a consequence, the generated results were identical to those obtained by OLS.¹⁹ So as not to preclude some clustering, reported standard errors are cluster robust.²⁰ Regression results are reported in Table 2.

Results

The *NFL* logit results are provided in the first three columns of the table. Based on column 1 coefficients, a player whose coach was replaced after the recruit's first year is less likely to be drafted into the NFL. Evaluating at the sample means, calculated marginal effects indicate having the coach replaced after the first year reduces the average probability of being drafted from 8.46% to 6.41%. No statistically significant effect was found for second and third year coaching replacements. The composite *Coach Replaced* variable is also insignificant. When the composite variable is decomposed into cause of departure, a significant effect is only found for when the coach was fired (the marginal effect indicating a reduction in average draft probability from 8.45% to 6.15%). While the logit results support the contention that coaching changes harm recruits, some caution is warranted. The results are very sensitive to the specification of the Sagarin computer rating. For example, if the single-year Sagarin is replaced by a 4-year average of the ranking (spanning the recruit's career), all the coaching variables in the logit equations become insignificant at conventional levels.

In all specifications, the primary determinant of a player being drafted is athleticism, as measured by the Rivals.com star ratings. Again, based on column 1 coefficients, the mean probability of a player being drafted is 8.46%. Based on the calculated marginal effects, this increases to a 12.5% probability for a three-star

Table 2. Regression Results

	(1)	(2)	(3)	(5)	(4)	(6)
Sample (N)	All (7,366)	All (7,366)	All (373)	Draftees (786)	Draftees (786)	Draftees (786)
Dependent variable	NFL (logit)	NFL (logit)	NFL (logit)	Draft pick (OLS)	Draft Pick (OLS)	Draft pick (OLS)
Constant	-6.08 ^a (0.467)	-6.08 (0.467)	-6.01 ^a (0.463)	211.9 ^a (17.4)	210.1 ^a (17.3)	211.8 ^a (17.2)
Coach replaced after first year	-0.292 ^b (0.135)	—	—	30.2 ^a (8.74)	—	—
Coach replaced after second year	-0.162 (0.173)	—	—	21.1 ^b (9.84)	—	—
Coach replaced after third year	0.0678 (0.173)	—	—	14.1 (12.1)	—	—
Coach replaced	—	-0.155 (.0997)	—	—	22.6 ^a (5.99)	—
Coach fired	—	—	-0.254 ^b (0.128)	—	—	19.9 ^a (7.47)
Replaced coach not fired	—	—	-0.251 (0.116)	—	—	25.8 ^a (7.19)
Three-star recruit	0.502 ^a (0.107)	0.505 ^a (0.107)	0.504 ^a (0.107)	-20.3 ^a (6.79)	-20.2 ^a (6.73)	-20.3 ^a (6.74)
Four-star recruit	1.25 ^a (0.110)	1.26 ^a (0.109)	1.26 ^a (0.110)	-28.4 ^a (7.83)	-28.7 ^a (7.69)	-28.6 ^a (7.66)
Five-star recruit	2.25 ^a (0.198)	2.27 ^a (0.199)	2.27 ^a (0.201)	-58.5 ^a (10.3)	-59.3 ^a (10.1)	-56.1 ^a (9.98)
Sagarin computer ranking	.0419 ^a (.00568)	.0417 ^a (.00567)	.0410 ^a (.00572)	-0.850 ^a (0.212)	-0.822 ^a (0.211)	-0.841 ^a (0.211)
Juco transfer	-0.553 ^a (0.181)	-0.529 ^a (0.182)	-0.536 ^a (0.182)	40.2 ^a (7.61)	39.8 ^a (7.63)	39.9 ^a (7.65)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Position dummies	Yes	Yes	Yes	Yes	Yes	Yes
R ²	—	—	—	.114	.113	.113

Note: Standard errors in parentheses adjusted for clustering at team level.

^a Denotes significant at 1% level.

^b Denotes significant at 5% level.

player, 22.0% for a four-star player, and a hefty 45.8% for a five-star player. Team strength is also an important factor; the elasticity of draft probability with respect to the Sagarin rating is 2.95. A 10% increase in team rating would therefore raise the average recruit's probability of being drafted to 11.0%. As expected, Juco players fare worse in the draft, reducing the mean probability of being drafted to 5.0%. Position coefficients are not reported, but relative to offensive lineman, tight ends and defensive backs are more likely to be drafted.

The last three columns of the table give the draft pick results for the subsample of drafted players. Here, in all specifications, there appears to be a detrimental effect of losing one's coach. Based on the point estimators, losing a coach after 1 year in the program drops a player thirty draft positions, or nearly a full round; losing the coach after the second year, 21 positions. The third-year coefficient, although positive, is not significant. The composite *Coach Replaced* coefficient (column 5) indicates a drop of nearly 23 positions. The coefficients of *Coach Fired* and *Coach Not Fired* (column 6) are both significant. Although the latter is a bit larger, the two coefficients are not statistically different from each other ($p = .46$). Apparently, it is the disruption of the coach departing itself that matters, not the cause of the departure.

As in the logit equations, recruit ratings have a major impact on draft placement. Across specifications, five-star recruits pick up over 56 positions, four-star over 28, and three-star, 20 positions. Juco transfers fare worse on average, than players whose coach departed, falling around 40 spots. Team strength, as measured by the Sagarin rating has only a modest impact on draft position. For example, depending on equation, a one-standard deviation increase in the rating leads to only a seven to eight spot improvement in the draft. Player position coefficients (not reported) are with the exception of kickers all insignificant. Kickers, relative to offensive lineman fall 41 spots.

Robustness

Unlike in the *NFL* equations, the *Draft Pick* results are not sensitive to the choice of Sagarin rating year used. The coaching coefficients remain statistically significant and their magnitudes are not appreciably changed. A possibility exists, however, that team performance itself may be endogenous—a high draft pick on the team could have contributed to better team performance. To account for this, the *Draft Pick* equations were reestimated using two-stage least squares (2SLS), with the combined number of four- and five-star rated players in a player's recruiting class as an additional instrument. Although the Sagarin rating itself fell below conventional statistical significance ($t = 1.32$), the coaching coefficients were inappreciably affected.²¹

Because the number of draft selections is capped by the NFL, a potential truncation problem exists in the data as some players who would be late draft picks are not observed to be drafted. To account for this, the *Draft Pick* equations were reestimated using a truncated regression specification. While there were no changes in significance levels, the magnitudes of the coaching variables were all increased.

For a player losing his coach following his first year, the drop in the draft became 38 spots, for a second year departure, 29 spots. For the composite coach departure variable, the drop increased to 30 spots. Coach fired and not fired coefficients increased to 28 and 32.²² Given the change in coefficient values, the OLS regressions should be interpreted, as the marginal effect on draft position conditional upon a player being drafted.

Finally, although the sample is restricted to teams from the major conferences, within these conferences there are still some teams that have weak programs and consequently fewer draftees. To see whether draftees from these schools might be driving the results, the sample was pared to those that were typically within the top 50 ranked programs in the nation (effectively an average Sagarin rating exceeding 75.0). The pared draft sample size was 609. Again, this did not change the basic results; the coaching coefficients increased slightly (e.g., the coefficient on *Coach Replaced* increased from 22.6 to 25.9).

Show Me the Money

What are the economic consequences of falling in the draft? NFL contracts do not provide guaranteed salaries. Consequently, much emphasis is placed on guaranteed money such as signing bonuses.²³ For draft selections, the guaranteed money pay gradient is very steep at the top and flattens out as draft number increases. For example, the 2009 draft's median guaranteed dollars by draft round were: first: \$10.1 million; second: \$1.91 million; third: \$704,000; fourth: \$461,000; fifth: \$187,000; sixth: \$100,000; and seventh: \$46,100.²⁴ Accordingly, the monetary consequences of falling in the draft can be substantial. The average draft pick in the sample is 118 (or midway through the fourth round). In 2009, the 118th pick received a signing bonus of \$471,700. Conditional on being drafted, the *Coach Replaced* coefficient indicates the average player who lost a coach would fall 23 spots. The 141st pick (top third, 5th round) received \$200,200, a drop-off of nearly \$272,000 (both players also received the rookie non-guaranteed base salary of \$310,000). These dollar differences vary considerably depending on where a player was selected, but even falling midway within the seventh round would have cost a player over \$20,000. A coaching departure costs the average drafted player in the pocketbook.

Summary and Conclusion

College coaches come and go. Some are fired, others move to higher profile jobs in the college or professional ranks. When a recruit ties his college playing career to a particular coach's program, the potential for disruption exists when the coach departs. This problem is exacerbated by NCAA transfer rules. This article has focused on the adverse effects of a coach departing on his recruit's NFL prospects.

Some evidence was found that losing one's coach after only 1 year in a program reduces the probability of being drafted into the NFL. Specifically, the average probability falls from 8.5% to 6.4%. The detrimental effect is significant only when a coach is forced out as opposed to departing voluntarily. These results though were not found to be robust. For those players who are drafted, however, a coach departure leads on average to a fall in draft position of approximately two thirds of a round. Further, the negative impact on draftees is not dependent on the cause of the coaching change. Voluntary and involuntary coach departures both have detrimental effects.

Why the possible discontinuity between being drafted and draft pick? One can conjecture that the economic consequences to a team in drafting a player are not as important as where in the draft the player is selected. The perceived difference in a late-round draft pick versus a non-drafted free agent signing might not be that large. There is a reason the last player to be selected annually is referred to as "Mr. Irrelevant." Consequently, teams may be willing to draft a marginal player who they view as having some potential and place less emphasis on his college career. In contrast, within the draft, there is a steep pay gradient for draft picks and perhaps an even steeper gradient in media and fan scrutiny over a team's selections. Mistakes being more costly, risk-averse teams are less willing to overlook any perceived player imperfections, resulting in a fall in the draft.

Undoubtedly, the coaching carousel will continue to turn. It is just a reflection of the labor market at work.²⁵ Perhaps to mitigate the effect on players, an accommodation to NCAA transfer rules is warranted for coaching changes.

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Notes

1. A Google search using the keywords NCAA Coaching Carousel turned up 54,700 hits. The term also applies to other NCAA sports, notably basketball.
2. There is no discernable trend in the number of coaching replacements. The website http://www.collegefootballpoll.com/coaching_changes.html provides a listing of all FBS coaching changes by year beginning with 2000.

3. NCAA (2009). Players are allowed to practice with their new teams, however. A player can also be released from his Letter of Intent by the signing school that then allows the player to transfer without penalty. Releases, when granted, are usually for so-called hardship cases, such as family emergencies.
4. On the NCAA as a cartel see, for example, Kahn (2007), Fleisher, Arthur, Goff, and Tollison (1992). Also see Brown (1993) on the NCAA as a monopsony that captures economic rents from their players.
5. See, for example, Fort (2006).
6. This might be more important in basketball where, for example, players were attracted/repelled by the opportunity to play for coaching legend Bob Knight.
7. While it might also be useful to assess the impact of assistant coach turnover, the data are not readily attainable.
8. <http://sports.espn.go.com/ncaa/recruiting/football/news/story?id=4821151>
9. These are teams that belonged to the ACC, Big 12, Big Ten, Big East, Pac 10, and SEC. Also included is independent, Notre Dame. Over the sample period, a number of new teams joined these conferences. These teams are included in the sample for the years they belonged to a BCS conference.
10. Durmond et al. (2008) also used Rivals.com as their primary data source.
11. Once a player has declared for the draft, he loses his eligibility to play college football in subsequent years (NCAA, 2009).
12. NFL draft information is readily available (e.g., ESPN.com).
13. In one instance, players recruited to the University of Washington in 2003, the coach who recruited them departed after their freshmen year and his successor departed after their junior year.
14. Coaching changes are from http://www.collegefootballpoll.com/coaching_changes.html. Beginning with 2004, the site also provides accounts of why a coach was fired. For prior years, newspaper accounts were used. The information provided in collegefootballpoll.com was also checked against other media accounts and found to be accurate.
15. In 2004, Rivals.com began providing numerical ratings but not for all players. Langelett (2003) using precursors to Rivals.com showed that a highly ranked recruiting class significantly improved team performance for the next 5 years and that the improved team performance fed positively back into team recruiting.
16. Alternatively, players could be production substitutes. A player recruited to a team with other good players at the same position, may see limited playing time. Or a team with strong defensive players could lead a coach to be conservative on offense.
17. Note not all players leave after their fourth year. Some choose to leave early and some red-shirted players remain at their school for a fifth year. In one specification, the Sagarin year was changed to junior year. In another, the average Sagarin rating from the all the years the player was in the program was used. As discussed in the results section of the article, some of the results using *NFL* as the dependent variable are sensitive to which Sagarin year or years is used.
18. There is not a corresponding test for fixed effects within logit, but a comparison of the coefficients showed only very minor differences.

19. This result was obtained using the Stata statistical package and replicated using *EViews*. For a detailed discussion on clustering and random effects and in particular the interpretation of ρ , see for example, Cameron and Trivedi (2005).
20. In terms of conventional significance levels, there is no qualitative change in the results if non-cluster robust standard errors are used instead.
21. 2SLS was also attempted in the *NFL* logit equation. Here, the coaching variables were insignificant in all specifications.
22. As an alternative to a truncated regression, a Tobit model was also estimated that incorporated the upper bound constraint. The Tobit results mirrored the truncated regression, but a likelihood ratio test rejected the Tobit model in favor of separate probit (*NFL*) and OLS (*Draft Pick*) equations. Given that draft picks are restricted to be positive integers, the *Draft Pick* equations were also reestimated using a Poisson specification. The coaching coefficients remained statistically significant and the calculated marginal values matched their OLS counterparts. Similar Poisson results were also obtained when *Draft Pick* was replaced by *Draft Round* (1–7).
23. Conlin and Emerson (2006) using data on players drafted between 1986 and 1991 report only 54% of players have an active contract a year after being drafted. This falls to 50% and 41% for the second and third years following the draft. Not surprisingly, they also find that player salaries fall monotonically by round in which they were selected.
24. Salary information was obtained from a number of sources including NFL.com, USA Today.com, and various media reports. For a handful of players dollar figures were unattainable.
25. The college football coaching market is examined by Brown, Farrell, and Zorn (2007) who analyze it from a matching prospective between coach and university.

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Bio

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