

Performance Appraisal and Football Point Spreads: A Note

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Football point spreads were designed to divide the betting public in half and turn transaction costs into risk-free returns for gambling operators. Invariably, one team will be better than its opponent and, in the absence of a point spread, would naturally be the bettors' choice. By awarding a skillfully devised number of points to the inferior team (or underdog), the superior team (or favorite) becomes less attractive to bettors and, in theory, is then picked to "win" by roughly half of the bettors. Academic writers subsequently used point spreads to test the efficiency of people's average economic judgments, arguing that since point spreads—like security prices—adjust for all available information, regular betting profits would be a bona fide exception to the *efficient market hypothesis*.

Another use of point spreads was proposed by Kochman and Goodwin (2007), who argued that the performance of football coaches could be appraised by their success against the point spread. They reasoned that if the football betting market is as efficient as researchers have generally reported, no team should experience abnormal success or failure against the spread (ATS). To do otherwise, Kochman and Goodwin hypothesized that point spreads may only capture the observable factors such as talent, game site and injuries and exclude the intangibles such as mental and physical preparedness, game strategy and game-day decisions. To the extent that those overlooked variables fall largely within the purview of the coach, K&G concluded that success ATS would serve as a legitimate performance standard¹.

While Kochman and Goodwin's performance measure may be more intuitive than empirical, it at least attempted to quantify the effectiveness of coaches. No such effort was made by FoxSports.com when it recently named the 25 most effective college football coaches for the 2008 season. Only the opinions of sports observers were used to produce the rankings seen on its web site on August 24. Persuasive as the brief narratives were for each coach, they contained only anecdotal evidence. And since nearly all the "winners" pilot big-time schools in powerhouse conferences, it seems fair to say that their success is hardly coincidental given the talent that those institutions routinely attract.

The purpose of this study is to appraise the performance of college football coaches in the absence of any advantages which their programs may afford them. To accomplish that goal, we investigated the performance of college football coaches with minimum tenures of seven years at their respective schools against the point spread for the 2001-2007 seasons. (We are assuming that length of tenure prior to the data period will have no input on the rankings.) By contrast, Kochman and Goodwin used a five-year

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minimum and an observation period that differed for each coach. That meant, for example, that the straight-up² (SU) and point-wise³ (PW) records of Joe Paterno over 39 years at Penn State and those of Bobby Bowden over 29 years at Florida State were compared with the SU and PW accomplishments of Randy Walker over six years at Northwestern and the same for Chuck Amato over five years at North Carolina State. Since different years produce different levels of competition, our decision to hold the observation period constant would seem to be a prudent one.

Once our eligible coaches were identified, their respective records with and without reference to the point spread were screened for non-randomness per Equation (1).

$$(1) \quad Z_R = \frac{(G - W)}{\{[(0.50)(1 - 0.50)]/G\}^{1/2}}$$

where: Z_R = statistic for testing the null hypothesis of randomness
 G = total number of games
 W = winning games.

Wins-to-games ratios were then compiled and compared to a hurdle mark of 50 percent. A popular newsstand magazine (Steele, 2008) was the source of both coaching profiles and point spread histories. A total of 31 college football coaches satisfied our requirement of seven unbroken years at the same school through the 2007 season. Admittedly, the seven-year constraint is somewhat arbitrary. However, the alternatives were less compelling. Seeking to balance the numbers of years and coaches, we found that an eight-year minimum tenure would have shrunk the number of coaches to 18 while a minimum of six years would have added only five.

Table 1 exhibits the straight-up and point-wise performances of our 31 coaches over the 2001-2007 college football seasons. Inasmuch as they have lasted at least seven years in their respective positions, it is not surprising that the coaches' average winning percentage was an impressive 64.1 percent. And given the alleged efficiency of the point spread market, it was perhaps equally predictable that their average mark against the spread (53.6 percent) hovered around the 50-percent rate.

No fewer than 17 individual coaches surpassed the 53.6-percent mean—topped by Connecticut's Randy Edsall (61.3 percent) and Pete Carroll (60.0 percent). Statistically, both Edsall's record ATS (46 out of 75) and Carroll's mark ATS (54/90) were significantly nonrandom at $p < .10$. While Carroll's straight-up success (84.4 percent) might suggest a strong, positive correlation between straight-up and point-wise success, it is clear from Edsall's 51.8-percent SU record that such is not necessarily the case. We could even imagine a negative relationship between SU and PW records since four of the most

Table 1
Performance logs for college football coaches (2001-2007)

Coach	School	SU	SU%	PW	PW%
Amstutz	Toledo	55/87	63.2**	40/79	50.6
Ault	Nevada	42/85	49.4	46/81	56.8
Beamer	Virginia Tech	68/92	73.9***	51/87	58.6
Bellotti	Oregon	57/87	65.5***	49/84	58.3
Blakeney	Troy	44/83	53.0	38/69	55.1
Bowden, T.	Clemson	54/87	62.1**	41/82	50.0
Bowden, B.	Florida State	58/90	64.4***	42/89	47.2
Brown	Texas	76/90	84.4***	47/87	54.0
Carroll	So. California	76/90	84.4***	54/90	60.0*
Edsall	Connecticut	43/83	51.8	46/75	61.3*
Ferentz	Iowa	57/87	65.5***	48/83	57.8
Friedgen	Maryland	56/87	64.4***	45/83	54.2
Fulmer	Tennessee	63/90	70.0***	43/88	48.9
Grobe	Wake Forest	46/85	54.1	41/79	51.9
Groh	Virginia	51/88	58.0	47/87	54.0
Hill	Fresno State	59/92	64.1***	43/86	50.0
Leach	Texas Tech	58/89	65.2***	44/83	53.0
Leavitt	South Florida	52/82	63.4**	41/71	57.8
Long	New Mexico	49/87	56.3	43/81	53.1
Paterno	Penn State	50/85	58.8	43/83	51.8
Patterson	Texas Christian	62/86	72.1***	42/80	52.5
Pinkel	Missouri	49/86	57.0	45/81	55.6
Richt	Georgia	72/91	79.1***	47/85	55.3
Riley	Oregon State	52/87	60.0*	42/80	52.5
Schiano	Rutgers	38/84	45.2	44/78	56.4
Schnellenberger	Florida Atlantic	41/83	49.4	19/42	45.2
Stoops	Oklahoma	77/94	79.4***	46/91	50.5
Tiller	Purdue	50/88	56.8	40/81	49.4
Tressel	Ohio State	73/89	82.0***	50/87	57.5
Tuberville	Auburn	66/89	74.2***	47/84	56.0
West	Memphis	41/85	48.2	37/87	42.5
Totals		1735/2709	64.1***	1351/2523	53.6***

*significantly nonrandom at $p < 0.10$

**significantly nonrandom at $p < 0.05$

***significantly nonrandom at $p < 0.01$

prominent coaches in our study (Joe Paterno, Bobby Bowden, Phillip Fulmer and Tommy Bowden) all failed to guide their respective schools to above-average, or even average, performances ATS. (*Since this paper was written, Phillip Fulmer and Tommy Bowden have been relieved of their coaching duties.*) In fact, the combined record of the four coaches against the spread is 169 out of 342—or 49.4 percent.

In sum, all the coaches in our study are effective. Tenures of 7+ years are convincing proof of satisfactory performance. So what have we accomplished? We could perhaps take credit for identifying the **most** effective coaches—not unlike the FoxSports.com feature. Our top-five standings would include

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Rank	Coach	School	FoxSports.com Rank
#1	Randy Edsall	Connecticut	Unranked
#2	Pete Carroll	So. California	#2
#3	Frank Beamer	Virginia Tech	#7
#4	Mike Bellotti	Oregon	#15
#5	Kirk Ferentz	Iowa	Unranked

Too, we applauded and extended the proposition that managerial performance can be appraised through the use of point spreads. While the alleged Las Vegas contribution to the field of management may be curious—even dubious—it seems clear that point spreads provide a level playing field on which coaches can be impartially evaluated.

ENDNOTES

1. Kochman and Goodwin ruled out turnovers and penalties as possible explanations of anomalous success ATS since they tend to even out in the long run.
2. actual outcomes
3. betting outcomes

REFERENCES

- Kochman, Ladd, and Randy Goodwin. "Performance Evaluation: Another Use of Point Spreads?" Journal of Business and Economic Perspectives, Fall/Winter 2007.
- Steele, Phil. College Football Preview, Cleveland: Phil Steele Publications, 2008.