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Decision-making on the hot seat and the short list: Evidence from college football fourth down decisions

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ABSTRACT

This study examines how career considerations influence risky decisions in the labor market for college football head coaches. We use historical data to predict, based on information available prior to the beginning of a given season, whether a coach will be fired or promoted after that season. Indices created from these models are used, along with other relevant data, to analyze the risky decision to attempt a fourth down conversion. We find that decision-making is sensitive to perceived job stability. Coaches who are more likely to be fired become more conservative, attempting fewer fourth down conversions. Conversely, coaches who are more likely to be promoted undertake more risk by attempting to convert more fourth downs. The result is that coaches with less job security are more likely to make decisions that are sub-optimal from the perspective of win-maximization.

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1. Introduction

There is often a clear tension between the objectives of an organization and the objectives of individuals within that organization. While taking a particular risk might have a positive expected value for an organization, the individual responsible for that decision might have worries about the downside risk that induce them to take a less risky course of action. One source of this tension is the career concerns of the employees within that organization: the calculus involving certain types of risky choices might change when the threat of losing one's job becomes more pronounced or the possibility of a more desirable position presents itself. We examine the issue of how risky decisions can be affected by the state of one's job prospects through an analysis of the labor market for NCAA head football coaches. In particular, we test whether job security impacts a particular set of decisions that are inherently risky: fourth down conversion attempts.

The rich set of observable information related to college football (the employment history of coaches, their accumulated record of performance and fourth down decision-making, and information on factors like attendance and recruiting) makes

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this a setting where we can estimate the job security and prospects for promotion for a coach at a particular point in time. From there, we estimate the extent to which these career concern measures significantly affect these risky decisions.

It has been established that, relative to an organization whose objective is maximizing wins, football teams on average are much too conservative on fourth down, attempting offensive plays too infrequently (Romer, 2006). Accepting that being relatively conservative on fourth down is the status quo in this market, we can interpret an increase in fourth down attempts as a willingness to move away from that status quo. Our findings indicate that coaches become even more conservative, relative to their own baseline levels, when their probability of being fired rises (that is, when they are on the “hot seat”). We find the opposite (a greater willingness to attempt a fourth down conversion) when their prospects for taking a new job improve (that is, when they are on the “short list” for a more attractive job). These results are consistent with theoretical literature on herding and career concerns with loss averse agents. The rest of the paper is organized as follows. Section 2 provides an overview of the related literature. Section 3 describes the data. The estimation strategy and results are given in Section 4. Section 5 provides a discussion of the results, and Section 6 concludes.

2. Literature review

This paper focuses on managerial decision-making and attitudes toward risk in a very specific labor market: the market for college head football coaches. This labor market is well suited to address this question because of the clear record of managerial decisions and the outcomes that follow. Additionally, and perhaps more fundamentally, it is a market where the link between these managerial decisions and team performance has been shown to be of consequence. Goff (2013) shows that in NFL football, the influence of the head coach is quite pronounced, with intra-manager effects of a magnitude almost five times as great as for Major League Baseball. Hadley et al. (2000) estimate that the quality of an NFL coach can account for an additional three to four victories per season. Given that an NFL season is 16 games long, this effect is quite strong in percentage terms. Taking into account the fact that NCAA head football coaches control recruiting and thus have more control over their rosters than do NFL head coaches (in addition to the managerial responsibilities analogous to those of NFL head coaches), the link between managerial prowess and team success is clear in this context. For colleges, team performance can be an important source of pride and often a significant source of revenue. In addition to the sort of psychic benefits to a school community one might assume comes from athletic success, such success has been shown to be associated with larger applicant pools (McCormick and Tinsley, 1987; Murphy and Trandel, 1994) and enrollment increases (Borland et al., 1992).

The decision-making at the center of this analysis is the risky decision to attempt a fourth down conversion. The risk inherent in the fourth down decision with respect to its bearing on the outcome of the game is assumed to be unrelated to a coach's job security. In general, a successful conversion will have the greatest positive impact on the likelihood of winning the game, an unsuccessful conversion will have the most negative impact on the likelihood of winning, and the conservative option (punting or attempting a field goal) has an effect somewhere between these extremes. Romer (2006) shows that NFL coaches in general, if they are trying to maximize wins, are systematically and significantly too conservative in terms of this decision. He suggests one possibility is an objective function that is more complicated than simple win maximization. The career status considerations highlighted here could enter into the objective function by framing coaches' perceived gains and losses in utility related to the possible outcomes of these risky decisions and thus bias their in-game decisions against maximizing wins. There are several theoretical explanations offering different predictions for how a coach might alter his decision-making as a result of a change in job status. Our empirical work seeks to uncover whether career concerns actually influence fourth down decisions, and if so, whether coaches choose riskier or safer choices in response to these concerns.

There are factors that may lead a coach on the hot seat to take more risk. It is possible that additional pressure to perform may induce a coach to make decisions with a greater emphasis on pure win-maximization. As Romer (2006) shows, such an adjustment would lead to more attempted fourth down conversions. Furthermore, a coach on the hot seat may perceive that the only way to keep his job is to have a very salient gamble work out in his favor, while a coach on the short list might become more conservative to guard against the possibility that a bad outcome could jeopardize those prospects. This is similar to a prediction that can be derived from behavioral ecology, where Stephens (1981) finds that foraging animals take more risks when the “energy budget” (the difference between calories foraged and calories expended) is negative. In other words, desperation borne out of concerns for survival lead to greater risk-taking because in such a situation, a failed gamble is not much worse than the conservative option.

There are other theoretical explanations to suggest that coaches on the hot seat will avoid risk more than those on the short list. Administrators (and fans) may make judgments about the appropriateness of fourth down decisions. However, they do so after knowing the result of the play, and as a consequence, their evaluation of whether it was the correct decision is influenced by hindsight bias (see Fischhoff, 1975). Hindsight bias can cause administrators to view a decision that may have been optimal ex ante as poor decision because it produced a bad outcome ex post. All things being equal, one might assume coaches would prefer that their decisions appear less questionable to administrators, fans, and other observers. Given empirical evidence that the status quo involves being too conservative on this dimension, there could be a theoretical reason for herding toward conservative fourth down decisions. This is analogous to the herding related to the investment decisions of managers with reputational concerns, who can have incentives to ignore private information and imitate other managers (Scharfstein and Stein, 1990). To the extent that this incentive to herd is greater when career concerns are more pronounced, we would expect to see coaches who believe they face a strong possibility of being fired acting more conservatively. The

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