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HOW PERFORMANCE EXPECTATIONS AFFECT MANAGERIAL REPLACEMENT DECISIONS**

ABSTRACT

We empirically investigate how performance expectations affect top manager replacements. We do so by approximating performance expectations based on professional bookmaker betting odds in professional soccer, thus capturing the effect on the dismissal probability of team coaches. Controlling for team performance and unobserved team heterogeneity, we show that a one-standard-deviation increase of performance expectations nearly doubles the coach's dismissal probability. Our study represents a strong test for the impact of performance expectations on managerial replacements because accurate performance measures are available at frequent intervals in the controlled field environment of professional soccer. The limitations of transferability are also discussed.

JEL Classification: J63, M54.

Keywords: Betting Odds; Performance Expectations; Professional Team Sports; Top Manager Dismissals.

1 INTRODUCTION

Terminating a top manager's employment before the expiration of his contract is among the most important actions a board of directors can take (Huson, Parrino, and Starks (2001)). The purpose of our study is to gain further insight into the factors that systematically shape the board of directors' dismissal decision.

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The most intuitive and empirically confirmed determinant of top manager replacement decisions is poor organizational performance (for example Coughlan and Schmidt (1985); Warner, Watts, and Wruck (1988); Weisbach (1988); Parrino (1997); Finkelstein, Hambrick, and Cannella (2008)). However, market- and accounting-based measures of organizational performance are somewhat noisy signals of the top manager's idiosyncratic performance (Engel, Hayes, and Wang (2003)) and consistently explain only a modest part of the variance in involuntary CEO turnover (Brickley (2003)).

In addition to the difficulty of attributing organizational performance to the top manager, the board members must evaluate his ability and effort to improve the organization's future performance. To the extent that board members can monitor the continuous managing process and rule out the nonmanagerial factors that also affect organizational performance, the board members evaluate actual performance in relation to whether the manager meets their performance expectations (Greve (1988); Halebian and Rajagopalan (2006)). Schneider (1992, 1053) defines performance expectations as "...the smallest outcome that would be deemed satisfactory by the decision maker". According to the board members' heuristic transformation of a continuous performance measure into a discrete measure of success or failure (March (1988)), top managers who are able to meet the board's performance expectations are less likely to be fired than are peers with similar performance records who fall short of it.

Despite the obvious appeal of this line of reasoning, the accurate specification of performance expectations constitutes a major obstacle for empirical investigations (DellaVigna (2009)). The common specification in prior studies that are based on one-year analyst forecasts (Puffer and Weintrop (1991); Farrell and Whidbee (2003); Wiersema and Zhang (2011)) is subject to a considerable endogeneity problem: top managers are able, and incentivized, to strategically influence analysts' forecasts, which have significant impact on investors' decisions and eventually on the firm's financial performance (Francis and Soffe (1997); Frankel, Kothari, and Weber (2006)). Simultaneously, top managers face adverse incentives to safeguard their position by deliberately curbing the board's expectations. Therefore, conclusions drawn on the basis of one-year analyst forecasts have limited validity.

In this paper, we overcome the endogeneity problem by specifying performance expectations with a variable that is unsusceptible to manipulations on behalf of the to-be-evaluated top manager. We use betting odds from an independent professional fixed-odds bookmaker and analyze their effect on the probability of involuntary turnover of team coaches in the highest German soccer league, the *Bundesliga*. Thus, we draw an analogy between top managers and professional soccer coaches. Both professions share some elemental commonalities: Typically, professional soccer coaches and top managers in the corporate setting are male and in their late 40s to early 50s when they take their positions. Because they have worked their way to the top in highly competitive labor markets, these men know how to cope with the pressure to perform and with the intense media coverage of their work. They are personally held accountable by multiple stakeholder groups for the performance within their area of responsibility, even though their idiosyncratic contributions are not precisely measurable. Ultimately, they report to an elected supervisory body that decides about the continuation or the termination of their employment.

In terms of allocated rights and responsibilities and required skills and expertise, the differences between both leadership positions certainly constrain the transferability of our results to the corporate context. However, the advantages of our research setting are likely to outweigh this disadvantage. Professional bookmakers' betting odds allow for an accurate approximation of the board's unobservable performance expectations because betting odds comprise all performance-relevant information available and evidently provide accurate predictions of perfectly observable future match outcomes (Sauer (1998); Forrest, Goddard, and Simmons (2005)); and because betting odds are highly immune to opportunistic manipulations on behalf of the coaches.

Because we are able to isolate the effect of performance expectations on involuntary managerial turnover decisions in a controlled field environment, we argue that performance expectations are even more relevant in corporate contexts in which managers can engage in expectation management and where performance measurement is subject to more noise. In this sense, our study represents a particularly unfavorable case, and thus a strong test, for the effect of performance expectations on the probability of involuntary managerial turnover.

The study is organized as follows: In Section 2 we derive the theoretical framework on the effect of organizational performance and performance expectations on dismissals. In Section 3 we describe the empirical setup, and in Section 4 we present the results. In section 5 we discuss the transferability of our results.

2 CONCEPTUAL BACKGROUND

2.1 ORGANIZATIONAL PERFORMANCE AND INVOLUNTARY MANAGERIAL TURNOVER

Prior research indicates that poor performance increases the probability of being dismissed. Some studies that investigate the effect of organizational performance on managerial change in the corporate context measure organizational performance by using stock returns (Coughlan and Schmidt (1985); Warner, Watts, and Wruck (1988); Wiersema and Bantel (1992); DeFond and Park (1999)), while other studies additionally include accounting-based performance measures (Weisbach (1988); Gibbons and Murphy (1990); Parrino (1997); Farrell and Whidbee (2003)). Generally, the empirical evidence indicates that both measures of financial performance are negatively related to CEO turnover, but the size of the effect is consistently quite small (Brickley (2003)).

Engle, Hayes, and Wang (2003) argue that current earnings capture only part of the value created by the incumbent manager. The lagged consequences of managerial decisions and actions are actually better reflected in future earnings. Yet, while stock returns fully capitalize the expected value created by the manager, they also capture many factors that are unrelated to his idiosyncratic value creating activities. Engle, Hayes, and Wang (2003) find that accounting returns receive less weight in turnover decisions when they are relatively noisier. Generally, stock-price and accounting-based measures of organizational performance are noisy signals of CEO performance and thus are prone to misinterpretations.

As a result, the CEO may exploit his private information to forestall his removal, for example, by controlling critical resources, such as major clients, proprietary technology, or key regulatory contacts (Hambrick (1981); Hickson et al. (1971)). Such means of managerial entrenchment typically reduce the CEO's accountability for contemporaneous underperformance (Morck, Shleifer, and Vishny (1988); Hill and Phan (1991)) and thus decrease his dismissal probability.

Professional soccer coaches, like top managers in the corporate context, face complexities and constraints in managing the organization's resources. Because a soccer coach is in charge of developing, motivating, and selecting players from the roster to accumulate as many points as possible in the championship race, a coach's impact on team performance is constrained by the chronic unpredictability that typifies the fitness, performance, and cooperation of the players. However, unlike most other industries, this uncertainty is unlikely to vary systematically across competing teams. All competitors in professional soccer leagues share a common-factor market, have comparable organizational structures, and consistently pursue the objective to maximize sporting success.

In addition, independent referees contribute to the high accuracy of measures of relative sporting performance by enforcing the clearly defined production process of weekly soccer matches (Koning (2003)). These commonalities reduce the variation of environmental factors across competitors (Holcomb, Holmes, and Connelly (2009)).¹ Accordingly, we argue that measures of relative team performance in professional soccer are more precisely attributable to managerial performance (for example they contain more information and less noise) than are market- or accounting-based measures of organizational performance in more heterogeneous industries (see Holmstrom (1982)).

2.2 PERFORMANCE EXPECTATIONS AND INVOLUNTARY MANAGERIAL TURNOVER

In addition to the difficulty of making causal attributions about prior organizational performance, the members of the monitoring board must evaluate the efficacy of their top managers. When the board members believe that the current top manager is capable of exercising control over the environmental events that are necessary to sustain or improve the organization's prospective performance, they are more likely to retain him (Bandura and Jourden (1991); Haleblan and Rajagopalan (2006)). To the extent that board members can monitor the continuous managing process and rule out the nonmanagerial factors that also affect organizational performance, the board members heuristically develop performance expectations and evaluate actual performance in relation to whether the manager meets their performance expectations (Greve (1988)). March and Simon (1958) and Cyert and March (1963) were among the first to predict that when organizational performance falls below the expected level of performance (in their terminology, "the

1 In the corporate setting, empirical studies show that the probability of CEO turnover varies systematically across industries. Weisbach (1988) and Parrino (1997) find that the negative relation between performance and involuntary CEO turnover increases with industry homogeneity. Defond and Park (1999) find that performance is more closely associated with CEO turnover in highly competitive industries than in less competitive industries.

level of aspiration”), a search for solutions will occur and organizational changes become more likely. Accordingly, CEOs who are able to meet performance expectations are less likely to be fired than are their peers with similar performance records who fall short of expectations.

However, the specification of unobservable performance expectations constitutes a major obstacle for deriving valid conclusions (DellaVigna (2009)). Performance expectations may be set relative to a firm’s prior performance (Cyert and March (1963); Greve (1988)) or relative to the performance of other industry competitors (DeFond and Park (1999); Lant, Milliken, and Batra (1992)). Empirical studies that investigate managerial change typically specify the board’s performance expectations based on one-year analyst forecasts (for example Puffer and Weintrop (1991); DeFond and Park (1999); Goyal and Park (2002); Farrell and Whidbee (2003); Wiersema and Zhang (2011)). The common reasoning is that to the extent that earnings forecasts reflect the board of directors’ performance expectations, forecast errors will capture the component of firm performance that the board attributes, in large part, to CEO performance. The studies’ results indicate that performance expectations have a positive impact on the CEO turnover probability beyond actual organizational performance.

But analyst forecasts suffer from an endogeneity problem because they not only capture a CEO’s value-creating actions, but also his efforts to systematically manage performance expectations. Because of imperfect monitoring mechanisms and infrequent performance evaluations, a CEO enjoys substantial discretion. The information advantage over all internal and external stakeholders allows him to manipulate performance expectations, for example by strategically influencing the content and the timing of news announcements (Westphal and Graebner (2010); Westphal and Deephouse (2011)).

Expectation management is highly relevant in the corporate setting. Farrell and Whidbee (2002) acknowledge the CEO’s responsibility for shaping the public perception by influencing media coverage, as indicated by their finding that the number of *Wall Street Journal* news items about a decline in earnings significantly increases the probability of forced CEO turnover. In a later paper the same authors emphasize that managing analysts’ expectations is the “primary responsibility of the CEO” (Farrell and Whidbee (2003)).

However, the direction in which the CEO exhibits influence to bias performance expectations is a priori unclear. On the one hand, high performance expectations increase share prices, reduce the cost of external financing, and improve the firm’s financial performance (Givoly and Lakonishok (1979); Lys and Sohn (1990); Francis and Soffer (1997); Frankel, Kothari, and Weber (2006)). On the other hand, Bartov, Givoly, and Hayn (2002) show that even after controlling for the absolute earnings performance, firms that meet or beat current analysis’ earnings expectations enjoy a higher return than do their peers who fail to do so. Their empirical evidence suggests that CEOs engage in what they call an “expectation game” to manage analysts’ expectations. Considering that lower performance expectations tend to decrease the probability of involuntary managerial change (Puffer and Weintrop (1991); Kasznik and Lev (1995); DeFond and Park

(1999); Goyal and Park (2002); Bartov, Givoly, and Hayn (2002); Farrell and Whidbee (2003)), CEOs may also use their discretion to curb expectations and thereby safeguard their position.

Our specification of performance expectations, which is based on weekly betting odds from the highest German soccer league, the *Bundesliga*, makes it possible for us to overcome the described endogeneity problem that handicaps statistical analyses of the role of performance expectations in explaining involuntary managerial change.

Three aspects of our setting are particularly important. First, due to intense monitoring, coaches in professional team sports have little discretion to manipulate performance expectations. A coach's managerial performance is observable not only in the stadium and on TV broadcasts during the match, but also during the training sessions that are usually open to public. Extensive media coverage makes additional outcome-relevant information largely public (for example relative playing strength, relative coaching quality, season aspirations, momentum effects, unforeseen player injuries). Throughout the season, each team usually plays one league game per week. The frequent comparisons of performance expectations with actual performance limit managerial discretion: the shorter the evaluative intervals, the less time there is for the coaches to engage in manipulative expectation management. The intervals between performance evaluations, and thus the windows of discretion, are much shorter than in the corporate setting, where quarterly earnings announcements are commonplace.

Second, because the performance expectations reflected in betting odds are unlikely to affect subsequent team performance on the pitch, coaches have few incentives to actively manage betting odds. As long as the coaches are not illegally involved in professional betting or match fixing, their incentives are limited to the direct maximization of their team's performance. Even if a coach stokes up his players' performance expectations to increase their motivation and thereby their performance on the pitch, doing so is a matter of performance management; the coaches have no intent to influence the performance expectations of professional bookmakers or any other stakeholder group. Similarly, even if artificially hyped bookmaker performance expectations could reduce the cost of external financing, doing so would not translate into a stronger team performance – at least, not within the short terms of the current season because of technological and institutional limitations such as transfer windows and fixed roster sizes. But in a corporate setting, performance expectations are likely to have a direct impact on share prices, the costs of external finance, and eventually, the company's financial performance. Thus, CEOs have much stronger incentives to manage performance expectations than the coaches of professional soccer teams.

Third, independent fixed-odds bookmakers can continuously aggregate and update information. In contrast to business analysts, because bookmakers take the opposite position of every bet, they bear a substantial financial risk when posting inefficient odds. Empirical studies provide solid evidence that bookmaker odds are weak-form efficient and display high prediction accuracy (Sauer (1998); Forrest, Goddard, and Simmons

(2005)). Thus, we are confident that betting odds are the optimal approximation of the board's unobservable performance expectations.

If performance expectations help explain involuntary managerial turnover in a controlled field environment in which accurate measures of performance and performance expectations are available at frequent intervals, then performance expectations should be even more relevant in managerial contexts with noisier performance measures. In this sense, our paper represents a particularly unfavorable case, and thus a strong test, for the effect of performance expectations on the probability of involuntary managerial turnover.

While we are the first to use betting odds to identify the causal effect of performance expectations on the probability of involuntary managerial change, there are several empirical studies that analyze the determinants of managerial change in professional team sports contexts (see Audas, Dobson, and Goddard (2002) for a review). Some studies explicitly address the relevance of performance expectations in explaining managerial change, while in other studies its relevance is only implicitly assumed. Different measures of performance expectations are the relative quality of players and coaches of the opposing teams (Scully (1994); Fizek and D'Itri (1997); Tena and Forrest (2007); Frick, Barros, and Passos (2009); Frick, Barros, and Prinz (2010)), the team's recent performance (Audas, Dobson, and Goddard (1999); Salomo and Teichmann (2000); Audas, Goddard, and Rowe (2006); Holmes (2010)), the team's league standing predicted preseason by a panel of experts (Audas, Goddard, and Rowe (2006)), the team's league standing when the coach took charge (Audas, Dobson, and Goddard (1999); Bachan, Reilly, and Witt (2005)), or the self-defined target standing in the league as articulated in the sport press before a season starts (Salomo and Teichmann (2000)).

All these approaches either ignore or do not appropriately reflect the fact that performance expectations are largely contingent on the relative playing strength of both opposing teams and thus vary from match to match. We argue that a club's decision makers continuously update the performance expectations for which they hold their coaches accountable, and that the mere consideration of a team's recent performances or its expected league standing cannot account for this updating process.

3 METHODS

3.1 SAMPLE

Our sample consists of match-level data of teams playing in the highest German soccer league, the *Bundesliga*, from the 1998/99 season to the 2007/08 season. Professional soccer is a highly competitive, interactive sport. The coach's primary responsibility is to manage the team in the preparatory process of training to improve the coordinated technical and tactical capabilities of the squad. In a competitive match, the coach is in charge of selecting the starting line-up, making substitutions, and giving tactical instructions.

With 18 teams playing each other twice (in one home and one away match) during a season, the full season comprises 306 matches, which generate 612 team-match observations per season and 6,120 team-match observations for the ten seasons covered by our data. Betting odds information is not available prior to the 1998/99 season. Because one of our variables is based on the previous five matches of each team-coach dyad, we lose 558 observations due to missings of this variable. Thus, our sample consists of 5,562 team-match observations. The match-level data makes it possible for us to study the effect of *recent* team performance and match-level performance expectations on within-season dismissals. The vast majority (87% in our sample) of dismissals occur during an ongoing season.

3.2 DEPENDENT VARIABLE

Managerial turnover. Within the study period of ten seasons, 104 managerial turnovers occurred in the coaching position. We define turnover decision as involuntary whenever a coach's employment was unilaterally terminated by the club's board before the expiration of his contract. We define turnover decisions as voluntary in the case of unilateral terminations by the coach (for example due to retirement or due to a switch to another club) and terminations that both sides publicly described as consensual. Based on extensive content analyses of press articles and webpages, an author and a research assistant independently coded the turnover cases as voluntary or involuntary. The interrater reliability coefficient was 0.87. Another research assistant re-examined all inconsistent events. These events were then discussed as a group, resulting in a total of 67 involuntary and 37 voluntary turnover decisions.

3.3 INDEPENDENT VARIABLES

Team performance. We assess team performance with two variables, the inverse of league position and the number of points achieved in the last five matches. The inverse of the team's current position in the league varies between one (team at the bottom of the league table) to 18 (team at the top of the league table). We determine the league position by the number of points accumulated in the previous matches of a given season relative to the competitors' points. Wins yield three points, draws yield one point, and losses yield zero points. If two teams have accumulated an equal number of points in the previous matches of a given season, the difference between the number of goals scored and the number of goals conceded determines the teams' relative league position.

The league position is the most important measure of a team's competitiveness, because the league position at the end of the season determines which team wins the championship, which teams qualify for the lucrative international competitions (UEFA Champions League and UEFA Europa League), and which teams are relegated to the next lower league in the next season. Therefore, we expect that coaches of teams at the bottom of the league table are more likely to be fired than are coaches of teams at the top of the league table, *ceteris paribus*.

The momentum of recent match results might exert an additional influence on the dismissal probability. Decision makers might remember recent performances better than earlier performances (see Murdock (1962)), even though the marginal contribution to the final league position in the championship race is identical for each point and even though temporary deviations from “normal” team performance (for example given the team’s constant relative playing strength) could just reflect the statistical regularities of regression-to-the-mean effects (Beck and Meyer (2012)).

We specify recent team performance by the number of points achieved in the previous five matches² of the same team-coach-dyad. We expect that coaches of teams that accumulated more points in recent matches are less likely to be fired than are coaches of teams that accumulated fewer points in recent matches.

Performance expectations. We conceptualize performance expectations based on betting odds for match outcomes. For each possible match outcome (for example home win, away win, or draw) the official German bookmaking company *Oddset* announces decimal odds (for example 2.5) that represent the payout ratios for a winning bet. The higher the odds, the smaller is the probability of this outcome to occur. We converted the listed decimal odds into probability odds, which are the reciprocal of the decimal odds (for example $1/2.5 = 0.4$). The sum of the probability odds exceeds one by the bookmaker’s margin. Therefore, we adjust the probability odds by the bookmaker’s margin to obtain the implicit probabilities, which sum to one as required for a probability measure.³ To calculate the expected number of points as an approximation of the ex-ante performance expectations, we multiply the implicit probability of a win by three and add the implicit probability of a draw multiplied by one. Then we calculate the number of points expected in the previous five matches⁴ and use this variable to test whether expectations affect coach dismissals beyond the effect of performance.

3.4 CONTROL VARIABLES

Frick, Barros, and Passos (2009) and Frick, Barros, and Prinz (2010) find that the probability of *Bundesliga* coaches being dismissed increases with the relative market value of their teams, so we include a control variable to account for this effect. In the *Bundesliga*, teams do not have to publish their players’ market values or salaries. However, since 1995 the well-respected soccer magazine *Kicker* has published estimates of the players’ market values before the start of each season. These proxy measures are likely to be consistent,

- 2 The results do not change in a statistically significant way if we consider the points accumulated in any other number of previous matches.
- 3 For example on November 20, 2004, the home team Bayern Munich played against FC Kaiserslautern. The *Oddset* decimal odds for Bayern winning, Kaiserslautern winning, and the match ending as a draw, were 1.3, 3.55, 6.0, respectively. The corresponding probability odds, 0.77, 0.28, 0.17 sum up to 1.22. In this case, the bookmaker’s margin is 22%. After adjusting the probability odds by the bookmaker’s margin, $0.77/1.22=0.63$, $0.28/1.22=0.23$, $0.17/1.22=0.14$, the probabilities sum to one.
- 4 The size and the direction of the effect are robust to the selection of a different number of previous matches. If we use the expected number of points in the previous match or the previous two matches only, then the effects are only marginally significant due to higher standard errors.

because they have been estimated in a systematic manner by largely unchanged editorial staff (Franck, Nüesch, and Pieper (2011); Franck and Nüesch (2012)). We take the logarithm of each team's total of player market values and use it to calculate the difference between the two opposing teams. We express market values in 2003 euros and adjust for inflation.

To control for the fact that coach dismissals are not equally distributed over the season, we include match-day dummy variables for each match-day in a given season. In the second half of the season, we observe slightly more dismissals than in the first half (52% to 48%). Twelve percent of the dismissals occurred after the last match-day in the summer break between two seasons. To take into account potential common time trends in coach dismissal probabilities, we include season dummy variables.

3.5 MODEL SPECIFICATION AND ESTIMATION

As the assumption of independent and normally distributed error terms is typically violated in longitudinal data sets like ours, inferences from OLS regressions are likely to be incorrect. For example unobserved team heterogeneity may correlate with both the independent and the dependent variables. Therefore, panel data requires either random- or fixed-effects modeling. The choice depends crucially on the underlying statistical assumptions. Whereas the fixed-effects model allows the unobserved team heterogeneity to be correlated with the independent variables, the random effects model assumes strict orthogonality (Wooldridge (2002)). A Hausman specification test (Hausman (1978)), which compares the estimates of a fixed-effects model with the estimates from a random-effects model, indicates that the difference between both estimates is not significant. This result suggests that the team level effects are uncorrelated with the independent variables and that both models produce unbiased estimates. Random-effects models are more efficient because they use both between- and within-unit information to calculate estimates, whereas fixed-effect models use only within-unit information to calculate estimates (Wooldridge (2002)). Thus, we use a random-effects linear probability model (LPM) as our baseline specification, which we compare with a fixed-effects LPM. For the fixed-effects LPM, we expect effects in the same direction and of similar magnitude but slightly lower statistical significance. To take potential serial correlation of the errors across team observations into account, we compute robust standard errors that are clustered at the team level.

We prefer the LPM to nonlinear probit or logit models because of the incidental parameters problem. A fixed-effect logit model produces consistent estimates only if all units whose dependent variable never changes are dropped (Verbeek (2004)). We show the results of such a fixed-effects logit model as an additional robustness test.⁵

5 Due to censoring issues in survival analyses, we prefer binary models to a cox proportional hazard model (Allison (1984)). The cox proportional hazard model (*stcox* in Stata) drops all observations of coaches who were not dismissed during the study period (right censoring). This censoring considerably limits the explanatory power. The direction of all coefficients in the cox proportional hazard model is the same as in the binary models, but the standard errors in the former are substantially higher. Our discrete choice approach is consistent with prior research on managerial change (for example Puffer and Weintrop (1991); Weisbach (1988); Goyal and Park (2002)).

4 RESULTS

Table 1 shows the descriptive statistics and the correlations of the variables. The inflation factors (VIF) to assess multicollinearity are all well below the critical value of ten (see Myers (1990)). The average likelihood of coach turnover after a given match is 1.2% for involuntary turnover and 0.3% for voluntary turnover. In terms of inverted league position and points achieved in the previous five matches, the team performances are negatively correlated with coach turnover. The negative correlation between points expected in the previous five matches and involuntary turnover is statistically significant. For voluntary turnover, the correlation is also negative but statistically insignificant. Predetermined relative market values are uncorrelated with coach turnover.

Table 1: Variables, Descriptive Statistics, and Correlations

Variables	Mean	s.d.	1	2	3	4	5	6
1 Involuntary turnover	0,012	0,109	1,00					
2 Voluntary turnover	0,003	0,058	-0,01	1,00				
3 Inverse of league position	9,744	5,153	-0,09***	-0,03*	1,00			
4 Points achieved previous five matches	7,018	3,159	-0,11***	-0,04***	0,66***	1,00		
5 Points expected previous five matches	6,857	1,223	-0,03**	-0,02	0,75***	0,53***	1,00	
6 Difference in log market values	0,010	0,625	0,01	-0,00	0,46***	0,34***	0,64***	1,00

Notes: 5,562 team-match observations. Match-day dummy variables and year dummy variables are not displayed. Significance levels (two tailed): *10%, **5%, ***1%.

Table 2 shows the results of our three different specifications. Column 1 shows the estimates of a random-effects LPM as our baseline specification. Columns 2 and 3 show the results of a fixed-effects LPM and a fixed-effects logit model, respectively. To facilitate the interpretation of the size of the effects, we report standardized coefficients that indicate the change in the dependent variable if an independent variable varies by one standard deviation. The percentage change of the turnover probability in the logit model caused by a one-standard-deviation change in an independent variable k is given by $e^{\beta_k} - 1$, which is a transformation of the coefficient β_k of variable k .

Table 2: The Effect of Performance and Performance Expectations on Involuntary Turnover

	Involuntary Turnover		
	RE LPM (1)	FE LPM (2)	FE Logit (3)
Inverse of league position	-0.011*** (0.002)	-0.012*** (0.003)	-1.063*** (0.254)
Points achieved previous five matches	-0.010*** (0.002)	-0.010*** (0.002)	-1.124*** (0.207)
Points expected previous five matches	0.007*** (0.002)	0.005* (0.003)	0.571* (0.295)
Difference in log market values	0.004** (0.002)	0.003* (0.002)	0.255 (0.285)
Matchday dummy variables	included	included	included
Season dummy variables	included	included	included
Observations	5562	5562	5087
R ² (within)	0.026	0.025	
Log likelihood			-239.645
Hausman test FE versus RE LPM		13.78	

Notes: This table reports the standardized coefficients of a random-effects linear probability model (LMP), a fixed-effects LPM, and a fixed-effects logit model with involuntary dismissals as dependent variable. Standard errors (in parentheses) are White heteroskedasticity robust and clustered at the team level for LPM models. Significance levels (two tailed): *10%, **5%, ***1%.

Our results indicate that both team performance variables significantly decrease the probability of involuntary turnover in all specifications. A team's improvement in the league position by one standard deviation (an improvement of about five ranks) decreases the probability of involuntary turnover by 1.1% ($p < 0.001$) in the random-effect model and 1.2% ($p < 0.001$) in the fixed-effects model. Although the magnitude of the effect seems to be small, it is actually substantial, given the base rate of involuntary coach turnover of only 1.2%. The coefficient of the fixed-effects logit model in column 3 shows that an improvement in the league position by one standard deviation decreases the probability of involuntary turnover by 65% ($p < 0.001$). The effect of recent team performance is similar in size and also statistically significant ($p < 0.001$). Thus, the better the team performance, the less likely is that the coach will be dismissed.

The results also confirm our hypothesis that even when we control for team performance, high expectations increase the probability of coach dismissals. The effect of

the number of points expected in the previous five matches is statistically significant at the 1% level in the random-effects LPM and the 10% level in the fixed-effects LPM and the fixed-effects logit model. The size of the effect is only slightly smaller than the effect of the team performance variables. A one-standard-deviation increase of the number of points expected in the previous five matches increases the likelihood of being dismissed by 0.7% in the random-effects model and 0.5% in the fixed-effects model, *ceteris paribus*. The odds ratio in the logit model increases by 77%, *ceteris paribus*. Overall, we find clear evidence that expectations matter for involuntary turnover in professional German soccer.

The relative sum of the players' market values also increases the dismissal rate. Coaches of teams with a lot of star players are more likely to be dismissed than are coaches of mediocre teams with a similar performance record. Even though the effect loses statistical significance in the logit model, it is positive and similar in magnitude in all specifications.

Table 3: The Effect of Performance and Performance Expectations on Voluntary Turnover

	Voluntary Turnover		
	RE LPM (1)	FE LPM (2)	FE Logit (3)
Inverse of league position	-0.0004 (0.0010)	-0.0005 (0.0010)	-0.0634 (0.3868)
Points achieved previous five matches	-0.0026** (0.0011)	-0.0024** (0.0011)	-0.8854** (0.3441)
Points expected previous five matches	0.0004 (0.0015)	-0.0003 (0.0017)	-0.2051 (0.4967)
Difference in log market values	0.0008 (0.0013)	0.0003 (0.0014)	0.1399 (0.3434)
Matchday dummies	included	included	not incl.
Season dummies	included	included	included
Observations	5562	5562	3060
R ² (within)	0.0283	0.0285	
Log likelihood			-239.645
Hausman test FE versus RE LPM		1.71	

Notes: This table reports the standardized coefficients of a random-effects linear probability model (LPM), a fixed-effects LPM, and a fixed-effects logit model with voluntary quits as dependent variable. Standard errors (in parentheses) are White heteroskedasticity robust and clustered at the team level for LPM models. Significance levels (two tailed): *10%, **5%, ***1%.

Table 3 reports the results when we use voluntary quits as the dependent variable. All three specifications show that only the number of points achieved in the previous five matches is significantly related to the decision of soccer coaches to leave their teams. Coaches are less likely to quit if their teams have been successful in the past five matches. However, the coach's decision is not influenced by performance expectations or the current league position.

5 DISCUSSION

Sooner or later, every organization's board of directors faces the decision to either replace an underperforming top manager and hope for a positive shock effect, or to prolong his employment and hope that the disappointing results are only temporary. To gain further insight into the factors that systematically shape this economically relevant decision, we examine performance expectations as a key determinant.

In evaluating managerial performance, the monitoring board members must not only account for the limited information content of organizational performance as an evaluative measure, they must also assess the ability of the top manager to improve future performance. Based on more or less constantly updated information at their disposal, board members heuristically develop performance expectations and evaluate actual performance in relation to whether the manager meets these performance expectations (Greve (1988)). As continuous measures of organizational performance are evaluated in relation to performance expectations and thus are transformed into perceived success or failure, performance expectations should affect managerial dismissal decisions beyond organizational performance.

However, the most common specification of performance expectations based on one-year analyst forecasts is subject to a hitherto unresolved and largely ignored endogeneity problem, which arises because analyst forecasts are susceptible to manipulations on behalf of the to-be-evaluated manager. To overcome this endogeneity problem, we use an innovative specification of performance expectations based on match-specific betting odds from professional soccer to capture the effect on the dismissal probability of team coaches.

The controlled field environment of professional soccer makes it possible for us to rule out many factors that, although they affect organizational performance, are unrelated to a coach's idiosyncratic contribution. We find a strong positive effect of performance expectations on the dismissal probability, even after controlling for the team's league position, its performance in previous matches and several other potential confounders. In more heterogeneous industries, in which top managers can engage in expectation management and in which measures of organizational performance are noisier and less frequently revealed, performance expectations should be even more relevant. In this sense, our study represents a particularly unfavorable case and thus a strong test for the effect of performance expectations on the probability of involuntary managerial turnover.

However, the same properties that allow for a high internal validity of our findings also enforce concerns about external validity (Harder (1992)). There are some peculiarities of professional soccer, which limit the transferability of our results.

A readily observable difference between coaches and top managers is their average tenure. In our sample a coach's mean tenure amounts to 44 league matches. Studies on CEO dismissals report substantially higher values of mean tenure between five and ten years (for example Miller (1991); Goyal and Park (2002); Henderson, Miller, and Hambrick (2006)).

A possible explanation of coaches' shorter tenure is that measures of relative team performance in professional soccer are likely to receive more weight in turnover decisions because these measures are more precisely attributable to leadership performance than to market- or accounting-based measures of organizational performance in more heterogeneous industries (Brickley (2003); Engle, Hayes, and Wang (2003)). Top managers also have the leeway to intentionally reduce their accountability by means of managerial entrenchment (Morck, Shleifer, and Vishny (1988); Hill and Phan (1991)) or by means of their social capital (Wrage, Tuschke, and Bresser (2011)), thus making dismissal decisions more difficult to justify and to enforce.⁶

Another explanation is that due to the rigid technology associated with the "production process" of a soccer match and the similar organizational structure of the clubs (Audas, Dobson, and Goddard (1999)) coaches can easily work for different clubs. The required human capital is largely general, in other words, coaches are transferable to, and productively employable by, another club. In our sample, only about one fourth of all coaches are former players of their current club, although about 90% of all coaches are former *Bundesliga* players. These ratios also indicate that club-specific human capital is not particularly important. Generally, specific human capital increases the costs of a dismissal decision because adequate replacements require comparable investments in the successor's specific human capital (Williamson (1975)). In this respect, the costs of a dismissal decision in professional soccer are relatively low. In the corporate setting with more heterogeneous competitors and more complex organizational structures, a top manager's organization-specific human capital is presumably more relevant and dismissal decisions are therefore more costly. Consistently, systems of internal succession and staffing schedules are commonplace in the corporate context but virtually nonexistent in professional soccer.

Another explanation for why top managers stay often longer in their positions than do soccer coaches hinges on the fact that the consequences of a soccer team's ongoing inadequate performance are not the loss of customers and a subsequent strategic reorientation. Soccer clubs usually retain highly loyal fans who do not consider abandoning their support or transferring their allegiances elsewhere, even in case of a relegation. Due to this

6 Activities of managerial entrenchment are generally at the detriment of the focal organization because the respective manager opportunistically exploits a lack of disciplining corporate governance and control mechanisms (Berger, Ofek, and Yermack (1997)). However, a top manager's social capital tends not only to reduce the threat of dismissal but also to increase organizational performance (Wrage, Tuschke, and Bresser (2011)). Thus, the net effect may well be positive.

substantial goodwill, clubs usually remain viable and manage to overcome acute financial distress. In contrast to soccer fans, corporate stakeholder groups are usually less loyal, less aligned in terms of their performance expectations, and less explicit in expressing their goodwill – or the lack thereof – towards a top manager.

Given that performance expectations substantially affect the dismissal probability, both soccer coaches and top managers might conclude that it is smarter to look for employment where performance expectations are lower. Efficient labor market models, however, suggest that this conclusion is shortsighted, because increased turnover risks and subsequent career concerns should go hand in hand with higher levels of compensation (for example Gibbons and Murphy (1990)). In case of managerial entrenchment, the turnover risk premium may even exceed the appropriate amount in terms of expectation values (Bebchuk and Fried (2005)). Several studies empirically confirm a positive relation between turnover risk and compensation (for example Heywood (1989); Moretti (2000)). It would be interesting for future research to investigate, whether the model predictions also hold in case of professional soccer.

More generally, we encourage future research that specifies expectations based on book-maker odds and prediction market prices. For example prediction markets have been used to forecast Oscar winners (Pennock et al. (2001)), box-office revenues (Spann and Skiera (2003)), sales figures of Hewlett-Packard (Chen and Plott (2002)), and project delivery time (Ortner (1998)). The emergence of prediction markets in various fields provides a largely unexplored potential to investigate the impact of expectations on behavioral decision making.

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