Effort in Nomination Contests: Evidence from Professional Soccer

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Abstract

In most promotion and hiring situations several agents compete for a limited number of attractive positions, assigned on the basis of the agents' relative reputations. Economic theory predicts that agents' effort incentives in such contests depend non-monotonically on their anticipated winning chances, but empirical evidence is lacking. We use panel data to study soccer players' responses to the (informal) nomination contests for being on a national team participating in the 2008 Euro Cup. The control group consists of players who work for the same clubs but are nationals of countries that did not participate in the Euro Cup. We find that nomination contest participation has substantial positive effects on the performances of players with intermediate chances of being nominated for their national team. Players whose nomination is close to certain perform worse than otherwise, particularly in duels that carry a high injury risk. For players without any recent national team appearances, we find no significant effects.

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1 Introduction

Situations abound in which several candidates compete for a limited number of desirable positions and selection is based on the candidates' relative reputations. Employees compete for promotions, given to the employee who their superior believes will be most effective in the higher-level position. Hiring decisions are based on subjective comparisons of candidates' skills and potentials. Political parties nominate election candidates on the basis of their anticipated abilities to attract voters. Team coaches in sports select those players for important matches who they believe will lead their teams to victory.

While motivating employees is often an explicit goal of promotion systems, the decision-maker's objective in a hiring contest is usually simply to select the most able agent.[1] Irrespective of a contest's ultimate goal, however, contest participation can have important incentive effects. Whenever current performance affects perceived ability, and thereby potentially also the contest outcome, actions aimed at improving one's performance can be profitable.

Does contest participation always motivate agents, and, when it does, what determines the extent of the effect? We propose a simple theoretical model predicting that each candidate's effort incentive depends on his own and his rivals' current reputations. Candidates who have realistic chances of being selected but are not too confident have strong incentives to exert higher than normal effort. Candidates in very weak or very strong positions, on the other hand, do not have much to gain from exerting additional effort, since changes in their performances are unlikely to affect the final decision. In some contexts, higher effort also increases the risk of an injury or leads to exhaustion. When competing for a position that requires continued fitness, candidates who are confident their reputations sufficiently exceed those of other contestants may therefore find it optimal to exert less than normal effort.

We use readily available data from professional soccer to test these predictions. When a nation qualifies for an international tournament, such as the Soccer Euro Cup, the national team coach gets charged with nominating a fixed number of players for the Cup.[2] Nationality determines the set of legally eligible players and hence whether a

[1] Prendergast (1999) provides an excellent survey of incentive provision in firms. Chan (1996) analyzes the conflict between motivating internal agents by the prospect of a promotion and selecting the most promising candidate out of a pool of internal and external candidates.

[2] National team compositions are flexible in friendly matches between nations or qualification matches for international Cups, but not in international Cups.

player participates in the nomination contest for a specific national team. A Euro Cup participation is clearly a milestone in any player's career.

The key feature of professional soccer that allows us to estimate the effects of nomination contests is the coexistence of important tournaments between national teams with international player compositions of club teams. We use a panel data set of all players that worked for clubs in the German Soccer League (*1. Bundesliga*) in the seasons 2006/07 and 2007/08. About two thirds of the players belong to nations that took part in the Euro Cup, the most important international soccer Cup alongside the World Cup, in summer 2008.[3] This set of players will provide the treatment group in our empirical analyses. In players from nations that did not participate in the so-called *Euro 2008* we have an exceptionally good control group, since these players work in exactly the same environment as players from qualified nations but did not face the additional career opportunity of the upcoming Euro Cup. The treatment period starts on the day a player's nation qualified for the *Euro 2008*.

Our data contain individual performance measures of two types. First, individual outputs such as shots on goal, ball contacts, passes received, and the number of minutes played. Second, performance grades assigned to players by soccer magazines after each match.

To distinguish between players with different nomination chances, we construct a time-varying variable that measures how frequently a player was selected for his national team in the more recent past. Difference-in-difference-in-differences analyses show that for players with intermediate chances the Euro Cup qualification treatment had a positive impact on many performance measures. For instance, the estimated increase in the number of passes such players receive per minute is 11%. The empirical results also confirm that injury and exhaustion concerns matter: for players with very high nomination chances, the impact of nomination contest participation is negative across a variety of output measures. Moreover, for duels, which carry a particularly high injury risk, all statistically significant effects are negative. Consistent with the theory, we find no impact on the performances of players without past national team appearances.

For players with intermediate chances, our study hence confirms that " ... the increased

[3] The Euro Cup and the World Cup take place every four years, and are always two years apart from each other. There are some other international cups, such as the Copa America or the Africa Cup of Nations, but these are far from being as important (in terms of media coverage, premia paid by national teams, etc.) as the Euro and the World Cup.

rivalry benefits clubs, because players exert even higher effort in their clubs in order to get into the national team.", as claimed by Oliver Bierhoff, manager of the German national team (Handelsblatt, 9/4/2009).[4] An upcoming Cup can be to the detriment of clubs that employ regular players of national teams, who are highly certain of their nominations, however. One may only speculate that statements such as "We want to ignite rivalry, and we want it for every position." (stern.de, 11/8/2004) by the German national team coach Joachim Löw are meant to reassure clubs in this respect.[5]

Related literature We are not aware of any other empirical study of nomination contests. There is however a sizeable literature on rank-order tournaments, in which agents' outputs during the tournament fully determine payoffs. An agent who starts out as a favorite still needs to outperform all his rivals to win, while an underdog does not face any handicap.[6] Many if not most hiring and promotion decisions are instead based on relative reputations, that is, on assessments of agents' relative abilities that incorporate not only recent but also past achievements and other relevant information. In the nomination contests for soccer teams, for example, two players who perform equally well during the nomination period will not be nominated with equal probabilities if one of them starts out with a higher reputation than the other.

The literature on rank-order tournaments is related to our paper because the predicted relation between an agent's winning probability and his effort incentives is similar. Most empirical studies of rank-order tournaments, however, focus on the more basic question whether higher prize differentials lead to more effort. Ehrenberg and Bognanno (1990) and Orszag (1994) provide evidence from golf tournaments, Becker and Huselid (1992) look at auto racing, and Knoeber and Thurman (1995) examine the impact of tournament-style contracts in the broiler industry. Garicano and Palacios-Huerta (2006) show that higher prize differentials increase not only creative but also destructive effort (in the form of fouls) in soccer.[7]

[4] The original quote in German is "... der größer werdende Konkurrenzkampf bereichert auch die Vereine, weil die Spieler sich in ihren Klubs noch mehr anstrengen, um in die Nationalmannschaft zu kommen" (Handelsblatt, 9/4/2009).

[5] The original quote in German is "Wir wollen den Konkurrenzkampf entfachen, wir wollen ihn auf jeder Position haben." (stern.de, 11/8/2004).

[6] A special case are biased tournaments (Meyer 1991, 1992) in which contestants face different handicaps. Biased tournaments are theoretically equivalent to contests based on relative reputations in a special case only. See footnote 11 in section 2 for more details.

[7] Similar in spirit, Duggan and Levitt (2002) find that there is more corruption in sumo matches in

More closely related to our paper, Brown (2010) shows that superstar Tiger Woods' participation in golf tournaments adversely affects the performances of his rivals. The impact is particularly strong for (higher skill) exempt players who would have realistic winning chances in the absence of Woods. Our study differs along several dimensions (in addition to looking at nomination contests instead of tournaments). By constructing a variable that measures players' relative national team nomination chances, we can test predictions about the impact of contest participation for players with winning chances from zero to virtually one. Brown (2010) instead compares situations - without and with Tiger Woods - in which other exempt players have either intermediate or low winning chances. Moreover, the institutional characteristic that players of many different nationalities work for the same clubs but only some nations participate in the Euro Cup allows us to test for causal effects of contest participation,[8] whereas Brown (2010) and other empirical studies compare tournaments with different features.[9]

Our motivating theory incorporates signal jamming, as in Holmström's (1982) seminal paper on career concerns, into the classic rank-order tournament model of Lazear and Rosen (1981).[10] Höffler and Sliwka (2003) use a similar theory to study the potential benefits of managerial turnover in revitalizing rivalry between employees. We propose a model that is closer to the nomination contests in our empirical application and focus on the equilibrium relation between individual effort and winning chances instead. Relative reputational concerns have also been studied in theoretical models on rivalry between experts (Effinger and Polborn 2001, Ottaviani and Sorensen 2006).

The next section develops a theory of nomination contests and derives empirical predictions. Section 3 describes the data, our choice of output measures, and the institutional context. Section 4 explains and discusses the empirical strategy. Section 5 contains the empirical results. Section 6 offers a brief conclusion and implications for other situations.

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which one wrestler faces a particularly high marginal payoff from winning.

[8]Miguel, Saiegh and Satyanath (2008) exploit international compositions of soccer teams to test whether there is a connection between cultural background and violence on the field.

[9]Another recent related study is Franke (2010) who shows that amateur golfers perform better in tournaments where individual scores are evaluated relative to a player's handicap than in standard tournaments. Sunde (2009) finds a negative correlation between the heterogeneity of opponents and the number of games in tennis matches.

[10]On the theory of rank-order tournaments, see also Green and Stockey (1983), Dixit (1987), Meyer (1992), Baik (1994), Moldovanu and Sela (2001), and the above-mentioned survey by Prendergast (1999).

2 Theory

Suppose there are two agents (for example, two soccer players of the same nationality), one of whom can be selected for an attractive post at the end of a fixed time period. The nomination decision is taken by a principal (the national team coach) whose objective is to select the most skillful agent. Hence, unlike in a classic rank-order tournament à la Lazear and Rosen (1981), it is the principal's beliefs about the agents' skills that determine the winner.

We model learning about each individual agent's skill as in Holmström (1982). Let η_j denote agent j's ($j \in \{1, 2\}$) skill level, which is assumed to be constant over the relevant time period. At the beginning of the nomination contest, the agents and the principal share the same prior beliefs. Specifically, we assume that the prior of η_j follows a normal distribution with mean m_j and precision (equal to the inverse of the variance) $h_j > 0$. The prior distributions of η_1 and η_2 are independent. Over time, learning about η_j occurs through the observation of j's performance. For simplicity, we consider learning in a single time period, called the nomination period. Agent j's output in the nomination period is given by

$$y_j = \eta_j + a_j + \varepsilon_j,$$

where $a_j \in [0, \infty)$ is j's effort in the nomination period, unobservable for the principal and agent $k \neq j$. ε_j is a stochastic noise term, and we assume that ε_1 and ε_2 are independently and normally distributed with zero means and precision $h_\varepsilon > 0$.

In addition, each agent faces an injury risk, modelled as an increasing function $r(\cdot)$ of individual effort with $r(0) \geq 0$ and $\lim_{a \to \infty} r(a) \leq 1$. The principal's objective is to nominate the most skillful agent, conditional on that agent not being injured. If both agents remain injury-free, then after observing y_1 and y_2 the principal will select $j \neq k$ whenever[11]

$$E[\eta_j \mid y_j] > E[\eta_k \mid y_k]. \tag{1}$$

If exactly one of the agents is injured, the principal will select the other agent. If both agents are injured, none will be selected.

[11] If $h_1 = h_2$, then there exists a biased rank-order tournament as in Meyer (1991, 1992) that is equivalent to the decision rule in (1). In a biased tournament, the contestant with the lower prior reputation has to outperform the other agents by a given amount to win. For $h_1 \neq h_2$, the rates at which the principal updates his beliefs about the agents' skills as a function of observed outputs differ, and therefore there is no direct equivalence with a biased tournament.

The expected payoff of agent $j \neq k \in \{1, 2\}$ is

$$\begin{aligned}&(1 - r(a_j))(1 - r(a_k)) \Pr\{E[\eta_j \mid y_j] > E[\eta_k \mid y_k]\} W_j \\ &+ (1 - r(a_j)) r(a_k) W_j + S_j(a_j) - c_j(a_j),\end{aligned}$$

where $W_j > 0$ denotes the (expected) prize j receives if the principal selects him. The function $S_j(a_j)$ measures agent j's expected gross payoff in the absence of the nomination contest and $c_j(a_j)$ his disutility of effort. We assume that $S_j(a_j) - c_j(a_j)$ is strictly concave and reaches a unique maximum at

$$a_j^n > 0,$$

the "normal" effort level of player $j \in \{1, 2\}$.

In a Bayesian Nash equilibrium, each agent's effort choice must be optimal given the other agent's effort choice and beliefs, and the principal must correctly anticipate effort choices. Appendix 1 contains a detailed analysis of the equilibrium conditions and comparative statics with respect to the equilibrium effort levels (a_1^*, a_2^*).

The main results are as follows. First, in the benchmark case without any injury concerns (i.e., $r(a) = 0$ for all a) we always have $a_j^* > a_j^n$. In this case, a_j^* depends on $\Delta = |m_1 - m_2|$ but not on m_1 and m_2 individually, and

$$\begin{aligned}\frac{da_j^*}{d\Delta} &< 0 \text{ if } \Delta > 0, \\ \frac{da_j^*}{d\Delta} &= 0 \text{ if } \Delta = 0.\end{aligned}$$

As m_j varies, the relation between j's equilibrium effort and equilibrium winning probability is a symmetric inverted U-shape with a maximum at winning probability 50%. As j's equilibrium winning probability approaches 0 or 1, respectively, a_j^* goes to a_j^n.

If the injury risk function is increasing instead, the effort impact of the nomination contest is ambiguous. Intuitively, $a_j^* < a_j^n$ when the marginal effect of higher effort on j's winning probability is small but j has a good winning chance conditional on remaining injury-free. Ceteris paribus, this is the case if m_j is sufficiently high so that j's winning probability is close enough to 1 but the marginal effect of effort on the winning probability is close to 0. If on the contrary agent j has a very low winning chance, the contest will not affect his effort significantly: $\lim_{(m_j - m_k) \to -\infty} a_j^* = a_j^n$. For intermediate winning chances and sufficient uncertainty about the agent's ability, the winning concern dominates the injury concern ($a_j^* > a_j^n$) as long as the injury risk function is not too steep. However, a_j^* as a function of the equilibrium winning probability always reaches its maximum at a

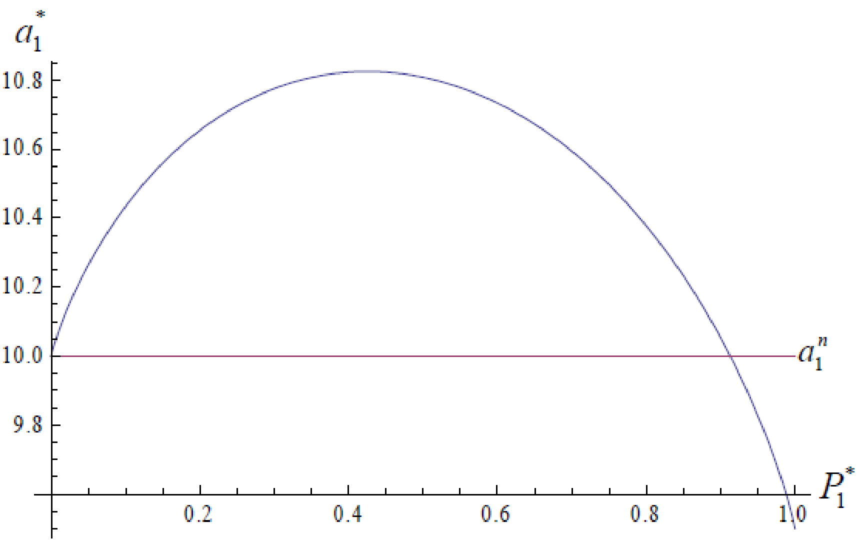

Figure 1: Equilibrium relation between agent 1's effort level a_1^* and his winning probability P_1^*. $W_1 = 10$, $m_2 = 1$, $h_1 = h_2 = 2$, $h_\varepsilon = 1$, $S_1(a) = S_2(a) = 10a$, $c_1(a) = c_2(a) = \frac{a^2}{2}$, $r(a) = 0.05a$ for $a < 20$ and $r(a) = 1$ for $a \geq 20$.

winning probability strictly below 50% now. Figure 1 depicts the relation between agent 1's equilibrium winning probability and his equilibrium effort as his prior reputation m_1 varies in a numerical example. The horizontal line indicates the normal effort level a_1^n the player would exert in the absence of the nomination contest. The equilibrium effort is increasing in the agent's equilibrium winning probability for low winning chances, but decreasing for higher winning chances. Moreover, because of the injury risk the equilibrium effort is maximal at a winning chance below 0.5, and lies below a_1^n if agent 1 has an equilibrium winning probability sufficiently close to 1.

In summary, the theory predicts that nomination contest participation leads to higher than normal effort if an agent has realistic winning chances but is not too certain of winning either. For agents with very good winning chances, the prediction is that nomination contest participation leads to less than normal effort as long as injury concerns are relevant. In the empirical analysis, we will study the evolutions of observable output and performance measures to test these predictions. The interpretation is that changes in effort (training intensity, motivation and concentration on the field, lifestyle, ...) lead to changes in performance and can hence be detected by looking at performance.

3 Institutional Characteristics and Data

3.1 *Euro 2008* qualifications and national team nominations

Our empirical analyses focus on the time period between the end of the World Cup 2006 on July 9, 2006, and the end of the 2007/08 soccer season on May 17, 2008. The *Euro 2008* began on June 7, 2008. As illustrated in the timeline in Figure 2, the qualification matches for the *Euro 2008* started shortly after the World Cup. All eligible nations, fifty in total for the *Euro 2008*, usually participate in the qualification matches. The official announcement of qualified nations took place on November 21, 2007, but several nations de facto qualified before that date having won sufficiently many matches. A group of four countries (Czech Republic, Germany, Greece, and Romania) qualified about one month before the official date, on either the 13th or 17th of October, while ten other nations qualified on the 17th or 21st of November. The two remaining participants were Austria and Switzerland, the host nations, which by the rules of the Cup participate automatically. We exclude players with citizenship of these two countries from all the empirical analyses.

National coaches can select different players for every non-Cup national team match if they wish to do so, and as we will document there is indeed considerable temporal variation in national team compositions for non-Cup matches. For the *Euro 2008*, however, all coaches had to nominate a fixed selection of 23 players. The deadline for the coaches' announcements of their team selections was May 28, 2008, eleven days after the end of the German soccer season. There were some differences between qualified countries regarding the date and procedures according to which national coaches announced their decisions, but most coaches made their final statements either between the last but one and the last, or after the last game day of the German soccer season.

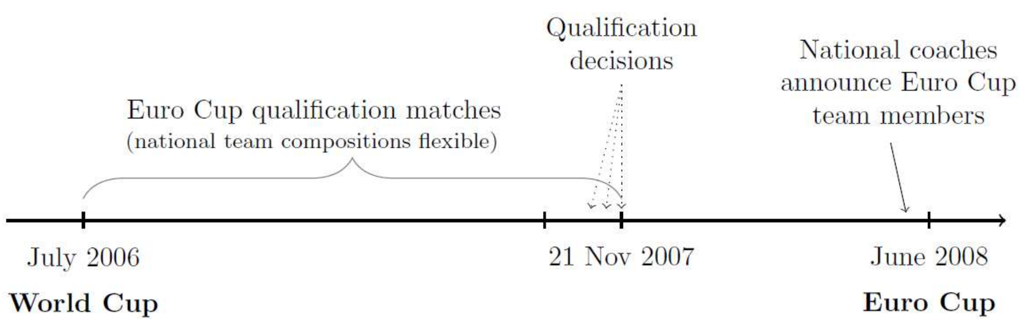

Figure 2: Timeline

A number of other international tournaments took place in the relevant time period: the Copa America in July 2007, the Africa Cup of Nations in January 2008, and the 2008 Olympic summer games in August 2008. These Cups could potentially interfere with our analysis by creating similar incentives as the *Euro 2008* but for different groups of players. However, because of their limited media coverage and endorsement opportunities, participation in these international tournaments is considerably less attractive for players than a Euro (or World) Cup participation. Some clubs do not even allow their players to miss club activities in order to participate.[12] Formally testing for an incentive effect of the Copa America, using the same empirical strategy as described below for the *Euro 2008*, we found no evidence of any effect. We therefore feel that it is safe to ignore other international Cups for the purpose of this paper.

3.2 Data and output measurement

We use a panel data set that contains detailed player-game day level information about the German Soccer League (*1. Bundesliga*) in the seasons 2006/07 and 2007/08.[13] The data provide individual output measures for all participating players in each match. In addition, we constructed a panel data set of the performance grades that two major German soccer magazines, *Kicker* and *Sportal*, assign to players after each match. We matched these data sets with data about individual injuries collected by a firm that runs an online fantasy soccer game.[14] Finally, we collected data on all national team participations of players in our sample between summer 2005 and the *Euro 2008* using publicly available sources.[15]

Our unit of observation is a player-game day.[16] In the analyses herein, we restrict attention to players for whom we have observations both before and after the official *Euro*

[12]For example, Bundesliga clubs Schalke 04 and Werder Bremen clashed with the Brazilian national team over the participation of their players in the 2008 Olympic games. Similarly, Guy Demel of Hamburger SV forwent playing for his home country Ivory Coast in the Africa Cup of Nations in 2008 to have more time available for his club.

[13]The data was kindly provided by IMIPRE AG, a company specialized in collecting and selling soccer data.

[14]Their website is comunio.de.

[15]We relied on ESPNsoccernet.com, FIFA.com, Kicker.de, Worldfoot-ball.net, footballdatabase.eu, as well as the sites of national soccer associations.

[16]Since no team ever plays twice the same day, each player-game day combination corresponds to a unique player-match combination.

2008 qualification date (November 21, 2007), and who were on the field at least once in the 2006/07 season as well as in the 2007/2008 season. We also exclude goalkeepers, because they have very different tasks than field players and many of our output measures are not applicable to them. The remaining number of observations is 11,799, including observations where a player spends the entire time on the reserve bench. There are 18 teams in the *Bundesliga* and 216 matches per season.

Table 1 lists the nationalities of the players in our sample. The treatment group consists of all players whose nations participated in the *Euro 2008*. Players of all other nationalities are in the control group. About half the players are German, while the rest originate from all over the world. The *Bundesliga* was the best represented national League in the *Euro 2008*, with active players in fourteen out of sixteen national teams.

The *Bundesliga* data contain a variety of detailed individual output measures:

Shots on goal - The ultimate objective in soccer is to shoot goals and prevent goals by the opponent. Shots on goal includes actual goals, but also failed goal attempts. The main advantage of using shots on goal instead of goals is that the former occur much more frequently. It is not unusual for matches to end without any goals.

Passes received - The data contains the number of passes a player receives from his teammates in every match. This is a good indicator of how active and fit a player is, and of his teammates' trust in his ability to make a valuable contribution.

Ball contacts - Ball contacts is a more aggregate measure than passes received of how involved a player is, and also reflects a player's success in obtaining the ball.

Duels won - A duel is a situation where two players fight for the ball in direct confrontation. A duel counts as won if the player himself or one of his teammates obtains the ball in the end. Duels won measures physical fitness and dedication. Duels carry a high risk of injury, and a player who is keen on avoiding an injury may choose to fight less vigorously in a duel or stay out of duels altogether.

Minutes played - The data also include detailed information on player substitutions. Coaches are allowed to make at most three substitutions per match, and typically make use of this possibility at least twice. Approximately 80% of substitutions take place in the last 30 minutes of a match (total duration is 90 minutes plus a few minutes extra time). It makes sense to view a player's number of minutes played as a relevant output measure. First, players' performances on the field influence substitution decisions. Second, the club coach's decision to let a player be a starter or substitute him in depends on the player's

Table 1: Number of players by nationality

Group	**Nationality**	**Players**
Euro 2008	Czech Republic	8
	Croatia	7
	France	2
	Germany	121
	Greece	3
	Netherlands	5
	Poland	7
	Portugal	3
	Romania	2
	Russia	1
	Sweden	2
	Turkey	3
	All Euro 2008	164
non-Euro 2008	Albania	2
	Algeria	1
	Argentinia	5
	Australia	2
	Belgium	3
	Bosnia-Herzegovina	3
	Brazil	17
	Cameroon	2
	Canada	1
	China	1
	Congo DR	1
	Denmark	7
	Egypt	1
	Finland	1
	Georgia	1
	Ghana	3
	Guinea	1
	Hungary	2
	Iran	2
	Ivory Coast	3
	Japan	1
	Macedonia	2
	Mexico	2
	Namibia	1
	Nigeria	1
	Paraguay	2
	Peru	1
	Serbia	3
	Slovakia	3
	South Africa	1
	Tunesia	2
	Uruguay	2
	USA	1
	All non-Euro 2008	81
	All players	246

Notes: The sample excludes goalkeepers, players of Austrian or Swiss nationality, or players for whom we have observations in one season only or only either after or before the official *Euro 2008* qualification date.

effort and performance during training.[17]

The discussion of substitutions implies that observed changes in individual outputs per match could be due to changes in minutes played (see Table 3 for correlations between per match outputs and minutes played). We take two steps to disentangle other output dimensions from minutes played. First, we use outputs per minute played instead of per match to measure performance. Second, for output per minute regressions we keep only observations associated with at least 71 minutes, the median substitution time for starters conditional on being substituted out. The second restriction is useful to avoid comparing observations associated with only a few minutes on the field (usually towards the end of a match) and much longer field appearances. The average number of ball contacts per minute, for example, is about 0.606 for players who play 71 minutes or less, but 0.635 for players who play more than 71 minutes. The difference between the averages for players who play more than 71 and those who play more than 90 minutes is much smaller: 0.635 versus 0.628. Adding the condition that minutes played exceed the median substitution time for starters hence substantially alleviates the problem of comparing observations based on field appearances of different durations, while permitting us to keep observations of players who were substituted out towards the end of a match.

In addition to the objectively measurable outputs listed so far, we use the grades that the soccer magazines *Kicker* and *Sportal* assign to players after each match as performance measures. Grades have the advantage of being an overall assessment of a player's multi-dimensional performance. The disadvantage is that grades are subjective judgements by journalists, and hence likely to be influenced by expectations prior to the match and subjective biases. Grades are recorded as numbers between 1 (excellent) and 6 (insufficient) in the data, but we used the linear transformation '6−grade' to generate a measure that is increasing and thereby facilitate the interpretation of results.

Table 2 presents summary statistics for players in the control and treatment group, respectively, and Table 3 reports correlations between the different output measures. All statistics refer to *Bundesliga* club matches.

[17]Even famous players sometimes have to work hard to convince the coach to let them play. A point in case is Lukas Podolski, a star of the German national team during World Cup 2006, who had just five Bundesliga starts between August 2007 and September 2008 at the Bayern München team.

Table 2: Summary statistics for players from nations participating (164 players) and not participating (81 players) in the *Euro 2008*

Variable	**Mean**	**Std. Dev.**	**Min**	**Max**
Euro 2008 nationalities (N = 6588)				
Age	27.08	3.91	19.43	38.58
Defense (dummy)	.339	.473	0	1
Midfield (dummy)	.485	.500	0	1
Forward (dummy)	.176	.381	0	1
Minutes played	73.87	27.25	1	96
Goals per minute	.002	.006	0	.125
Shots on goal per minute	.017	.024	0	.33
Passes received per minute	.309	.154	0	1.33
Ball contacts per minute	.613	.207	0	2
Duels won per minute	.135	.072	0	1
Kicker grade (N = 5664)	2.349	.925	0	5
Sportal grade (N = 5922)	2.421	.813	0	5
Non-*Euro 2008* nationalities (N = 3450)				
Age	28.76	3.32	19.90	36.69
Defense (dummy)	.388	.487	0	1
Midfield (dummy)	.405	.491	0	1
Forward (dummy)	.207	.405	0	1
Minutes played	74.04	26.86	1	96
Goals per minute	.002	.008	0	.25
Shots on goal per minute	.018	.026	0	.5
Passes received per minute	.313	.150	0	1.06
Ball contacts per minute	.626	.208	0	1.6
Duels won per minute	.140	.073	0	2
Kicker grade (N = 2971)	2.328	.958	0	5
Sportal grade (N = 3142)	2.445	.830	0	5

Notes: The sample excludes goalkeepers, players of Austrian or Swiss nationality, or players for whom we have observations in only one season or only either after or before the official *Euro 2008* qualification date. The summary statistics are calculated on the basis of observations associated with a positive number of minutes on the field.

Table 3: Correlations between different output measures

	Variables		Grades		Output per game					Output per minute played			
		Minutes played	Kicker	Sportal	Shots on goal	Goals	Passes received	Ball contacts	Duels won	Shots on goal	Goals	Passes received	Ball contacts
grades	Kicker	.2178	1.000										
	Sportal	.1562	.7122	1.000									
per game	Shots on goal	.2270	.2051	.2791	1.000								
	Goals	.0818	.4299	.4587	.3852	1.000							
	Passes received	.5878	.1173	.1334	.2469	.0501	1.000						
	Ball contacts	.7616	.1651	.1457	.1576	.0025	.8820	1.000					
	Duels won	.6726	.2003	.1709	.1956	.0652	.4350	.6224	1.000				
per minute played	Shots on goal	-.1413	.1757	.2414	.7079	.2788	-.0075	-.1158	-.0626	1.000			
	Goals	-.0598	.4083	.4148	.2498	.7563	-.0348	-.0827	-.0346	.3410	1.000		
	Passes received	.0148	.0335	.0652	.1287	.0045	.7292	.4883	.0603	.1107	.0129	1.000	
	Ball contacts	.1152	.0696	.0733	.0135	-.0684	.6527	.6547	.2377	.0084	-.0513	.8093	1.000
	Duels won	-.0323	.1215	.1044	.0328	.0042	.0223	.0857	.5237	.0497	.0143	.0786	.2661

Notes: The sample excludes goalkeepers, players of Austrian or Swiss nationality, or players for whom we have observations in one season only or only either after or before the official *Euro 2008* qualification date. Output per minute measures are calculated using only observations associated with a positive number of minutes on the field.

Our data also contain information about fouls. Conceptually, fouls suffered could be interpreted as a positive performance measure, the idea being that stronger players are more difficult to stop for the opponent team. Fouls committed can be viewed as a measure of destructive effort. This is the approach taken by Garicano and Palacios-Huerta (2006), who provide empirical evidence for Lazear's (1989) prediction that relative performance evaluations can lead to undesirable sabotage. Once we control for constant differences between players by means of player fixed effects, however, our regressions show no significant effects of nomination contest participation on either fouls suffered or fouls committed.

4 Empirical Strategy

To test for the effects of nomination contest participation on players with different chances of being selected for the *Euro 2008*, we first construct the following time-varying variable in $[0, 1]$ that measures player i's more recent national team history:

$$\text{pastselect}_{it} = \frac{\begin{array}{c}\text{number of } i\text{'s field appearances in the}\\ \text{past 15 matches of his nation's national team}\end{array}}{15}, \qquad (2)$$

where national team matches include friendly matches, qualification matches for the *Euro 2008* or other international tournaments, and tournament matches.[18] Players' recent national team participations, as captured by pastselect, are based on national team coaches' perceptions of players' skills, which will also determine future nominations. Players with higher pastselect values should hence have greater future nomination probabilities than rival candidates with lower pastselect values. Table 12 in Appendix 2 shows that the values of pastselect at the time of final nomination decisions (at the end of the 07/08 season) are indeed closely related to the actual nominations for the German *Euro 2008* team. Uncertainty seems to have been greatest for players with final values of pastselect between .1 and .5: three out of ten players in this group were nominated. At high

[18] The results remain similar if we treat each other tournament as consisting of a single match when constructing pastselect. The results are also robust to small changes in the number of past games used to construct pastselect, or to using the proportion of a player's appearances in either all national team matches in the past 360 days or all national team matches since summer 2005 or summer 2006 instead of the definition in (2). Only actual field appearances are used to compute pastselect because for some national team matches we were unable to obtain information on the full list of reserve players.

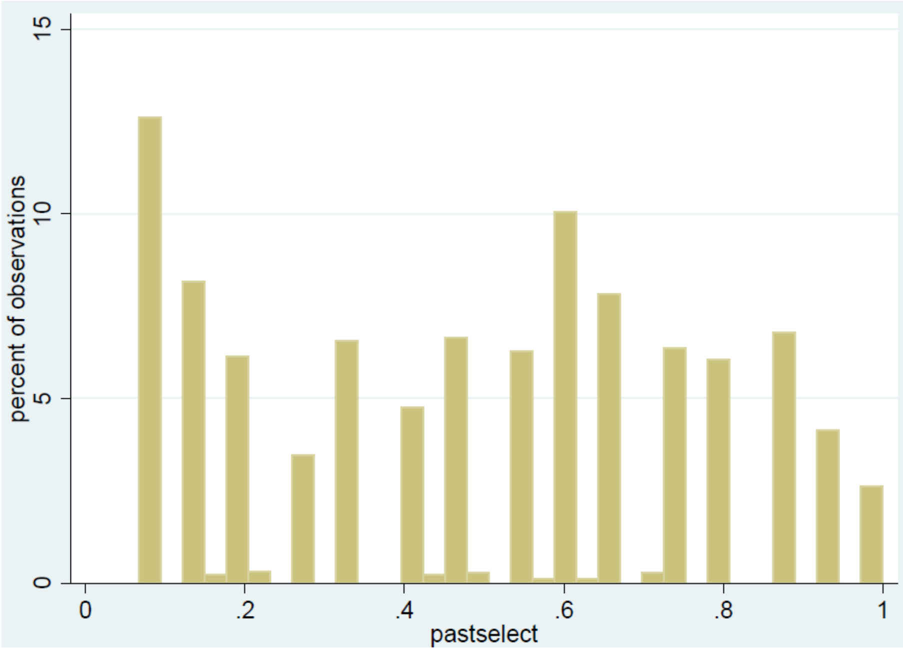

Figure 3: Histogram of pastselect_{it} for nationals of *Euro 2008* nations, conditional on $\text{pastselect}_{it} > 0$. The number of players is 59, and the number of observations is 2607.

values, pastselect seems to understate a player's actual nomination chance: all players whose pastselect at the end of the 07/08 season exceeded .6 were nominated. Overall, the predicted qualitative relation between pastselect and nomination contest effort is the same as that between nomination chance and effort, although pastselect should not be understood as a precise estimate of individual nomination probability.

In our sample, $\text{pastselect}_{it} = 0$ at all dates t for 105 out of the 164 players in the treatment group, and for 14 of the 81 players in the control group. Figure 3 depicts the distribution of pastselect observations for players of *Euro 2008* nationalities, conditional on $\text{pastselect}_{it} > 0$. Figure 4 shows the analogue to Figure 3 for the control group. The histograms confirm that the data contain variation in nomination chances. Many *Bundesliga* players are sometimes selected for their national team, but there are relatively few observations with pastselect very close to 1, which is probably due to the fact that most soccer superstars work for better-paying English, Spanish or Italian clubs.

Our theory predicts that nomination contest participation affects the effort decision of players who have a positive nomination chance. Players in the treatment group who currently believe they will be nominated with an intermediate probability should have the strongest incentives to exert additional effort in order to impress the national coach.

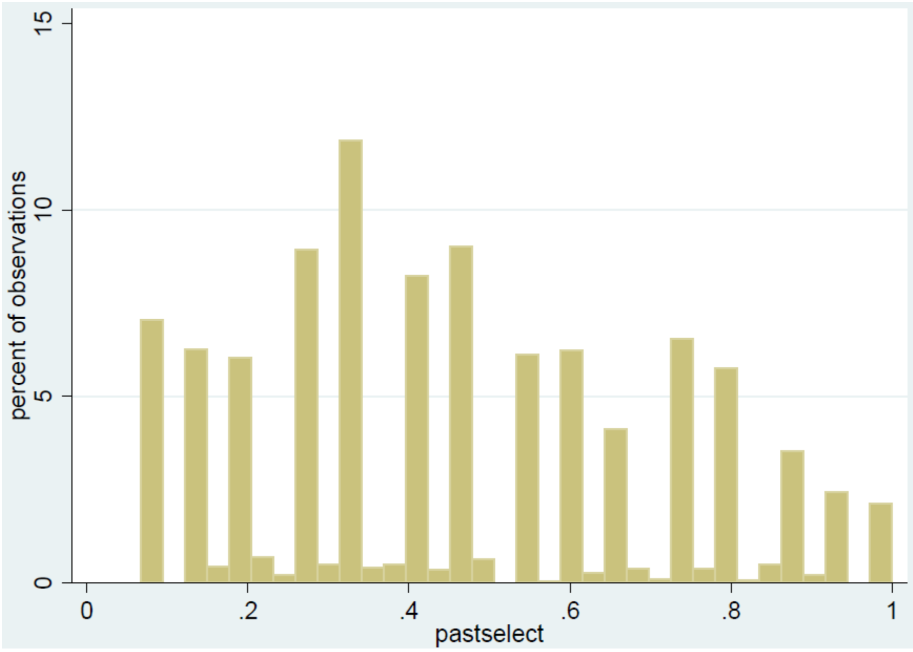

Figure 4: Histogram of pastselect_{it} for players who are not from *Euro 2008* nations, conditional on $\text{pastselect}_{it} > 0$. The number of players is 67, and the number of observations is 2867.

A player whose current nomination chance is close to one, on the other hand, expecting that a small performance change will not affect the national coach's decision, has weaker incentives to exert additional effort. In addition, players with positive nomination chances should have stronger than normal incentives to avoid exhaustion and injuries prior to the Euro Cup, which could even lead to a negative net effect of contest participation for players with high nomination chances. To test these predictions, we run the following difference-in-difference-in-differences regressions:

$$\begin{aligned} Y_{int} = \;& \delta_0 \text{qualified}_{nt} + \delta_1 \text{qualified}_{nt} \text{pastselect}_{it} + \delta_2 \text{qualified}_{nt} \text{pastselect}_{it} (1 - \text{pastselect}_{it}) \\ & + \eta_1 \text{pastselect}_{it} + \eta_2 \text{pastselect}_{it} (1 - \text{pastselect}_{it}) \\ & + \rho_1 \text{euro}_n \text{pastselect}_{it} + \rho_2 \text{euro}_n \text{pastselect}_{it} (1 - \text{pastselect}_{it}) \\ & + \pi_1 \text{post}_t \text{pastselect}_{it} + \pi_2 \text{post}_t \text{pastselect}_{it} (1 - \text{pastselect}_{it}) \\ & + \gamma_i + \alpha_t + X'_{it}\beta + \varepsilon_{int}. \end{aligned} \tag{3}$$

where Y_{int} is the output of player i of nationality n on game day t. We run separate regressions for different output measures. The treatment dummy qualified_{nt} equals 1 if and only if nation n is qualified for the *Euro 2008* at time t. The theory predicts that

δ_0, the treatment effect for players with no recent national team participations, is zero. The coefficient δ_2 is predicted to be positive, since players with uncertain chances, i.e., high values of pastselect(1-pastselect), have strong effort incentives. δ_1 is predicted to be negative if injury concerns and energy preservation strategies are relevant. We also run regressions with tertile or quartile dummies of pastselect instead of pastselect and pastselect(1-pastselect) as robustness checks for the functional form assumption. In all cases, the various pastselect variables also enter the regression equations interacted with a euro_n dummy that indicates whether nation n was a *Euro 2008* participant, and post_t, which indicates the time period after the official *Euro 2008* qualification date (November 21, 2007).[19]

The player fixed effects γ_i pick up (time-invariant) skill differences between players, and the game day fixed effects α_t control for changes in playing conditions over time that affect all clubs. X_{it} also includes dummies that indicate the club the player currently works for,[20] and dummies that indicate the opponent team i's club faces on day t. Since it is relatively common for players to occupy different field positions (forward, midfield or defense) in different matches, the covariates moreover include field position dummies. Finally, X_{it} includes a homegame_{it} dummy indicating whether i's current club plays in its home stadium on day t, and an unfit_{it} dummy indicating whether the player is injured or recovering from an injury.[21]

In our main alternative specification, we use club-game day dummies instead of the game day, club, opponent, and homegame dummies. There are two club-game day dummies per match, one per participating club. These dummies capture unobserved differences in the marginal returns from a victory across matches and clubs (depending, for example, on the current degree of competition for the championship and the club's current ranking), and other differences in playing conditions (weather etc.) between matches and clubs. Inclusion of these finer club-game day dummies substantially improves fit.

The identifying assumption is that in the absence of the Euro Cup treatment, players from qualified and from non-qualified nations would have evolved similarly over time (given controls). Since players in the treatment and the control group work in the same

[19] $\text{qualified}_{nt} = \text{post}_t \times \text{euro}_n$ for nations that qualified on the official qualification date (November 21, 2007). For nations that already de facto qualified at an earlier date, qualified_{nt} is equal to 1 from the de facto qualification date onwards.

[20] Several players in our sample switched between clubs in the sample period.

[21] Note that if a player is seriously injured, he will not show up in our output dataset, which only contains observations for players who were either on the reserve bench or on the field.

environment and are subject to similar incentive systems in the absence of international Cups, we find little reason to doubt this. A player's eligibility for the Euro Cup treatment, i.e., his nation's participation in the Euro Cup qualifications, is determined exogenously by geography and the player's nationality.[22] Within the group of Europeans, the assignment of the treatment, i.e., a nation's qualification, should depend on the skills of the players who participated in the Euro Cup qualification matches, so for a small number of European players selection into the treatment group is not completely random at this stage. Since we control for constant output differences by means of player fixed effects, however, bias caused by potential correlation between these players' outputs and treatment status is largely if not completely eliminated in our results.

An underlying assumption is that the de facto qualification dates are relevant for determining the beginning of the treatment for *Euro 2008* - Europeans. Our analysis builds on the insight that on a nation's de facto qualification date its qualification probability exhibits a discrete and permanent upward jump (to one).[23] One may argue however that players from countries that are likely to qualify may have already altered their effort earlier on. Such effects tend to bias against finding performance responses to qualification, thereby making our estimates conservative.

Because the data on minutes played take on nonnegative integer values (between 0 and 96), a count model is appropriate in regressions with minutes played as the dependent variable. We will use the negative binomial model, as the Poisson model is rejected at high degrees of confidence.[24] For the other dependent variables, outputs (shots on goal,...) per minute played and grades, we use OLS estimation. Standard errors are robust and clustered at the individual player level to take into account serial correlation.[25] The

[22] In rare cases players change nationality. Formerly Brazilian player Deco's adopted Portuguese citizenship, for example, mainly to participate in the Euro 2004 and World Cup 2006. Authorities and the FIFA have a critical attitude to such steps, however, which are therefore very rare.

[23] Similarly, for non-qualified European nations there is a downward jump to zero at some point in time, in some cases long before the official qualification date. The group of players from such nations in our sample is small ($n = 23$).

[24] Allison and Waterman (2002) and Guimarães (2008) show that for the negative binomial model the estimator proposed by Hausman et al. (1984) is a conditional fixed effects estimator under very specific assumptions only. As suggested by Allison and Waterman (2002), player fixed effects can be included by means of player dummies, however, which is the approach we follow.

[25] If class is player identity, the intraclass correlations for the various output measures we employ lie between 0.2 and 0.4. Note also that while the regression equation in the text allow error terms to depend on nationality n, within-group correlations at the nationality level are low: for all our output measures

resulting estimator of the variance-covariance matrix is consistent as the number of players in our data is large (see Bertrand et al. (2004)).

5 Results

Tables 4 to 11 report results of regressions with different performance measures as the dependent variable. For minutes played, we present both OLS and negative binomial regression results (Tables 4 and 5). We will first discuss overall patterns in the results, and then turn to differences between various output measures.

Columns (1) and (2) of each table report results for the basic regression specification in equation (3). The regressors of main interest are the interactions qualified×pastselect(1-pastselect) and qualified×pastselect. For all output measures, the coefficient of the former is positive and that of the latter negative, as predicted by our theory. For minutes played, passes received, ball contacts, and *Sportal* grades, both coefficients are statistically significant, mostly at the 1% or 5% level. The sizes of the coefficients are such that the implied net impact of nomination contest participation is positive for pastselect values up to somewhere between .6 and .7, depending on the output measure, and negative thereafter. The latter is in line with our earlier observation, based on Table 12 in Appendix 2, that pastselect above .6 suggests certain nomination, so that injury concerns dominate. Positive effects are maximal for pastselect between .3 and .4, i.e., for players with appearances in $30 - 40\%$ of their country's recent national team matches. For instance, the estimated effect of nomination contest participation on the passes received per minute of a player with pastselect equal to .3 is about +8% (with respect to pre-treatment observations with pastselect-values between .2 and .4 of treatment group players). The corresponding effects on other performance measures are of similar magnitudes: +7% for ball contacts per minute, +9% (or 5.7 field minutes) for minutes played, and +6% for Sportal grades. For shots on goal (Table 8), where only the positive interaction qualified×pastselect(1-pastselect) is significant ($p < 0.1$), the estimated positive impact of nomination contest participation for a player with pastselect $= 0.3$ is as high as 25%.[26] The coefficient of qualified, which measures the impact of nomination contest participation for players with-

the intraclass correlation if class is nationality lies below 0.1, in many cases even below 0.05.

[26] All effects were calculated on the basis of the regressions with club-game day dummies in columns (1). Since the regressions results with different dummies reported in columns (2) are very similar, the estimated effects would be very close if we used those estimated instead.

out any recent national team participations, is insignificant in all these regressions. This is consistent with the theoretical prediction that players without nomination chances do not alter their efforts.

Columns (3) to (6) of the regression tables report results of regression with dummies for different percentiles of positive pastselect values. These regressions confirm that negative effects for players with high nomination chances are not an artifact of the functional form of pastselect in the basic regression equation discussed so far. In the regressions with club-game day dummies, interactions of the treatment with the top tertile or quartile of pastselect (pastselect above .6429 and .7333, respectively) have a significant negative impact on many output measures: minutes played, ball contacts, passes received, *Kicker* grades, and duels won. These negative effects are economically significant. The regressions for ball contacts per minute with club-game day dummies (columns (3) and (5) in Table 7) imply output reductions of about 10% for players in the top tertile and top quartile. The corresponding effects on passes received per minute are −14% and −13%.

For low pastselect percentiles, the coefficients of the interactions with the treatment are generally positive,[27] as predicted by the theory, but not always significant. Where significant, the effects are substantial. In the case of passes received (Table 6), for instance, we find positive effects of about 11% and 9% for the lowest pastselect tertile and the second pastselect quartile.

In the regressions with club, opponent and game day dummies (columns (4) and (6) of each table), the coefficient of qualified is negative and statistically significant for some output measures, which is inconsistent with the theoretical prediction that nomination contest participation affects only the effort of players with positive nomination chances. In all regressions, however, the effect vanishes once finer club-game day dummies are used.

There are interesting differences between the findings for the various output measures. The theory implies that players with high nomination chances should reduce activities that carry a high injury risk. This is consistent with our finding that nomination contest participation has negative effects on the number of duels won. In the basic regression equation (columns (1) and (2) in Table 9) only the negative interaction term with past-

[27] An exception occurs in Table 11 where in column (5) the interaction of qualified with the lowest pastselect quartile is negative and significant. The coefficient of qualified is positive and significant in this regression as well, however, and jointly the two coefficients are statistically insignificant. For observations in the highest pastselect quartile, on the other hand, the joint effect is is negative and significant at the 5% level.

Table 4: Regression results for minutes played (Negbin FE Model)

VARIABLES	Minutes played					
	(1)	(2)	(3)	(4)	(5)	(6)
qualified	.048 (.102)	.067 (.085)	.059 (.105)	.078 (.088)	.062 (.106)	.079 (.088)
qualified ×						
pastselect	-.632*** (.241)	-.538*** (.196)				
pastselect(1-pastselect)	1.659** (.814)	1.426** (.675)				
qualified ×						
$\text{pastselect}_{1stTertile}$			.076 (.165)	.059 (.146)		
$\text{pastselect}_{2ndTertile}$			.152 (.163)	.133 (.111)		
$\text{pastselect}_{3rdTertile}$			-.273** (.134)	-.264** (.106)		
qualified ×						
$\text{pastselect}_{1stQuartile}$					.049 (.188)	-.00002 (.160)
$\text{pastselect}_{2ndQuartile}$					.269 (.170)	.254* (.134)
$\text{pastselect}_{3rdQuartile}$					-.140 (.150)	-.039 (.132)
$\text{pastselect}_{4thQuartile}$					-.336** (.170)	-.269** (.105)
forward	-.576*** (.144)	-.508*** (.128)	-.579*** (.143)	-.510*** (.128)	-.580*** (.143)	-.507*** (.128)
midfield	-.372*** (.100)	-.326*** (.089)	-.372*** (.101)	-.325*** (.089)	-.371*** (.101)	-.321*** (.090)
injured	-.181*** (.044)	-.155*** (.035)	-.178*** (.044)	-.154*** (.035)	-.177*** (.044)	-.153*** (.035)
pastselect	.144 (.198)	.245 (.151)				
pastselect(1-pastselect)	-.035 (.635)	.252 (.564)				
Gameday-club FE	Yes		Yes		Yes	
Gameday FE		Yes		Yes		Yes
Club FE		Yes		Yes		Yes
Opponent FE		Yes		Yes		Yes
Observations	11799	11799	11799	11799	11799	11799

Notes: The table reports negative binomial regression estimates. Values between parentheses are robust standard errors clustered at the player level. Only observations from players who are neither goalkeepers nor Austrian or Swiss are included. Moreover, the sample includes only players who were active in both the 06/07 and the 07/08 season, and before and after 21 Nov 2007, and with at least one strictly positive observation of minutes played in the two seasons.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 5: Regression results for minutes played (Linear FE Model)

	Minutes played					
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
qualified	2.663	4.280	3.532	5.238	3.626	5.337*
	(3.587)	(3.172)	(3.624)	(3.213)	(3.628)	(3.219)
qualified ×						
pastselect	-33.490***	-29.670***				
	(11.240)	(10.660)				
pastselect(1-pastselect)	75.180**	62.680*				
	(35.950)	(34.200)				
qualified ×						
$\text{pastselect}_{1stTertile}$			1.688	-.324		
			(6.309)	(6.116)		
$\text{pastselect}_{2ndTertile}$			4.489	4.002		
			(6.503)	(4.980)		
$\text{pastselect}_{3rdTertile}$			-16.850***	-17.200***		
			(5.426)	(5.223)		
qualified ×						
$\text{pastselect}_{1stQuartile}$					.279	-2.777
					(7.103)	(6.631)
$\text{pastselect}_{2ndQuartile}$					9.538	9.267
					(7.295)	(6.734)
$\text{pastselect}_{3rdQuartile}$					-3.888	-4.310
					(6.940)	(6.552)
$\text{pastselect}_{4thQuartile}$					-19.480**	-18.250***
					(5.695)	(4.926)
forward	-21.960***	-20.810***	-22.120***	-20.910***	-22.120***	-20.800***
	(4.742)	(4.622)	(4.733)	(4.623)	(4.732)	(4.620)
midfield	-17.480***	-16.000***	-17.550***	-16.000***	-17.430***	-15.850***
	(3.482)	(3.406)	(3.491)	(3.423)	(3.513)	(3.434)
injured	-8.572***	-7.636***	-8.610***	-7.693***	-8.530***	-7.616***
	(1.686)	(1.488)	(1.687)	(1.470)	(1.695)	(1.486)
pastselect	6.153	11.670				
	(9.091)	(7.603)				
pastselect(1-pastselect)	-9.026	-1.078				
	(26.740)	(25.910)				
Gameday-club FE	Yes		Yes		Yes	
Gameday FE		Yes		Yes		Yes
Club FE		Yes		Yes		Yes
Opponent FE		Yes		Yes		Yes
Observations	11799	11799	11799	11799	11799	11799
Variance captured by player FE	.58	.56	.58	.56	.58	.56
R^2	.13	.07	.13	.07	.13	.07

Notes: The table reports linear fixed effects regression estimates. Values between parentheses are robust standard errors clustered at the player level. Only observations from players who are neither goalkeepers nor Austrian or Swiss are included. Moreover, the sample includes only players who were active in both the 06/07 and the 07/08 season, and before and after 21 Nov 2007, and with at least one strictly positive observation of minutes played in the two seasons.

*** p< 0.01, ** p< 0.05, * p < 0.1

Table 6: Regression results for passes received

VARIABLES	Passes received per minute played (1)	(2)	(3)	(4)	(5)	(6)
qualified	-.011	-.020	-.012	-.027**	-.011	-.026**
	(.009)	(.012)	(.009)	(.011)	(.009)	(.011)
qualified ×						
pastselect	-.131***	-.099**				
	(.034)	(.040)				
pastselect(1-pastselect)	.322***	.356***				
	(.099)	(.115)				
qualified ×						
$\text{pastselect}_{1stTertile}$			.036**	.066***		
			(.017)	(.017)		
$\text{pastselect}_{2ndTertile}$			-.006	.015		
			(.018)	(.016)		
$\text{pastselect}_{3rdTertile}$			-.053***	-.014		
			(.022)	(.020)		
qualified ×						
$\text{pastselect}_{1stQuartile}$					.026	.056***
					(.017)	(.018)
$\text{pastselect}_{2ndQuartile}$					.030*	.054***
					(.017)	(.018)
$\text{pastselect}_{3rdQuartile}$					-.034*	.001
					(.018)	(.020)
$\text{pastselect}_{4thQuartile}$					-.049**	-.010
					(.023)	(.027)
home game		.030***		.030***		.030***
		(.003)		(.003)		(.003)
forward	-.005	-.009	-.005	-.010	-.006	-.008
	(.012)	(.013)	(.012)	(.013)	(.012)	(.013)
midfield	.009	.011	.009	.010	.009	.010
	(.009)	(.010)	(.009)	(.010)	(.009)	(.010)
injured	-.003	-.001	-.003	-.001	-.003	-.001
	(.006)	(.007)	(.006)	(.006)	(.006)	(.007)
pastselect	-.009	.006				
	(.018)	(.025)				
pastselect(1-pastselect)	.017	.065				
	(.057)	(.072)				
Gameday-club FE	Yes		Yes		Yes	
Gameday FE		Yes		Yes		Yes
Club FE		Yes		Yes		Yes
Opponent FE		Yes		Yes		Yes
Observations	6747	6747	6747	6747	6747	6747
Variance captured by player FE	.46	.38	.50	.38	.48	.38
R^2	.55	.19	.55	.19	.55	.19

Notes: The table reports linear fixed effects estimates. Values between parentheses are robust standard errors clustered at the player level. Only observations associated with more than 71 minutes played and of players who are neither goalkeepers nor Austrian or Swiss are included. Moreover, the sample includes only players who were active in both the 06/07 and the 07/08 season (before and after 21 Nov 2007), and with at least one strictly positive observation of the dependent variable in these two seasons.

*** p < 0.01, ** p < 0.05, * p < 0.1

Table 7: Regression results for ball contacts

	Ball contacts per minute played					
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
qualified	-.016	-.024	-.018	-.033**	-.018	-.032**
	(.012)	(.016)	(.012)	(.015)	(.012)	(.015)
qualified ×						
pastselect	-.183***	-.117**				
	(.045)	(.047)				
pastselect(1-pastselect)	.455***	.410***				
	(.126)	(.136)				
qualified ×						
$pastselect_{1stTertile}$			.051**	.079***		
			(.020)	(.021)		
$pastselect_{2ndTertile}$			-.009	.010		
			(.023)	(.023)		
$pastselect_{3rdTertile}$			-.075**	-.016		
			(.031)	(.030)		
qualified ×						
$pastselect_{1stQuartile}$					.038*	.070***
					(.022)	(.021)
$pastselect_{2ndQuartile}$					.035	.052**
					(.022)	(.024)
$pastselect_{3rdQuartile}$					-.048	-.003
					(.028)	(.028)
$pastselect_{4thQuartile}$					-.070**	-.010
					(.032)	(.032)
home game		.037***		.037***		.037***
		(.004)		(.004)		(.004)
forward	-.112***	-.118***	-.112***	-.120***	-.102***	-.118***
	(.020)	(.020)	(.020)	(.021)	(.034)	(.020)
midfield	-.083***	-.081***	-.083***	-.082***	-.057**	-.082***
	(.017)	(.017)	(.018)	(.017)	(.027)	(.018)
injured	-.008	-.001	-.007	-.001	-.147	-.001
	(.007)	(.008)	(.007)	(.008)	(.013)	(.008)
pastselect	-.015	.009				
	(.026)	(.031)				
pastselect(1-pastselect)	.041	.092				
	(.078)	(.085)				
Gameday-club FE	Yes		Yes		Yes	
Gameday FE		Yes		Yes		Yes
Club FE		Yes		Yes		Yes
Opponent FE		Yes		Yes		Yes
Observations	6747	6747	6747	6747	6747	6747
Variance captured by player FE	.54	.47	.56	.47	.54	.47
R^2	.46	.17	.46	.17	.46	.17

Notes: The table reports linear fixed effects estimates. Values between parentheses are robust standard errors clustered at the player level. Only observations associated with more than 71 minutes played and of players who are neither goalkeepers nor Austrian or Swiss are included. Moreover, the sample includes only players who were active in both the 06/07 and the 07/08 season (before and after 21 Nov 2007), and with at least one strictly positive observation of the dependent variable in these two seasons.

*** p < 0.01, ** p < 0.05, * p < 0.1

Table 8: Regression results for shots on goal

	Shots on goal per minute played					
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
qualified	-.001 (.001)	-.001 (.001)	-.001 (.001)	-.001 (.001)	-.001 (.001)	-.001 (.001)
qualified ×						
pastselect	-.005 (.004)	-.005 (.003)				
pastselect(1-pastselect)	.023* (.013)	.022* (.012)				
qualified ×						
$\text{pastselect}_{1stTertile}$			.001 (.002)	.001 (.002)		
$\text{pastselect}_{2ndTertile}$			.001 (.003)	.001 (.002)		
$\text{pastselect}_{3rdTertile}$			.0002 (.003)	.001 (.002)		
qualified ×						
$\text{pastselect}_{1stQuartile}$					.001 (.003)	.0001 (.002)
$\text{pastselect}_{2ndQuartile}$					.004 (.003)	.004 (.003)
$\text{pastselect}_{3rdQuartile}$					.002 (.003)	.002 (.003)
$\text{pastselect}_{4thQuartile}$					-.005 (.003)	-.004 (.003)
home game		.036*** (.0003)		.004*** (.0003)		.004*** (.0003)
forward	.008*** (.002)	.008*** (.002)	.008*** (.002)	.008*** (.002)	.008*** (.002)	.008*** (.002)
midfield	.007*** (.001)	.007*** (.001)	.007*** (.001)	.007*** (.001)	.007** (.001)	.007*** (.001)
injured	-.002* (.001)	-.002 (.001)	-.002 (.001)	-.002 (.001)	-.002 (.001)	-.001 (.001)
pastselect	.005* (.003)	.005** (.002)				
pastselect(1-pastselect)	.0004 (.008)	.001 (.008)				
Gameday-club FE	Yes		Yes		Yes	
Gameday FE		Yes		Yes		Yes
Club FE		Yes		Yes		Yes
Opponent FE		Yes		Yes		Yes
Observations	6747	6747	6747	6747	6747	6747
Variance captured by player FE	.41	.41	.42	.40	.41	.41
R^2	.24	.07	.24	.07	.24	.07

Notes: The table reports linear fixed effects estimates. Values between parentheses are robust standard errors clustered at the player level. Only observations associated with more than 71 minutes played and of players who are neither goalkeepers nor Austrian or Swiss are included. Moreover, the sample includes only players who were active in both the 06/07 and the 07/08 season (before and after 21 Nov 2007), and with at least one strictly positive observation of the dependent variable in these two seasons.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 9: Regression results for duels won

	Duels won per minute played					
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
qualified	.0001	.002	.0001	.001	.0002	.002
	(.004)	(.004)	(.004)	(.004)	(.004)	(.004)
qualified ×						
pastselect	-.024**	-.022**				
	(.010)	(.009)				
pastselect(1-pastselect)	.032	.023				
	(.039)	(.036)				
qualified ×						
$\text{pastselect}_{1stTertile}$			.003	.005		
			(.008)	(.007)		
$\text{pastselect}_{2ndTertile}$			-.009	-.010		
			(.007)	(.006)		
$\text{pastselect}_{3rdTertile}$			-.017**	-.014***		
			(.007)	(.006)		
qualified ×						
$\text{pastselect}_{1stQuartile}$					.002	.004
					(.008)	(.007)
$\text{pastselect}_{2ndQuartile}$					-.008	-.008
					(.008)	(.007)
$\text{pastselect}_{3rdQuartile}$					-.008	-.010
					(.008)	(.007)
$\text{pastselect}_{4thQuartile}$					-.014*	-.012*
					(.008)	(.007)
home game		.005***		.005***		.005***
		(.001)		(.001)		(.001)
forward	.008	.007	.008	.007	.009	.008
	(.006)	(.005)	(.006)	(.005)	(.006)	(.005)
midfield	.009**	.009**	.008**	.009**	.009**	.009**
	(.004)	(.004)	(.004)	(.004)	(.004)	(.004)
injured	-.002	-.002	-.002	-.002	-.002	-.002
	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)
pastselect	-.003	-.006				
	(.009)	(.007)				
pastselect(1-pastselect)	-.011	-.001				
	(.023)	(.023)				
Gameday-club FE	Yes		Yes		Yes	
Gameday FE		Yes		Yes		Yes
Club FE		Yes		Yes		Yes
Opponent FE		Yes		Yes		Yes
Observations	6747	6747	6747	6747	6747	6747
Variance captured by player FE	.41	.38	.41	.38	.46	.38
R^2	.24	.07	.25	.07	.25	.07

Notes: The table reports linear fixed effects estimates. Values between parentheses are robust standard errors clustered at the player level. Only observations associated with more than 71 minutes played and of players who are neither goalkeepers nor Austrian or Swiss are included. Moreover, the sample includes only players who were active in both the 06/07 and the 07/08 season (before and after 21 Nov 2007), and with at least one strictly positive observation of the dependent variable in these two seasons.

*** p < 0.01, ** p < 0.05, * p < 0.1

Table 10: Regression results for Sportal grades

	Sportal grade					
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
qualified	-.032	-.071	-.035	-.093	-.038	-.092
	(.056)	(.058)	(.056)	(.062)	(.056)	(.062)
qualified ×						
pastselect	-.431**	-.440**				
	(.189)	(.196)				
pastselect(1-pastselect)	1.295*	1.599**				
	(.658)	(.646)				
qualified ×						
$pastselect_{1stTertile}$			.070	.189*		
			(.106)	(.112)		
$pastselect_{2ndTertile}$			.072	.074		
			(.110)	(.118)		
$pastselect_{3rdTertile}$			-.140	-.034		
			(.123)	(.136)		
qualified ×						
$pastselect_{1stQuartile}$					.044	.135
					(.115)	(.134)
$pastselect_{2ndQuartile}$					.020	.224*
					(.140)	(.131)
$pastselect_{3rdQuartile}$					.062	-.004
					(.120)	(.138)
$pastselect_{4thQuartile}$					-.162	-.102
					(.147)	(.163)
home game		.222***		.222***		.222***
		(.017)		(.017)		(.017)
forward	.115	.095	.120	.092	.123	.099
	(.011)	(.116)	(.107)	(.114)	(.107)	(.116)
midfield	.081	.102	.087	.102	.084	.101
	(.060)	(.066)	(.059)	(.065)	(.059)	(.065)
injured	-.030	-.054	-.031	-.057	-.028	-.053
	(.042)	(.044)	(.042)	(.044)	(.043)	(.044)
pastselect	-.055	-.068				
	(.119)	(.133)				
pastselect(1-pastselect)	.021	-.280				
	(.448)	(.469)				
Gameday-club FE	Yes		Yes		Yes	
Gameday FE		Yes		Yes		Yes
Club FE		Yes		Yes		Yes
Opponent FE		Yes		Yes		Yes
Observations	6721	6721	6721	6721	6721	6721
Variance captured by player FE	.32	.26	.32	.27	.33	.27
R^2	.45	.05	.45	.06	.45	.06

Notes: The table reports linear fixed effects estimates. Values between parentheses are robust standard errors clustered at the player level. Only observations associated with more than 71 minutes played and of players who are neither goalkeepers nor Austrian or Swiss are included. Moreover, the sample includes only players who were active in both the 06/07 and the 07/08 season (before and after 21 Nov 2007), and with at least one strictly positive observation of the dependent variable in these two seasons.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 11: Regression results for Kicker grades

	Kicker grade					
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
qualified	-.107 (.075)	-.407 (.075)	.129 (.078)	.032 (.079)	.132* (.076)	.030 (.079)
qualified ×						
pastselect	-.447** (.192)	-.437* (.224)				
pastselect(1-pastselect)	.417 (.700)	1.050 (.767)				
qualified ×						
$\text{pastselect}_{1stTertile}$			-.172 (.118)	.015 (.130)		
$\text{pastselect}_{2ndTertile}$			-.105 (.138)	.003 (.143)		
$\text{pastselect}_{3rdTertile}$			-.335** (.137)	-.159 (.155)		
qualified ×						
$\text{pastselect}_{1stQuartile}$					-.230* (.139)	-.054 (.158)
$\text{pastselect}_{2ndQuartile}$					-.097 (.141)	.179 (.157)
$\text{pastselect}_{3rdQuartile}$					-.162 (.140)	-.093 (.156)
$\text{pastselect}_{4thQuartile}$					-.355** (.150)	-.223 (.176)
home game		.233*** (.020)		.233*** (.020)		.233*** (.020)
forward	.032 (.095)	.045 (.115)	.038 (.094)	.046 (.113)	.043 (.093)	.048 (.114)
midfield	-.080 (.054)	-.014 (.068)	-.079 (.053)	-.015 (.066)	-.081 (.053)	-.017 (.067)
injured	.017 (.051)	-.018 (.055)	.015 (.050)	-.021 (.055)	.013 (.050)	-.021 (.055)
pastselect	.084 (.141)	.040 (.152)				
pastselect(1-pastselect)	-.266 (.450)	-.251 (.568)				
Gameday-club FE	Yes		Yes		Yes	
Gameday FE		Yes		Yes		Yes
Club FE		Yes		Yes		Yes
Opponent FE		Yes		Yes		Yes
Observations	6722	6722	6722	6722	6722	6722
Variance captured by player FE	.31	.28	.31	.27	.30	.28
R^2	.48	.05	.48	.06	.48	.06

Notes: The table reports linear fixed effects estimates. Values between parentheses are robust standard errors clustered at the player level. Only observations associated with more than 71 minutes played and of players who are neither goalkeepers nor Austrian or Swiss are included. Moreover, the sample includes only players who were active in both the 06/07 and the 07/08 season (before and after 21 Nov 2007), and with at least one strictly positive observation of the dependent variable in these two seasons.

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

select is significant and in the regressions with dummies the only significant effects are negative ones. These negative impacts are economically significant: we find a 13% reduction in the number of duels won for players in the top pastselect tertile for example. Players with high nomination chances hence seem to be less persistent in duels, which carry a much higher injury risk than actions in less direct confrontation with players of the opponent team. The results are similar in unreported regressions with total duels instead of duels won as the dependent variable, which suggests that players with high nomination chances also avoid fighting duels in the first place.

The control variables have the expected signs. The coefficient of homegame is positive and highly significant in most regressions. Interestingly, homegame is also significant in the regressions with grades as the dependent variable. Soccer journalists hence do not seem to discount performances for the well-known homegame advantage when grading players. A forward field position is associated with more frequent goal attempts but fewer ball contacts, while midfield positions are associated with significantly more duels than forward or defense positions. The results for minutes played show that there are also more substitutions of players in forward and midfield positions than of players in defense positions. The coefficient of injured has a negative sign in all regressions, but is statistically significant for minutes played only.

To summarize our findings on the differential effects of the Euro Cup treatment:

1. Players from qualified countries with intermediate national team nomination chances perform better in club matches (relative to players of other nationalities with similar national team experience) after their nations' qualifications for the *Euro 2008* than before.

2. Players from qualified countries with very high national team nomination chances perform worse in club matches (relative to players of other nationalities with similar national team experience) after their nations' qualifications for the *Euro 2008* than before.

6 Conclusion

Contest-style rivalry, whether based on pre-specified performance criteria or reputations as the nominations for national soccer teams, arises in many contexts. Some firms explicitly offer promotion prospects or use relative performance evaluation schemes in order to provide incentives to employees. In many other situations, the principal's goal is to select the most skillful agent, but this creates similar incentives. In either case, economic theory predicts that agents' effort responses should depend on their anticipated winning probabilities. In particular, agents with intermediate winning probabilities should exert higher than normal effort. This paper provides empirical evidence for this prediction. We show that players from nations qualified for the *Euro 2008* who had been called upon by the national coach in some but not too many past national team matches improved their club performance, relative to players of other nationalities with a similar standing in their national teams, after their countries' qualifications. For players without any past national team nominations, on the other hand, there is no evidence of any improvement relative to players of other nationalities.

Moreover, we find that players who were already quite certain of their Euro Cup participations performed worse along several dimensions than they would have in the absence of the upcoming Cup. Our explanation is that these players wanted to avoid injuries and more generally preserve their strength and fitness for the Cup. Hence, while clubs often benefit from the national team nomination contests, they may actually suffer losses in the case of top players. Similar effects can occur in other situations where agents compete for a position that requires future effort instead of a monetary prize. Consider promotion contests in firms for example. An employee who expects an almost certain promotion into a different unit may be inclined to exert less effort in his current position in order to preserve energy for his new position. Such behavior inflicts a loss on the employee's current unit. Ensuring that rivalry between candidates persists is key to avoiding such losses and promoting effort. Effort will be higher if several candidates perceive that they have realistic but less than perfect chances of obtaining the promotion.

A Appendix 1: Analysis of the theoretical model

Denote by (a_1^*, a_2^*) the equilibrium effort levels. Thanks to our normality and independence assumptions, the learning process about each agent's skill is well-known. Given the principal anticipates effort level a_j^*, the posterior distribution of η_j after observing y_j will be normal with mean

$$\frac{h_j m_j + h_\varepsilon (y_j - a_j^*)}{h_j + h_\varepsilon} \tag{4}$$

and precision $h_j + h_\varepsilon$.

Let us now consider j's effort decision at the beginning of the period. From (4) it follows that, given $a_k = a_k^*$, if j chooses a_j then he will have a higher posterior reputation than agent k with probability

$$\Pr\left\{\frac{h_j m_j + h_\varepsilon(\eta_j + a_j + \varepsilon_j - a_j^*)}{h_j + h_\varepsilon} > \frac{h_k m_k + h_\varepsilon(\eta_k + \varepsilon_k)}{h_k + h_\varepsilon}\right\} \tag{5}$$

$$= \Pr\left\{\frac{h_\varepsilon}{h_j + h_\varepsilon}(a_j - a_j^*) > \frac{h_k m_k + h_\varepsilon(\eta_k + \varepsilon_k)}{h_k + h_\varepsilon} - \frac{h_j m_j + h_\varepsilon(\eta_j + \varepsilon_j)}{h_j + h_\varepsilon}\right\}. \tag{6}$$

Define the random variable

$$\zeta_j \equiv \frac{h_k m_k + h_\varepsilon(\eta_k + \varepsilon_k)}{h_k + h_\varepsilon} - \frac{h_j m_j + h_\varepsilon(\eta_j + \varepsilon_j)}{h_j + h_\varepsilon}.$$

Our independence and normality assumptions imply that the *prior* distribution of ζ_j is normal with mean

$$z_j \equiv m_k - m_j \tag{7}$$

and variance[28]

$$\sigma^2 \equiv \left(\frac{h_\varepsilon}{h_k + h_\varepsilon}\right)^2 \left(\frac{1}{h_k} + \frac{1}{h_\varepsilon}\right) + \left(\frac{h_\varepsilon}{h_j + h_\varepsilon}\right)^2 \left(\frac{1}{h_j} + \frac{1}{h_\varepsilon}\right) \tag{8}$$

We denote this distribution by $\varphi_j(\cdot)$ with c.d.f. $\phi_j(\cdot)$. Moreover, let us denote by $\sigma(h_j, h_k, h_\varepsilon)$, equal to the square root of σ^2 defined in (8), the standard deviation of the distributions $\varphi_1(\cdot)$ and $\varphi_2(\cdot)$.

Using the newly defined variable ζ_j, the probability in (6) that j's posterior reputation exceeds that of k can be rewritten as

$$\Pr\left\{\zeta_j < \frac{h_\varepsilon}{h_j + h_\varepsilon}(a_j - a_j^*)\right\} = \phi_j\left(\frac{h_\varepsilon}{h_j + h_\varepsilon}(a_j - a_j^*)\right). \tag{9}$$

[28] Since the prior distributions of ζ_1 and ζ_2 have the same variance, we can simply denote this variance by σ^2, not using any subscript.

Given $a_k = a_k^*$, the marginal impact of a_j on the probability that j has a higher posterior reputation than k is equal to the first derivative of (9) with respect to a_j:

$$\varphi_j\left(\frac{h_\varepsilon}{h_j+h_\varepsilon}(a_j-a_j^*)\right)\frac{h_\varepsilon}{h_j+h_\varepsilon}.$$

The first-order conditions for an equilibrium are then that for all $j \neq k \in \{1,2\}$:

$$\left[1-r\left(a_j^*\right)\right]\varphi_j\left(0\right)\frac{h_\varepsilon}{h_j+h_\varepsilon}W_j+S_j'(a_j^*)-c_j'(a_j^*)=r'\left(a_j^*\right)\left[\left[1-r\left(a_k^*\right)\right]\phi_j\left(0\right)+r\left(a_k^*\right)\right]W_j. \tag{10}$$

Consider the special case without injury risk, that is, $r(a)=0$ for all a, first. Making use of the normality of $\varphi_j(\cdot)$, the first-order condition defining a_j^* can be rewritten as

$$\frac{1}{\sqrt{2\pi}\sigma\left(h_j,h_k,h_\varepsilon\right)}\exp\left(-\frac{\left(m_k-m_j\right)^2}{2\sigma^2\left(h_j,h_k,h_\varepsilon\right)}\right)\frac{h_\varepsilon}{h_j+h_\varepsilon}W_j+S_j'\left(a_j^*\right)-c_j'\left(a_j^*\right)=0, \tag{11}$$

which is equivalent to

$$\frac{1}{\sqrt{2\pi}\sigma\left(h_j,h_k,h_\varepsilon\right)}\exp\left(-\frac{\left|m_k-m_j\right|^2}{2\sigma^2\left(h_j,h_k,h_\varepsilon\right)}\right)\frac{h_\varepsilon}{h_j+h_\varepsilon}W_j+S_j'\left(a_j^*\right)-c_j'\left(a_j^*\right)=0. \tag{12}$$

The latter condition depends on $\Delta \equiv |m_1-m_2|$ but not on m_1 and m_2 individually. As is apparent from the first-order conditions, $\lim_{\Delta\to-\infty} a_j^* = \lim_{\Delta\to\infty} a_j^* = a_j^n$ when there are no injury risks. Assuming that the second-order condition for a maximum holds,[29] the implicit function theorem implies that

$$sign\left(\frac{da_j^*}{d\Delta}\right)=sign\left(\varphi_j\left(0\right)\left(\frac{-2\Delta}{2\sigma^2\left(h_j,h_k,h_\varepsilon\right)}\right)\frac{h_\varepsilon}{h_j+h_\varepsilon}W_j\right). \tag{13}$$

It follows directly from (13) that $\frac{da_j^*}{d\Delta}<0$ for $\Delta>0$, and that $\frac{da_j^*}{d\Delta}=0$ for $\Delta=0$, in which case j's equilibrium winning probability, $\phi_j(0)$, is equal to $\frac{1}{2}$.[30]

If $r'>0$ and the second-order condition holds, then

$$sign\left(\frac{da_j^*}{d(m_j-m_k)}\right) \tag{14}$$

$$=sign\left(\left[1-r\left(a_j^*\right)\right]\frac{d\varphi_j\left(0\right)}{d(m_j-m_k)}\frac{h_\varepsilon}{h_j+h_\varepsilon}-r'\left(a_j^*\right)\left[1-r\left(a_k^*\right)\right]\underbrace{\frac{d\phi_j\left(0\right)}{d(m_j-m_k)}}_{>0}\right). \tag{15}$$

[29] It is easy to check that the second-order condition always holds for small enough Δ in the model without injury concerns.

[30] With more than two contestants, the analysis is considerably more complex. In particular, an agent's effort incentive is no longer maximal if his prior reputation is the same as that of his rivals (assuming the rivals all have the same prior reputations). Rather, the agent's effort incentive will be maximal if he has an advantage over his rivals and an equilibrium winning probability between $\frac{1}{n}$, where n is the number of contestants, and $\frac{1}{2}$.

Since the mean of φ_j is $m_k - m_j$, $\frac{d\phi_j(0)}{d(m_k - m_j)} < 0$ which implies $\frac{d\phi_j(0)}{d(m_j - m_k)} > 0$. Overall, the second term in (15) is therefore always negative. As implied by the discussion of the situation without injury concerns, $\frac{d\varphi_j(0)}{d(m_j - m_k)} = 0$ for $m_j = m_k$, $\frac{d\varphi_j(0)}{d(m_j - m_k)} < 0$ if $m_j > m_k$, and $\frac{d\varphi_j(0)}{d(m_j - m_k)} > 0$ if $m_j < m_k$. Since the second term in (15) is negative, we can conclude that $\frac{da_j^*}{d(m_j - m_k)} < 0$ whenever $m_j \geq m_k$. If j has a (weak) advantage over k, then further improvements in j's relative position reduce j's effort. In the limit where j is certain to win conditional on remaining injury-free, $\lim_{(m_j - m_k) \to \infty} \phi_j(0) = 1$ and $\lim_{(m_j - m_k) \to \infty} \varphi_j(0) = 0$, hence the first-order condition in (10) directly implies that $\lim_{(m_j - m_k) \to \infty} a_j^* < a_j^n$. By continuity, agents with high enough equilibrium nomination probabilities will exert lower than normal effort as well.

For $m_j < m_k$, on the other hand, the impact of a reduction in asymmetry, i.e., of an increase in $(m_j - m_k)$, is ambiguous. If r is not too steep, then equilibrium effort is increasing in equilibrium winning probability initially but decreasing thereafter. Not also that in the limit case where j has virtually no chance of winning, $\lim_{(m_j - m_k) \to -\infty} \phi_j(0) = \lim_{(m_j - m_k) \to -\infty} \varphi_j(0) = 0$, so the first-order condition in (10) implies $\lim_{(m_j - m_k) \to -\infty} a_j^* = a_j^n$.

B Appendix 2: Additional Tables

Table 12: German Euro 2008 team nominations and values of pastselect.
Bold letters indicate nominated players.

player	pastselect		World Cup 06
	end of 07/08 season	two-year average	
Thomas Hitzlsperger	86.67%	60.24%	Yes
Per Mertesacker	80.00%	59.66%	Yes
Kevin Kuranyi	73.33%	33.43%	-
Clemens Fritz	66.67%	37.94%	-
Marcell Jansen	66.67%	56.97%	Yes
Philipp Lahm	66.67%	75.44%	Yes
Arne Friedrich	60.00%	73.93%	Yes
Bastian Schweinsteiger	60.00%	81.99%	Yes
Lukas Podolski	60.00%	74.25%	Yes
Mario Gomez	60.00%	21.92%	-
Piotr Trochowski	60.00%	34.97%	-
Simon Rolfes	60.00%	22.94%	-
Miroslav Klose	53.33%	71.49%	Yes
Roberto Hilbert	53.33%	21.52%	-
Torsten Frings	46.67%	80.45%	Yes
Bernd Schneider	40.00%	74.42%	Yes
Gonzalo Castro	33.33%	16.00%	-
Manuel Friedrich	26.67%	37.07%	-
Mike Hanke	20.00%	25.68%	Yes
Tim Borowski	20.00%	43.08%	Yes
Christian Pander	13.33%	5.66%	-
Heiko Westermann	13.33%	2.45%	-
Jan Schlaudraff	13.33%	12.82%	-
Alexander Madlung	6.67%	8.67%	-
Jermaine Jones	6.67%	2.67%	-
Paul Freier	6.67%	3.88%	-
Stefan Kiessling	6.67%	4.02%	-
Fabian Ernst	0.00%	0.78%	-
Gerald Asamoah	0.00%	10.58%	Yes
Malik Fathi	0.00%	10.42%	-
Patrick Owomoyela	0.00%	2.50%	-
Sebastian Kehl	0.00%	10.67%	Yes

Notes: The table includes all German players with positive average values of pastselect, except for goalkeepers. No German player without any national team nominations during the sample period was nominated.

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