Does the Corruption Perceptions Index Predict the Outcome of Competitions? Evidence from a Natural Experiment around the World

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Abstract

In this paper we study the effect of the corruption, as measured by the Corruption Perceptions Index (CPI), on the probability of determining the outcome in real competitive settings, where all agents in all countries are faced with exactly the same task under fixed and known rules. To that end we utilize data from soccer matches between a team in immediate danger of being relegated to a lower division and a team not affected by the results in the respective match. Based on analysis of a similar situation that occurred on the last day of a season in 75 different countries during the period between 2001 and 2013, we find that the CPI significantly correlated with the probability of achieving the desired result in order to avoid relegation to a lower division. The odds are significantly higher when the country is more corrupt according to the CPI. We also find strong evidence of a significant effect of the CPI on quid pro quo behavior that takes place in the later stages of the following year. Despite the fact that the CPI is a survey-based index and its effect is not linear throughout the scale of scores, we still find a significant association between CPI level and the results of sensitive soccer matches that were previously found to be infected by corruption. Our results provide evidence that the virus of corruption, as measured by the CPI, affects the level of competition in social activities that are not necessarily directly linked to governmental activities.

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I - Introduction

"Soccer provides important evidence to test various theories of economic behavior, such as efficient markets and social influences on behavior"

-Gary S. Becker, Nobel laureate in Economics[1]

Corruption is detrimental to economic growth and industrial development. It slows industrial competition (Gould & Amaro-Reyes, 1983; Mauro, 1995; Mo, 2001) and impairs innovative activities. Innovators depend on goods supplied by the government such as certificates and import quotas more than do established manufactures. The demand for these goods is high and inelastic; therefore, they become the primary targets of corruption. Moreover, innovators usually have no contacts and lobbyists in the institutions of the ruling regime and, unlike established manufacturers, often have limited liquidity and cannot find funds in order to pay bribes (Murphy et al., 1993). Therefore, when corruption is common, private investments are reduced, and in the long term this will harm the infrastructure and the production input stock. In such a case, people's efforts and creative endeavors are focused on non-productive activities rather than on investments to accumulate capital, knowledge and skills. Moreover, corruption favors a certain type of people and creates unequal opportunities. Studies indicate that the level of corruption is negatively correlated with development (e.g., Gould and Amaro-Reyes, 1983; Mauro, 1995; United Nations, 1990) and the impact of corruption on the growth of the economy can only be empirically measured (Aidt, 2009). By examining the relationship between investment and corruption in 58 countries, Mauro (1995) found that corruption lowers private investment. Mo (2001) showed that a one-unit increase in the corruption index reduces the growth rate by 0.545 percentage points. These results are consistent with the view that corruption is detrimental to economic growth.

Nevertheless, demonstrating the damage caused by corruption while controlling all other variables is rather difficult in the industrial field. Bliss and Di Tella (1997) argued that

[1] From "Beautiful Game Theory: How Soccer Can Help Economics" by Ignacio Palacios-Huerta

these difficulties depend on the definition of corruption. Economic competition is not an exogenous parameter that can be varied in a model to see how corruption is affected and vice versa. Corruption may itself affect the extent of competition. It may be inaccurate to consider the number of firms as an indicator of the level of competition in the market, as corruption affects the flow of income from a particular investment and thus the number of firms in a free-entry equilibrium.

The aim of this paper is to investigate the effect of corruption on the level of competition in a cross-country sample. Comparing the rate of economic competition between countries involves many difficulties. The perfect way to make such a comparison would be to observe a competition with exactly the same rules among contestants in different countries. It is difficult to find such an economic competition, since Nature rarely creates a situation that allows a clear view of the corruption in the same competition in different societies.

In this study we overcome these obstacles by investigating the effect of corruption in real tournament settings. We found a unique case of competition with the same rules in different countries that will allow testing the effect of corruption. For that purpose we use soccer matches that took place on the last day of the season in different countries between a team that was in immediate danger of being relegated to a lower division, with considerable impact on the club's prestige and cash flow, and a team for which the result in the respective match would not change anything. Therefore in these games, which were scheduled randomly at the beginning of the season, one of the two teams needed to achieve a victory or a draw in order to avoid relegation and the other team would not be affected by the result.[2] This same situation can occur in many different countries. Moreover, the rules of soccer competition are clear, fixed, available and known to participants from different countries. Therefore, we have

[2] The association between soccer and corruption has already been recognized. Hill (2010) exposed several potentially explosive stories of match-fixing in professional soccer, from domestic professional soccer leagues to matches that were fixed in the World Cup Games of 2006.

an example where different agents all around the world face the same familiar task with exactly the same rules in real tournament settings. All these provide us with a perfect natural experiment to examine whether corruption is correlated with the probability that a team that needs to attain points in order to avoid relegation to a lower division will achieve the desired result.

Despite the fact that corruption is concealed and therefore its rate is difficult to determine, several indexes have been used to compare the corruption level of different countries. One of the most common measures is the Corruption Perceptions Index (CPI) published by Transparency International (TI), the global coalition against corruption. The CPI considers data sources from independent institutions specializing in governance and business climate analysis. The CPI relates solely to sources providing scores for a group of countries and measures corruption as indicated by the public.[3] The second measure of country corruption levels is published by a team led by Daniel Kaufmann at the World Bank. Despite the different methodologies and sometimes different sources, these two ratings are extremely highly correlated, from $\rho = 0.96$ to $\rho = 0.98$ (Treisman, 2007).

Using the CPI as the measure of corruption and based on 827 observations among 75 different countries during the period from 2001 through 2013, we find that a lower CPI score (more corrupt country) significantly increases the probability of achieving the desired result by a team struggling against relegation to a lower division. Such an intriguing result may have several explanations, among them bribery or unwillingness to exert effort when this effort has no potential rewards as might appear in the case of a team that is not affected by the result of

[3] Thirteen data sources were used to construct the CPI of countries for 2013: African Development Bank Governance Ratings 2012; Bertelsmann Foundation Sustainable Governance Indicators 2014; Bertelsmann Foundation Transformation Index 2014; Economist Intelligence Unit Country Risk Ratings; Freedom House Nations in Transit 2013; Global Insight Country Risk Ratings; IMD World Competitiveness Yearbook 2013; Political and Economic Risk Consultancy Asian Intelligence 2013; Political Risk Services International Country Risk Guide; Transparency International Bribe Payers Survey 2011; World Bank - Country Policy and Institutional Assessment 2012; World Economic Forum Executive Opinion Survey (EOS) 2013; and World Justice Project Rule of Law Index 2013.

the respective match. And finally, another possible explanation is quid pro quo behavior that might be treated as a type of corruption, as was stated by the US Supreme Court (1976, p27): "Of almost equal concern as the danger of actual quid pro quo arrangements is the impact of the appearance of corruption…".

This type of quid pro quo behavior was demonstrated by Duggan and Levitt (2002), who referred to corruption in the form of collusion rig matches in professional sumo wrestling in Japan. These researchers noted that a player's ranking and profits rose markedly after the competitor's eighth victory and showed that wrestlers approaching their eighth victory coordinated the results of their fight to improve their ranking and profit. Such coordination consisted of bribery or promises to reciprocate in the future. Based on this study, we examined the results in the following year for each pair of teams. Our results are in line with those of Duggan and Levitt (2002). We find that if a team that was in immediate danger of being relegated achieved the desired result that in retrospect prevented the relegation, the CPI has a signifficant impact on the probability that this team will reciprocate by losing in the following year. More intriguingly, we provide even stronger evidence that quid pro quo behavior occurs in the later stages of the next season in more corrupt countries.

Our study also contributes to the question of the validity of the CPI (see Campbell, 2013; Donchev and Ujhelyi, 2014). Although we find that the effect of the CPI is not linear and although we cannot completely rule out other possible explanations for our results, we still provide evidence of a strong relationship between the CPI and the outcome in real competition already found to be infected by corruption (see Hill 2009; McLaren, 2008; Preston and Szymanski, 2003). To the best of our knowledge, no past study has documented such a robust effect of the CPI on the probability of determining the outcome in real competitive settings, where all agents in all countries are faced with exactly the same task. And despite the fact that

corruption is usually associated with governmental activities, our findings provide evidence that the virus of corruption infects competition in different aspects of social life.[4]

The rest of the paper is organized as follows: Section 2 describes the data and the variables. Section 3 assesses the effect of the CPI on the probability of achieving the desired result in order to avoid relegation to a lower division, presents different ranges of CPI scores with regard to the linearity of this index and finally provides evidence of quid pro quo behavior. In Section 4 we offer concluding remarks.

II - Data Extraction and Variables

Our assumption is that in corrupt countries free market and competition principles are frequently violated and therefore are not internalized in people's values. Bribery is common and is seen as a practical solution for attaining desired goals in every area of corrupt society, from politics to sports. Therefore, our hypothesis is that the probability of fixed soccer match results depends on the culture and the moral environment. This hypothesis is supported by Hill (2009), who posed five essential questions that a potential corruptor must answer before making his decision: Is the game important? Is it morally acceptable to fix it? Can my team win the game without fixing it? Can I afford to fix the game? And finally, if caught will I face high sanctions? Two of these questions are directly engaged with the culture and the moral environment regarding corruption. To examine the hypothesis we looked for results of sensitive soccer matches where the outcome is important for one team while the other team is indifferent regarding the results. The hypothesis is that the prospects that the first team will attain the favorable result become greater as the country becomes more corrupt.[5]

[4] Previously Fisman and Miguel (2008) found that diplomats from highly corrupt countries accumulated significantly more unpaid parking violations than their counterparts from less corrupt countries.

[5] Preston and Szymanski (2003) argued that sports match fixing for betting purposes seems to have flourished where salaries are low, largely owing to restrictions on payments imposed by team owners or administrators, and where the incentive to win is not great enough.

In order to test our hypothesis, all the matches of the final day in the domestic soccer season were scrutinized in the countries that had a CPI rating during at least one of the years in the period between 2001 and 2013. Data was extracted from the The Rec.Sport.Soccer Statistics Foundation website (www.rsssf.com). Some matches were important, while others were less important. Specifically, matches may have been important to both teams, unimportant to both teams, or important to one team and less important to the other team. Included in this analysis were matches whose result was critical to one team, while the other team was relatively indifferent regarding the result. Importance of the result was defined according to the position of the team before the last day of the season. We referred to the team for whom the result is important as Team *A* and to the team that is less interested in the result as Team *B*.

We distinguished between two cases in which a match result might be important for a team:

1. Team *A* is competing for the championship or has the opportunity to take part in the championship game/playoff.
2. Team *A* is struggling to survive (is in immediate danger of relegation to a lower division or faces the risk of playing in a subsequent relegation game/playoff).

It is important to note that the literature has already shown that competitors are expected to improve their game in critical matches (Scarf and Shi 2008). Szymanski (2003) showed that profit maximization is the major motivation in American team sports. Athletes play for money and the financial incentive for winning is high. Therefore, one should consider the incentive for surviving in the league. Relegation from a leading league division has serious financial consequences, such as reduced future income and limited broadcasting contracts. Economists have suggested that public demand for sports events increases when relegation is at stake (Cairns, 1987; Forrest et al., 2005; Jennett, 1984).

In the first case (competing for the championship), winning the championship is assumed to improve a team's future cash flow, which should increase Team *A*'s exerted effort and as a result increase its probability of winning in the respective match. Moreover, in the first case, usually Team *A* is ranked higher (more skilled) than Team *B*, which also yields a higher probability that Team *A* will win. Therefore, there are two forces exerted in the same direction toward Team *A*'s higher probability of winning. In the second case (struggling against relegation), by winning (or sometimes ending in a draw) in the respective match, Team *A* may prevent serious financial consequences that can significantly harm the club's cash flow. This yields higher exerted efforts and therefore a higher probability of winning. However, Team *A* is usually ranked lower (less skilled) than Team *B* (83.3% in our data), which yields a lower probability that Team *A* will win. Therefore, unlike the first case, in the second case there are two opposing forces that can influence the probability that Team *A* will win. For that reason our focus will be on the second case, in which we will investigate the influence of corruption on Team *A*'s probability of achieving the desired result in order to avoid relegation.

To that end, we analyzed matches in which Team *A* is struggling to survive in the league and Team *B*'s case is neither of these two above situations, so it has no significant interest in the result of the match. In total, we analyzed 827 soccer matches from 75 different countries during the period 2001-2013 that took place on the last day of the season, where one team was struggling to survive in the league and the other team had no interest in the result of the match. It is important to note that even if Team *A* wins, which means that it achieved the desired result, it can still be relegated to a lower division because other teams that were also in danger of relegation also won in their games.

Complications emerged in most of the European leagues because the last match was decisive for participation in the following year's UEFA Championship League or UEFA Europa League (former UEFA Cup tournament). As such, many teams were involved in

important matches. It was therefore decided to analyze the second division and not the first division. In this case we analyzed the matches in which Team *A* was struggling against relegation to the third division and Team *B* was not influenced by the result of the match. We also excluded countries in which no promotion or relegation took place between the divisions (for example USA Major League Soccer) or countries in which the relegated team was determined by results obtained in the previous several seasons (for example, Argentinian league). Eliminating these problematic cases leaves a total of 75 different countries (see Appendix B for the full list of countries divided into divisions).

Variables

Our dependent variable, Desired Result, is a dummy variable where the value 1 is assigned if the result fits the requirements of Team *A* (a win or in some cases a draw) and the value 0 is assigned for all other outcomes (a loss or in some cases a draw). Panel A of Table 1 presents the descriptive statistics of the desired results and reveals that in the majority of the matches in the sample (61.9%), the desired result was obtained.

[Table 1 here]

To test the effect of corruption on the probability of obtaining the desired result, we have to use an index that represents the corruption level of country *i* during year *j*. For that purpose we use the Corruption Perceptions Index (CPI) published by Transparency International (TI), the global coalition against corruption. The scores range from 0 (highly corrupt) to 100 (not corrupt at all) and the scores are assigned annually to every country. When a match was played in a certain country (*i*) in a certain year (*j*), the CPI score of that country in the respective year was considered.

Table 2 (except for the three last columns) describes the data collected for each country in the sample and the corruption index information of each country. The table shows

that the CPI was almost constant over the years, with median and average standard deviations of 2.8 and 3.0 respectively. Figure 1 plots the percentage of observations where Team *A* achieved the desired result as a function of the country's average CPI score as presented in Table 2.

[Table 2 here]

[Figure 1 here]

Since our data include both home and away matches, we also controlled for the home advantage, which was found to be significant in previous studies (Terry et al., 1998; Sutter and Kocher, 2004; Garicano et al., 2005; Koning, 2011). Hence, we created dummy variable that was assigned the value of 1 if the match was played at Team *A*'s home field and the value of 0 if the match was played at Team *B*'s home field. Panel A of Table 1 shows that Team *A* attained the desired result in 72.8% of the home matches and just about 50.4% of the away games.

We also had to control for ability differences between the teams. In line with Klaassen and Magnus (2001), we considered the final ranks of Teams *A* and *B* and added a variable that reflects the difference in rankings, calculated as $log2(Rank\ of\ team\ A) - log2(Rank\ of\ team\ B)$. The main advantage of this measure is that the differences in team quality are not linear; instead, they grow at an increasing rate as we move up the table. This implies that a difference of one position in the league's table corresponds to a smaller difference in quality if the teams are at the bottom of the table, but corresponds to a more substantial difference when we compare top teams.

It is reasonable to expect that the higher ranked team will win. Indeed, Panel A of Table 1 shows that in 79.0% of the cases where Team *A* was ranked higher than Team *B*,

Team *A* attained the desired result. When Team *B* had a better final rank than Team *A*, in about 58.5% of the cases, Team *A* still attained the desired result.

Another factor we had to control for is the competitive balance of the league in the respective season. The intuition is that the lower ranked team has a higher probability of winning in a league that is in general more balanced. We use the *HHI* (Herfindahl-Hirschman index) that examines inequalities between all the firms in an industry. In the general industry case, the index is based on a calculation of the market share of every firm. These shares are then summed into a weighted average index for the industry using each firm's market share as its weight. In the case of soccer, the *HHI* captures inequalities between all the clubs that make up a league. We can translate this into an indicator of competitive balance for the soccer industry by looking at each club's share of points in a season and aggregating these into an index using each club's share of points as weights, to yield:

$$HHI = \sum_{c=1}^{N} S_c^2 \qquad (1)$$

where S_c is club *c's* share of points in a season, and *c = 1, 2…N*, where *N* is the number of clubs in the league. However, as a measure of competitive balance, the *HHI* always decreases as the number of firms in the market (clubs in the league) increases. Therefore, because the number of clubs varies between the leagues, it is necessary to control for the firm-number influence on the distribution of league points. Depken (1999) suggested the following formula in order to do so:

$$dHHI_{ij} = HHI_{ij} - \frac{1}{N_{ij}} \qquad (2)$$

where HHI_{ij} is the actual Herfindahl-Hirschman index in country *i* of year *j*, and $\frac{1}{N_{ij}}$ is the Herfindahl-Hirschman index in the most possible balanced league in country *i* of year *j*. The higher the $dHHI_{ij}$, the less balanced is the league. Table 1 show that the average value of

$dHHI_{ij}$ in our sample is about 0.007 and the standard deviation is about 0.005. We also controlled for the number of clubs in the specific league. Table 1 shows that on average there are about 15.4 clubs per league and the standard deviation is about 3.5.

III - Empirical Estimation

In order to analyze how corruption affects soccer results, we applied the following logistic regression:

$$\pi Desired\ Result_A = \frac{1}{1+ e^{-(\alpha_0 + \alpha_1 \cdot CPI_{ij} + \beta \cdot X_{ij} + \varepsilon_{ij})}} \quad (3)$$

Where $\pi Desired\ Result_A$ refers to the probability that Team *A* will attain the desired result, CPI_{ij} is the Corruption Perceptions Index score assigned to country *i* in the respective year *j* and X_{ij} refers to a set of observed characteristics of the match (a dummy for whether a match was played on Team *A*'s home field, the difference between the logs of the rankings of the two teams, the respective league $dHHI_{ij}$ score and the number of clubs in the league).

In Table 3 we show that the probability for Team *A* to attain the desired result is significantly and negatively correlated with the CPI score. The coefficient of the CPI is almost the same with and without the set of controlled variables. This means that the probability of attaining the desired results is greater in more corrupt countries (lower CPI score) as measured by CPI. Considering these 827 observations, a standard deviation increase (less corrupt) from the mean in the CPI Score as obtained from Panel A of Table 1 lowers the probability of Team *A* achieving the desired result by about 13.7%, and a one standard deviation decrease from the mean in the CPI Score (more corrupt) increases the probability of Team *A* achieving the desired result by about 12.4%. Table 3A shows that the model predicted 69.5% of the observations.

Our results suggest that, as expected, the home advantage increases Team *A*'s probability of achieving the desired result. Also as expected, we find that the gap in abilities as well as the $dHHI_{ij}$ significantly influence the probability of achieving the desired result. This result implies that in the more balanced league, Team *A*, which is usually the lower ranked team, has a higher probability of achieving the desired result. Nevertheless, more expanded gaps in abilities reduce Team *A*'s odds. The number of clubs in the league does not explain the probabilities of Team *A* achieving the desired result.

[Table 3 here]

[Table 3A here]

In addition, since our data consist of first and second divisions, we have to distinguish between those cases and run our regressions separately for each division. In Table 4 we present the results of these regressions. In the first column of Table 4 we ran a regression on the 406 first division matches. The CPI score is again significant, implying that the probability of attaining the desired results is greater in more corrupt countries (lower CPI Score). Based on these estimations, we find that an increase of one standard deviation from the mean value of the CPI score (less corrupt) lowers the probability of Team *A* attaining the desired result by about 9.0%, and a decrease of one standard deviation from the mean value of the CPI Score (more corrupt) raises the probability of Team *A* attaining the desired result by about 8.2%.

Similar results appear for the second division matches described in the second column of Table 4. In this case we ran a regression on the 421 second division matches in European countries, where an increase of one standard deviation from the mean value in the CPI score (less corrupt) lowers the probability of Team *A* attaining the desired result by about 10.2% and a decrease of one standard deviation from the mean value in the CPI score (more corrupt) raises the probability of team *A* attaining the desired result by about 9.7%. As we can see, the results are robust for the status of both of the divisions.

It is important to note that there are some countries in which the CPI score was assigned for the first time after 2001. In order to compare all the countries during all the years in the period 2001-2013 we considered the score of the earliest year the country was reviewed and assigned that score for the years where no CPI was available. For these countries we found 54 more observations in which Team *A* struggled against relegation. In the third column of Table 4 we ran a regression on the new data that consists of 881 observations, including those additional 54 observations. The results for the new set of observations are robust.

[Table 4 here]

The Linearity of CPI

Previous studies have criticized the CPI for being biased. There are several sources for this criticism. First, the CPI is a survey-based measure that uses opinions that may be distorted (Campbell, 2013; Donchev and Ujhelyi, 2014). Second, there is interdependence between the various sources of the index because the respondents who were asked for their opinions are similar. They consist of the national elite and they typically have a shared background and a similar education. Third, the index aggregates different individual source results that measure different things. Some of them focus on low-level administrative corruption, others on the frequency of bribes, others on size, others on the burden imposed on the economy or the relative seriousness of the problem and others on political dirty tricks. Therefore using an average of these sources may be meaningless or biased at the very least. Fourth, interpretation of corruption varies from one culture to another, while Transparency International may have a western perspective about corruption.

Therefore, we also intend to examine whether the effect of the CPI on the probability of attaining the desired result is continuous and linear throughout the scale of scores. For this purpose, we created four categorical variables with the same number of observations. The first categorical variable is assigned a value of 1 if the CPI score is in the lower quarter of the

observations (most corrupt countries with CPI less than 30); the second is assigned a value of 1 if it is between one quarter and one half of the observations (CPI scores in the range of 30-43); the third if it is between one half and three quarters of the observations (CPI scores in the range of 44-64); and the fourth if it is higher than three quarters (score of 65 and above). To avoid multicollinearity, we omit the first category and use it as a reference category. The results, presented in the last column of Table 4, are consistent with our previous results for the third and fourth quartile variables, where the coefficients are negative, the size of the coefficient decreases with the CPI score and the results are significant. The second quartile variable is positive and not significant. Therefore, it seems that there is no meaningful difference between the first and the second quartile in terms of the prospects of Team *A* to achieve the desired result. These results raise the suspicion that the impact of the CPI on the prospects is non-linear.

Therefore, in order to check whether or not the CPI scores respond linearly to the probability of the desired result, we use the logit model presented in equation (3) and examined the derivative function (by CPI score) as follows. In the first step we insert the coefficients described in column 4 of Table 3 along with the average values of the independent variables described in Panel A of Table 1. This yields the following $\pi Desired\ Result_A$ function:

$$\pi Desired\ Result_A = \frac{1}{1+e^{-(1.963+1.104\cdot\frac{426}{827}-0.685\cdot0.972-69.758\cdot0.007-0.016\cdot CPI_{ij})}} = \frac{1}{1+e^{-(1.395-0.016\cdot CPI_{ij})}} \quad (4)$$

Figure 2 depicts the function chart representing the relationship between Team *A*'s odds of achieving the desired result and the CPI scores when all other variables are at their average.

[Figure 2 here]

And finally, we derive the function presented in equation (4) as follows:

$$\frac{\partial\ \pi Desired\ Result_A}{\partial CPI_{ij}} = \frac{-0.016\cdot e^{-(1.395-0.016\cdot CPI_{ij})}}{\left(1+e^{-(1.395-0.016\cdot CPI_{ij})}\right)^2} \quad (5)$$

The derivative function chart is shown in Figure 3.

[Figure 3 here]

Figure 3 shows that the derivative function is negative and decreases as the CPI score increases. This means that one CPI point in high score counties (low corruption) has more influence on the probability that Team *A* will attain the desired result than one point in low score countries (high corruption).

The intuition behind this result is that there is not much difference between the countries with low CPI. For example, regardless of whether the CPI score is 20 or 40, Team *A* will most probably attain the desired result. However, as we climb the CPI scale, the differences between the countries become more conspicuous, and the values of transparency and visibility have more and more meaning. So, the extra effort Team *A* needs to invest in order to achieve the desired result in a country with a CPI score of 90 compared to the effort in a country with a CPI score of 70 is greater than the extra effort Team *A* needs to invest in order to achieve the desired result in a country with a CPI score of 40 compared to the effort in a country with a CPI score of 20.

Another interesting result as reflected in Figure 3 is that the influence of CPI score on the probability of achieving the desired result can be linear as well as non-linear and this is the function of the height of the CPI score. For example, at the high range of CPI scores (CPI of 65 and above) the slope of the derivative function is more or less 0. This negligible slope of the derivative function means that the effect of the CPI on the prospect of Team *A* achieving the desired result is linear in this range. However, in the range that describes more corrupt countries, the influence of CPI score is non-linear. This result is in line with Treisman (2007), who found far greater variations in the frequency of bribes reported in countries that were perceived as more corrupt according to the World Bank index. It is quite possible that in both cases the sensitivity of the indexes in more corrupt countries is biased.

Quid pro quo behavior

So far, we have emphasized the fact that it is more common that a team that needs a certain result will ultimately achieve that result when the country is more corrupt. We did not explain the mechanism by which this intriguing result was achieved. One explanation assumes the intervention of a third party that is interested in fixing matches. Another explanation is related to Team *B's* players, who have no incentive to make the extra effort. The third explanation pertains to the culture of corruption. In the following, our aim is to investigate possible quid pro quo behavior, which may be seen as a type of corruption.

Previously, Duggan and Levitt (2002) argued that in Japanese sumo matches, wrestlers reciprocate. Namely, in return for getting the precious eighth victory, the winner promises to lose to his opponent in the next year. Based on this finding we investigated matches in the following year to find out whether such reciprocation exists in soccer. For that purpose we considered all the pairs of Teams *A* and *B* where Team *A*, which struggled against relegation, managed to achieve the desired result against Team *B* in year *j*. In panel B of Table 1 we can see that in total there were 548 such matches between 264 different pairs in the following year *j+1*.

In order to investigate possible quid pro quo behavior, namely that Team *B* will win against Team *A* in the next year, we conducted a logit model regression where our dependent variable was Team *B's* winning probability in the following year. For that purpose we created a dummy variable and assigned the value 1 if Team *B* won and 0 otherwise (draw or Team *A* won). The results are presented in Table 5, where clustered standard errors at the "pair" level are reported in parentheses. In column 1 we present the results of the regression and find no significant effect of the CPI on Team *B's* winning probability in the following year.

[Table 5 here]

However, there may be a difference between the cases in which Team *A* achieved the desired result in the previous year. In one case this result was critical for Team *A* in retrospect. Namely, Team *A* would have been relegated to the lower division in the previous year without achieving this desired result. In another case, achieving the desired result was not critical in retrospect for team *A*, meaning that Team *A* would have survived in the league even without achieving this result. This may happen because other teams that were involved in struggling against relegation were unable to achieve a result that would keep them in the league for another year. These two situations may differentially influence a team's behavior in the subsequent matches against Team *B* in year *j+1*. Therefore, our aim is to investigate possible quid pro quo behavior only in the matches between the pairs in which Team *A* avoided relegation by actually achieving the desired result in the previous year, i.e., cases in which this result in the previous year was critical in retrospect.

But first we have to be sure that there is no significant difference in the main characteristics of the match (CPI, difference in rankings, dHHI, home advantage) between Teams *A* and *B* in year *j+1*, whether the result in the previous year was critical in retrospect for Team A or not. In Table 6 we present the results of logit and probit regressions using all 548 matches that were held in year *j+1*, where our dependent variable was a dummy variable. The value 1 is assigned if in year *j*, the match was critical for Team *A* in retrospect and 0 otherwise. The clustered standard errors at the "pair" level are reported in parentheses. We find that there is no correlation between the critical results in retrospect and all the independent variables that we used in the previous analysis. This implies that there is no significant difference between the main characteristics in the two different cases of the matches of year *j+1* between Teams *A* and *B*.

[Table 6 here]

In the next step we restricted the data to the first case only, in which Team *A* achieved the desired result that was critical in retrospect. In Panel C of Table 1 we can see that our new data include 334 such matches between 159 different pairs in year *j+1*. The last two columns of Table 2 describe the data collected for each country in the new dataset. Now we run the same regression as presented in column 1 of Table 5, but for the new dataset. The results are presented in column 3 of Table 5. We can see that the CPI score is significant at the level of 10%, implying that in more corrupt countries according to the CPI, there is a greater probability of quid pro quo behavior in which Team *A* will achieve the desired result on the last day of the season. If this result is critical in retrospect such that it prevents Team *A* from being relegated, then team *A* will most probably reciprocate by losing in the following year.

To probe more deeply into the quid pro quo behavior, we decided to investigate Team *B's* winning probability against Team *A* in the later stages of the following year. The intuition behind this is that the later matches of the season are more important with regard to the fact that each match may determine the final ranking and that there is less time to fix the mistakes. It is important to note that during the soccer season, each pair of teams can play against each other more than once. The reason is that in the round-robin type of tournament used in soccer leagues there are several rounds in which each team plays against a different opponent in the pair-wise matches at home and away. [6] Therefore, in addition to the CPI_{ij+1} score we add another key variable, LR_{ij+1} as a dummy variable that represents the last round in league *i* in year $j+1$. This measure is assigned 1 if the respective match between teams *A* and *B* is played in the last (or the only) round of the league and 0 otherwise. We also interact between CPI_{ij+1} score and the LR_{ij+1} variable by creating the $(CPI \cdot LR)_{ij+1}$ variable. Thus, eventually we run the following logistic regression in order to investigate possible quid pro quo behavior.

[6] In our database, represented in Panel B, there are nine pairs that played only one game between each other in the following year, 232 pairs played two matches, 17 pairs played three times against each other and six pairs played a round-robin of 4 rounds.

$$\pi Team\ B\ Wins = \frac{1}{1+ e^{-(\alpha_0 + \alpha_1 \cdot CPI_{ij+1} + \alpha_2 \cdot LR_{ij+1} + \alpha_3 \cdot (CPI \cdot LR)_{ij+1} + \beta \cdot X_{ij+1} + \varepsilon_{ij+1})}} \qquad (6)$$

Where $\pi Team\ B\ Wins$ refers to the probability that Team *B* will win against Team *A* in the next year and X_{ij+1} refers to a set of observed characteristics of the match (a dummy for whether a match was played on Team *B*'s home field, the difference between the logs of the rankings of the two teams and the respective league $dHHI_{ij}$ score). The effect of the CPI score on Team *B*'s winning probability in the last round of the league is given by the sum of the coefficients $\alpha_1 + \alpha_3$, whereas in all other rounds this effect is represented only by α_1. In column 4 of Table 5 we can see that this effect is significant in the last round of the season, where the p-value of $\alpha_1 + \alpha_3$ is equal to 0.0102, and not significant in the previous rounds. We also conducted the same test for all 548 matches between Teams *A* and *B* in year *j+1*; however, no significant effect of CPI was found (column 2 of Table 5). This strengthens the finding that the significant effect of CPI on quid pro quo behavior appears only in the pairs in which Team *A* achieved the desired result that actually helped to avoid relegation to a lower division. Figure 4 presents the percentage of matches in which Team *B* won in the last round of the following year as a function of the country's average CPI score.

[Figure 4 here]

Our intriguing results are in line with those of Duggan and Levitt (2002) that relate to reciprocation that takes place in sumo matches. Not only do we find general evidence of quid pro quo behavior that takes place in the future, but also more specifically we find that this behavior occurs in the later stages of the season.

IV - Concluding Remarks

In this paper we examined the effect of the CPI on the probability of determining the outcome in real competitive settings where all agents in all countries are faced with exactly the same task. For this purpose we examined soccer matches in 75 countries during the period

2001-2013. In all these matches that were determined randomly at the beginning of the season, one of the teams had to achieve the desired result on the last day of the season in order to avoid relegation to a lower division, while the other team was not affected by the result.

Our results indicated that the prospects of a team that struggled against relegation (team *A*) to attain the desired result are significantly higher when the country is more corrupt, as measured by the CPI score. This result was robust for different specifications and while controlling for other possible variables, such as home field advantage, difference in team ranking and the league's competitive balance.

We also find strong evidence of a significant effect of the CPI on the quid pro quo behavior that appears only in the pairs in which Team *A* achieved the desired result that actually helped to avoid relegation to the lower division. In these pairs, the more corrupt the country according to the CPI score, the higher the probability that Team *A* will lose in the following year. Moreover, we find not only general evidence of quid pro quo behavior that takes place in the future, but also more specifically we find that this "arrangement" occurs in the later stages of the following year.

There are other possible explanations for the finding that Team *A*'s prospects of achieving the desired result increase as CPI score decreases. It can be due to the intervention of a third party that is interested in match fixing. It can also be because Team *B*'s players have no incentive to "work hard". Nevertheless, our results provide evidence that corruption, as measured by the CPI, affects the level of competition in social activities that are not necessarily directly linked to governmental activities. In general this effect may lead to the lower effort exerted by agents and as a result to lower productivity.

Another contribution of this article is its examination of the validity of the CPI index, which has been criticized for not reflecting the actual corruption level in various countries. To

date, however, the validity of the index in a real life competitive environment with the same fixed and known rules in different countries has never been examined. More importantly, this environment was already found to be infected by corruption, and in the current study we found a significant association between the CPI level and the results of sensitive soccer matches. In other words, even if the CPI needs improvement, the index is not detached from reality.

It was further acknowledged that the CPI effect on the outcome of the various matches is not linear. Analysis of the results shows that the marginal contribution of one point at the lower end of the scale is less effective than the marginal contribution of one point at the higher end of the scale. This phenomenon may be relevant only to this specific study in the soccer field, but it may be meaningful to the CPI measure. The effort that a state has to invest to raise its CPI score from 20 to 21 is smaller than the effort needed to raise its CPI score from 80 to 81. This result is interesting and has important implications. Future research is advised to examine this phenomenon in fields other than soccer matches.

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Table 1: Descriptive statistics

Panel A: All matches on the last day of season j between Teams A and B

Variable Name	Team *A* achieved the Desired Result				
	Yes	No	Total	Mean (rate of yes/ total)	Standard deviation
A has better final rank	109	29	138	0.790	0.409
B has better final rank	403	286	689	0.585	0.493
A home game	310	116	426	0.728	0.446
B home game	202	199	401	0.504	0.501
First league	261	145	406	0.643	0.480
Second league	251	170	421	0.596	0.491
Total	512	315	827	0.619	0.486
Number of countries				75	
Relative Rank *A* to *B* $Log_2(A)$-$Log_2(B)$				0.972	1.046
Number of teams in the league				15.383	3.486
dHHI				0.007	0.005
CPI Score				50.013	22.535

Panel B: All matches in season j+1 between Teams A and B

Variable Name	Team *B* won				
	Yes	No	Total	Mean (rate of yes/ total)	Standard deviation
B has better final rank	206	181	387	0.532	0.500
A has better final rank	39	122	161	0.242	0.430
B home game	157	117	274	0.573	0.496
A home game	88	186	274	0.321	0.468
Last Round	108	161	269	0.401	0.491
Not last round	137	142	279	0.491	0.501
Total	245	303	548	0.447	0.498
Number of pairs				264	
Number of countries				63	
Relative Rank *A* to *B* $Log_2(A)$-$Log_2(B)$				-0.494	1.186
dHHI				0.007	0.006
CPI Score				46.180	21.447

Note: A - the team in need of a desired result in year j
B- the team indifferent to results in year j

Panel C: All matches in season j+1 between Teams A and B in which Team A achieved the desired result that in retrospect was critical in order to avoid elimination

Variable Name	Team *B* won				
	Yes	No	Total	Mean (rate of yes/ total)	Standard deviation
B has better final rank	120	112	232	0.517	0.501
A has better final rank	25	77	102	0.245	0.432
B home game	94	75	169	0.556	0.498
A home game	51	114	165	0.309	0.464
Last Round	64	98	162	0.395	0.490
Not last round	81	91	172	0.471	0.501
Total	145	189	334	0.434	0.496
Number of pairs				159	
Number of countries				56	
Relative Rank *A* to *B* $Log_2(A)$-$Log_2(B)$				-0.460	1.210
dHHI				0.008	0.006
CPI Score				44.958	20.632

Note: A - the team in need of a desired result in year j
B- the team indifferent to results in year j

Table 2: Descriptive statistics per country

Represent data from Panel A in Table 1							Represent data from Panel C in Table 1	
State	Years were covered	No. of Years with relevant data	No. of Relevant Matches	Percentage of matches in which Team *A* achieved the required result	Weighted average of CPI score	Stdv of CPI score	No. of matches between Teams *A* and *B* in the following year	Percentage of matches Team B won
Albania	11	5	18	88.9%	29.3	3.5	20	55.0%
Algeria	11	5	21	81.0%	29.9	1.8	14	42.9%
Austria	11	3	5	0.0%	83.4	4.0		
Azerbaijan	10	2	3	66.7%	21.4	0.4		
Bahrain	10	7	16	56.3%	55.4	4.3	6	50.0%
Belarus	10	3	8	50.0%	26.8	4.0	4	0.0%
Belgium	12	9	18	50.0%	72.3	2.8	8	50.0%
Bosnia and Herzegovina	11	5	11	81.8%	30.7	1.5	9	33.3%
Botswana	11	4	7	71.4%	57.8	1.7	4	75.0%
Bulgaria	9	3	5	60.0%	37.5	1.2	4	50.0%
Côte d´Ivoire	11	5	12	75.0%	22.2	2.3	8	62.5%
Czech Republic	11	6	15	60.0%	46.6	4.0	6	66.7%
Denmark	10	7	19	68.4%	92.8	1.6	7	28.6%
Djibouti	2	1	1	100.0%	36.0	0.0	2	0.0%
Estonia	10	3	5	60.0%	59.4	4.3		
Ethiopia	7	3	7	71.4%	31.4	4.1	6	50.0%
Finland	9	7	16	62.5%	95.3	3.3	4	25.0%
France	11	7	17	52.9%	70.8	2.4	6	50.0%
Gabon	10	3	5	40.0%	31.1	3.0		
Georgia	11	3	5	60.0%	34.7	4.4	2	100.0%
Germany	12	10	23	56.5%	79.1	2.5	2	50.0%
Ghana	10	10	24	66.7%	37.1	3.7	4	50.0%
Greece	9	3	5	80.0%	40.3	5.1		
Guatemala	11	1	3	66.7%	29.0	0.0		
Guinea	4	2	4	75.0%	24.0	0.0		
Hong Kong	11	1	3	100.0%	75.0	0.0		
Hungary	11	8	25	44.0%	50.8	1.7	8	25.0%
Iceland	10	4	8	25.0%	92.8	3.6		
India	11	4	12	58.3%	31.0	3.1	2	50.0%
Iran	11	5	9	77.8%	22.4	2.7	4	25.0%
Iraq	10	5	17	52.9%	19.4	3.5	2	100.0%
Ireland	10	1	3	0.0%	74.6	0.0		
Israel	10	7	16	68.8%	63.4	4.0	6	16.7%
Italy	11	6	27	77.8%	48.4	4.7	8	0.0%
Jordan	10	5	11	45.5%	49.1	4.2	3	66.7%
Kosovo	11	3	9	100.0%	31.4	2.4	8	37.5%
Kuwait	11	3	5	60.0%	45.1	2.7		
Latvia	10	2	3	0.0%	46.2	1.0		

	Represent data from Panel A in Table 1						Represent data from Panel C in Table 1	
State	Years were covered	No. of Years with relevant data	No. of Relevant Matches	Percentage of matches in which Team *A* achieved the required result	Weighted average of CPI score	Stdv of CPI score	No. of matches between Teams *A* and *B* in the following year.	Percentage of matches Team B won
Lebanon	11	6	15	60.0%	27.9	2.2	6	50.0%
Lesotho	5	3	7	28.6%	42.4	8.2	2	100.0%
Luxembourg	13	6	13	38.5%	82.3	1.9		
Macedonia	11	6	11	72.7%	35.7	5.7	5	40.0%
Mali	11	5	11	36.4%	29.6	3.0	8	50.0%
Mauritania	8	2	2	50.0%	27.9	2.9		
Mauritius	11	1	1	100.0%	52.0	0.0		
Morocco	11	5	12	91.7%	33.8	2.0	8	37.5%
Namibia	11	5	11	63.6%	43.7	3.4	5	40.0%
Netherlands	12	2	5	0.0%	86.4	2.2		
Norway	10	7	19	47.4%	86.2	2.9	2	50.0%
Oman	11	7	14	78.6%	54.0	4.8	6	16.7%
Poland	9	6	11	54.5%	43.1	5.4	2	50.0%
Portugal	11	9	19	68.4%	64.0	2.4	12	41.7%
Qatar	11	1	3	0.0%	77.0	0.0		
Romania	11	5	12	66.7%	30.1	4.3	2	0.0%
Russia	12	7	13	76.9%	25.0	2.9	4	50.0%
Rwanda	8	5	12	75.0%	39.0	12.6	4	75.0%
Saudi Arabia	11	3	7	14.3%	38.3	5.4	2	50.0%
Senegal	9	5	13	84.6%	31.0	1.1	6	33.3%
Serbia	10	3	8	62.5%	33.5	2.4	17	52.9%
Slovakia	10	2	5	60.0%	45.8	5.5	5	40.0%
Slovenia	12	4	9	100.0%	63.5	2.7	3	33.3%
South Africa	13	9	18	44.4%	45.4	3.4	2	0.0%
Spain	11	4	18	83.3%	65.0	4.0	16	31.3%
Suriname	10	5	12	75.0%	33.7	2.9	2	100.0%
Swaziland	13	6	13	53.8%	37.2	9.5	4	50.0%
Sweden	8	5	12	50.0%	92.5	0.4	8	50.0%
Switzerland	11	7	16	43.8%	89.2	2.0	4	25.0%
Tanzania	7	5	14	78.6%	28.8	2.6	8	37.5%
Tunisia	13	4	13	46.2%	44.3	2.3	8	87.5%
Turkey	8	2	6	83.3%	44.0	0.0	4	100.0%
Uganda	3	2	3	100.0%	25.0	0.0	4	25.0%
Ukraine	13	7	14	57.1%	24.6	1.8	2	50.0%
United Arab Emirates	11	4	7	57.1%	63.2	5.0		
United Kingdom	10	6	14	57.1%	82.8	4.2	8	0.0%
Venezuela	11	4	13	61.5%	21.3	2.3	8	50.0%
Total/Average	**762**	**346**	**827**	**60.4%**	**48.2**	**3.0**	**334**	**43.4%**

Table 3: The effect of CPI on the probability of Team A attaining the desired result in the matches against relegation - Logit model

Dependent variable: Team *A* achieves the desired result	(1)	(2)	(3)	(4)	(5)
CPI	-0.012***	-0.012***	-0.014***	-0.016***	-0.016***
	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)
Team *A* home advantage		0.973***	1.122***	1.104***	1.098***
		(0.149)	(0.160)	(0.161)	(0.162)
Log_2rank(*A*) - Log_2rank(*B*)			-0.647***	-0.685***	-0.687***
			(0.085)	(0.086)	(0.086)
dHHI				-69.758***	-76.591***
				(16.721)	(20.788)
Number of teams in the league					-0.016
					(0.028)
Intercept	1.099***	0.636***	1.311***	1.963***	2.255***
	(0.179)	(0.194)	(0.219)	(0.269)	(0.593)
Observations	827	827	827	827	827
Log likelihood	-542.254	-520.257	-482.905	-473.284	-473.126
Pseudo R^2	0.013	0.053	0.121	0.139	0.139
Number of Countries	75	75	75	75	75

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

Note: Robust standard errors are reported in brackets.

Table 3A: Logit model prediction (based on column 5 of Table 3)

		Predicted	
		0	*1*
	0	*147*	*85*
Actual	*1*	*168*	*427*
Number of cases 'correctly predicted'		*574*	*69.4%*
Likelihood ratio test: Chi-square (5)		*152.8*	*(0.000)*

Table 4: The effect of CPI score on the probability of Team A achieving the desired result in the matches against relegation– Logit model

Dependent variable: Team *A* achieves the desired result	Only first division matches	Only second division matches	Including observations with CPI score from the closest year	CPI score divided to quarters
CPI	-0.019**	-0.011**	-0.016***	
	(0.008)	(0.005)	(0.003)	
2nd quartile				0.057
				(0.231)
3rd quartile				-0.424*
				(0.225)
4th quartile				-0.984***
				(0.232)
Team *A* home advantage	1.090***	1.088***	1.077***	1.108***
	(0.239)	(0.222)	(0.157)	(0.162)
Log_2rank(*A*) - Log_2rank(*B*)	-0.915***	-0.538***	-0.672***	-0.688***
	(0.141)	(0.107)	(0.082)	(0.086)
dHHI	-96.798***	-56.187	-82.338***	-75.532***
	(26.963)	(38.625)	(20.776)	(20.624)
Number of teams in the league	-0.040	0.020	-0.020	-0.007
	(0.057)	(0.037)	(0.028)	(0.029)
Intercept	3.198***	1.000	2.353***	1.640***
	(1.069)	(0.895)	(0.588)	(0.598)
Observations	406	421	881	827
Log likelihood	-214.901	-254.456	-503.069	-470.032
Pseudo R^2	0.188	0.104	0.138	0.145
Number of Countries	41	34	75	75

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

Note: Robust standard errors are reported in brackets.

Table 5: The effect of CPI scores on the probability of Team B winning against Team A in the following year– Logit model:

Dependent variable: Team *B* wins	(1)	(2)	(3)	(4)
CPI	-0.001	0.006	-0.009*	0.002
	(0.004)	(0.006)	(0.005)	(0.008)
Last Round		0.241		0.865
		(0.440)		(0.612)
CPI*Last Round		-0.015*		-0.026**
		(0.008)		(0.012)
Team *B* home advantage	1.166***	1.169***	1.171***	1.178***
	(0.198)	(0.197)	(0.257)	(0.256)
Log_2rank(*B*) - Log_2rank(*A*)	-0.614***	-0.618***	-0.569***	-0.576***
	(0.912)	(0.092)	(0.112)	(0.114)
dHHI	22.333	21.444	17.609	17.585
	(17.698)	(18.013)	(25.309)	(25.506)
Intercept	-1.251***	-1.354***	-0.889**	-1.264***
	(0.285)	(0.355)	(0.356)	(0.471)
CPI effect in the last round (p-value)		0.174		0.010
Observations	548	548	334	334
Log likelihood	-329.397	-325.440	-199.478	-196.421
Pseudo R^2	0.126	0.136	0.127	0.141
Number of Countries	63	63	56	56

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

Note: Robust standard errors in parentheses (clustering at the level of the pairs ID). This table represents all matches between Teams *A* and *B* in year *j+1*. Columns 1-2 represent all matches in which Team *A* achieved the desired result in year *j*. Columns 3-4 represent all matches in which Team *A* achieved the desired result in year *j* that were critical in retrospect for Team *A* to avoid the relegation.

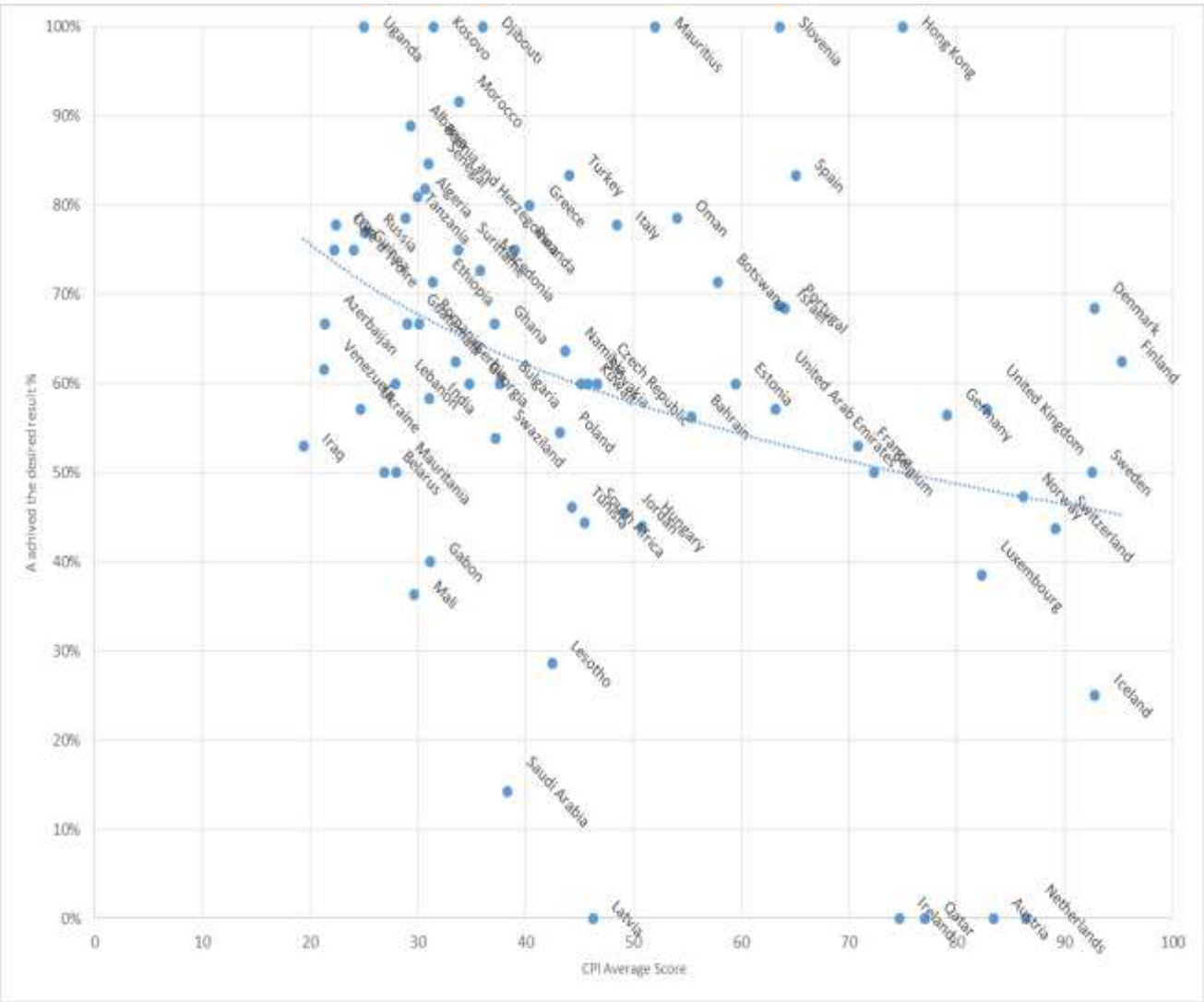
Table 6: Correlation between critical results in retrospect and characteristics of the matches between Teams A and B in the following year:

Dependent variable: Critical result	*Logit*	*Probit*
CPI	-0.006	-0.004
	(0.006)	(0.004)
Team *B* home advantage	0.056	0.035
	(0.052)	(0.032)
Log_2rank(*B*) - Log_2rank(*A*)	0.105	0.065
	(0.109)	(0.068)
dHHI	33.348	19.736
	(31.001)	(17.924)
Intercept	0.529	0.339
	(0.405)	(0.245)
Observations	548	548
Log likelihood	-362.541	-362.574
Pseudo R^2	0.011	0.011
Number of Countries	63	63

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

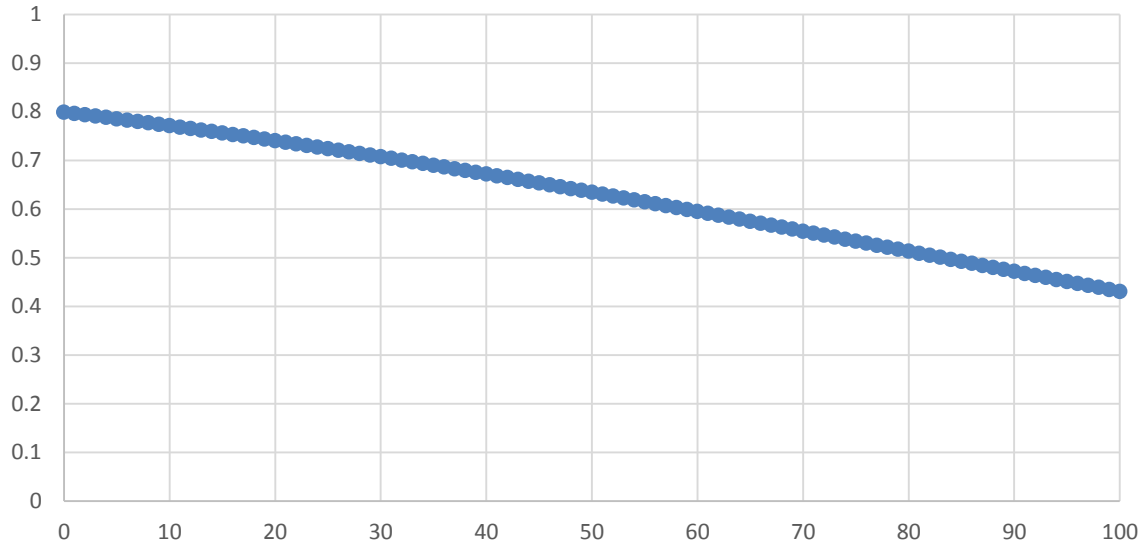
Note: Robust standard errors in parentheses (clustering at the level of the pairs ID).

Figure 1: Percentage of matches in which Team A achieved the desired result as a function of the CPI Score



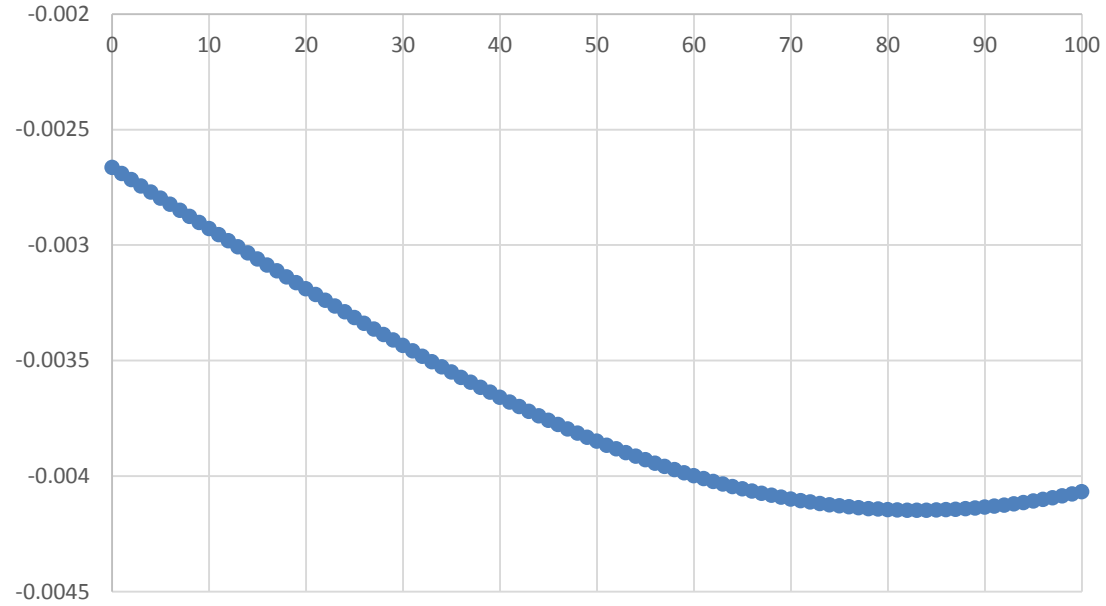
Note: This figure presents the percentage of matches in which Team *A* achieved the desired result in order to avoid elimination as a function of the CPI score.

Figure 2. The probability of Team A achieving the desired result as a function of CPI Score according to the logit model while all the other variables are at their average



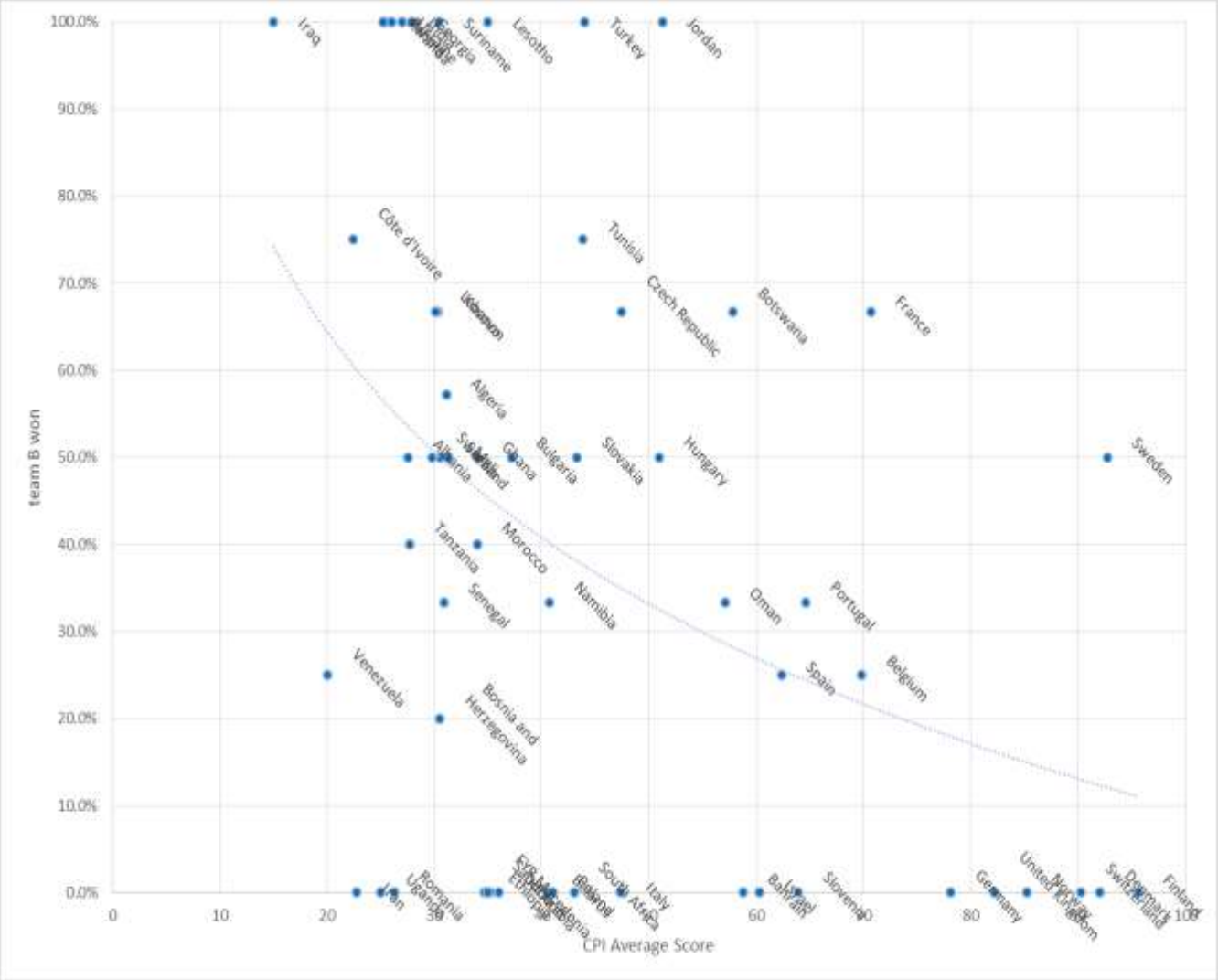
Note: This figure is based on the coefficients described in column 4 of Table 3.

Figure 3. The derivative of the probability of Team A achieving the desired result as a function of CPI Score according to the logit model while all the other variables are at their average



Note: This figure is based on the coefficients described in column 4 of Table 3.

Figure 4. Percentage of matches in which Team *B* won in the last round of the following year as a function of the country's average CPI score



Note: This figure presents the percentage of matches in which Team *B* won in the following year after Team *A* achieved the desired result that in retrospect was critical in order to avoid elimination.

Appendix A: List of Sources

www.rsssf.com

www.transparency.org

Appendix B: List of countries sampled by division:

1st Division Countries	2nd Division Countries
Albania	Austria
Algeria	Belarus
Azerbaijan	Belgium
Bahrain	Bosnia and Herzegovina
Botswana	Bulgaria
Côte d´Ivoire	Czech Republic
Djibouti	Denmark
Ethiopia	England as UK representative
Gabon	Estonia
Georgia	Finland
Ghana	France
Guatemala	Germany
Guinea	Greece
Hong Kong	Hungary
India	Iceland
Iran	Ireland
Iraq	Israel
Jordan	Italy
Kosovo	Latvia
Kuwait	Macedonia
Lebanon	Netherlands
Lesotho	Norway
Luxembourg	Poland
Mali	Portugal
Mauritania	Romania
Mauritius	Russia
Morocco	Serbia
Namibia	Slovakia
Oman	Slovenia
Qatar	Spain
Rwanda	Sweden
Saudi Arabia	Switzerland
Senegal	Turkey
South Africa	Ukraine
Suriname	
Swaziland	
Tanzania	
Tunisia	
Uganda	
United Arab Emirates	
Venezuela	