The Role of Decentralized Decision Making in Fans' Demand for European Football: Implications for Proposed Rules Changes That Would Interrupt Play

Nathan Berg[1] and JuanCarlos Martinez[2]

In American baseball, coaches tell players when to swing, when to run for home plate, and whether to steal a base. Similarly, frequent stoppage of play in American football and basketball enables coaches to regularly exert executive authority over key strategic decisions, setting up plays, dictating who should receive the ball, and guiding players' actions in relatively fine detail. In contrast, when match play begins in European football (i.e., soccer), the players on the pitch assume substantially greater decision-making authority. They invent plays, direct the ball to specific locations, and choose strategic approaches geared to the specific lineup of players on the opposing team.

This study collects empirical evidence from a variety of sources to investigate the role of decentralized decision making as a new variable to explain at least one component of the distinctiveness of European football and its role in attracting fans. In light of the important interaction between decentralized decision making and the relatively uninterrupted flow of the game, we then considers likely effects of proposed rule changes that would interrupt play. Our focus is the balance of executive versus players' real-time

[1] Nathan Berg is Associate Professor of Economics and Associate Program Head at University of Texas-Dallas. nberg@utdallas.edu
[2]Juan Carlos Martinez is Senior Lecturer in Economics at Richland College. CarlosMartinez@DCCCD.edu

decision making, and the expected consequences of match stoppage for fans' demand for European football.

As an industry populated by inventive businesses with enduring brands, European football is a much more competitive and decentralized business than the highly regulated professional team sports of North America (Barros, Ibrahimo and Szymanski, 2002). The distinctiveness of European football and its unique quality of athletic competition are undoubtedly crucial determinants of fans' appreciation of football. Yet quantifying this distinctiveness has proved challenging, as studies of fan attendance, which are typically specified as a function of competitive balance and other likely factors derived from standard economic models, have produced mixed results (Dobson and Goddard, 2001; Szymanski, 2001). Nevertheless many voices have expressed admiration and appreciation for the distinctive qualities of football and their importance in the context of homogenizing forces of globalization (e.g., Foer, 2004).

Our hypothesis is that football's unique level of real-time decision-making authority placed in the hands of players gives rise to a distinctive ensemble effect that is noticeable to spectators, both consciously and subconsciously. This phenomenon is intrinsically exciting and aesthetically pleasing. To witness players making critical strategic decisions in real time rather than executing a managerially-defined algorithm dictated from the sidelines is a distinct source of fans' pleasure. We look for all forms of evidence we can find to support or refute the role of this previously unstudied variable as a determinant of fans' attachment to their teams, attendance, and team revenue.

We then consider managerial decentralization's role in fans' demand for football and its interaction with time stoppage. The nearly continuous flow of match play without

time-outs or built-in time stoppages plays an important role in fans' appreciation of football. This important component of fans' demand functions suggests caution regarding the introduction of new institutions that require stoppage of match play. We discuss these implications in light of proposals to introduce instant replay technology, time-outs to increase ad revenues, and the IFAB's Additional Referee Experiment.

Attempts to quantify managers' contributions to team performance have been mixed, reinforcing the idea that football is, perhaps more than other professional team sports, a players' rather than a managers' game (at least once the match begins). See, for example Dobson and Goddard's (2001) less than satisfying statistical model of managers' contribution to team performance which ranked Sir Alex Ferguson in the middle of the distribution, much lower than managers with far less successful records. Szymanski (2001) shows that competitive balance is important, at least when explaining trends such as the declining attendance at FA Cup matches relative to English league matches. His evidence suggests that investments in player talent is key to growing the fan base, which is consistent with our hypothesis that European football players, and their real-time decision making during games, are a key component in the production of high quality football matches.

A previous line of research used Data Envelopment Analysis to estimate the maximum output possible given any combination of inputs and, based on that, to measure managers' relative efficiency. For example, Kern and Süssmuth (2005) present data pointing to the technical efficiency of managerial and player inputs in the production of match results—but they also find inefficiency in economic terms, which is once again

broadly consistent with our hypothesis emphasizing the importance of players' match-time decision making. A contrasting point of view is put forward by Frick and Simmons (2008), who argue that Bundesliga teams could perform better by paying more for better coaching. Garcia-del-Barrio and Szymanski (2009) present evidence from Spanish club football suggesting that many teams maximize the probability of winning and, in so doing, fall short of maximizing profits. A related but distinct measure of coaches' importance is team stability, which appears to have non-linear effects on team performance, as documented by Montanari, Silvestri, and Gallo (2008).

Barros, Ibrahimo and Szymanski (2002) describe an "Atlantic divide" that contrasts regulatory institutions and the quality of competition in US versus European professional team sports. These authors grapple with the question of which factors belong in fans' demand functions. Is it competitive balance, or the uncertainty of match outcomes? Is it the skill of individual players? Or is it something else altogether (i.e., something that has yet to be adequately quantified), perhaps related to the ensemble performance of teams that possess an enduring power to produce a quality of play that is undeniably interesting to watch. Dell'Osso and Szymanski (1991, p.113) identifies team "architecture" as a design principle that depends on the "structure of contracts and relationships which makes the whole greater than the sum of its parts." And the work of Barros, Ibrahimo and Szymanski (2002) suggests that, despite extensive economic analysis of available football data, there are still important variables missing from our understanding of fans' demand for football.

This paper seeks to fill this lacuna by introducing a new variable measuring decentralization of managerial control over strategic decision making during match play.

We rely on data from four sources. The first source is video information (based on professional soccer, NFL football, basketball and baseball) from which duration measures are derived, quantifying instances of coach-player communication and coaches' opportunities to make strategic decisions in European football versus American professional team sports. A second information source is survey data from which we attempt to measure the relative importance of football's decentralized managerial structure during match play as a potential missing variable to better describe fans' demand functions and what attracts them to football. A third source of data comes from laboratory experiments that measure participants' willingness to pay to watch team sports with strong versus weak executive control over players' actions. Finally, we examine previous data on fan attendance, match outcomes, and managerial strategy in European football to look for further empirical tests of the hypothesis that football's elusive and difficult-to-quantify distinctiveness among professional sports stems (at least in part) from the decentralized real-time decision making that places the game more under the control of players functioning as an ensemble.

Decision-making authority during match play, as a new explanatory variable with power to predict fan behavior, would seem to hold promise in quantifying elusive but nevertheless powerful factors that enable football to reach so deeply into culture, politics, and even nations' senses of confidence (McGovern, 2002; Borusiak and Braithwaite, 2010; Kavetsos and Szymanski, 2010). The interaction of our decentralized decision-making variable with match stoppage underscores the importance of continuous flow of football play, which mathematicians and statisticians have analyzed extensively to reveal deep predictive patterns pointing to a distinctive "ensemble" phenomenon in successful

football teams (Yue, Broich, Seifriz, and Mester, 2008). It stands to reason that fans appreciate this subtle yet powerful aspect that distinguishes football from other professional team sports.

Understanding the determinants of fan responses to international football competition can have important public policy consequences in addition to the high stakes consequences for soccer clubs themselves (Ahlert, 2001). Just as Chadwick (2007) argues in favor of synergistic collaboration between academics and professional soccer clubs, we contend that a new research focus on managerial and players' decision making can provide useful data, and perhaps fill in, what has until now been a missing variable in analyses of issues facing the international football community.

References

Ahlert, G. (2001). The economic effects of the soccer world cup 2006 in Germany with regard to different financing. *Economic Systems Research*, 13(1), 109-127.

Barros, C., Ibrahimo, M., & Szymanski, S. (2002). *Transatlantic Sport: The Comparative Economics of North American and European Sports*. Cheltenham, U.K.: Edward Elgar Publishing.

Borusiak, L., & Braithwaite, K. (2010). Soccer as a catalyst of patriotism. *Russian Social Science Review*, 51(1), 72-96.

Dell'Osso, F., & Szymanski, S. Who are the champions? (An analysis of football and architecture). *Business Strategy Review*, 2, 113-131.

Dobson, S., & Goddard, J. (2001). *The Economics of Football*. Cambridge: Cambridge University Press.

Foer, F. (2004). Soccer vs. McWorld. *Foreign Policy*, 140, 32-40.

Frick, B., and Simmons, R. (2008). The impact of managerial quality on organizational performance: Evidence from German soccer. *Managerial and Decision Economics*, 29(7), 593–600.

Garcia-del-Barrio, P. & Szymanski, S. (2009). Goal! Profit maximization versus win maximization in soccer. *Review of Industrial Organization*, 34, 45-68.

Kavetsos, G. & Szymanski, S. (2010). The happiness goal. *Psychologist*, 23, 460.

Kern, M., & Süssmuth, B. (2005). Managerial efficiency in German top league soccer: An econometric analysis of club performances on and off the pitch. *German Economic Review*, 6(4), 485–506.

Malcolm, D. (2000). Football business and football communities in the twenty-first century. Soccer & Society, 1(3), 102 - 113.

McGovern, P. (2002). Globalization or internationalization? Foreign footballers in the English league, 1946-1995. *Sociology*, 36(1), 23-42.

Montanari, F., Silvestri, G., & Gallo, E. (2008). Team performance between change and stability: The case of the Italian 'Serie A'. *Journal of Sport Management*, 22(6), 701-716.

Partridge, D., & Franks, I. (1993). Computer-aided analysis of sport performance: An example from soccer. Physical Educator, 50(4), 208.

Simon, H. (1947). *Administrative Behavior: A Study of Decision-Making Processes in Administrative Organization.* The Free Press. (4th ed. in 1997).

Szymanski, S. (2001). Income inequality, competitive balance and the attractiveness of team sports: Some evidence and a natural experiment from English soccer. *Economic Journal*, 111(469), 69–84.

Yue, Z., Broich, H., Seifriz, F., & Mester, J. (2008). Mathematical analysis of a soccer game. part I: Individual and collective behaviors. *Studies in Applied Mathematics*, 121(3), 223–243.