

The Influence of Managerial Changes and NCAA Regulations on Competitive Balance in College Football

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Most of sport leagues have faced a problem related to the balance of strengths among competitors within leagues. It was one of the primary concerns of league administrators since excessive imbalance in sport competition would have a negative impact on spectator interest (Kessenne, 2006). Likewise, the Coase Theorem (Coase, 1960) implies that the more even the distribution of playing talent, the greater the uncertainty of a given contest's outcome, which in turn influences the demand for the contest. This theory indicates that the uncertainty of each contest's outcome is of importance in determining both attendance and broadcasting revenue. Consequently, the overall competitiveness of a league is important to all teams playing within the league (Depken & Wilson, 2003).

Since the theory of competitive balance was introduced, scholars have conducted rigorous empirical investigations on various aspects, for instance, the formal balance within a league using the winning percentages and the number of championships, changing league rules regarding free agency and league expansion, cross-subsidization schemes such as reserve and draft systems, caps, and revenue sharing, and the connection between payroll and performance (Sanderson & Siegfried, 2003). Most of these empirical attempts are limited to professional sports, particularly, major league baseball (Schmidt, 2001; Schmidt & Berri, 2001, 2003, 2004; Lee & Fort, 2005; Fort & Lee, 2006). The issue of competitive balance has not been emphasized in collegiate sports as much as professional sport. Unlike professional sports, the uncertainty of outcome might be less important to gate revenues for collegiate sports because of the characteristics of the fans (Wilson, 2001). Additionally, intercollegiate sports have traditionally emphasized the balanced playing field from the beginning to promote amateurism without the impediments of profit motives (Depken & Wilson, 2003).

Nevertheless, recently, the issue of competitive balance has become a crucial concern in collegiate sport, especially in football, because football programs generate hundreds of millions of dollars per year for selective Division I-A institutions. Given their popularity and prominence, collegiate football programs are heavily regulated by the NCAA rules that are mainly designed to promote competitive balance (Baird, 2004). A few empirical studies have been conducted to identify the effect of NCAA regulations including enforcement and punishment upon outcomes in college football (Bennett & Fizek, 1995; Depken & Wilson, 2002, 2006). They found that NCAA sanctions have put insignificant effects on the competitive balance of collegiate football. While studies have examined the field of collegiate football in lights of the NCAA regulatory schemes, there has been a dearth of research about the issue of competitive balance with respect to management turnovers in collegiate football. Specifically, there has been no empirical study investigating the effect of how managerial changes in football programs that presumably affect the overall competitive balance in leagues or conferences. The purpose of this study is to propose a conceptual model based upon an economic theory regarding the competitive balance in Division I-A college football and the probable impact of management turnover, particularly, of head coaches of collegiate football programs. In order to measure competitive balance, the Hirschman-Herfindahl Index (HHI) of team points estimated from the ideal distribution of points in any given period are generated with respect to particularly selected Division I-A collegiate football leagues. A HHI is a set of sophisticated variance-based constructs than other index such as general winning percentage across leagues or number of championships won by teams. Specifically, it does not have the sensitivity issue related to sizes of leagues, length of schedule, and inability to capture the season-to-season turnover in relative position (Jenn, Allmen, Brook, & Preissing, 2005).

Following Depken and Wilson's model (2006), the impact of managerial changes in competitive balance in collegiate football can be described:

$$HHI_{i,t} = \alpha HHI_{i,t-1} + \beta_j \text{Regulations}_{j,t} + \gamma_h \text{Coach}_{h,i,t} + \delta \text{Time} + \epsilon_{i,t}$$

where i, t represents the conference and time, respectively; "Regulations" consists of the NCAA's enforcement, punishment and league membership change; "Coach" is dummy variable to represent the management turnover, where superscript h is introduced for lagged time.

According to Depken and Wilson (2006), the enforcement is measured by the total-related investigations conducted by the enforcement institution and total football-related probations. The punishment is measured as the average length of probations pending in a given year in a given conference. The HHI is calculated for the respective conference and year. The Generalized

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Method of Moments (GMM) estimates a functional form of competitive balance. This proposed model is likely to provide more insightful information regarding the competitive balance in collegiate football in lights of management turnover than previous studies. The empirical applicability of the model is warranted by a given hypothetical data analysis using a data set based upon 6 different college football conferences from 1953 to 2007, i.e., ACC, Big East, Big 10, Big 12 (former Southwest Conference), SEC, and PAC 10.