A Resource-Based Look at Compensation Strategy: Application and Implementation of Competitive Advantage

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While resource-based views of the firm implicitly assume heterogeneity with respect to resource endowments and the efficacy of firms to acquire additional resources, competing firms can still produce competitive advantage when such differences are negated by industrial policy. This study examines salary and performance data over a ten-year period and integrated theory and application of compensation policy on competitive advantage within the National Football League. Path analysis is used to examine a model of league salary cap components and reveals that strategic management of specific components of this compensation system does result in more team wins.

Introduction

Industrial relations policies and human resource practices are organizational activities directed at managing human capital and human resources toward the fulfillment of organizational goals (Wright, McMahan & McWilliams, 1994). In the context of the resource-based view of the firm, these activities are undertaken to achieve competitive advantage within an industry. Research on strategic human resource management (HRM) or resource-based strategy often makes broad categorizations of such practices without isolating compensation policy and implementation as competitive tools. For instance, Schuler (1992) generically discusses the necessity of human resource (HR) practices and policies to match business needs, but makes no

specific mention of the compensation system. On the other hand, Wright and McMahan (1992) stress the importance and research value of HR practices that reinforce role behaviors important to organizational success. Perhaps no other system is implemented more directly with the intent of reinforcing role behaviors consistent with organizational strategy than is a firm's compensation system. Strategic implementation of compensation management is not a new idea (Milkovich, 1988; Gomez-Mejia & Balkin, 1992a). However, the specific application of compensation management and a test of the resultant competitive advantage is the impetus of this study.

Competitive Advantage

Schulze (1994) observes two schools of thought in the resource-based strategy literature – a structural school and a process school – and asserts several assumptions made by these groups in explaining competitive advantage. Generically, Schulze (1994) cites: 1) Conner (1991) – all resource-based perspectivists assume that differences in product/service attributes (and therefore performance) are related to the differences in resources possessed or controlled by the firm; 2) Barney (1991) – resources are heterogeneous across competing firms; and 3) Rumelt (1987) – firms are rent seekers. Such firms seek returns in excess of the "normal" profit seeking perspective, and these rents can be differentiated by their source. For instance, the difference between managerially produced rents versus those produced by labor.

Schulze (1994) posits two additional assumptions which differentiate each school from the other. The structural school is characterized by the assumption that competitive advantage is sustainable from resources that are rare, valuable, imperfectly mobile, and inimitable through substitution (Barney, 1991). The process school assumes that rents are available to the firm through managerial learning, development of new resources, and achieving a better match between the competitive environment and the capabilities of the firm resources (Schoemaker, 1990); aspects which directly implicate the managerial quality and discretion in the implementation of strategy.

An implicit assumption of Conner (1991) is that competitive firms have differing inherent levels of efficacy with respect to their abilities to acquire critical resources. Firm-idiosyncratic resources are a central concept to the resource-based view and create a fundamental paradox with respect to generalizability of theory (Gibbert, 2006). Finkelstein and Peteraf (2007) also note that some environments and organizations limit managerial discretion. Some organizations or industries offer varying amounts of discretion depending upon their characteristics. A question arises then, if through chance or external policy, the ability of firms to acquire scarce resources was effectively equivalent, or non-idiosyncratic, would firm-by-firm managerial and developmental effects still account for all differences in rent production, or can the system of acquisition of resources account for these differences? Such an industry exists where, as a matter of policy, both the number of resources available to each "firm" is equivalent, as is the total amount of compensation each firm can provide.

Parity in Resource Acquisition

In 1993, the National Football League (NFL) entered into a collective bargaining agreement (CBA) with the National Football League Players Association (NFLPA) that changed the economic and social structure of their industry, as well as the ability of each team to acquire and retain its critical human resources. Two of the major changes provided by the CBA were the provision of free agency for most players with three or more accrued seasons, and an annual hard "cap" on annual aggregate team payroll. Free agency removed the long-standing protection of resource immobility that owners enjoyed, and which prohibited application of basic economic theory. This revolutionary move was prototypical of what Barney (1991) calls "structural revolutions in an industry," which may redefine or erode competitive advantage of individual firms.

Perhaps nowhere is the concept of competitive advantage more apparent than in the multi-billion dollar industries of professional sports. Here, resource acquisition, effective strategy, and management spell the difference between competitive success and mediocrity, making these industries prototypes for studies of industrial policy and resource-based strategy. Data from professional and collegiate athletics have proven to be a useful and insightful venue for many academics (Abelson, 1985; Bloom, 1999; Hofmann, Jacobs & Gerras, 1992; Mazur, 1994; Wright, Smart & McMahan, 1995) for at least two reasons. First, the use of sports data has been demonstrated to be a valid measure of performance (Hofmann et al., 1992), or used more generically as productivity indicants or outcomes (Mazur, 1994). There is some disagreement over specifically which statistics provide the most appropriate information (Henry & Hulin, 1987) for the given research circumstances and objectives, and it seems apparent that this information is valid, useful, and readily available. Second, athletics provides a fertile ground for the study of many of the issues of scholarly interest today, such as team formation and development, the interdependence of individuals and groups, effective leadership, resource management, and the implementation of strategic goals through compensation. The purpose of this article is to examine the function and effect of the salary cap in the NFL, its application to the resource-based view of the firm, and to empirically examine its structural components to determine how teams can win consistently despite using tools that are both available to and constrained to all competitors.

Why a Salary Cap?

The salary cap was arguably necessary from a league standpoint on a number of grounds. First, as evidenced in other major sports, particularly baseball, free agency begets ever-escalating player salaries (Staudohar, 1996). The salary cap meant that the subsequent increases in player salaries would reflect, rather than overextend, the revenues earned by the league, maintaining a viable economic structure. In order for free agency to be effective, particularly from the viewpoint of the players' association, salary levels must relate to player value or marginal revenue product (MRP). From a management viewpoint, an association between salary and value is validated by performance. In general, better performing players should have higher salaries, otherwise labor economics are being violated.

Second, it further demonstrated efforts at achieving competitive parity between the teams in the league. It was reasoned in part that, with each team's player expenses capped at the same amount, and in accordance with generated league revenues, teams had theoretically equal opportunity and economic means to purchase competitive resources in the newly created free agent market. Third, since the salary cap was tied directly to revenues which were divided equally among teams, it mitigated the concerns of small market franchises that bigger market, or more cash rich teams, could consistently outbid and more easily compensate valuable player resources. Thus, it was supposed to provide a means of achieving competitive and economic parity by institutionalizing compensation policy within the industry.

Specifics of the Cap

The salary cap is determined as a percentage of defined gross revenues (DGR), which is outlined in the CBA as the aggregate revenues from all sources relating to the performance of NFL games. This includes gate receipts and most significantly, television revenues. Excluded from calculation of DGR are revenues from concessions, parking, local advertising and promotion, programs, and those revenues from NFL Films and NFL Properties, the licensing branch of the NFL. The percentage of DGR that comprises the salary cap varies slightly over the term of the CBA. In its inception in 1994, the amount was 64%.

The actual team salary cap is determined on a *pro rata* basis by dividing the dollar amount arrived at as a percentage of DGR by the number of teams, less a portion of that figure (about $5 million) that is allocated annually to collective benefits, such as the player pension fund. The remaining portion represents the amount each team has available to spend on player salaries for that contract year. Every one of the thirty-two NFL teams has exactly the same amount as the limit they may spend, or more correctly, allocate collective player compensation. Each team also has the same number of active players. Thus, a situation exists whereby the number of critical human resources and the total amount of compensation are the same for all firms in the industry.

At the intuitive level, the salary cap seems to be a straightforward addition problem: do not spend more than x dollars in a given year on player salaries. Teams have found that implementation according to the rules agreed upon in the CBA is a much more complex issue. Since its realization in 1994, successful teams have had the same salary cap figure each year as losing teams have had. They appear to have been much more willing to incur significant risk, both from an economic and absolute standpoint, to do what they believe was necessary to sustain an advantage and win, either immediately or consistently. They chose to allocate salary cap dollars to future contract years. Although the cumulative dollars contained in players' contracts cannot exceed the cap number (without substantial financial penalty), the calculation of dollars spent for any given year may not reflect the actual dollars paid to a team's players. Even though the salary cap creates a hypothetical ceiling on the amount of money that teams can spend in a given year, the ceiling is frequently exceeded from a cash flow standpoint, depending upon a team's orientation toward risk.

Allocation is the key. The primary method by which teams routinely push cap dollars into future contract years is through the signing bonus. Signing bonuses,

regardless of when they are paid to a player, are prorated over the life of the contract. Thus, only that portion prorated to any given contract year counts against the total team salary cap, rather than the entire amount paid to the player at the time of signing. For example, if a player signs a five-year contract for $500,000 per year and receives a $5 million signing bonus, only $1,500,000 in salary counts against the cap each year, despite the fact that the player actually received $5,500,000 in his first year, and $500,000 each year thereafter.

Individual Compensation

In the presence of a competitive labor market, a player's maximum value would theoretically be equal to his marginal revenue product (MRP). From the team's perspective, in the competitive labor market, the most it should be willing to pay a player would be equal to his MRP. This aspect of compensation theory has applicability in many areas, not just professional sports. For instance, Gomez-Mejia, Tosi, and Hinkin (1987), in a study of executive compensation, provided the same explanation for determining the "upper limit" a firm would be willing to pay an executive. In this case, MRP was defined as the profit realized by a firm in excess of the amount estimated under the alternative or next best executive. The lower limit, or least amount an executive should accept, would be the next best offer or the amount he/she could obtain in their second-best employment situation. They also note that in a competitive market for executive talent, the MRP and second-best amounts converge and executive compensation will equal their MRP.

From the player perspective, the least he should be willing to accept in salary should be his next-best employment value, or reservation wage (Quirk & Fort, 1992). The reservation wage for some players may very well approach the minimum salary set forth in a collective bargaining agreement. The more competitive the free agent market, the more convergent the reservation wage and the MRP should be. The more substitutes that exist for a player's talent and the more players of equitable value available in the market, the higher the bargaining power of the team can be. In such situations, the consequent salary will be closer to the player's reservation wage. The greater the perceived uniqueness of ability or drawing power of the player (rarity and inimitability), the greater his individual bargaining position, resulting in a salary closer to his MRP. However, the dynamics of the salary cap can manipulate this situation. Without a cap, in a truly free market, the reservation wage and the MRP would be expected to converge. The actual effect is incongruent from what we expect in a free market exchange because the salary cap, as an absolute limit to (aggregate) market spending, can reduce the bargaining power of a player with respect to that of a team at or near that year's limit. This may serve to create and maintain a significant differential between his reservation wage with a team that has more room under the cap limit – a wage which may in fact be higher and closer to the player's true market value.

Monopsony Power

In resource-based terms, the new CBA created resource mobility. Until the advent of the agreement, a free market in the NFL had not existed. The monopsonistic position of each team with regard to the negotiation rights to a player effectively represented

concrete immobility. Such an economic position leads to a situation where player salaries have no reason to equal or perhaps even to approach their MRP (Hamilton, 1995). Yet, even without free agency, there had been variance in the individually negotiated player salaries. NFL owners have long maintained that players were paid for their performance, while the NFLPA had long asserted that this was not the case.

Ahlburg and Dworkin (1991), in a study of 1982 (pre-free agency) NFL player salaries, found that player's salary was determined by each player's draft round, position, and years in the league, all nonperformance related factors, as was then contended by the NFLPA. Also significant in the analysis was a performance measure. There were differences in salary correlated with individual performance by position, but this relationship was not significant for every position and was not very strong overall. Ahlburg and Dworkin's (1991) study provides evidence that player salary determination had been made primarily on something other than performance factors, a significant boost to the labor position in its own right. Football player salaries had been reflective of a skill-based compensation system, rather than a performance or merit-based system. Many of the skill-based system criteria outlined by Gomez-Mejia and Balkin (1992b) are reflective of the NFL. Some of this criteria includes frequent changes in technology and organizational structure, frequent employee exchanges, new learning opportunities, high turnover, and worker values consistent with teamwork and participation – the latter being the very embodiment of team sports.

With the CBA, there is some evidence that the new labor market brought performance into the equation. In a pilot sample (n=110) of the highest paid players (by position) in the first year of the salary cap, the 1994 playing season, Carey (1994) found performance to be highly significant (p<.001) in a regression model of player compensation, as well as position and the interaction of performance and draft round. In contrast to the Ahlburg and Dworkin (1991) study, neither seniority, nor draft round (as a main effect) was significant. While the sample for this study is somewhat biased, examining the highest paid players at the time, performance was a clear indicator of compensation for these individuals at the margin in the first capped season.

As a fundamental managerial principal in HR strategy, Boxall (2003) notes that, apart from the prospect for HR advantage, firms have no incentive to pay above market clearing wages. That performance is a factor in compensation and is a vital aspect in compensation strategy and implementation under the salary cap. If performance does not matter, owners have no incentive to pay above league minimums, and their competitive advantage or their ability to win games is a random effect. Essentially, player productivity is homogeneous. This would not seem to be true, because with or without a salary cap, some teams are consistently able to win games, yet others consistently lose. Variance in team wins would be much greater if they were the result of random effects. The salary cap creates a zero-sum tournament in which cost/benefit utility becomes the overriding issue. Teams at or near the cap level must pay less to one or more players in order to meet the market salary level for just one premium player. Thus, performance is a critical distinction. Since the salary cap produces an exercise in cost/benefit utility for team owners, one in which they know there is an absolute limit in their ability to purchase resources, a difference in rent production (defined as wins beyond the mean) should be illustrated consistently by structural

differences in the aggregation and distribution of salary cap components at the team level. If it can be shown that a relationship exists between some (or all) salary cap components and team performance, then the presumption of resource heterogeneity is also affirmed. Or, differences in team salaries reflect differences in player performance, and the economic theory holds.

Sirmon, Hitt and Ireland (2007) assert that the role of managers in a dynamic environment is to structure resources and bundle capabilities, creating a causal relationship between resource management and value creation. A demonstration that specific managerial activities result in competitive advantage is necessary to support theoretical aspects of the implementation of the resource-based view and also HR strategy. The questions of interest regarding management of the salary cap in the NFL are: a) whether teams can ultimately win more games through effective management of salary cap components, and b) whether differences in player salaries reflect differences in performance.

Hypothesis 1: Salary cap components, as defined by the NFL, in either their distribution or levels or both, are indicators of team success (wins).

    H1a. Team Total Salary is an indicator of team wins.
    H1b. Team Total Base Salary is an indicator of team wins.
    H1c. Team Total Cap Value is an indicator of team wins.
    H1d. Team Total Signing Bonus is an indicator of team wins.
    H1e. Team Mean Salary is an indicator of team wins.
    H1f.   Team Mean Base Salary is an indicator of team wins.
    H1g. Team Mean Cap Value is an indicator of team wins.
    H1h. Team Mean Signing Bonus is an indicator of team wins.
    H1i.   Team Salary Cap Percentage is an indicator of team wins.

Hypothesis 2: Player salaries have a positive relationship with performance.

Table 1: *Description of Variables*

Team Salary	Cap Components designated by the NFL.
Wins	Team regular season wins each year.
Salary Cap	Specified total amount of salary for each team each year.
Total Salary	Total of all player compensation paid by a team in a given year. (Can and does exceed the salary cap for the year.)
Total Base Salary	Aggregate contract year-specific base salaries, exclusive of all bonuses and incentives.
Total Cap Value	Aggregate amount of base salary, signing and other bonuses and/or incentives accruing to the salary cap each year.
Total Signing Bonus	Aggregate year-specific amount of signing bonuses paid each year.
Mean Salary	Mean amount of total salary for team each year. (Total salary / number of players under contract.)
Mean Base Salary	Mean amount of base salary, exclusive of all bonuses and incentives each year.
Mean Cap Value	Mean amount of base salary, signing and other bonuses and/or incentives accruing to the salary cap each year.
Mean Signing Bonus	Mean amount of signing bonuses paid each year.
Additional Variable Used in Analysis.	
Cap Percentage	Percentage of accrued cap value. (Cap Value/Cap)

Method

Salary data and components were collected for thirty NFL teams for ten seasons (1995-2004; n=300). The components of team salary that are defined, differentiated, and reported by the league and player's association were the variables used as the basis for this study. They include: Cap Value (total amount of player salary accruing to that year's salary cap), Total Salary (total amount of compensation paid), Total Base Salary (base pay rate, not including bonuses and incentives, for that season), Total Sign Bonus (amount of signing bonus accruing to that year's cap), and yearly means (the mean values for each of the four components above). An additional measure, Cap Percentage, was formulated. Cap Percentage is an indicator of the percentage of total cap dollars a team uses each year, as opposed to the absolute amount noted above. Salary data from two teams, the expansion Cleveland Browns and Houston Texans were omitted because they did not operate over this entire ten-year period. Data were combined for the pre expansion Cleveland Browns (a team that later became the Baltimore Ravens) who operated uninterrupted over the time period.

Path analysis was chosen as the appropriate method of testing a theoretical model of the effect of each variable on team win production and to produce tests for incremental model reduction (Hatcher, 1994). The original causal model was constructed according to convention as shown in Figure 1. Each salary component variable is illustrated using an arrow indicating the theoretical effect it exerts on team-win production. Curved, double-pointed arrows illustrate covariance between variables, including and especially between the year's actual salary cap and each of the individual components. The model is over-identified, allowing for goodness-of-fit testing (Hatcher, 1994). Because some—but not all—of the salary components may be significant, an additional objective of the study is to determine the best fitting causal model through model modification tests procedures.

Table 2: *Correlation Matrix*

	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9	10	11
Cap	58633	14555	-										
Tsalary	57451	16080	0.84***	-									
Tcap	50674	13011	0.89***	0.84***	-								
Tbase	31954	8205	0.69***	0.66***	0.85***	-							
Tsign	34134	29565	0.66***	0.78***	0.64***	0.52***	-						
Msalary	909.4	237.1	0.72***	0.91***	0.67***	0.44***	0.60***	-					
Mcap	802.8	173.8	0.82***	0.77***	0.87***	0.63***	0.46***	0.82***	-				
Mbase	502.3	102.0	0.63***	0.61***	0.73***	0.85***	0.37***	0.59***	0.76**	-			
Msign	746.7	454.7	0.13**	0.41***	0.16***	0.15***	0.70***	0.30***	0.01	0.03	-		
Cap%	0.869	0.089	-0.33***	-0.08	0.12*	0.21***	-0.09	-0.18***	-0.003	0.13**	0.07	-	
Wins	8.19	3.09	-0.02	0.05	0.04	-0.02	0.03	0.11**	0.11*	0.04	0.03	0.18***	-

*p<.10 **p<.05 ***p<.01

Figure 1: *Full Theoretical Model of Salary Cap Components on Team Win Production*
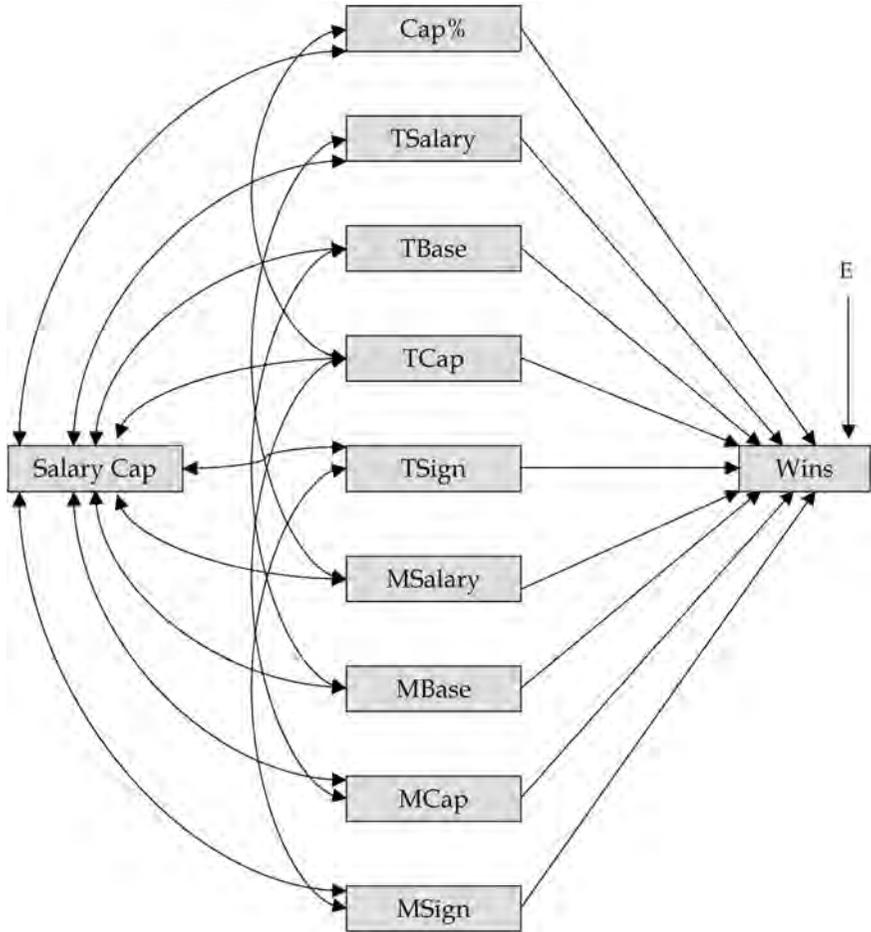
Results

The theoretical model was examined using the LINEQS input in the CALIS procedure of the SAS® system to identify variables that have a direct effect on the team wins. The initial examination of the CALIS output indicates the model fits the data, although model reduction is also indicated (Hatcher, 1994). The chi-square for the model is 1.21 with a p-value of .27, which is outside the rejection range, but not strongly indicative of model fit. Bentler and Bonett's (1980) normed-fit index (NFI) also indicates a fit at .9980. Despite these indications, only the path estimate for Cap Percentage indicates a significant t-test. Stepwise model reduction is indicated by Wald tests, with Mean salary (p=.9698), Mean cap (p=.4514), and Mean sign bonus (p=.2180) suggesting removal.

Table 3: *Tests of Full and Reduced Path Models*

	Full Model		Final Model	
	Path Coefficient [a]	t-value [b]	Path Coefficient [a]	t-value [b]
Cap%	0.282	3.91	0.265	4.19
Tsalary	0.142	0.17		
Tbase	-1.412	-1.77	-0.531	-3.70
Tcap	0.880	-1.08		
Tsign	0.163	1.07	0.196	2.60
Msalary	-0.029	-0.04		
Mbase	0.980	1.59	0.404	3.22
Mcap	-0.668	-0.99		
Msign	-0.080	-0.75		

[a] *Standardized coefficients*
[B] *T-test significant where absolute value > 1.96*

An incremental reduced model was tested eliminating Mean salary, Mean cap, and Mean sign bonus from the model and produced stronger results. The chi-square for the reduced model was 3.28 (p=.5114) and the NFI is .9994, indicating a much better fit. Several path coefficients again are marginal or non-significant, however. Total salary (t=0.5095), Total cap (t=0.8638), and Total sign (t=1.1528) each remain suspect. Wald tests indicate that Total salary is the only variable to remove, with the probability of the test at p=.6104.

Incremental reduction provides a better model when Total salary is eliminated. Chi-square for this reduced model is 3.54 (p=.6168) and the NFI of .9998 indicates fit, but t-tests of the remaining path coefficients raise additional issues. T-tests for Cap Percentage (t=4.19), Total base (t=-3.99), and Mean base (t=3.12) are all significant. Total cap (t=1.50) and Total sign bonus (t=1.81) are marginal. LaGrange Indices show no other variables should be included in the model, but Wald tests make removal of Total cap a possibility at p=.1345. Since its t-test was not significant, and the Wald test indicates removal, an addition modification was done.

Chi-square for a model of Cap percentage (t=4.19), Total base (t=-3.70), Total sign (t=2.60), and Mean base (t=3.22) effects on wins is 5.77 (p=.4490). With NFI .9990, collectively this final model appears to fit the data well according to Hatcher's requisites. LaGrange Indices and Wald tests show no other variables should be included or eliminated from the model. Collectively, these tests provide primary support for Hypothesis 1 and indirect support for Hypothesis 2. Standardized path estimates for the final model are shown in Table 3. Specifically, hypotheses 1b, 1d, 1f, and 1i are supported. Hypotheses 1a, 1c, 1e, 1g, and 1h are not supported.

The findings also demonstrate that player compensation is related to performance on a broad scale, in support of Hypothesis 2. Because a model fits the data (i.e. the distribution of team wins is reflected in their salary and bonus distributions), it is an additional indication that salary distributions exhibit the performance abilities of those teams' players. Holding true to the MRP argument, teams cannot stockpile talented resources under a mask of economic equity, but must pay for them according to market forces, and allocate expenses according to operational or strategic needs.

Figure 2: *Final Path Model*
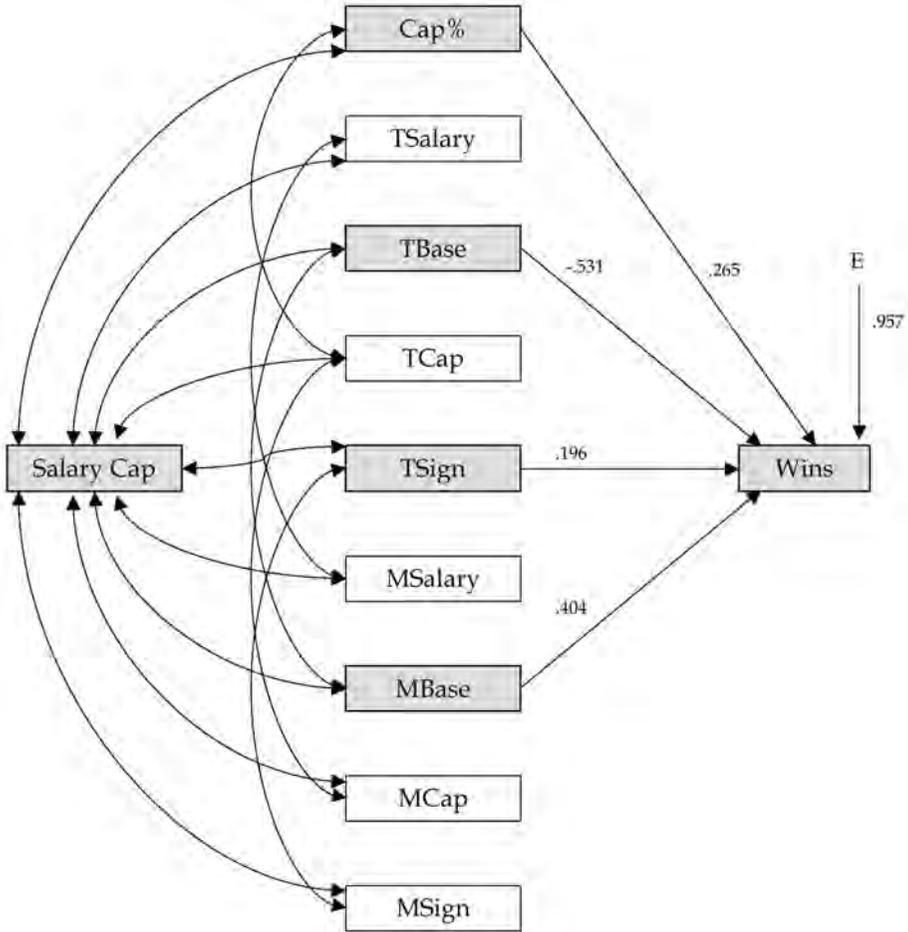
Discussion

Results indicate that teams in the NFL that choose to remain as far under the salary cap as possible each year are doing their organizations and their fans a disservice, assuming that their goal is to win more games. The results of incremental path analysis using salary cap components as reported by the NFL indicate that a team's ability to win consistently is possible despite resource equivalence. A general indication is that the closer your aggregate team compensation is to the salary cap, the more likely you are to win. Results of the model tested show that cap percentage, total base salary, total signing bonus, and mean base salary all contribute to win production in general support of Hypothesis 1.

As expected, the allocation of signing bonuses does affect win production and is shown to be a valuable tool in acquiring or stockpiling rare talent. Cap percentage

indicates that some teams win because they consistently use all of the financial resources available to them each year, rather than get by at the league minimums. It may also indicate that team owners or managers that do not push the limits of the cap may have a utility acceptable to them other than winning. Several possibilities exist, but profit may be a likely goal overriding wins. Total and mean base salaries are significant, yet the number of players accruing salary to the cap have little variance, due more commonly to injury or suspension. Because of this, these significant differences in wins likely come not from the base payments, but from player productivity, or heterogeneity of resources. Because the ultimate criterion of this study is wins, this is a stronger indication that players are in fact paid for differences in their performance than the simple fact that the data fits the model. Hypothesis 2 is thus supported and echoes basic labor economic principles. While some individual players may be overpaid or underpaid, there is a distribution of competencies among teams that is explicated by aggregate pay levels.

Essentially, resource heterogeneity is the norm for human resources when it comes to performance. Hunter and Schmidt (1989) showed that the standard deviation of performance is always at least 20% of the mean. Further examination by Hunter, Schmidt and Judiesch (1990) demonstrated this difference to be even larger within high complexity jobs (as much as 46%). It could be argued then, that part of the reason teams pay more for specialists is to reduce the possibility of variation in performance, particularly when there is a specific competitive intent in mind. Highly specialized performance that is interdependent, (i.e. in a team-based work environment) makes "skill and resource deployments" (Reed & DeFillippi, 1990, pg. 92) ambiguous to the competition, which raise barriers to imitation. Thus, teams help themselves by seeking and acquiring asset specificity (Williamson, 1985), and are willing to pay for those aspects. This would appear to be equally valid for managerial positions. This is very much in line with the resource-based view of the firm. Generalizing from the perspective of the structural school, this hints that managers might consider variable compensation systems that preserve the immobility of those higher producing human resources. The process school posits that rents can be and are produced by managerial resources. In this context, matching specific player personnel with a well-defined strategy, and this interpretation may account for much of the error variance in the model.

Some teams are somewhat superior in their ability to implement a strategic plan in confluence with the resources at their disposal. Thus, it is possible that the ability not only to select and compensate "better" players effectively, but also the ability to match these players' abilities, or more importantly, to develop personnel who can do many things specifically toward the strategic intentions of the organization (or vice versa) are the mechanisms by which an organization produces rents. Some teams win more consistently because they are coached and/or managed better than others. This was the findings of Wright, Smart and McMahan (1995) using basketball data and also the finding of Kahn (1993) using professional baseball data. Better managers lead to more wins, and individual player performance improves as the managerial quality improves. Managerial quality includes the management and implementation of industrial relations and human resource practices such as compensation, as well as coaching

decision-making. While the literature examined sports industries, authors such as Castanias and Helfat (2001) effectively generalized the concept of managerial quality to apply in most industries.

Implications for Practice

The results of this study demonstrate several principles useful for managers in broad contexts. First, competitive advantage can come from many parts of an organization, not just the planning and strategy formation processes. Implementation is key and this is particularly true when considering the activities and support functions that human resources perform. This study supports the notion that effective human resource policies and procedures such as selection and compensation can be critical to an organization's success.

Because this study illustrates that resource-based views of the firm also soundly apply to critical human resources, it lends support conceptually and economically to merit-based compensation systems over more traditional methods, such as seniority-based compensation, where these are appropriate. When firms benefit economically or competitively from idiosyncratic human and social capital, it may be in their best interests to share some of that benefit as a motivation and retention device.

Of even broader applicability is the demonstration that a structural change to an industry should not be viewed as merely changing the rules of competition. In such circumstances, a manager's tasks should focus on understanding the impact that structural change has on his or her organization and the relative effects such constraints have on their competitors. This study demonstrates that sustained advantage results from doing so. Because successful strategy is a dynamic process rather than a choice (D'Aveni, 1994), the effective manager understands that it is what he or she can do, not what new and complex constraints prevent doing, that produces a competitive advantage. While it is simple to suggest that managers merely reframe structural changes as new opportunities, competitive success depends upon proactively and positively responding to constraints when they occur.

Limitations

As always, some limitations are evident. First, because of the construction and delineation of variables as they are defined by the NFL, there is multicollinearity between several of the variables. Second, while the purpose of this study was to examine those variables reported by the league, effects that are not included in these data may represent a significant clue to specifically understanding the management of salary in the league. For instance, average contract length would be useful in determining over how long a period the signing bonus amounts are spread. It is possible that contract lengths are gradually extending each calendar year as a method of accruing less to each cap year. If true, this might account for a non-trivial amount of error, and further illustrate a principle of effective management. This variable is not one of those reported by the league, and hence was not used in this study.

Recommendations for Future Research

A starting point for continuing research in this area would be examination of

variables which may have additional explanatory value. As noted above, it might be useful to examine the absolute amount of initial signing bonus each year and the average lengths of the contracts. Not only do these amounts vary between teams and players, but such variation might also help explain differences in compensation strategy between successful and unsuccessful teams. Team-specific effects are also unaccounted for, and clearly have an impact on the criterion of wins. However, these effects can potentially be operationalized in a number of ways. For example, variables such as coaching turnover and even the construction or renovation of new facilities have been suggested, at least in popular media, as possible sources of team success.

Another key in further understanding the dynamics of competitive advantage would be to examine the effect of individual performance on team performance. In the context presented in this study, it would be valuable to determine how successful or unsuccessful teams distribute their salary cap among which of their players or positions. Individual performance could be both gauged against absolute standards and compared league-wide. A comprehensive understanding of the interaction of individual and team performance may provide a theoretical foundation that could have broad applicability, given the proliferation of team-based organizations and decision-making.

Although this study looked specifically at compensation policy, an additional area of research may be the effects of managers and coaches on team rents. This is particularly true given that other studies (e.g. Kahn, 1993) have found positive connections between management ability and firm success. Determining these and other such factors that contribute to firm- or team-specific effects is an important area for future research. Fundamentally, it would be useful to consistently demonstrate that effective management practices lead to competitive advantage, rather than convolute the association by assuming that a firm's success is a direct result of a manager's charisma, without first understanding what he or she actually did.

Conclusion

It should be noted that it was not the intent of this study to pit Schulze's (1994) structural and process perspectives on resource-based strategy in an attempt to validate one or the other. These perspectives were used as a theoretical basis for exploring a wholly unique industry and circumstance where the ability of competitive firms to acquire critical resources is non-disparate. This study demonstrated that even under conditions of parity, competitive advantage can be attained by firms that effectively manage the tools available to them. The generalizability of operational human resources and managerial abilities as critical aspects of a firm's success, and the ability of managers to the compensation system to produce performance, should not be undervalued. Authors such as Koch and McGrath (1996) have asserted that human resource policies affect firm productivity. Thus, effective management of compensation and human resource practices may result in significant productivity gains for the

organization and improvements to effectiveness and efficiency objectives. One must accept that HR policy such as effective compensation does not exist in a vacuum. It is inextricably linked to other organizational processes and outcomes, such as effective selection and appraisal of performance. The end objective is competitive advantage.

In addition to selecting high performing human resources, firms would do well to take care to implement strategic planning by linking business needs and HR practices. One of the tools available to achieve competitive advantage is through effective management of compensation policy. This is in concurrence with Barney's (1991, 1995) theoretical perspectives on resource-based strategy.

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