

Full Length Research Paper

The effects of equities on organizational performance in Chinese professional baseball league

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Accepted 25 June, 2010

The paper introduces indices to measure the concepts of internal, employee, and external equities in social psychology. The unbalanced panel data of Chinese Professional Baseball League (CPBL) for the year 1990 to 2007 are employed to examine the relationships between salary dispersions and corresponding performance. The empirical evidence shows that payroll has a significant and positive effect on team performance. It indicates that the expenditure on human capital induces more wins in the CPBL. In addition, the measure of internal equity has an insignificant effect on performance. The results of internal equity do not support equity theory. The effect of employee equity for pitchers is significantly negative for team performance. The external equity is significant for team performance, but the evidence is very limited. The empirical evidence shows that the degree of employee equity for pitchers negatively contributes to teams' performance, but not for hitters. This discrepancy reflects the difference in cooperation requirements of different positions. The implication for team managers is that tournament-like compensation is suitable for pitchers but not for hitters.

Key words: Employee equity, external equity, internal equity, professional baseball, team performance, tournament theory.

INTRODUCTION

Pay equity has an important effect on organizational performance. While most papers focus on describing the development of wage differentials over time and seek to identify the reasons for the observed patterns, few attempts have been made to analyze the relationship between pay equity and organizational performance (Frick, Prinz and Winkelmann, 2003). In one of the earlier papers on the topic, Simon (1957) asserted that the relative distribution of pay within an organization is a critical determinant of executives' behavior. Furthermore, pecuniary pay also matters to most employees, and research has shown that the level of employees' salary dispersion is linked to a number of significant organizational performances. Unfortunately, the lack of individual salary data and well-defined performance data always makes the analysis of this relationship complicated. Therefore, knowledge of the influence of pay inequality

on economic outcomes is quite limited.

Thanks to the availability of salary and performance data, professional sports represent a unique laboratory for testing labor market theories and predictions (Antonietti, 2006). Kahn (2000) indicated that there is no research area like professional sports where we know the detailed history of individual performance, team performance, and wages. As a result, there is a considerable amount of research on professional sports because of this unfettered access to compensation and performance data for each player and team.

Neither the theoretical model nor empirical evidence of the relationship between salary dispersion and organizational performance is unambiguous. Theoretically, there are two strands of literature with opposing predictions. One stand of this literature focuses on incentives and establishes a positive link between salary dispersion and firm performance: individuals will work harder if there is larger additional money earned. An example of this is Tournament Theory proposed by Lazear and Rosen (1981), wherein a greater salary gap increases worker's

effort and organizational performance. The second strand of the literature focuses on equity and fairness, and it is proposed by Akerlof and Yellen (1990). This perspective suggests that dramatic increases in salary dispersion within an organization may cause breakdowns of team cohesiveness and performance. As advocated by Levine (1991), the Pay Equality Hypothesis predicts that greater wage disparity motivates jealousy and mistrust among players in teams and causes possible reduction in individual performance and overall team performance. In addition, Folger (1993) argued that too much dispersion might create feelings of social, psychological, and economic injustice, and therefore a more compressed salary distribution within a team should lead to better team performance.

Researchers have held two opposing views in regard to this question. Based on the tournament perspective, Becker and Huselid (1992) found a positive relationship between auto racers' wage dispersion and their performances. Ehrenberg and Bognanno (1990) showed that, after controlling for a golfer's ability, his opponents' ability, and the difficulty of the course, the offering of a greater prize at a tournament will have a statistically significant, favorable effect on a player's performance.

By contrast, the compressed salary argument, which is derived from the perspective of equal pay, focuses on how a pay distribution affects collaborative work and cooperation. Studies of baseball players (Richards and Guell, 1998; Bloom, 1999; Depken, 2000; DeBrock et al, 2004) and soccer players (Franck and Nüesch, 2008) tend to agree that inequity has a negative impact on performance. Bloom (1999) measured the intra-wage disparity of a team by a Gini coefficient for wage payments and argued that organizations with lower Gini coefficients have higher winning percentage, gate receipts, media income and franchise value. Depken (2000) used the intra-team Herfindahl-Hirschman Index (HHI) for salary payments to measure intra-team salary dispersion. He found higher salary disparity is detrimental to team performance.

The empirical findings from Frick et al. (2003) and Jewell and Molina (2004) are mixed. Frick et al. (2003) used data from four major leagues and the team's Gini coefficient to test the relationship between salary disparity and performance. A higher degree of salary disparity enhances the performance of basketball and hockey teams but decreases the winning percentage of football and baseball teams. Their findings suggest that neither the hypothesis of cohesion nor Tournament Theory is fully supported or rejected. Results may depend on the specific factors, such as the size of a team and the requirement of cooperation in a team.

The complexity of the salary structure for an organization that links pay to employees' performance is an important issue. There are some working papers such as Franck and Nüesch (2008) and Vasilescu (2007) made a great effort on analyzing possible non-linear effects of

wage dispersion in professional team sports. In this paper, I provide another way to cope with the complicated system of salary structure for an organization. The individual may base his or her perceptions of equity on more than one equity comparison (Ronen, 1986). The feelings of fairness from the perspective of internal equity, employee equity, and external equity must be considered in order to provide a more complete view of the relationship between salary dispersion and team performance. The concept of internal equity, which is called intra-team salary dispersion in the sports economics, has been employed by most researchers in team-sports economics when they discussed the related issues. The relationship between salary dispersion and organizational performance from the viewpoints of external and employee equity has not been discussed. This paper contributes to the existing literature with a more complete investigation of the relationships between the degree of salary disparities, e.g. the scope of internal, external and employee equities, and organizational performance. Analyzing the link between further concepts of salary dispersions related to the organizational performance can not only understand the relationships between fairness and performances, but it can provide a paradigm for structuring further suggestions of salary policy.

Internal, employee, and external equities

Equity theory states that employees examine their input and output and judge fairness by comparing them to the input and output of a referent other (Adams, 1963, 1965). Employees who perceive that they are either under or over compensated in terms of salary might experience inequity tension. Such tension motivates employees to alter their input and output, or may cause them to leave the workplace (Mowday, 1983). Furthermore, the referent others need not be a specific individual, but may be a broad class of relevant others. Based on common choices of referent others, three distinct types of equity in social psychology are common: external equity, internal equity, and employee equity.

Internal equity refers to the relative fairness of the pay for different types of jobs within an organization. Jobs that differ in terms of their content (e.g., skill, effort, responsibility and working conditions) should have different base wages associated with them. Although employees use internal as well as external referent others (Andrews and Henry, 1963; Finn and Lee, 1972), the relative importance of this use is unclear. Finn and Lee (1972) found that employees using internal comparison others were more satisfied with pay than those using external others. However, Hill (1980) indicated that people tended to use both internal and external referents.

Employee equity refers to the fairness of pay based on the relative performance contributions of individuals working on the same type of job in the same organization.

Much of the research supporting Equity Theory, using this type of concept, has been experimental (Mowday, 1983). It has been suggested that the impact of employee equity is greater than the impact of internal and external equity (Romanoff et al, 1986; Coff, 1997).

External equity refers to the fairness of pay for a specific job in an organization in comparison to the pay for similar jobs in other organizations in the relevant labor market. Even when referent others are not in the same type of organization or work group, or are substantially dissimilar, equity effects may still be considerable (Weick et al., 1976). Moreover, limited evidence suggests that managers higher in organizational hierarchies may use external comparison with others more than managers lower in hierarchies (Ronen, 1986; Heneman et al., 1980).

METHODOLOGY

Taiwan entered its professional baseball era in 1990 with the establishment of the Chinese Professional Baseball League (CPBL). The labor market in the CPBL is almost monopsony. Once a rookie is drafted, the player cannot leave the team unless he is released by the original team manager. That is, the trading of players between teams is totally controlled by the employers. Besides, there is no free agency in the CPBL, so player's contracts never expire for a given period.¹ Furthermore, there is no powerful labor union and the salary arbitration is also commanded by the teams' leader committee. This result is a serious imbalance of bargaining power between employers and employees and employers can easily exploit employees. It seems that CPBL is stuck in the "reserve clause era" of the MLB before 1976.

Richard and Guell (1998) argued that on-field performance is an ideal index by which the team's success can be gauged. In this study, we will use the percentage of wins (wins per games played in each year, WinP) and the number of wins (WinN) in each year as the proxies for the team's on-field performance (TP). Examining the CPBL panel data by following the Depken (2000) fixed and random effects models, the explanatory variables are the total salary (TSal), the index of a team's salary equity (E), and time dummies (Time). Variable E includes three indices to measure the salary dispersions from the view of internal (IE), employee (EmpE), and external equity (ExtE), and the variable TSal is divided into the total salary of pitchers (TSalP) and the total salary of hitters (TSalH) in order to uncover correspondence between these different concepts of equity. The fixed effects empirical model used in this study is specified as follows:

$$TP_{kt} = \alpha_k + \beta_1 \text{LogTSal}_{kt} + \beta_2 \text{LogE}_{kt} + \beta_3 \text{TIME}_{kt} + \varepsilon_{kt} \quad (1)$$

Where the α_k are individual effects that vary across teams, the β are parameters which are constant across teams, and ε_{kt} is a random term.

In order to simulate the salary dispersions from the perspective

of internal, employee, and external equities, the measurements of different groups (hitters or pitchers) and their corresponding player's total salary are necessary. By previous definition, the variable IE, which represents the salary dispersion from the view of internal equity, is constructed by using the coefficient of variation for players' salaries within the same team. It is defined as the ratio of the standard deviation, σ , to the mean, μ , for players' salaries in team i in year t , and the formula is abbreviated as follows:

$$IE_{it} = \sigma_{it} / \mu_{it}, \quad i=1, 2, 3, \dots, n. \quad t=1, 2, 3, \dots, T. \quad (2)$$

The corresponding total salary includes all the players' salaries in the same team. Then, employee equity is defined by the same job equity comparison in the same team, and the external equity is the same job equity comparison in different teams. Therefore, the players must be divided into groups (e.g., hitters and pitchers) for measurements of salary dispersion from the viewpoints of employees and external equity for comparison.

The proxy variables of salary dispersions from the perspective of employee equity include the measurements of salary dispersion from the viewpoint of employee equity between hitters (EmpEH) and between pitchers (EmpEP). That is, EmpEH/EmpEP measures the degree of equality in hitters'/pitchers' salaries, and EmpEH and EmpEP are measured by the coefficients of variation for hitters' salaries and the coefficients of variation for pitchers' in the same team. For the j th group of team i in year t , Emp is defined as the ratio of the standard deviation to the mean of the salaries:

$$\text{Emp}_{ijt} = \sigma_{ijt} / \mu_{ijt}, \quad i=1, 2, 3, \dots, n. \quad j=1, 2. \quad t=1, 2, 3, \dots, T. \quad (3)$$

Where j equals to 1 (or 2) if players are hitters (or pitchers).

The measurements of salary dispersion from the view of external equity are calculated by ExtEH and ExtEP. ExtEH/ExtEP measures the degree of equality in hitters'/pitchers' salaries in other teams, and ExtEH and ExtEP are measured by the coefficients of variation for hitters' salaries and the coefficients of variation for pitchers' salaries from other teams.

For example, ExtEH of team A is measured by the coefficients of variation for hitters' salaries over the whole league, excluding players' salaries in team A. ExtEP is also calculated according to the same reference. For the j th group of team i in year t , Ext is defined as the ratio of the standard deviation (σ_{ijt}) to the mean of the salaries (μ_{ijt}) in other teams.

$$\text{Ext}_{ijt} = \sigma_{ijt} / \mu_{ijt}, \quad i=1, 2, 3, \dots, n. \quad j=1, 2. \quad t=1, 2, 3, \dots, T. \quad (4)$$

The unbalanced panel data of salary for 294 hitters and 141 pitchers on 10 teams and team performance are collected for the years 1990 through 2007, and the number of players' sample is 2109.² The average number of players is 21.74 per team each year, and 15.1 hitters and 6.64 pitchers are included in the samples. Table 1 presents the variable definitions and the data description.

Lower salary levels reduce worker input, while higher salary levels attract better players and provide incentives for good performance (Adams, 1963).

Therefore, the relationship between total salary expenditures and team performance (β_1) is thus expected to be positive. Research on the salary dispersion from the perspective of internal (intra-team) equity in professional baseball supports equity theory, so the coefficient of IE should be negative.

RESULTS AND DISCUSSION

The empirical results of Equation (1) for the fixed or

¹ Rules of free agency were passed in 2006. A player with a 9-year tenure is eligible to be a free-agency player, and the starting point for that tenure was 2003. That is, the first free-agency player will appear in 2012. Therefore, the system of the free agency will not be implemented in the CPBL until 2012. The CPBL also offers a natural ground for testing salary dispersion and organizational performance without the system of free agency.

² The data were obtained from "Professional Baseball" and the website of the CPBL. <http://www.cplb.com.tw/>

Table 1. Descriptive statistics.

Variable	Description	Mean	Std. Dev.	Min.	Max.
WinP	Winning percentage for each team in each year	0.5050	0.0884	0.28	0.727
WinN	Wins for each team in each year	46.6111	8.1801	28	64
TSal ^a	Total salary for each team in each year	2511.0870	775.7447	987	4569.333
TSalH ^a	Hitters' total salary for each team in each year	1750.4230	584.0715	602	3462.333
TSalP ^a	Pitchers' total salary for each team in each year	760.6639	314.3841	215	1985
Equity measurement					
IE ^a	The measurement of internal equity	28.3095	24.2040	1.2972	156.7999
EmpEH ^a	The measurement of employee equity between hitters	27.4690	30.4147	1.5852	214.9024
EmpEP ^a	The measurement of employee equity between pitchers	26.2315	25.0020	.4388	109.6552
ExtEH ^a	The measurement of external equity between hitters	30.1305	20.1512	2.0865	75.1830
ExtEP ^a	The measurement of external equity between pitchers	35.2925	25.8176	2.4023	104.4945

^a The unit is thousand NT dollars, and the average exchange rate during 1990 to 2007 was 1US\$= 30.2125 NT\$.

random effect model which is investigated by Hausman (1978) test are listed in Table 2³ which is divided into two parts. The upper half represents the results of the model of internal equity, and the lower half represents the results of a complete model which include the employee and external equities. Regarding the effects of salary on team performance, the coefficients of team' salary expenditures on hitters and pitchers are significantly positive in all regressions. The empirical evidence indicates that the salary expenditures on players increase the team's performance. These results are consistent in both of the dependent variables (for both the percentage of wins and the number of wins) and they correspond to previous expectation.

Regarding the salary dispersion, the index from the concept of internal (IE) is insignificant, but the index from the concept of employee equity for pitcher (EmpEP) is significant and positive. This finding suggests that increasing the salary dispersion for pitchers in a team enlarges the incentive for effort and increases team performance. These empirical results are more in line with the "tournament" models than with the "fairness, morale and cohesiveness" models. The result of salary dispersion for pitchers in external equity (ExtEP) reveals a positive effect, but the evidence is quite limited. In summary, the empirical evidence indicates that the hawkish type of management, i.e. a dispersed distribution on team expenditure for pitchers' salary, will stimulate better team performance. In particular, dispersed salary for pitchers seems to dominate salary policy.

Furthermore, the marginal effect of EmpEP on WinP is 0.002, and it indicates that an increase in coefficient of variation for pitchers' salary in a team brings 0.2%

increase in winning percentage. This effect is much larger than the effects from TSaH and TSaP. The economic implication is that increasing salary dispersion is more effective than spending money on pitchers' salaries.

Baseball is widely viewed as a sport which requires cooperation between players, so much of the empirical research in professional baseball has shown that it is more in line with Equity Theory. A reasonable explanation for the empirical results of the tournament model in the CPBL may arise from the different degrees of cooperation required for hitters and pitchers. In a baseball game, a pitcher defends the team to prevent losing points without another pitcher on the field at the same time, but a hitter supports his team by scoring along with his fellow hitters. Therefore, greater team work is required of hitters than pitchers. That is, pitchers have no need to consider cooperation with other pitchers when they work for pecuniary compensation. Therefore, a "hawkish" (dispersed) salary structure is more suitable for pitchers, and a "dovish" (compressed) salary structure is more suitable for hitters.

Research by Lazear and Rosen (1981) suggests another theoretical prediction: Tournaments work best when participants have similar abilities. However, pay structure has changed due to the fact that recruiters are signing players from other leagues more often now, especially pitchers. Other leagues such as the MLB or Nippon Professional Baseball (NPB) have been recruiting top pitchers by offering higher payment. This results in pitchers' abilities being closed in the CPBL, and creates a hawkish salary structure.

DISCUSSION

Salary distribution is an important incentive mechanism for an organization. Previous research on team performance has used internal equity to investigate the relationship of salary inequality and organizational

³ Two dependent variables plus two model specifications construct four (2x2) Hausman tests of model selection. The null hypothesis is that the individual effects are uncorrelated with the other regressors in the model. If H₀ is rejected, a fixed effect model is preferred. After checking the χ^2 test, all model specification are preferred the random effects.

Table 2. Fixed or random effect regression of performances on salary dispersions in different concepts of equity.

Variable	Dependent variable: WinP		Dependent variable: WinN	
	Coefficient	Standard error	Coefficient	Standard error
Internal equity				
TSaIH	0.000064**	0.000030	0.005624**	0.002664
TSaIP	0.000086**	0.000038	0.007757**	0.003352
IE	0.000669	0.000565	0.064364	0.050212
Intercept	0.414342***	0.051522	34.68638***	4.575961
Time	Yes	Yes	Yes	Yes
Hausman test (χ^2 test)		14.42		7.60
Complete equity				
TSaIP	0.000082*	0.0000426	0.007528**	0.003802
TSaIH	0.000085***	0.0000324	0.007268**	0.002894
EmpEP	0.002093**	0.001005	0.175235**	0.089682
EmpEH	-0.000043	0.0006495	-0.010166	0.057961
ExtEP	0.006942*	0.0038181	0.551014	0.340697
ExtEH	-0.002293	0.0019344	-0.218180	0.172609
Intercept	0.386385***	0.0573803	32.71259***	5.120168
Time	Yes	Yes	Yes	Yes
Hausman test (χ^2 test)		6.97		7.35

*, **, *** Indicate that the level of significance is 10, 5, and 1% respectively.

performance. This paper offers further two indices of salary dispersion to measure the concepts of employee and external equity. For a team's salary expenditures, the empirical evidence indicates that higher salary for players increases the team's performance.

Employees care much more about the equity inside (internal) than outside (external) their organization. The evidence of salary dispersion, constructed by the concepts of employee and external equities, indicate that the "incentive" in the Tournament Theory works on a team. The findings of this study are different, but do not completely contradict other equity studies of professional baseball. The findings show there is a Tournament incentive for pitchers, but the effect of salary dispersion among hitters cannot be supported by the results of this study. Any differences may be due to the different cooperation requirements between pitchers and hitters. That is, the structure of baseball game requires each hitter's output to be connected with that of other hitters, but this is far less the case among pitchers. Therefore, the greater cooperation requirement for hitters weakens the effect of incentives in Tournament Theory. As such, the findings for pitchers suit the tournament-like pecuniary compensation, but the hitters' incentive in the Tournament Theory is weakened by the feelings of fairness, morale, and cohesiveness.

In addition to the different cooperation requirements between players' positions, another concern for the utility of the structure of dispersed salary may be the international competition for labor between leagues. Even though reserve clause rules, lack of free agency and

unionization, and employers' tacit agreement in player transactions weaken the labor's bargaining power in the CPBL, there is one issue that overshadows baseball in Taiwan. CPBL is forced to face the competition from other leagues all over the world. Competitors like MLB or NPB recruits top players by offering highly lucrative contracts.⁴ Therefore, team managers in CPBL naturally offer star players more payment to keep them on the team, especially the best pitchers. The payment possibilities outside the CPBL may also distort the salary structure of pitchers in Taiwan, and further, it induces the relationship between employee equity and team performance.

The most criticism of the paper may be the classification of the players in a team. We only classify them into two groups, e.g. hitters and pitchers, and researches may challenge that it should be divided into more groups for the classified requirement of the real job. For example, the pitchers can also be divided into the relief, starting, closing pitchers and hitters can also be divided into outfielders, infielders, or others. The limitation of the data in CPBL is the main reason, but the implication of the results in the paper is meaningful. Therefore, we think

⁴ According to the salary database of USATODAY, the average number of player's annual salary in MLB in 2000 was \$1,895,630. As to the CPBL, it was 1,722,688.8 NT dollars. The exchange rate was US\$1= NT\$30.75 in 2000. Therefore, the average salary in MLB was 33.84 than salaries in the CPBL. Even when comparing the highest player's salary in CPBL (6,000,000 NT dollars) with the minimum salary for rookies in MLB (\$327,000), via the adjustment of the average exchange rate (US\$1= NT\$30.213) during our data period (1990-2007), it still reached 1.65 times the highest player's salary in Taiwan.

that the classification is a reasonable breakdown of jobs for grouping and further research could be included into a big-size league like MLB.

ACKNOWLEDGEMENT

Author thanks Professor Neil Longley for his valuable comments and suggestions. Earlier versions of this paper were presented at the IASE 10th Annual Conference and EBES 2010 conference, and author also thanks participants for their suggestions. All remaining errors are, of course, the responsibility of the author

REFERENCES

- Adams JS (1963). "Toward an understanding of inequity." *J. Abnormal Soc. Psychol.*, 67(5): 422-436.
- Adams JS (1965). Inequity in social exchange. In: Berkowitz L (Ed). *Adv. Exp. Soc. Psychol.*, 2: 267-299.
- Akerlof GA, Yellen JL (1990). "The fair-wage hypothesis and unemployment." *Q. J. Econ.*, 105: 255-283.
- Andrews IR, Henry MM (1963). "Management Attitudes toward Pay." *Ind. Relat.*, 3: 29-39.
- Antonietti R (2006). "Human Capital, Sport Performance, and Salary Determination of Professional Athletes," Working Papers from Dipartimento Scienze Economiche, Università di Bologna.
- Becker BE, Huselid MA (1992). "The Incentive Effects of Tournament Compensation Systems." *Adm. Sci. Q.*, 37: 336-350.
- Bloom M (1999). "The Performance Effects of Pay Dispersion on Individuals and Organizations." *Acad. Manage. J.*, 42(1): 25-40.
- Coff RW (1997). "Human Assets and Management Dilemmas: Coping with Hazards on the Road to Resource-based Theory." *Acad. Manage. Rev.*, 22: 374-402.
- Debrock L, Hendricks W, Koenker R (2004). "Pay and Performance: The Impact of Salary Distribution on Firm-Level Outcomes in Baseball." *J. Sports Econ.*, 5(3): 243-261.
- Depken CA (2000). "Wage Disparity and Team Productivity: Evidence from Major League Baseball." *Econ. Lett.*, 67: 87-92.
- Ehrenberg RC, Bognanno ML (1990). "The Incentive Effects of Tournaments Revisited: Evidence from the European PGA Tour." *Ind. Labor Relat. Rev.*, 43: S74-S88.
- Finn RH, Lee SM (1972). "Salary Equity: Its Determination, Analysis and Correlates." *J. Appl. Psychol.*, 56: 283-292.
- Folger R (1993). *Reactions to Mistreatment at Work*, (Ed.) J. K. Murnighan, *Social Psychology in Organizations: Advances in Theory and Research*. Englewood Cliffs, NJ: Prentice-Hall, pp. 161-183.
- Franck E, Nüesch S (2008). "Wage Dispersion and Team Performance – An Empirical Panel Analysis," University of Zurich, Institute for Strategy and Business Economics (ISU) in its series, Working Papers No. 0073.
- Frick B, Prinz J, Winkelmann K (2003). "Pay Inequalities and Team Performance: Empirical Evidence from the North American Major Leagues." *Int. J. Manpower*, 24(4): 472-488.
- Hausman JA (1978). "Specification tests in econometrics." *Econometrica*, 46: 1251-1271.
- Heneman HG III, Schwab DP, Standal JT, RB Peterson (1980). "Pay Comparisons: Dimensionality and Predictability." *Acad. Manage. Proc.*, 38: 211-215.
- Hills, F. S. (1980). "The Relevant Other in Pay Comparisons." *Ind. Relat.*, 19: 345-51.
- Jewell RT, Molina DJ (2004). "Productive efficiency and salary distribution: the case of US Major League Baseball". *Scottish J. Polit. Econ.*, 51: 127-142.
- Kahn LM (2000). "The Sports Business as a Labor Market Laboratory". *J. Econ. Perspect.*, 14(3): 75-94.
- Lazear E, Rosen S (1981). "Rank-order tournaments as optimum labor contracts." *J. Polit. Econ.*, 89: 841-864.
- Levine D (1991). "Cohesiveness, productivity and wage dispersion." *J. Econ. Behav. Organ.*, 15: 237-255.
- Mowday RT (1983). *Equity Theory Predictions of Behavior in Organizations*. In RM Steers, LW Porter (Eds.), *Motivation and Work Behavior* (3rd Ed.). New York: McGraw-Hill, pp. 91-113
- Pfeffer J, Langton N (1993). "The Effect of Wage Dispersion on Satisfaction, Productivity, and Working Collaboratively: Evidence from College and University Faculty." *Adm. Sci. Q.*, 38: 382-407.
- Richards DG, Guell RC (1998). "Baseball Success and the Structure of Salaries." *Appl. Econ. Lett.*, 5: 291-96.
- Richards DG, Guell RC (1998). "Baseball Success and the Structure of Salaries." *Appl. Econ. Lett.*, 5: 291-296.
- Romanoff K, Boehm K, Benson E (1986). "Pay Equity: Internal and External Considerations." *Compens. Benefits Rev.*, 18(3): 17-25.
- Ronen S (1986). "Equity Perceptions in Multiple Comparisons: a Field Study." *Hum. Relat.*, 39(4): 333-46.
- Simon HS (1957). "The Compensation of Executives." *Sociometry*, 20(1): 32-35.
- Vasilescu O (2007). "Team performance, efficiency and wage distribution in professional baseball," *Social Science Research Network (SSRN)* in its series Working Paper with number 1103952.
- Weick KE, Bougon MG, Maruyama G (1976). "The Equity Context," *Organ. Behav. Hum. Perform.*, 15: 32-65.