empirical evidence with respect to the year 1977, the first year after the adoption of the six-year free agency system.

An obvious extension of this paper would be to derive similar estimates of the impact of free agency on player salaries for years subsequent to 1977. It would be interesting to see if our findings of an impact on salaries due to both the *availability* and *actual usage* of free agency hold up in subsequent years.

Particularly fascinating would be an attempt to assess the accuracy of the predictions of the two chief negotiators in baseball's recent conflict over free agent compensation which led to a 58-day strike and the cancellation of 714 regularly scheduled games during the 1981 season. The eventual settlement provided for additional compensation for teams losing free agents above the amateur draft choice agreed to in 1976.

As is common in labor negotiations featuring a protracted strike, both sides claimed victory. Ray Grebey, baseball's chief negotiator and head of the Player Relations Committee, recently noted, "We set out to get additional compensation and we got more compensation than we set out to get."[12] Marvin Miller, executive director of the Major League Baseball Players Association, commenting on the owners' strategy during the negotiations, noted, "It did not succeed. The players could not be broken."[13]

However, Miller also commented, "I believe this was simply the first in a series of attempts to cut player rights, to be followed, if successful, in 1983 with an attack on basic free agency and salary arbitration and perhaps other rights."[14] After we have witnessed several more years of salary negotiations under this newly bargained free agent/compensation system, it will be possible to evaluate the accuracy of the above statements using a framework similar to that proposed and employed in this paper.

[The End]

A Discussion

By LAMONT E. STALLWORTH

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ISSUES OF WAGES and salaries are important topics, particularly given our current difficult and inflationary times. In such an uncertain economic environment, employers are faced with the question of what constitutes a fair wage and salary increase. It should be acceptable to the employee and yet not be inflationary. Of course, any proposed increase should be within the employer's ability to pay.

In the two papers, "Free Agency and Salary Determination in Baseball" and "Correlates of Just Noticeable Differences in Pay Increases," the authors have attempted to analyze factors that might determine an appropriate salary and wage. Although they examine two different industries, baseball and nonunionized construction workers, there are several factors common to both industries, particularly the "marketability" factor.

The paper by Dworkin and Chelius seems to support their hypotheses that the availability of free agents increased

[12] "Both Sides Claim Victory in Baseball Strike," *Indianapolis Star,* August 9, 1981.

[13] *Ibid.*

[14] *Ibid.*

the average salary of baseball players and that the individual salaries of free agents increased due to the greater bargaining power inherent in the right to negotiate. These conclusions support what one might have assumed where the dynamics of free market economics were allowed to exist. This would be particularly true in a highly skilled industry such as professional sports.

The authors indicate that any future research would employ more of a time-series approach. I agree that this would be appropriate, but I would hasten to add that any future research should consider the sample of baseball players to be analyzed; for example, there should be some assurance that the sample is not biased.

Second, I would suggest that any future behavioral research should also consider the employer's "ability to pay" in the equation. This is particularly the case given the apparently rapid transition to "sports pay television." Absent an employer's ability to pay, it is doubtful whether free agency would have as great an effect. Lastly, of course, some measure of the labor relations environment must be considered. On this score, I would be particularly interested in learning of the possible influence of the threat of work stoppages and actual work stoppages. In sum, the authors employed an interesting approach and have offered a worthwhile foundation for future research in this area.

I found the paper entitled "Correlates of Just Noticeable Differences in Pay Increases" particularly interesting and noteworthy for what the authors attempted to do. That is, they essentially attempted to apply Weber's Law* to the just-noticeable-differences area. Their findings that such factors as current pay, expected pay raises, hours of work per week, and marketability support the findings of other researchers and are what might have been expected.

It is worth noting that they found that such "macroeconomic events" as the expected cost of living changes were not significantly related to JND raises. On the other hand, "microeconomic events" appeared to be the primary source of influence relative to JND raises. As the authors suggest, this may be due to the relatively small sample or to another factor. Nevertheless, a larger sample of respondents might have yielded different results concerning possible moderator variables.

I also would be particularly interested in knowing whether different factors explain JND for the "money group" vis-à-vis the "recognition group." It is presumed that the authors did not run separate regression analysis on these two groups separately because of the small sample size (17 respondents in the recognition group and 59 in the money group).

It is suggested that any future research be conducted along the lines of, for example, a laboratory experiment or simulation in order to determine an employee's perception of a JND. Among other things, such a technique might approach or simulate the effects of a real pay raise. Also, this "laboratory" simulation approach would afford the researchers the opportunity to gather data from a larger and more diverse population, and it would allow them to operationalize the term JND.

* Investigations into observable differences were conducted in the early nineteenth century by Ernst H. Weber (1795-1878) which resulted in what became known as Weber's Law: "The increase of stimulus necessary to produce an increase in sensation in any sense is not an absolute quantity but depends on the proportion which the increase bears to immediate preceding stimulus." See *Encyclopedia Britannica: Micropaedia*, Vol. X, 15th ed. (Chicago: Encyclopedia Britannica, 1974), p. 593.

As stated earlier, behavioral research in the JND area is particularly difficult. The authors of this paper have made a worthwhile step in applying behavioral research methods in this area.

[The End]

A Discussion

By MARK L. KAHN

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THE CONTRIBUTED PAPERS selected for this program represent two extremes of the wage-change continuum. They are: the highly subjective notion of the kind of minimal improvement that is "just noticeable" and the presumably far more gratifying quantum leap based on a dramatic structural change in employment—in this case, the impact in 1977 of free agency in major league baseball.

The factors involved in how workers perceive a pay change constitute a worthy object of study. I am concerned, however, that the concept of the "just noticeable difference" (JND) is simply too amorphous to serve as a basis for such analysis. Remember: the respondents were simply asked "to indicate the smallest pay raise (cents/hour) that would be just meaningful to them." Meaningful in relation to what? To keep the respondent from looking for another job? To improve his or her standard of living? To serve as an indicator of employer approval? To be fair in relation to one's peers? To be reasonable in relation to what the respondent believes the employer can afford?

I suggest that a respondent may have a variety of subjective JNDs for a variety of considerations and that a single cents-per-hour JND response produces a package of heterogeneous data that is not fit for reliable statistical analysis. Ask yourself about this: what is your JND today?

In any event, hypothetical questions—even if unambiguous — elicit questional responses. Would it not be more insightful to ask a group of workers who have just received pay rate adjustments how they evaluate them and why?

It is not clear to me why the anticipated direction of correlation of JND with each of the independent variables was a "hypothesis" rather than a "hunch," since we are not given a theoretical basis for the expected outcome. All that the statistically significant results indicate to me is that JND tends to be higher for workers who have higher incomes (either because their hourly rates are higher or because they work more hours, or both) and for workers who expect higher pay increases. (Does this mean that one might fail to "notice" a smaller pay increase than was expected?) On the other hand, if a respondent thought that a new job would be difficult to get, he believed that a smaller pay adjustment would be "just noticed." My hypothesis is that the independent variables listed may have a closer correlation with how wage changes are perceived than this study, because of its focus on the spongy JND concept, could identify.

In regard to the authors' suggestions for future research, I suggest that pursuit of the JND will be less helpful to the development of useful theoretical formulations than would open-ended question-