

THE UNIVERSITY OF IOWA

MLB Winning Percentage vs. Team Payroll

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Introduction

The baseball industry is a multi-billion dollar business encompassing a wide array of teams and people from a variety of locations. The game itself, baseball, is a game of statistics with every play, every hit, every error, and every single act on the field recorded and kept track of in the form of a statistic. The most prominent of these statistics among every sport is the winning percentage. Representing the number of winning games out of every game played, the ratio is a numeric representation of the team's success.

Additionally, another common fascination among sports fans is the pay earned by the athletes. Some of the best athletes in the world command seven and eight figure yearly salaries, justifiable by their outstanding athletic performance. However, with athletes who aren't known as the best in the game yet still receive large paychecks or above-average athletes who receive low salaries, it becomes unclear whether or not there is a direct relationship between pay and athletic performance.

Through a database of baseball statistical information on www.baseballalmanac.com, information was found regarding both types of data dating back to 1995. The primary concern of the testing was to determine if in fact there was a positive relationship between the winning percentage of the overall baseball team and the payroll of the team for the entire year. The payroll only included the salaries of the players; the managers' payroll was excluded from the analysis.

Data

For the collection of data, the group analyzed thirteen American League teams. For each team, thirteen years were analyzed (1995-2007) noting the yearly payroll and the winning percentage. Overall, this collection of data resulted in 169 observations covering each of the thirteen teams for thirteen years.

Each year, the payroll changed for every team as did the winning percentage. However, to properly analyze the *value* of the payroll, rather than specific dollar amount, adjustments to the payroll amount had to be made. A payroll of \$50 million in 1995 has significantly more value than a payroll of \$50 million in 2007 due to economic inflation. In order to account for this decrease in the value of the currency, adjustments were made to reflect the monetary value of the payrolls rather than simply dollar amounts.

This was accomplished by utilizing the compound interest formula:

$$(1 + x)^{-n}$$

where ...

x = the inflation rate in decimal format.

n = years after 1995

This formula was utilized on a large scale in an excel spreadsheet and the numbers were reported in a separate list. Once these data were calculated and gathered, the numbers were analyzed using the SAS software. Only the winning percentage and inflation-adjusted team payrolls were utilized in the analysis.