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Quick Reminder: Would implementing a Salary Cap in MLB affect competitive advantage? How does excessive spending currently affect competitiveness in MLB? Do more valuable teams have an advantage?

Data Used:

- File name: Ostensen_John_CP4

CP6 Baseline: Simple linear regression of total Playoff games played (2011–2025) on Average Payroll (2011–2025). Headline numbers include $R^2 = 0.382$; payroll coefficient $\approx 4.77 \times 10^{-7}$ ($p \approx 0.00027$). In practical terms, a $10M increase in average payroll associates with ~4.8 additional playoff games over the 2011–2025 period.

Upgrades in CP7:

- Relative Payroll: replace the raw average payroll per team with the average payroll per team relative to the average payroll for the entire league over the time period.
    - Divide average payroll (for each team) by average payroll (overall league).
    - Results <1 indicate the teams average payroll was below league average, results >1 indicate the teams average payroll was greater than league average.
    - This removes scale effects and makes coefficient interpretable as "X% above league average" impact. Example: ARI Diamondbacks relative payroll came to 0.81, indicating they are 19% below league average in terms of average payroll.

Model or Analysis Spec:

Field	**CP7 specification**
Outcome	Playoff games played (total, 2011–2025)
Inputs	1) Relative Payroll = team_avg_payroll / league_avg_payroll (2011–2025) 2) Playoff Games played (2011 - 2025)
Sample	30 MLB teams (same rows as CP6)
Row definition	One row per team aggregated across 2011–2025

Model or Analysis Spec:

Metric	CP6 (Avg Payroll)	CP7 (Relative Payroll)
Predictor(s)	Average Payroll (raw dollars)	Relative Payroll (ratio vs league avg)
R^2	0.382	0.382 (essentially unchanged)
Adjusted R^2	0.36	0.36
F-statistic	17.32	17.32
Significance F	0.00027	0.00027
Payroll Coefficient	very small (≈ 4.8e-7)	62.57
Payroll P-value	0.00027	0.00027
Interpretability	Weak (due to scale of dollars)	Strong (games per 1.0 payroll index)
Observations	30	30

Results and Comparison:

The CP7 upgrade did not change the model's statistical fit (R^2 remains 0.382), but it significantly improved interpretability. Relative Payroll remains a highly significant predictor of playoff games ($p = 0.00027$), and its coefficient (62.57) provides clear real-world meaning: teams spending more relative to the league average consistently reach deeper into the postseason.

Interpretation in Plain English

- Teams that spend more relative to the league average tend to make deeper playoff runs. A team that spends double the league average is predicted to play about 63 more playoff games over the 2011–2025 period.
- Money still strongly matters, and statistical confidence remains very high. The upgraded variable makes it clear how much spending matters in a way coaches, general managers, and analysts can understand quickly.
- Payroll differences explain about 38% of the variation in playoff success, meaning spending is important, but other performance drivers still need to be added.
- This model can help front offices benchmark whether their payroll strategy aligns with their playoff expectations, especially compared to similarly sized markets.

Limits:

Payroll is a strong indicator, but like the model depicts, it only tells 38.2% of the story. There are many other factors that may have a large impact on a team's performance, but it is also important to recognize that payroll is one of the driving factors.