



Draft Smart: Identifying Hidden Value in WNBA Expansion

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Introduction

Motivation: As the WNBA continues to expand, new teams represent both exciting growth and a strategic challenge. Ensuring teams start off strong is critical for the league’s long-term success.

Goals:

- Optimize expansion draft strategy by predicting which players are likely to be protected or unprotected by their current teams.
- Quantify salary inefficiencies by comparing player performance to their current compensation.
- Recommend players whose on-court impact exceeds their salary, making them ideal candidates for expansion teams.

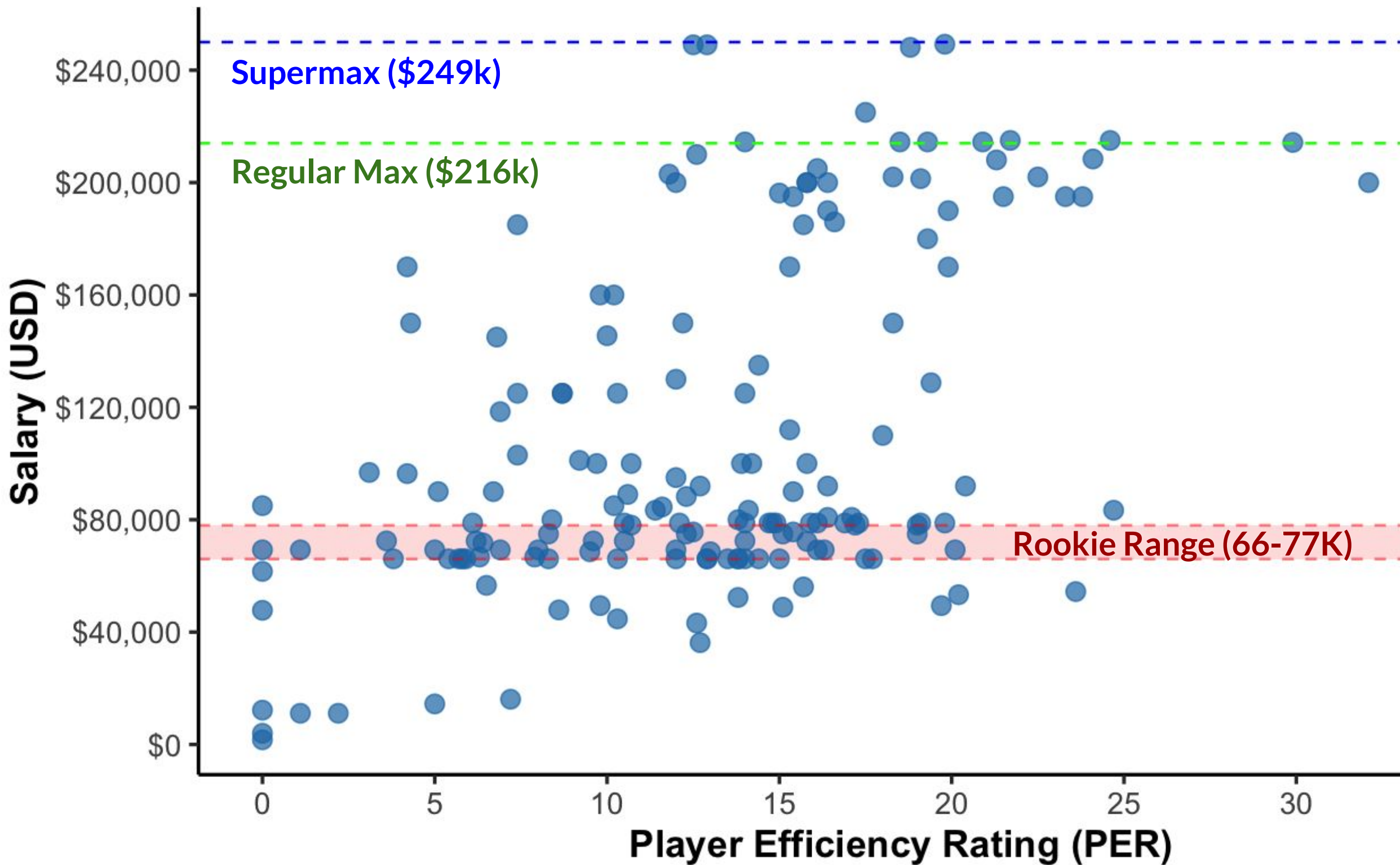
Data:

- Player demographics (e.g., name, age, position, team).
- Performance metrics (e.g., PER, minutes, win shares, etc.).
- Financial metrics (e.g., salary, team cap, years remaining in contract, contract status).

Sources: Basketball Reference, Spotrac, & Her Hoop Stats

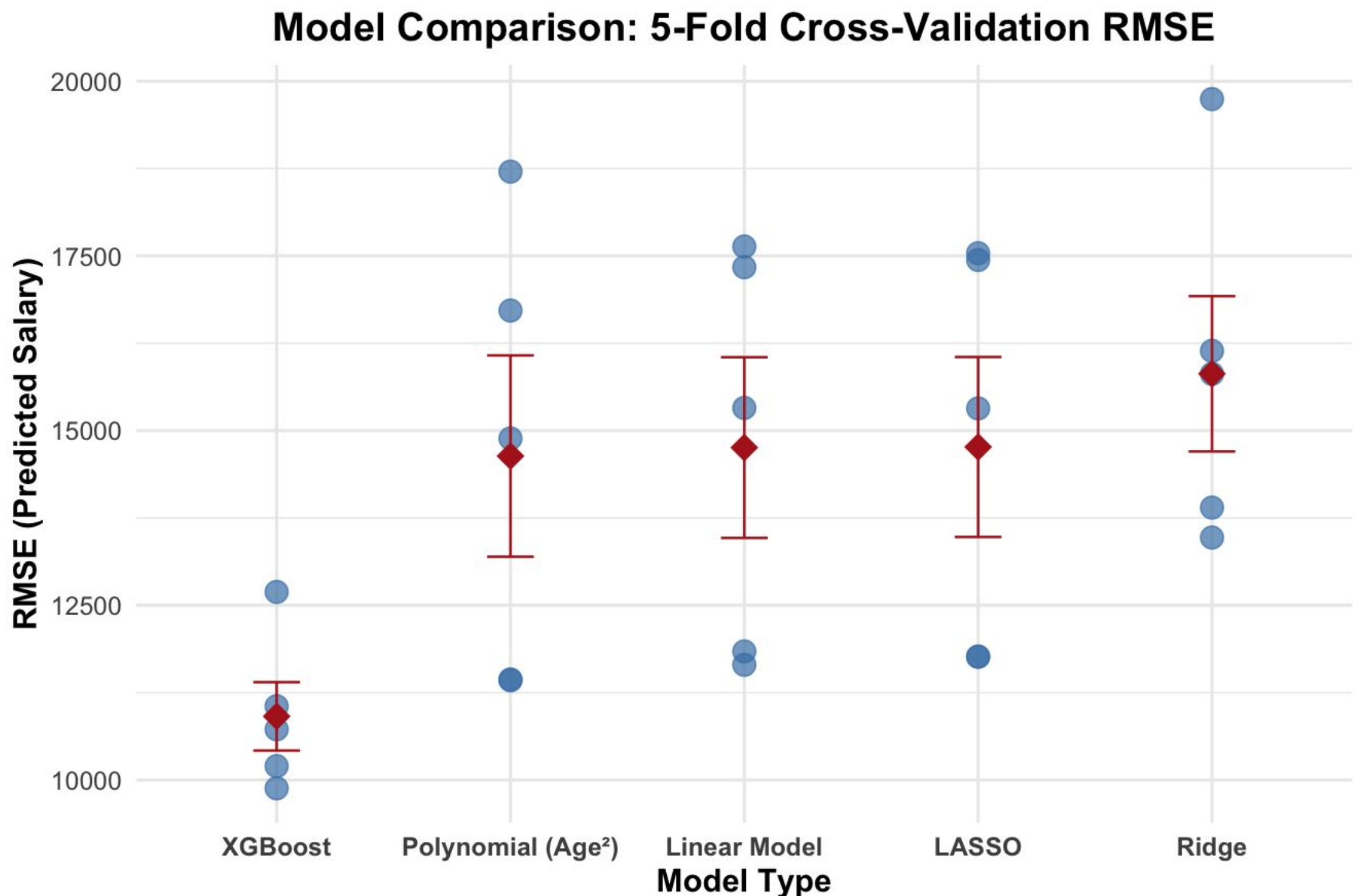
Exploratory Data Analysis

Identifying who may be outperforming their salary

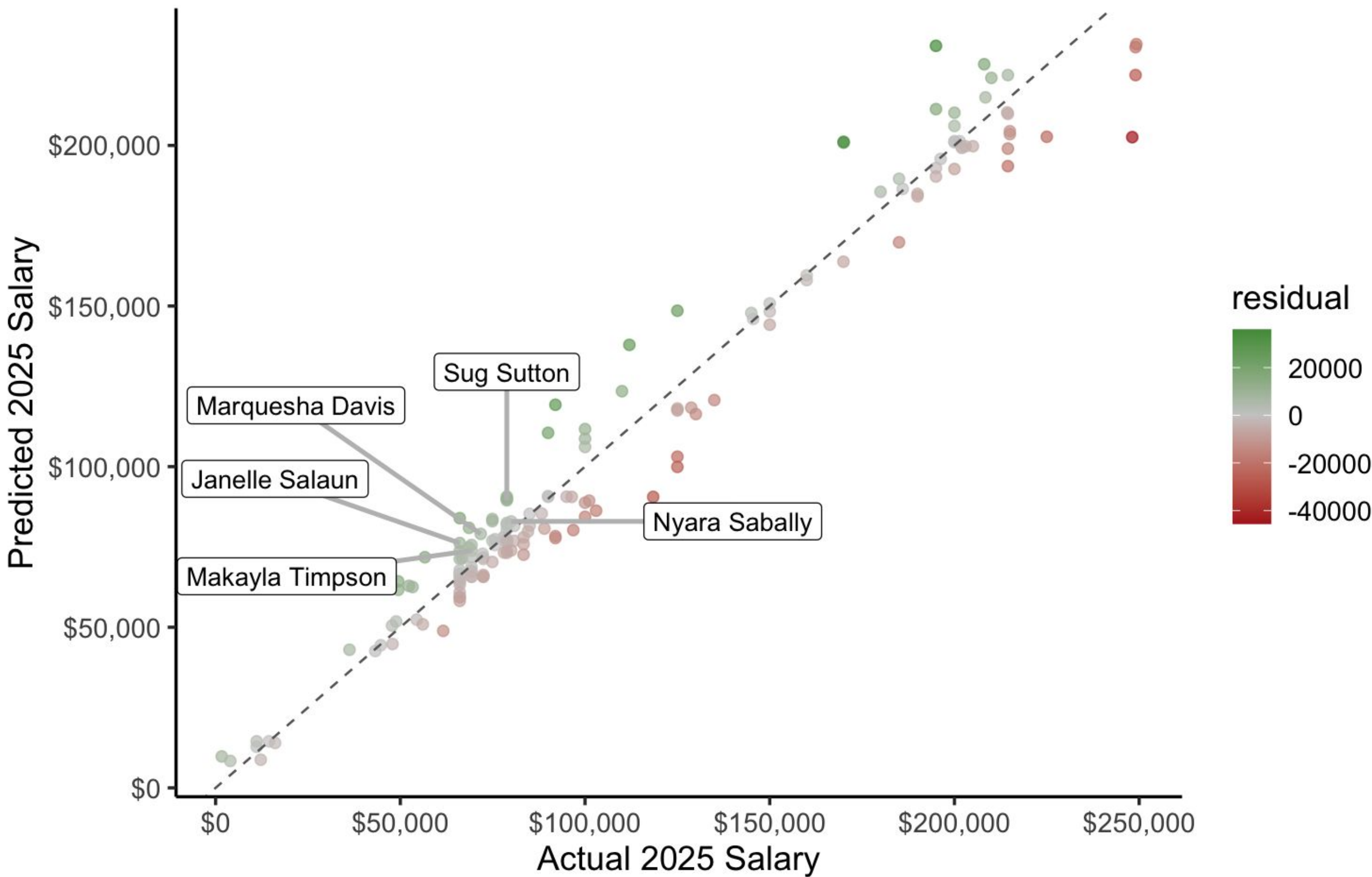


Methodology

- Heuristic player ranking formula** to predict player protection based on weighted metrics.
 - Metrics: PER, win share, years remaining in contract, and age penalty
- Fit and trained an XGBoost **salary prediction model**
 - Variables: PER (as a multi-year rating with a decay), age, proportion o current team’s salary cap



Predicted vs. Actual WNBA 2025 Salaries



Discussion

Conclusion

- Predicted likely unprotected players across all teams.
- XGBoost outperformed other models, capturing complex relationships in the data.
- Identified undervalued players via positive residuals.
- Produced a balanced, competitive list of potential expansion draft targets.

Limitations

- Lack of data on past protected/unprotected player classifications..
- Frequent roster moves and player-specific circumstances (injury, leave, etc.) reduce predictive accuracy.

Acknowledgments

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Results

- Integrated model-based salary valuations with protection status to prioritize undervalued players for draft selection

Top Expansion Draft Prospects						
Name	Age	Position	Team	Actual Salary	Predicted Salary	Residual
Sug Sutton	26	G	WAS	\$78,831	\$89,522	\$10,691.03
Janelle Salaun	23	F	GSV	\$66,079	\$76,203	\$10,124.32
Marquesha Davis	24	G	NYL	\$71,753	\$79,068	\$7,315.49
Makayla Timpson	22	F-C	IND	\$69,267	\$73,866	\$4,599.10
Nyara Sabally	25	C	NYL	\$79,999	\$82,960	\$2,961.34
Maya Caldwell	26	G	ATL	\$66,079	\$67,742	\$1,663.48
Olivia Nelson-Ododa	24	C	CON	\$80,823	\$81,554	\$731.49
Julie Vanloo	32	G	LAS	\$66,079	\$66,723	\$643.55
Li Yueru	26	C	DAL	\$66,079	\$66,497	\$418.02
Naz Hillmon	25	F	ATL	\$80,823	\$76,889	-\$3,934.27
Kayla McBride	33	G	MIN	\$205,000	\$199,756	-\$5,243.61