

# Draft Smart: Identifying Hidden Value in WNBA Expansion



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# Introduction

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- WNBA league growth → Expansion Draft
  - Opportunity to build brand new roster from players across the league
- **Research Question:** *How can we use player performance and salary data to optimize an expansion draft strategy in the WNBA?*

# Data & Variables

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## Demographic Info:

- Name
- Age
- Position



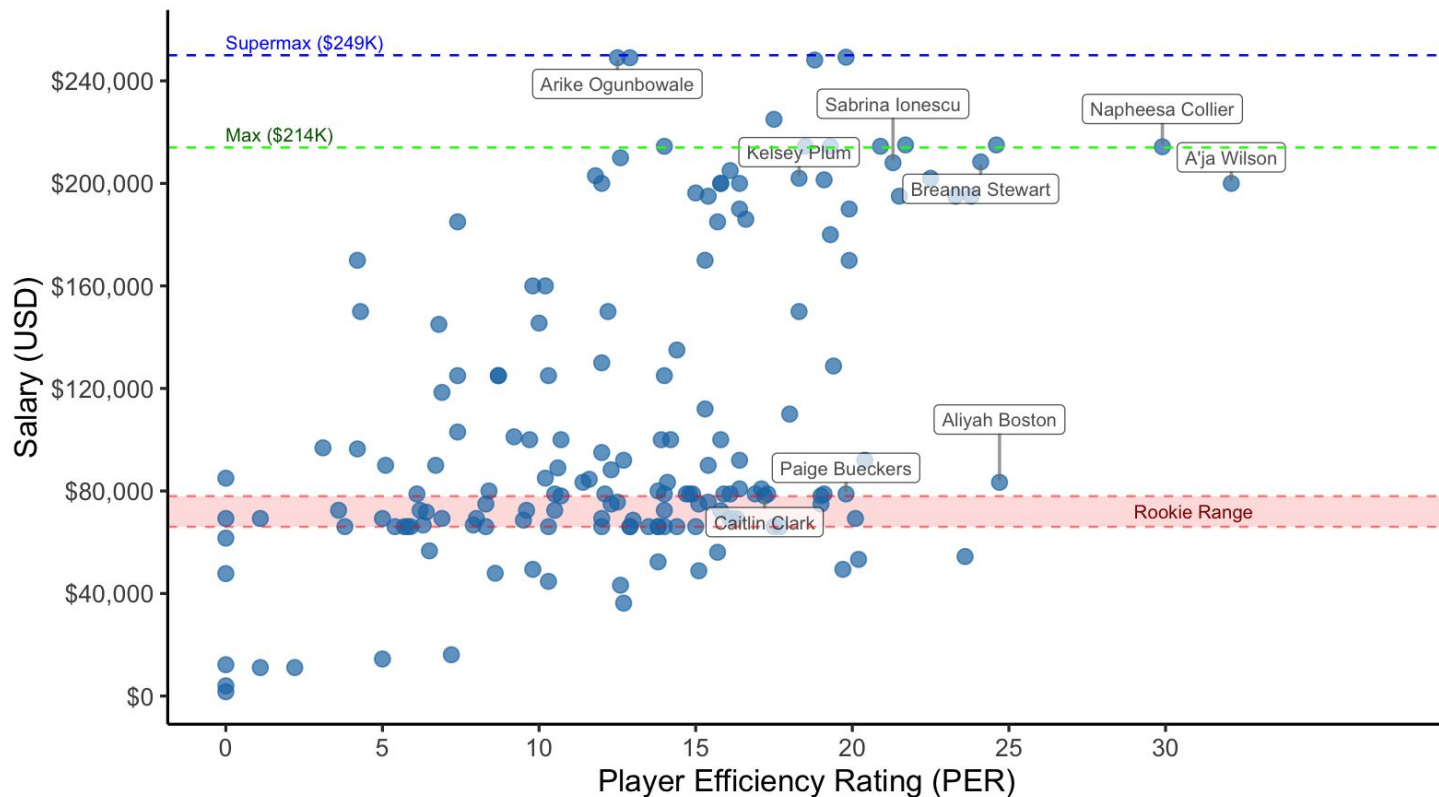
## Performance Metrics:

- Player Efficiency Rating (PER)
- Minutes Played
- Win Shares (WS)

## Contract & Salary:

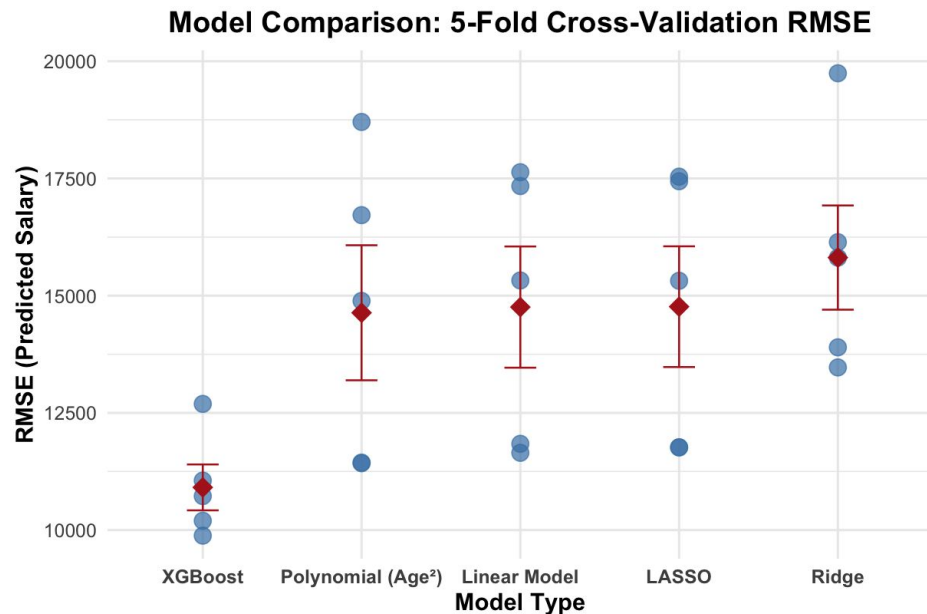
- 2025 Base Salary
- Contract Type & Years Remaining

# Using salary to identify potentially undervalued players



# Methods: Modeling Salary

- Variable selection:
  - Player Efficiency Rating (as a multi-year rating with a decay)
  - Age
  - Proportion of current team's salary cap
- XGBoost model preformed best based on RMSE



# Player Protection Methodology

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Created a **heuristic player ranking formula** using four key metrics:

- Weighted PER and Weighted Win Shares (WS)
- Contract years remaining
- Age, with a penalty for players 35+

**Formula:**

$$W\_PER * (0.3) + W\_WS * (0.2) + \text{Contract Years} * (0.1) - \text{Age penalty} * (0.3)$$

# Las Vegas Aces Predicted Protection Status

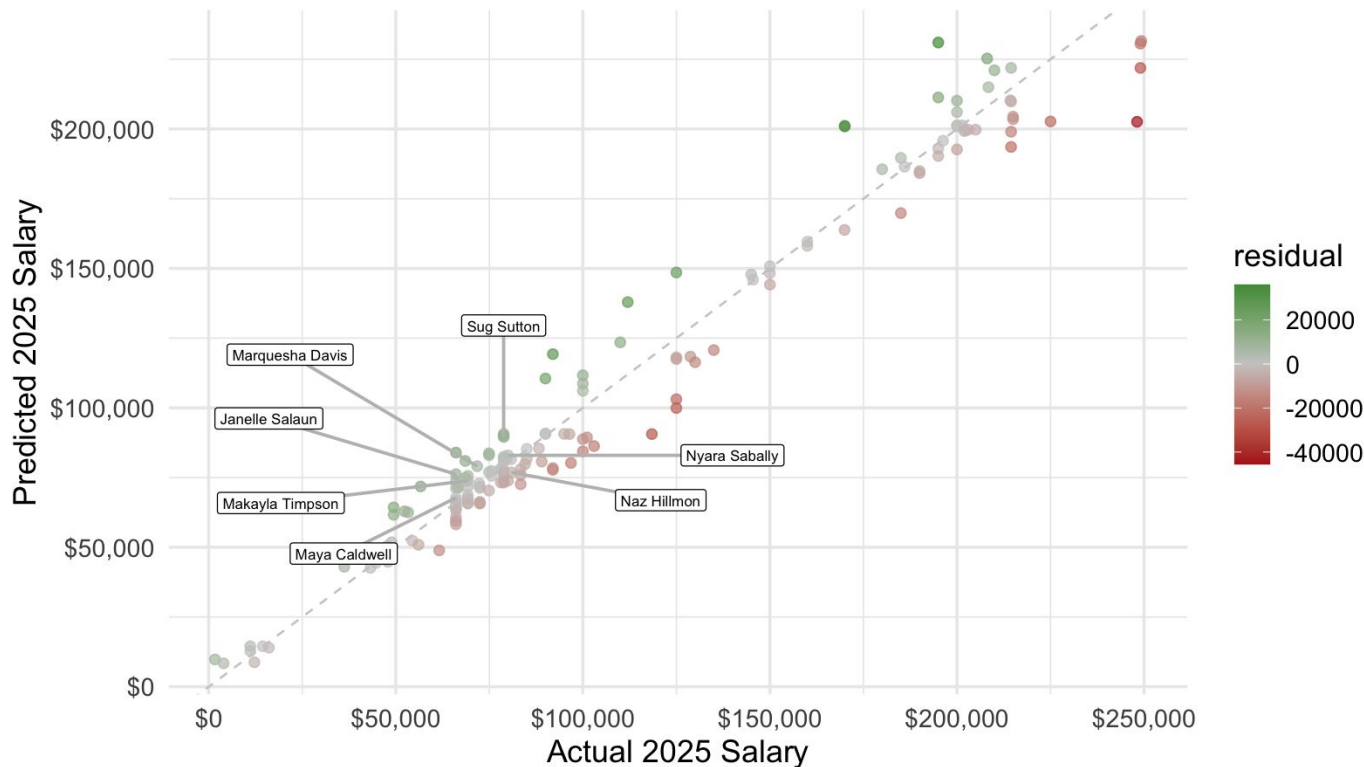
## ✓ Protected Players

Player	Position	Age
A'ja Wilson	C	28
Jackie Young	G	27
Jewell Loyd	G	31
Nalyssa Smith	F	24
Chelsea Gray	G	32

## ✗ Unprotected Players

Player	Position	Age
Aaliyah Nye	G-F	22
Dana Evans	G	26
Kierstan Bell	F	25
Kiah Stokes	C	32
Megan Gustafson	C	28

# Identifying the target pool of players





# Results

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

# Limitations

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- Limited public available data on player protection status
- Constant roster changes due to injuries, overseas commitments, personal matters
- Ongoing 2025 WNBA season
- Difficulty maintaining definitive player salary and contract data
  - Waivers & buyouts
  - Player movement

# Appendix: Atlanta Dream

## ✓ Protected Players

Player	Position	Age
Brionna Jones	F	29
Brittney Griner	C	34
Allisha Gray	G	30
Jordin Canada	G	29
Rhyne Howard	G	25

## ✗ Unprotected Players

Player	Position	Age
Naz Hillmon	F	25
Nia Coffey	F	30
Taylor Thierry	G-F	22
Maya Caldwell	G	26
Cheyenne Tyus	F	32
Iliana Rupert	C	24
Shatori Kimbrough	G	30
Te Paopao	F	22

# Chicago Sky

## ✓ Protected Players

Player	Position	Age
Kamilla Cardoso	C	24
Angel Reese	F	23
Ariel Atkins	G	28
Elizabeth Williams	C-F	32
Rebecca Allen	F-G	32

## ✗ Unprotected Players

Player	Position	Age
Courtney Vandersloot	G	36
Rachel Banham	G	31
Maddy Westbeld	F	23
Kia Nurse	G	29
Moriah Jefferson	G	31
Michaela Onyenwere	F	25
Hailey Lith	G	23

# Connecticut Sun

## ✓ Protected Players

Player	Position	Age
Marina Mabrey	G	28
Aneesah Morrow	F	22
Tina Charles	C	36
Saniya Rivers	G	22
Leila Lacan	G	21

## ✗ Unprotected Players

Player	Position	Age
Lindsay Allen	G	30
Jacy Sheldon	G	24
Bria Hartley	G	32
Rayah Marshall	C-F	21
Jaelyn Brown	G-F	26
Haley Peters	F-G	32
Olivia Ododa	C	24

# Dallas Wings

## ✓ Protected Players

Player	Position	Age
Paige Bueckers	G	23
Teaira Mccowan	C	28
Tyasha Harris	G	27
Jj Quinerly	G	22
Dijonai Carrington	G-F	27

## ✗ Unprotected Players

Player	Position	Age
Arike Ogunbowale	G	28
Aziaha James	G	22
Li Yueru	C	26
Maddy Siegrist	F	25
Luisa Geiselsoder	C	25
Lou Senechal	G	27
Myisha Allen	F	29

# Golden State Valkyries

## ✓ Protected Players

Player	Position	Age
Tiffany Hayes	G	35
Veronica Burton	G	24
Kayla Thornton	F	32
Monique Billings	F	29
Temi Fagbenle	C	32

## ✗ Unprotected Players

Player	Position	Age
Cecilia Zandalasini	F	29
Laeticia Amihere	F	24
Carla Leite	G	21
Kaitlyn Chen	G	23
Kate Martin	G	25
Janelle Salaun	F	23
Stephanie Talbot	F	31

# Indiana Fever

## ✓ Protected Players

Player	Position	Age
Aliyah Boston	F-C	23
Natasha Howard	F	33
Kelsey Mitchell	G	29
Caitlin Clark	G	23
Sophie Cunningham	G	28

## ✗ Unprotected Players

Player	Position	Age
Makayla Timpson	F-C	22
Aari McDonald	G	26
Lexie Hull	G	25
Sydney Colson	G	35
Damiris Dantas	C-F	32
Brianna Turner	F-C	29
Katie Samuelson	F	28
Kristy Wallace	G	29



# Minnesota Lynx

## ✓ Protected Players

Player	Position	Age
Napheesa Collier	F	28
Alanna Smith	F	28
Courtney Williams	G	31
Maria Kliundikova	F	26
Jessica Shepard	F	28

## ✗ Unprotected Players

Player	Position	Age
Kayla McBride	G	33
Karlie Samuelson	G	30
Natisha Hiedeman	G	28
Bridget Carleton	F	28
Diamond Miller	F	24
Alissa Pili	F	24
Anastasiia Kosu	F	20
Dorka Juhasz	F	25

# New York Liberty

## Protected Players

Player	Position	Age
Breanna Stewart	F	30
Jonquel Jones	C	31
Sabrina Ionescu	G	27
Natasha Cloud	G	33
Leonie Fiebich	F	25

## Unprotected Players

Player	Position	Age
Nyara Sabally	C	25
Kennedy Burke	G-F	28
Rebekah Gardner	G	35
Isabelle Harrison	F	31
Marine Johannes	G	30
Jaylyn Sherrod	G	23
Marquesha Davis	G	24
Betnijah Hamilton	G	21

# Los Angeles Sparks

## ✓ Protected Players

Player	Position	Age
Kelsey Plum	G	30
Dearica Hamby	F	31
Azura Stevens	F-C	29
Rickea Jackson	F	24
Mercedes Russell	C	29

## ✗ Unprotected Players

Player	Position	Age
Julie Allemand	G	29
Rae Burrell	G-F	25
Emma Cannon	F	36
Julie Vanloo	G	32
Sania Feagin	F	22
Cameron Brink	PF	23
Sarah Barker	G	23

# Las Vegas Aces

## ✓ Protected Players

Player	Position	Age
A'ja Wilson	C	28
Jackie Young	G	27
Jewell Loyd	G	31
Nalyssa Smith	F	24
Chelsea Gray	G	32

## ✗ Unprotected Players

Player	Position	Age
Aaliyah Nye	G-F	22
Dana Evans	G	26
Kierstan Bell	F	25
Kiah Stokes	C	32
Megan Gustafson	C	28

# Phoenix Mercury

## ✓ Protected Players

Player	Position	Age
Alyssa Thomas	F	33
Satou Sabally	F	27
Kalani Brown	C	28
Kahleah Copper	G-F	30
Natasha Mack	F	27

## ✗ Unprotected Players

Player	Position	Age
Dewanna Bonner	G-F	37
Lexi Held	G	25
Kathryn Westbeld	F	29
Kitija Laksa	F	29
Sami Whitcomb	G	36
Monique Makani	G	24

# Seattle Storm

## ✓ Protected Players

Player	Position	Age
Nneka Ogumike	F	35
Skylar Diggins	G	34
Ezi Magbegor	F-C	25
Dominique Malonga	C	19
Gabby Williams	F	28

## ✗ Unprotected Players

Player	Position	Age
Erica Wheeler	G	34
Mackenzie Holmes	F	24
Lexie Brown	G	30
Tiffany Mitchell	G	30
Alysha Clark	F	38
Zia Cooke	G	24
Jordan Horston	F	24
Nika Muhl	G	24

# Washington Mystics

## ✓ Protected Players

Player	Position	Age
Sonia Citron	G	21
Kiki Iriafen	F	21
Shakira Austin	C-F	24
Brittney Sykes	G	31
Aaliyah Edwards	F	23

## ✗ Unprotected Players

Player	Position	Age
Lucy Olsen	G	22
Emily Engstler	F	25
Stefanie Dolson	C	33
Sika Kone	F	22
Sug Sutton	G	26
Jade Melbourne	G	22