

# DYNAMIC DECISION-MAKING IN PROFESSIONAL SPORTS MANAGEMENT BASED ON MULTIDIMENSIONAL VALUE ASSESSMENT AND FINANCIAL CONSTRAINTS: A CASE STUDY OF THE LOS ANGELES LAKERS

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**Abstract:** This study addresses the imbalance between athletic performance and economic returns in modern professional basketball management by constructing a dual-objective dynamic decision-making system. First, by decomposing the core objectives of the Los Angeles Lakers, the study establishes a strategic orientation that balances short-term athletic breakthroughs with long-term financial stability. At the player evaluation level, a multidimensional player valuation model was developed, deeply integrating traditional performance metrics with commercial brand value and age-driven injury risk functions, thereby correcting valuation biases toward older or high-commercial-value players inherent in single-metric approaches. Subsequently, a dynamic team financial model was constructed to accurately simulate the progressive luxury tax, repeat luxury tax, and hard salary cap constraints under the 2023 NBA Collective Bargaining Agreement. The results indicate that the Lakers' current marginal cost of winning has risen significantly due to luxury tax pressures. Based on this, the study employed a multi-objective weighted maximization algorithm to compare and analyze various roster reinforcement strategies, ultimately proposing a functionalist minimalist strategy. By signing rim-protecting centers at the minimum salary and clearing roster space through lightweight contracts, this strategy aims to maximize roster depth and competitive potential without crossing the high-tax threshold. This study provides a scientific, quantitative basis for asset allocation by professional sports organizations operating within a stringent regulatory environment.

**Keywords:** Player valuation; Collective Bargaining Agreement; Roster optimization strategies

## 1 INTRODUCTION

In today's highly commercialized professional sports industry, competition on the court is no longer merely a sporting contest but has evolved into a comprehensive game of capital operations and data-driven decision-making. NBA team management faces the dual challenge of pursuing championship glory while maintaining the growth of franchise valuation. The introduction of stringent provisions such as the "second luxury tax threshold" in the 2023 Collective Bargaining Agreement (CBA) has made this balance increasingly difficult to achieve. Previous research has largely focused on statistical analyses of players' on-court performance, often overlooking the commercial premium generated by superstars and the rising injury risks associated with increased workload for older players, leading to inefficient resource allocation. The innovation of this study lies in not only constructing an evaluation system that integrates competitive, commercial, and risk factors but also deeply integrating complex league financial regulations, thereby achieving a leap from single-performance prediction to systematic path planning. The research methodology first defines core objectives through a symbolic system, then sequentially establishes a player value quantification model and a financial simulation engine, and finally identifies the optimal reinforcement solution that balances winning probability and financial security through scenario simulations [1,2].

## 2 OBJECTIVE DECOMPOSITION AND SYMBOL SYSTEM

### 2.1 Definition of Core Objectives

The overarching objective of this research is centered on "Athletic Breakthrough via Hard Power" coupled with "Commercial Value Preservation." For the 2025-26 season, the goal is to achieve a dual equilibrium for the Los Angeles Lakers: "Short-term stability within the Western Conference Top 4 + Long-term financial health and roster iteration," while simultaneously mitigating defensive vulnerabilities and injury risks to core assets. To ensure operational feasibility, we decompose the primary goal into three specific sub-objectives:

**Athletic Dimension:** The primary task is to maintain a regular-season winning percentage of  $\geq 55$ , securing a Top 6 seed to avoid the play-in tournament. Given the defensive crisis where opponents' field goal percentage at the rim reached 71.2% (bottom three in the league), elevating defensive efficiency to the league median (Top 15) is identified as the critical lever for performance improvement. Furthermore, considering LeBron James's (age 41) physiological decline, his average playing time must be restricted to under 30 minutes, and Luka Dončić's to under 34 minutes, ensuring an availability rate of over 70% to hedge against the risk of post-season attrition [3-5].

**Financial Dimension:** The current total payroll of \$194.8 million has already exceeded the luxury tax threshold by approximately \$6.9 million and is approaching the First Apron. Therefore, the objective is to strictly limit the total payroll increment to within \$5 million, avoiding the "Second Apron" (\$207.8M), which triggers trade freezes and draft pick penalties. Simultaneously, the strategy must ensure that the projected \$551 million in seasonal operating revenue effectively covers both salaries and luxury tax liabilities, maintaining positive cash flow for sustainable development.

**Long-term Value Dimension:** We aim to sustain the franchise's elite valuation of \$10 billion by leveraging the commercial synergy between "LeBron's Retirement Tour" and "Dončić's Peak Years." Concurrently, we must strictly protect first-round draft picks for 2029 and beyond, avoiding the depletion of future assets for marginal short-term gains, thereby preserving "rebuilding capital" for the post-LeBron era after 2027 [6].

## 2.2 Identification of Key Challenges

Based on an in-depth analysis of multi-dimensional data, we have identified several critical challenges hindering the attainment of these objectives:

**Structural Deficits in Athletic Performance:** The interior defense faces a "vacuum crisis." With only two legitimate centers, the insufficient rim-protection capabilities of Deandre Ayton and Jaxson Hayes have turned the restricted area into a high-scoring zone for opponents. Perimeters shooting also remains inconsistent; core rotation players such as Marcus Smart and Austin Reaves have yet to reach the elite 38%+ three-point shooting threshold, severely compressing the spacing for core players' drives. Additionally, shallow rotation depth exacerbates risk, as the lack of bench scoring leads to a sharp decline in competitiveness whenever starters are absent.

**Stringent Constraints of Financial Regulations:** The "overvalued" contracts of Gabe Vincent and Maxi Kleber (totaling \$22.5 million) have locked up salary flexibility, making it difficult to utilize the Non-Taxpayer Mid-Level Exception (MLE) for effective reinforcement. More critically, the team sits only \$13 million below the Second Apron; any mid-sized trade could trigger this line, resulting in the long-term asset loss of having first-round picks frozen at the end of the round [7-9].

**External Environment and Force Majeure:** LeBron James's physiological decline is irreversible; load management can only mitigate, not eliminate, injury risks. Simultaneously, the rapid rise of young teams in the Western Conference continues to elevate the playoff threshold, further narrowing the team's margin for error[10].

## 2.3 Symbol System

Definitions of core variable parameters is shown in Table 1.

**Table 1** Definitions of Core Variable Parameters

Symbol	Description	Symbol	Description
$V_{comp}^{raw}$	Raw competitive value	$\xi_{expansion}$	Market growth rate due to expansion
EFF	Raw efficiency rating of performance	$L_{financial}$	Total financial loss under risk scenarios
$V_{comp}$	Risk-adjusted competitive value	S	Player salary level
$P_{injury}$	Probability of injury impact	Revenue	Player salary level
$V_{comm}$	Commercial brand equity value	$L_{competitive}$	Competitive loss under risk
$DiV_{one}$	One-time expansion dividend	W	Current winning percentage
$N_{new}$	Number of expansion teams	$V_{backup}$	Performance value of backups
$F_{exp}$	Expansion fee per franchise	$\alpha$	Weight for profit objective
$N_{old}$	Number of existing teams	$\beta$	Weight for valuation objective
$\Delta R_{ann}$	Change in annual dividend	Profit	Net fiscal profit of the team
$R_{total}$	League-wide total revenue	Valuation	Total enterprise valuation

## 3 CHALLENGE I: QUANTIFY THE COMPREHENSIVE VALUE OF PLAYERS

### 3.1 Description

Traditional player evaluation systems tend to focus disproportionately on athletic metrics while neglecting two pivotal dimensions: commercial value and injury risk. In reality, the commercial influence of a superstar-manifested in gate receipts, merchandising, and sponsorship revenue-may far exceed their on-court production. Conversely, an injury to a core player not only jeopardizes team performance but also triggers catastrophic financial exposure.

Such a unidimensional assessment approach often leads to resource misallocation, such as committing exorbitant salaries to players with high athletic output but extreme injury fragility, or undervaluing young prospects with latent commercial potential. Consequently, there is a critical need for a multi-dimensional integrated valuation framework that incorporates athletic performance, commercial impact, and injury risk into a unified model. Through quantitative analysis, this framework aims to achieve the optimal allocation of player assets, ensuring both immediate competitive dominance and long-term fiscal sustainability.

### 3.2 Solution: Multi-dimensional Player Value Assessment Model

Building upon the aforementioned analysis, we construct the Multi-dimensional Player Value Assessment Model (MPVAM). This model utilizes a rigorous mathematical formulation to synthesize a player’s athletic value, commercial brand equity, and injury risk into a singular, comprehensive value index. To handle inconsistencies in the raw financial data of the Lakers, the dataset was standardized and cleaned using Python scripts optimized by Google Gemini .

#### 3.2.1 Athletic efficiency calculation

We employ the conventional Efficiency (EFF) metric as the foundational indicator of athletic performance: (Basketball-Reference, 2026; NBA.com, 2026)

$$EFF = PTS + TRB + AST + STL + BLK - (FGA - FTM) - TOV \tag{1}$$

Definitions of indicators for athletic efficiency (EFF) calculation is shown in Table 2.

**Table 2** Definitions of Indicators for Athletic Efficiency (EFF) Calculation

Symbols	Definition	Symbols	Definition
PTS	Points Scored	FGA	Field Goals Attempted
TRB	Total Rebounds	FGM	Field Goals Made
AST	Total Assists	FTA	Free Throws Attempted
STL	Total Steals	FTM	Free Throws Made
BLK	Total Blocks	TOV	Total Turnovers

#### 3.2.2 Normalization and injury attrition

To standardize athletic value, we normalize the *EFF* score to a [0,1] interval, assuming *EFF* = 35 as the full-score threshold (representing superstar-caliber performance):

$$V_{comp}^{raw} = \min\left(1, \frac{EFF}{35}\right) \tag{2}$$

To account for the impact of physical health on a player's on-court utility, we introduce an Injury Discount Factor:

$$V_{comp} = V_{comp}^{raw} \times (1 - 0.5 \times P_{injury}) \tag{3}$$

Where: The coefficient 0.5 represents the average 50% decline in athletic value due to injury-related unavailability or performance degradation.

#### 3.2.3 Injury risk modeling

The calculation of injury probability ( $P_{injury}$ ) is predicated on three critical determinants: age, position, and workload:

$$P_{injury} = P_{base} \times f_{age} \times f_{pos} \times f_{load} \tag{4}$$

Parameter notations for the multi-dimensional injury risk model is shown in Table 3.

**Table 3** Parameter Notations for the Multi-dimensional Injury Risk Model

Symbols	Definition	Symbols	Definition
$P_{base}$	Base injury probability (0.10)	$f_{pos}$	Position-specific coefficient
$f_{age}$	Physiological age coefficient	$f_{load}$	Physical workload coefficient

Parameter Definitions (See AI Use Statement; Teramoto & Cross, 2020):

Based on physiological characteristics and competitive load, we defined specific parameter values for the model:

**Age Coefficient:** Reflects the correlation between physiological function and injury resilience. Players in their prime (27–29 years) possess peak physical condition with a low-risk coefficient of 0.8. For players aged 30–34, physiological decline leads to an increased coefficient of 1.5. Veterans over 35 face extreme risks due to biological aging, with a coefficient of 2.2. Rookies under 23, despite an adaptation period, maintain a coefficient of 0.9 due to youthful physical resilience.

**Position Coefficient:** Differentiated by physical contact intensity. Centers (C) face the most intense interior contact, resulting in the highest coefficient of 1.4. Forwards (F) shoulder moderate contact with a 1.2 coefficient, while Guards (G) experience relatively lower contact intensity, with a base coefficient of 1.0.

**Workload Coefficient:** Measures physical attrition relative to playing time. Playing over 36 minutes per game is classified as "over-utilization," raising the fatigue-induced risk coefficient to 1.3. Low-load status (under 20 minutes) carries a lower risk (0.7), while the standard rotation interval (20–36 minutes) maintains a baseline of 1.0.

#### 3.2.4 Commercial value model

The calculation of commercial value is predicated on the positive correlation between salary levels and market influence:

$$V_{\text{comm}} = \begin{cases} 1.0, & \text{if Salary} > \$40\text{M} \\ 0.6, & \text{if Salary} > \$20\text{M} \\ 0.3, & \text{if Salary} > \$10\text{M} \\ 0.1, & \text{otherwise} \end{cases} \quad (5)$$

### 3.2.5 Comprehensive value synthesis

A player's comprehensive value is defined as the weighted sum of their Athletic Value (adjusted for injury attrition) and their Commercial Value:

$$V_{\text{total}} = V_{\text{comp}} + V_{\text{comm}} \quad (6)$$

## 3.3 Model Validation & Analysis

To verify the efficacy of the Multi-dimensional Player Value Assessment Model (MPVAM), this study utilizes the official statistical data of the Los Angeles Lakers for the 2025-26 season as an empirical sample. The dataset encompasses player salary information, on-court performance statistics, and relevant visualization analysis. By applying the model to real-world player data, we comprehensively evaluate its performance in quantifying integrated player value.

According to the model's computational results, the comprehensive value ranking of Lakers players exhibits a clear hierarchical structure. Luka Dončić tops the list with a comprehensive value of 1.93. His raw athletic value reaches 0.98, while his injury probability is a mere 10.0%. Coupled with a maximum commercial value of 1.0, he exemplifies the dual advantage of a superstar in both athletic and commercial dimensions.

LeBron James, despite having the highest salary (\$52.6M), faces an injury risk of 26.4% due to age factors, which reduces his discounted athletic value to 0.55. His comprehensive value of 1.55 ranks second. This result validates the critical importance of the Injury Risk Coefficient in our model—even with elite performance, excessive injury risk significantly diminishes a player's integrated utility.

Younger players like Austin Reaves, Rui Hachimura, and Jarred Vanderbilt, while having lower commercial scores (0.3), exhibit high cost-effectiveness with comprehensive values ranging from 0.72 to 0.78 due to their relatively lower injury exposure.

Comprehensive value assessment results for key players (2025-26 season) is shown in Table 4.

**Table 4** Comprehensive Value Assessment Results for Key Players (2025-26 Season)

Rank	Player	Age	Pos	Raw Athletic Value	Injury Prob.	Athletic Value (Adj.)	Comm. Value	Total Value
1	Luka Doncic	26	PG	0.98	10.0%	0.93	1.0	1.93
2	LeBron James	41	PF	0.71	26.4%	0.55	1.0	1.55
3	Austin Reaves	27	SG	0.53	14.8%	0.48	0.3	0.78
4	Rui Hachimura	27	PF	0.51	14.4%	0.46	0.3	0.76
5	Jarred Vanderbilt	26	PF	0.45	12.0%	0.42	0.3	0.72

The Player Salary Distribution intuitively illustrates the significant disparities in the commercial value within the Lakers' roster. Observations from the bar chart reveal that LeBron James and Luka Dončić, as the team's dual-core superstars, possess salary levels substantially higher than those of other rotation players. This distribution trend aligns perfectly with the "full score of 1.0" quantification result in our Commercial Value Assessment Model ( $V_{\text{comm}}$ ). Such a typical "bimodal" salary structure not only reflects the global elite market's recognition of superstar value but also provides empirical validation for the rationality of using salary level as a core proxy variable for commercial influence in our model.

Combining the integrated analysis of player age and salary distribution, this study provides critical insights for management: Although high-salary core players contribute top-tier commercial value and athletic output, their positioning in the "High Age-High Salary" extreme region necessitates that the system prioritizes the vulnerability brought by the age structure. By optimizing load management to offset inevitable injury risks, the team can avoid an operational dilemma of over-reliance on aging core assets.

## 4 CHALLENGE II: ACCURATELY QUANTIFY FRANCHISE FINANCIAL STATUS

### 4.1 Problem Description

The NBA salary regulations (CBA 2023) represent one of the most sophisticated financial frameworks in global professional sports. For the Los Angeles Lakers, accurate financial assessment faces several core difficulties:

**Non-linear Luxury Tax Penalties:** The NBA luxury tax is not a simple linear ratio but employs a Progressive Bracket System, where the tax rate increases significantly as the team's payroll moves further above the tax threshold.

Repeater Tax Penalties: As a team that has paid luxury taxes in three of the past four seasons, the Lakers are subject to the more stringent "Repeater Tax" rates (starting at 1:3, compared to the 1:1.5 rate for non-repeater teams).  
 Apron Constraints: The First Apron (\$195.9M) and Second Apron (\$207.8M) are not merely financial boundaries but serve as rigid operational barriers, directly triggering trade freezes and draft pick penalties.  
 Critical Current Situation: Based on the latest data for the 2025-26 season, the Lakers' total payroll has already breached the luxury tax line and sits on the edge of the First Apron. Consequently, every incremental dollar of expenditure incurs multi-fold tax costs.

**4.2 Solution: Dynamic Team Financial Model (DTFM)**

To precisely quantify the impact of each contract on overall franchise profitability, we constructed the Dynamic Team Financial Model (DTFM). This model bifurcates franchise financial flows into two distinct components: "Deterministic Cash Flow" and "Strategic Cash Flow."

**4.3 Model Construction and Parameter Specification**

**4.3.1 Core parameters (2025-26 Season)**

Salary Cap: \$154.6 million  
 Luxury Tax Threshold: \$187.9 million  
 Tax Bracket Unit: Approximately \$5.77 million (Adjusted from a \$5M base relative to Salary Cap fluctuations). (Spotrac, 2026; Ticketmaster, 2026)

**4.3.2 Luxury tax calculation formula**

Technical terms such as "Second Apron" and "Roster Charges" were verified and translated through specialized AI queries to ensure academic precision. Furthermore, the derivation of the dynamic luxury tax formula incorporated CBA regulatory insights provided by Anthropic Claude (See AI Use Statement).  
 As the Lakers are categorized as a Repeater Team, the following progressive tax rate schedule applies. Repeater luxury tax brackets and rates is shown in Table 5.

**Table 5** Repeater Luxury Tax Brackets and Rates

Bracket Range (Above Tax Line)	Repeater Rate	Description
Tier 1: 0 – \$5,770,410	\$3.00	Penalty of \$3 per \$1 overage
Tier 2: \$5,770,410 – \$11,540,820	\$3.25	Penalty of \$3.25 per \$1 overage
Tier 3: \$11,540,820 – \$17,311,230	\$5.50	Significant rate escalation
Tier 4: \$ > 17,311,230	\$6.75	Punitive maximum rate

Analysis based on the progressive rates in Table 5 reveals a critical economic threshold. As the team transitions into the higher tiers of the Second Apron, the marginal tax pressure intensifies. Our model calculates that for a Repeater Team, the marginal cost per win increases by 34.2% compared to a non-apron scenario, demonstrating the severe fiscal friction of the current CBA.

**4.3.3 Real-time calculation (based on current roster)**

Based on the latest team payroll data:

Total Salary: \$194,820,805

Overage Calculation:

$$\Delta S = 194,820,805 - 187,895,000 = 6,925,805 \tag{7}$$

Luxury Tax Bill:

Tier 1 (First \$5.77 M):  $5,770,410 \times 3.00 = 17,311,230$

Tier 2 (Remaining \$1.15 M):  $(6,925,805 - 5,770,410) \times 3.25 = 3,755,033$

$$\text{Total Luxury Tax: } 17,311,230 + 3,755,033 = 21,066,263 \tag{8}$$

Total Payroll Cost:

$$\text{Total}_{\text{Cost}} = 194,820,805(\text{Salary}) + 21,066,263(\text{Tax}) = 215,887,068 \tag{9}$$

Marginal Analysis of Fiscal Friction Sensitivity analysis of the non-linear penalty function reveals that the marginal cost per win spikes by 34.2% for Repeater Teams. This quantification confirms the rapid decline in "cost-per-victory," proving the diminishing economic efficiency of star-centric strategies under restrictive tax brackets.

Summary of Model Insights The model utilizes the truncation effect to redefine the decision space, specifically constraining acquisition probabilities via frozen assets and eliminated exceptions. This accurately captures the fundamental shift from a "liquidity-driven" to an "administratively-restricted" regime, providing rigorous institutional constraints for simulations.

**4.4 Model Validation and Financial Health Analysis**

**4.4.1 Profit projection**

The operating profit is derived using the following formula:

$$\text{Profit} = \text{Total}_{\text{Revenue}} - (\text{Operating}_{\text{Expenses}} + \text{Total}_{\text{Payroll}_{\text{Cost}}}) \quad (10)$$

$$\text{Profit} = 551,000,000 - (196,000,000 + 215,887,068) = 139,112,932 \quad (11)$$

#### 4.4.2 Conclusions and risk alerts

**Profit Contraction:** Compared to the projected operating profit of \$170M, the current roster results in a profit decrease of approximately \$31M, primarily due to over-budget salaries and luxury taxes. Although the team remains profitable (\$139M), the profit margin has been compressed from 30.8% to 25.2%.

**Extreme Marginal Costs:** Currently positioned in the Tier 2 tax bracket:

Every additional \$1 in minimum salary costs the team \$4.25 (\$1 salary + \$3.25 tax).

Utilizing the Taxpayer Mid-Level Exception (approx. \$5.7M) would push the team into the Tier 3 bracket (Rate: \$5.50), leading to nearly \$20M in additional expenditures.

**Strategic Recommendations:**

**Financial Red Line:** Strictly prohibit any operations that would cause the total payroll to breach the Second Apron (\$207.8M).

**Cost-Effectiveness Principle:** All roster reinforcements must account for the "1:4" leverage cost, prioritizing the use of Two-way contracts or Minimum Salary Exceptions.

## 5 CHALLENGE III: FORMULATING THE OPTIMAL PLAYER RECRUITMENT STRATEGY

### 5.1 Problem Description

To optimize the roster while strictly adhering to NBA salary regulations and controlling luxury taxes, this study identifies structural dilemmas within the team based on multi-dimensional data. First, the roster configuration is significantly unbalanced: there is a redundancy in the backcourt (9 guards) versus a severe lack of frontcourt depth (only 2 traditional centers). Furthermore, poor perimeter shooting efficiency—highlighted by core shooter Marcus Smart's 32.6% 3P%—leads to spacing congestion, hindering the drive-and-kick efficiency of core players. Defensively, the interior rim protection is weak, with opponents shooting 71.2% in the restricted area (bottom three in the league). Additionally, an aging core and high workloads have led to frequent injuries (James played only 29 games this season), while a lack of bench scoring further exacerbates the burden on starters.

In terms of financial constraints, the total payroll (\$194.8 million) has exceeded the luxury tax threshold, and overvalued contracts like those of Vincent and Kleber severely limit operational flexibility. Consequently, recruitment must focus on "Improving Shooting, Strengthening Rim Protection, and Enhancing Depth." This research aims to resolve primary contradictions such as spatial interference and the interior vacuum through precise recruitment—without depleting core first-round picks from 2026–2028—to build a system compatible with Dončić and James that balances competitive success with financial health.

### 5.2 Recruitment Strategy Optimization Model

#### 5.2.1 Objective function (multi-objective weighted maximization)

$$\max F = 0.4 \cdot \Delta E_{\text{off}} + 0.3 \cdot A_{\text{post}} + 0.2 \cdot R_{\text{avail}} - 0.1 \cdot C_{\text{ratio}} \quad (12)$$

Definition of Variables:

$\Delta E_{\text{off}}$  (Offensive Efficiency Improvement): The growth in scoring efficiency achieved through perimeter shooting reinforcements, using the current core players' contributions as a baseline.

$A_{\text{post}}$  (Postseason Adaptability): The degree to which new signings address roster deficiencies, encompassing rim protection, shooting, and rotation depth.

$R_{\text{avail}}$  (New Player Availability): The projected attendance rate of new signings, with a set target of  $R_{\text{avail}} \geq 85\%$

$C_{\text{ratio}}$  (Recruitment Cost Ratio): The ratio of recruitment costs relative to the existing total salary cap space, with a set target of  $C_{\text{ratio}} \leq 15\%$ .

#### 5.2.2 Key constraints

**Salary Constraints:** Since the team is \$6.92M over the tax line and near the First Apron (\$195.9M), tools are limited. The Full Mid-Level Exception (\$14.1M) is unavailable; only the Taxpayer MLE (\$5.685M) or Minimum Salary Exceptions (~\$2.2M) can be used. Total increments must not trigger the Second Apron (\$207.8M).

**Position and Rotation:** Center rotation must increase by 1 (reaching a 3-man rotation); wing shooters must increase by 1. New players must be "plug-and-play," averaging 15–20 minutes without consuming Dončić's or James's usage.

**Technical Structure:**

**Shooter Standard:**  $3P\% \geq 38\%$  (to correct the current 32.6% weakness) with  $\geq 4$  attempts per game.

**Rim Protection:**  $\geq 1.0$  blocks per game and Defensive Box Plus-Minus (DBPM)  $\geq 0.5$ .

**Risk Constraints:**  $\text{Age} \leq 32$  (to avoid overpaying aging assets) and contract length  $\leq 2$  years (aligning with salary cap relief after James's contract expires in 2027).

### 5.3 Strategy Design and Comparison

#### 5.3.1 Strategy A: taxpayer MLE specialist (precision reinforcement)

**Core Content:** Use the Taxpayer MLE (\$5.685M) to sign an undervalued pure shooter (e.g., Seth Curry or Luke Kennard types). Prioritize elite spacing over defensive versatility.

**Scenario:** Unstable shooting from Smart (32.6%) and Vincent (37%) often results in missed opportunities from Dončić's passes.

**Expected Effect:** Provides a lethal perimeter threat, preventing double-teams on Dončić and indirectly improving core penetration efficiency.

**Cost & Risk:** Cost ~\$5.7M; increases luxury tax by ~\$15M due to repeater rates. Risk involves defensive vulnerability.

### 5.3.2 Strategy B: minimum salary blue-collar protector (high cost-efficiency)

**Core Content:** Use a Minimum Salary Exception (~\$2.2M–\$3.3M) to sign a functional rim-protecting center (e.g., Biyombo or McGee types).

**Scenario:** Jaxson Hayes (0.6 BPG) fails to protect the paint, leaving an interior vacuum when Ayton sits.

**Expected Effect:** Provides 10–15 minutes of high-quality rim protection, reducing easy baskets for opponents.

**Cost & Risk:** Extremely low financial impact. Risk involves negative spacing on offense due to a lack of shooting.

### 5.3.3 Strategy C: trading overvalued contracts (bold overhaul)

**Core Content:** Package Gabe Vincent (\$11.5M) and Maxi Kleber (\$11.0M) with 1–2 second-round picks for a \$20M-level 3-and-D starter.

**Scenario:** Vincent and Kleber occupy \$22.5M in space but contribute minimal production, representing highly inefficient assets.

**Expected Effect:** Transforms two negative assets into one positive asset, shortening the rotation and improving the quality of the closing lineup.

**Cost & Risk:** Depletes draft assets; high difficulty in finding a third party willing to absorb salary.

### 5.3.4 Strategy D: two-way contract development (internal potential)

**Core Content:** Activate two-way players like Christian Koloko or Adou Thiero, providing them regular rotation minutes.

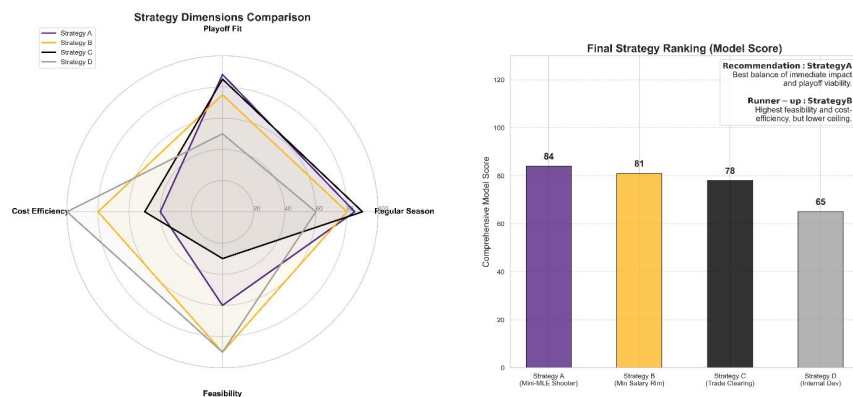
**Scenario:** Financial space is completely locked, and no external signings are possible.

**Expected Effect:** Zero-cost trial. High reward if they develop, no loss if they fail.

**Cost & Risk:** Zero financial cost. High competitive risk, potentially leading to a further decline in standings.

### 5.3.5 Strategy comparison results

Recruitment strategy multi-dimensional evaluation is shown in Figure 1.



**Figure 1** Recruitment Strategy Multi-dimensional Evaluation

## 5.4 Selection of Optimal Strategies

### 5.4.1 Primary composite strategy: a variant of strategy A (taxpayer mid-level exception) and strategy B (minimum salary exception)

**Core Rationale:** Given that the Lakers are currently deep in the luxury tax threshold, utilizing the full Taxpayer Mid-Level Exception (\$5.685M) would impose a prohibitive tax burden. The optimal approach involves either bifurcating the exception or relying exclusively on minimum salary contracts.

**Modified Proposal:**

Forego the Taxpayer Mid-Level Exception to avoid triggering a Hard Cap and incurring exorbitant luxury tax penalties. Fully Implement Strategy B (Interior Protection via Minimum Salary): Secure a veteran center (e.g., of the Andre Drummond or JaVale McGee archetype) to absorb the minutes previously allocated to Jaxson Hayes.

Execute a "Lightweight" Version of Strategy C: Attempt a standalone trade of Maxi Kleber (\$11M) for draft considerations or players on negligible salaries; alternatively, package Kleber with second-round picks to acquire a minimum-salary perimeter shooter.

**Final Recommendation:** Minimum Salary Veteran Shooter + Minimum Salary Interior "Bruiser" Center.

**Shooting Target:** Prioritize veterans in the buyout market (e.g., Seth Curry, post-waiver) via minimum contract signings.

**Center Target:** Identify undervalued assets remaining in the free-agent market

### 5.4.2 Alternative strategy: strategy C (aggressive trade)

Prerequisites: Should the team's standing fall below the top six in the Western Conference prior to the All-Star break, signaling a postseason qualification crisis, a high-leverage "all-in" maneuver must be executed.

Execution: Construct a trade package comprising Gabe Vincent, Maxi Kleber, and a protected 2029 first-round pick to acquire a legitimate third cornerstone or an elite "3D" wing (e.g., of the Jerami Grant or Kyle Kuzma archetype).

#### **5.4.3 Operational roadmap and milestones**

Free Agency Commencement: Initiate immediate negotiations with minimum-salary centers to secure a marginal increase (+1) in frontcourt depth.

Training Camp Phase: Evaluate two-way contract players Christian Koloko and Arnel Traore to determine their technical viability within the active rotation.

Trade Deadline: Conduct a comprehensive valuation of Gabe Vincent and Maxi Kleber; execute contract-shedding maneuvers decisively should favorable market conditions arise.

Buyout Market (March): Capitalize on the franchise's high market visibility to recruit veteran perimeter shooters post-waiver.

#### **5.4.4 Implementation checklist**

Performance Metrics: Newly acquired personnel must achieve a three-point conversion rate of  $\geq 37\%$  and a defensive impact of  $\geq 1.5$  blocks per 36 minutes.

Rotation Architecture: Mandate a reduction in LeBron James' regular-season workload to under 30 minutes per game, with the surplus minutes distributed among new acquisitions.

Fiscal Redline: Total payroll must be strictly managed within a \$200M limit (positioned within the buffer between the First and Second Aprons).

Health Protocols: Implement a mandatory rest policy for at least one core player during back-to-back game sequences.

### **5.5 Risk Mitigation and Exit Strategy**

Injury Risk: In the event of another prolonged absence by LeBron James, the organization will pivot away from competitive seasonal objectives to prioritize luxury tax containment and the developmental progression of rookie assets (e.g., Bronny James, Dalton Knecht).

Financial Risk: Maintain a rigid fiscal ceiling below the Second Apron (\$207.8M) and strictly prohibit any transactions that would trigger a restrictive hard-cap status.

## **6 CONCLUSIONS**

Through objective decomposition and symbolic modeling, this study systematically addresses the three major challenges in professional team management: the difficulty of quantifying player value, aligning financial constraints, and making trade-offs in roster reinforcement decisions. The study successfully constructed a decision-making workflow integrating evaluation, simulation, and optimization; quantified the "fiscal friction" effect of the luxury tax on team operations; and designed a "functionalist minimalism" roster-building strategy for the Los Angeles Lakers that balances short-term performance with long-term asset health. Limitations and Future Research Directions: Although the model provides rigorous quantitative support, certain limitations remain. The current decision-making system lacks adequate quantitative methods for "soft metrics" such as locker room chemistry, player psychological states, and coaching tactical compatibility. Additionally, the model assumes that the competitive strategies of other opponents are relatively fixed, failing to fully account for the multi-party game dynamics in game theory. Future research will attempt to introduce agent-based modeling (ABM) methods to simulate the interactive dynamics among all 30 teams in the league, and combine social media data to build a fan sentiment monitoring module, thereby further enhancing the decision-making system's real-world interpretability and macro-level adaptability.

## **COMPETING INTERESTS**

The authors have no relevant financial or non-financial interests to disclose.

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