CHARZEWSKI, Piotr, STARZYK, Agnieszka and RELIGA, Aleksandra. The Rising Role of Private Equity in Professional Sports. A Review. Quality in Sport. 2025;38:57874. eISSN 2450-3118.
https://doi.org/10.12775/QS.2025.38.57874
https://apcz.umk.pl/QS/article/view/57874

The journal has been 20 points in the Ministry of Higher Education and Science of Poland parametric evaluation. Annex to the announcement of the Minister of Higher Education and Science of 05.01.2024. No. 32553.
Has a Journal's Unique Identifier: 201398. Scientific disciplines assigned: Economics and finance (Field of social sciences); Management and Quality Sciences (Field of social sciences).
Punkty Ministerialne z 2019 - aktualny rok 20 punktów. Załącznik do komunikatu Ministra Szkolnictwa Wyższego i Nauki z dnia 05.01.2024 r. Lp. 32553. Posiada Unikatowy Identyfikator Czasopisma: 201398.
Przypisane dyscypliny naukowe: Ekonomia i finanse (Dziedzina nauk społecznych); Nauki o zarządzaniu i jakości (Dziedzina nauk społecznych).

The authors declare that there is no conflict of interests regarding the publication of this paper.
Received: 16.01.2025. Revised: 29.01.2025. Accepted: 03.02.2025 Published: 03.02.2025.

The Rising Role of Private Equity in Professional Sports. A Review

Piotr Charzewski[1*], Agnieszka Starzyk[2*], Aleksandra Religa[2*]

1. Kozminski University, Jagiellońska 57, 03-301 Warsaw, Poland
2. Medical University of Warsaw, Żwirki i Wigury 61, 02-091 Warsaw, Poland

* Corresponding author

Piotr Charzewski: charzewskip@gmail.com; ORCID: https://orcid.org/0009-0007-5170-3899
Agnieszka Starzyk: astarz.st@gmail.com; ORCID: https://orcid.org/0009-0002-8696-4187
Aleksandra Religa: olareliga4@gmail.com; ORCID: https://orcid.org/0009-0004-9340-1221

ABSTRACT

Introduction:
The involvement of private equity investment in sports franchises, media rights, and stadium infrastructure has seen substantial growth since 2019, when many professional sports leagues began amending their bylaws to permit this form of capital infusion. Historically, sports organizations and properties had restrictive ownership structures, limiting external investments. However, the policy shift opened the door for private equity (PE) firms to deploy record levels of "dry powder"—capital waiting to be invested—into these highly attractive assets. Sports properties have long been regarded as lucrative investment opportunities due to their consistent historical returns and diversification benefits. These assets are often less correlated with traditional financial markets, making them particularly appealing in periods of economic uncertainty. Private equity firms are drawn to the potential for significant long-term value creation through ownership stakes in franchises, the monetization of media rights, and investments in stadium infrastructure, which often serve as anchors for broader commercial development. Despite these advantages, such investments are not without challenges. Private equity firms typically lack governance control, as they are often excluded from board representation and decision-making power in the management of these entities. Furthermore, the highly illiquid nature of sports investments presents potential difficulties when executing exit strategies, as the resale market for ownership stakes in sports franchises and related assets remains limited and often tightly regulated. Nevertheless, the combination of strong financial returns, unique diversification potential, and growing interest in the sports industry has made this sector an increasingly attractive target for private equity capital in recent years.

Materials and Methods:
A comprehensive literature review was performed utilizing the IMF eLibrary, PubMed, Wiley Online Library, and World Bank Open Knowledge Repository, focusing on studies published between 2019 and 2024. The search strategy employed keywords such as "private equity", "sport", sport financing", "investment". The inclusion criteria encompassed meta-analyses that investigated the impact of investment sector growth, financial global markets seeing the opportunity in sports monetization and sports trends changing over time due to injuries.

Results:
Findings present a PE sector growing its presence in the sports industry each single year due to positive financial investment returns generated. The phenomenon is a direct aftermath of

private investors and private equity funds seeking portfolio diversity and a greater return on invested capital (ROI) on the market. Private equity investments in sports face challenges such as limited governance control and restricted board representation. Additionally, the illiquidity of sports assets complicates exit strategies due to a limited and regulated resale market. However, strong financial returns, diversification benefits, and growing interest in the sports industry have made this sector an appealing target for private equity capital. The sports sector is part of the global economy, where the macro strategy rules apply for every business, regardless of the specialty – underinvested entities like football clubs have limited exposure to the outer world and struggles with growth due to underinvestment. Private equity provides sports franchises with a new source of liquidity, aiding owners with limited available capital. It also offers expertise in areas like stadium operations, media rights, and brand building, helping maximize revenues and returns. Additionally, private equity investment boosts franchise valuations, reduces loan-to-value ratios, and enhances the accuracy of valuation estimates through improved transaction data.

Conclusions:

The rise of private equity in the sports industry marks a pivotal shift in financing and management, driven by league bylaw changes since 2019. Sports franchises, media rights, and stadium infrastructure have become attractive investment opportunities due to their strong returns and diversification benefits. Despite challenges such as limited governance control and asset illiquidity, private equity provides much-needed liquidity, operational expertise, and enhanced franchise valuations. These investments support underfunded entities and align with broader economic strategies, positioning private equity as a key player in shaping the future financial landscape of professional sports.

Keywords:

private equity, sports, investment growth, injuries, nutrition

INTRODUCTION

Since the early 2000s, private equity firms have increasingly invested in businesses associated with the sports industry. Notable early investments include the Yankees Entertainment and Sports Network in 2001 and the acquisition of the sports and media talent agency IMG in 2004. However, private equity's direct involvement in sports leagues began in 2005 with a proposed, but ultimately unexecuted, transaction to purchase the NHL. During a lockout caused by a labor dispute between players and owners, a private equity firm offered $3.5 billion to buy the league. Although the deal did not proceed, it marked the beginning of private equity interest in sports leagues.[1]

In 2006, a private equity firm acquired a majority stake in Formula 1, the prominent international racing championship, for approximately $2.1 billion. That same year, Paris Saint-Germain (PSG), a European football club, was sold to a consortium of private equity firms. Following the PSG deal, other European football clubs, such as Manchester United, AC Milan, Inter Milan, and Atlético Madrid, began taking on private capital. Large-scale transactions, such as the £2.5 billion acquisition of Chelsea FC in 2022, have captured international attention. By 2023, private equity investments in Europe's five largest football leagues amounted to approximately €4.9 billion, a substantial increase from €66.7 million in 2018.[2,12]

In North America, significant developments began in 2019 when Major League Baseball (MLB) became the first North American sports league to allow private equity investments in its franchises. Under current MLB rules, private equity funds can hold only minority stakes in franchises, a model that contrasts with the more permissive European approach. Similar restrictions exist across all major North American sports leagues, with the NFL limiting investments to league-approved private equity firms. Despite these limitations, dealmaking has accelerated in recent years. For example, the MLB's first major transaction after its rule change was the $750 million acquisition of more than a 10% stake in Fenway Sports Group, the entity owning the Boston Red Sox and Liverpool FC.[14]

As of December 2024, private equity firms and executives had ties to numerous teams across North America: 20 of 30 NBA teams, 18 of 30 MLB teams, 15 of 29 MLS teams, 10 of 32 NHL teams, and eight of 32 NFL teams. These developments underscore the growing influence of private equity in both domestic and international sports industries.

The growing presence of PE-backed teams and the corresponding improvement in their on-field performance may enhance the overall competitiveness and attractiveness of leagues. This increased competitiveness could draw more sponsors and secure better TV broadcasting deals, thereby generating higher revenues for clubs. However, the profit-driven approach of PE-backed clubs may also impact the cultural essence of football. For instance, efforts to boost matchday revenues through higher ticket prices and revamped stadium experiences—featuring restaurants and shops—could attract a new audience seeking a broader leisure experience beyond just the sport. Conversely, these changes might alienate traditional fans, as higher prices and commercialization may become economically inaccessible or culturally unwelcome.[2]

Given these dynamics, the involvement of PE in football requires careful monitoring and evaluation by National Football Federations. If PE participation proves beneficial, such as through increased revenues and fan engagement, existing restrictions—like the German Bundesliga's “50+1 rule,” requiring clubs to be majority-owned by supporters—could be reconsidered. Conversely, if PE involvement leads to adverse effects, such as reduced stadium attendance due to excessive ticket prices, Football Federations may need to introduce measures to mitigate these challenges.

MATERIALS AND METHODS

A comprehensive literature review was undertaken utilizing the IMF eLibrary, PubMed, Wiley Online Library, World Bank Open Knowledge Repository, and Google Scholar to examine studies published between 2019 and 2024. The primary objective was to synthesize a broad spectrum of research addressing the role of private equity funds in generating profit from the sports market as a diversified investment asset. The search strategy incorporated targeted keywords, including private equity, sports, sports market, investment growth, injuries, and nutrition to identify relevant studies.

Data extraction was conducted systematically to classify findings by exercise type (e.g., low-impact, high-impact, occupational), intensity, and individual-specific factors such as injury, market risk, and historical return on investment generated.

RESULTS

Private equity (PE) plays a crucial role in providing liquidity to franchises, particularly those facing limited owner capital or financial strain. Franchise valuations have seen significant growth, driven in part by PE investments that enhance credit profiles and operational efficiency. Additionally, stable revenue streams from media rights and sponsorships make these investments resilient, even during economic downturns. Investment in sports might be prone to fail due to players' injuries and sports seasonality, however, this calculated risk is likely to be mitigated by a wise investment strategy created.

Sport as an Investment Asset:

One of the few scholars conducted research underscoring the increasing prominence of PE investments in professional sports, particularly within the United States from approximately 2019 onward. While acknowledging examples of PE involvement in European football, such as Manchester City and Paris Saint-Germain—technically owned by PE entities but functionally controlled by sovereign wealth funds from the UAE and Qatar—Browndorf identifies the U.S. as a key locus for the expansion of PE activity in sports.[1]

The growing interest of PE firms in sports clubs is driven by both general factors typical of PE markets, such as abundant liquidity and the pursuit of higher returns during the post-pandemic period, and sector-specific developments, including the relaxation of ownership regulations in Major League Baseball (MLB) and the National Basketball Association (NBA).[2]

Moreover, the influence of U.S.-based PE firms has extended into European football, reflecting a transatlantic diffusion of investment strategies. For instance, RedBird Capital Partners has acquired ownership stakes in AC Milan and Toulouse FC while also establishing initiatives such as the Union Football League in the United States. According to Blue Owl, the United States has been at the forefront of creating sports-focused PE funds, with entities like Arctos Sports Partners, Dyal Capital Partners, and RedBird Capital Partners leading the way. Arctos and Dyal Capital Partners, in particular, have benefited from regulatory changes in the NBA that now permit PE firms to acquire stakes in franchises such as the Golden State Warriors, Atlanta Hawks, Sacramento Kings, and Phoenix Suns.[2]

Growth Drivers:

Sports leagues and franchises generate revenue from several key sources. The overall valuation growth of major sports leagues has been predominantly fueled by lucrative media rights deals, which provide predictable and long-term revenue streams. This stability, combined with the evolution of digital platforms, underscores the financial attractiveness of investments in professional sports.

- **Media/Broadcasting Rights**: A substantial portion of revenue comes from television and streaming agreements, often featuring exclusive rights, premium content packages, and long-term contracts. These deals enhance the appeal of professional sports teams to financial investors. Media rights account for the largest share of revenue for major leagues such as the NBA, MLB, and NFL. The shift from traditional broadcast to streaming platforms has further intensified investments in live sports. For instance, Apple TV secured rights to Friday night MLB games in 2022 for $85 million annually over seven years, while Amazon committed $1 billion annually starting in 2023 to broadcast NFL Thursday Night Football games, equating to over $62 million per game.[2,20]
- **Sponsorships**: Revenue from official sponsorships, naming rights, and advertising partnerships form a critical component of sports leagues' income. Sponsorships extend beyond traditional advertising to include branded content, in-stadium promotions, and co-marketing initiatives, offering brands enhanced visibility and engagement opportunities.
- **Ticket Sales and Concessions**: Revenue derived from live event attendance is influenced by stadium capacity, ticket pricing, and attendance rates. This stream also encompasses sales from concessions during events, contributing significantly to overall income.
- **Merchandising**: Income from branded merchandise, including apparel, collectibles, and licensed products, constitutes another major revenue source. Sales are driven through both physical retail outlets and e-commerce platforms, catering to a wide audience of fans and collectors.
- **Other Revenue Streams**: Emerging sources of income include gaming, e-sports, sports betting, digital content, and immersive fan experiences. These avenues have gained traction as leagues and franchises diversify their offerings to attract new audiences.[1,12]

The global sports betting market, valued at $83.7 billion in 2022, is expected to grow at a compound annual growth rate (CAGR) of 10.3% between 2023 and 2030, driven by increasing popularity, greater accessibility through digital platforms, and favorable regulatory developments. Similarly, the global e-sports market is forecasted to expand from $2.3 billion in 2023 to $16.7 billion by 2033, achieving an impressive CAGR of 21.9%. Collectively, the global sports market generated $463 billion in revenue in 2024 and is projected to exceed $600 billion by 2028, ultimately reaching nearly $863 billion by 2033. These projections underscore the expansive growth potential of the sports industry, which now extends well beyond traditional athletic events to encompass diverse and rapidly evolving sectors, offering a multitude of emerging investment opportunities.[12,14]

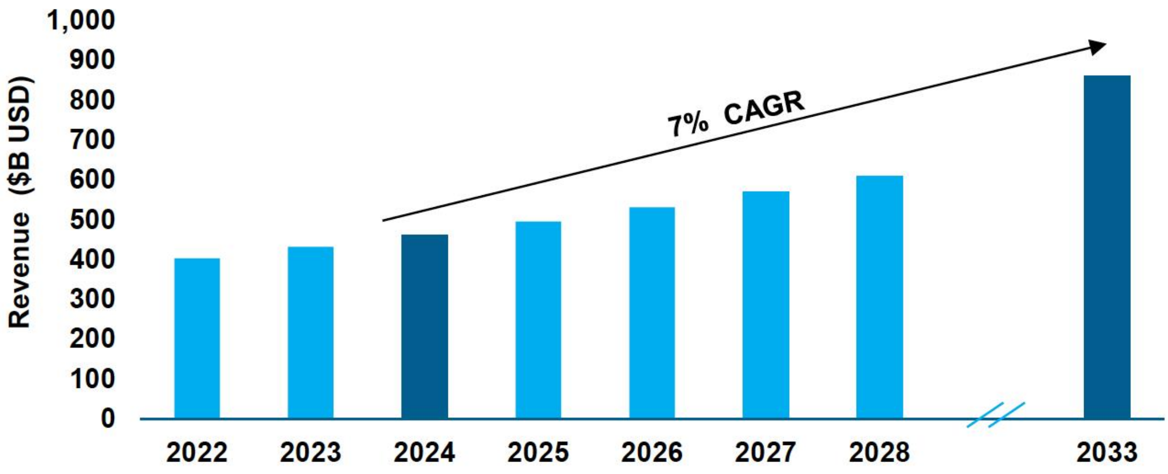

Figure 1. PE Investments is Sports CAGR[1]

Systematic Risks:

The sports industry represents a dynamic and multifaceted market that transcends the boundaries of traditional athletic events. It has evolved into a global economic powerhouse, driven by innovative revenue streams, emerging technologies, and shifting consumer behaviors. Investing in professional sports presents a unique set of opportunities and challenges for private equity firms. While the sector is buoyed by its cultural significance, growing global reach, and lucrative revenue streams such as media rights and sponsorships, the market dynamics are far from conventional. Unlike traditional investments, sports teams and leagues operate within tightly regulated environments, and their valuation is often influenced by intangible factors like brand equity and fan loyalty. The following analysis highlights the key challenges facing private equity firms in this space, including the limited availability of franchises, the complexity of exit strategies, governance constraints tied to minority ownership, and the unpredictable profitability of teams. These factors illustrate the nuanced and often sentiment-driven nature of sports investments, requiring careful consideration of market limitations and long-term strategies.[12,16]

- **Limited Market Participants** - The number of professional sports teams available for ownership is inherently limited, particularly in major North American leagues such as the NFL, NBA, MLB, and NHL. These leagues operate under a closed franchise model, meaning that expansion teams are rare, and the total supply of available franchises remains fixed. Opportunities to acquire teams are further restricted by league regulations, which impose stringent qualifications for prospective owners, including financial stability, reputational integrity, and sometimes personal alignment with league values. These requirements can deter or disqualify potential buyers who might otherwise meet financial criteria, narrowing the pool of potential investors. Additionally, the extraordinarily high valuations of teams—often reaching into the billions of dollars—limit the pool of potential buyers to ultra-high-net-worth individuals, institutional investors, or select private equity firms, making the market even more exclusive and competitive.
- **Complex Exit Path** - Exiting an investment in a sports team is far more complicated than with traditional assets. Selling a team typically requires league approval, which involves extensive review processes, including vetting potential buyers to ensure they meet the league's qualifications and align with its strategic priorities. This regulatory oversight can delay or even block transactions. Moreover, finding a buyer willing to meet the high valuation of a team can be challenging, as the market is inherently illiquid. Unlike other asset classes, sports teams cannot be easily sold during economic downturns or when investor priorities shift, as the process of securing league approval and aligning with potential buyers' interests is time-intensive and inflexible. These factors contribute to an elongated and unpredictable exit process, increasing risks for private equity investors.
- **Sentiment-Driven Valuation** - The valuation of professional sports teams is significantly influenced by intangible and often unpredictable factors. While traditional businesses are valued primarily on financial metrics such as revenue, profit margins, and cash flow, the worth of sports franchises can be heavily shaped by factors such as brand equity, team performance, historical legacy, and fan loyalty. For example, a team's value may spike due to a successful season or the acquisition of a star player but could decline just as quickly due to poor performance, scandals, or a loss of public interest. This subjectivity makes it difficult for investors to rely on

traditional valuation models, introducing a level of volatility that complicates decision-making and financial forecasting.[2,17]

- **Growth Trajectory** - Historically, the growth in sports team valuations has been fueled by substantial increases in media rights deals and sponsorship revenue. However, these revenue streams may be approaching a saturation point, particularly in mature markets like the United States, where the value of media rights and viewership has begun to stabilize. As traditional broadcast platforms lose viewers to streaming services, and consumer preferences for sports consumption evolve, the pace of revenue growth from these sources may slow. While streaming platforms have shown a willingness to invest heavily in sports rights, the long-term sustainability of such investments remains uncertain. This potential plateau in revenue growth could reduce the future appreciation of franchise values, limiting the upside for private equity investors.[13]
- **Governance Challenges** - Private equity firms often acquire minority stakes in sports teams due to high purchase prices and league-imposed ownership restrictions, which limit their ability to exert significant influence over decision-making. Minority ownership typically excludes control over operational and strategic decisions, leaving PE firms dependent on majority owners whose priorities may differ. For example, majority owners may prioritize legacy, community engagement, or the prestige of owning a team over maximizing financial returns. Conflicts of interest may arise, as private equity investors typically focus on value creation and return on investment, while majority owners might pursue goals that are less aligned with financial performance. Additionally, minority ownership can complicate exit strategies, as private equity firms may have limited influence over the timing and structure of a sale, extending holding periods and impacting overall returns.[1]
- **Profitability of Teams** - Despite high valuations, sports teams often face significant operational challenges that impact profitability. Major cost drivers include player salaries, which have risen exponentially due to competitive pressures, as well as expenses related to coaching staff, support personnel, and stadium maintenance. Many teams rely disproportionately on a few key revenue streams, including media rights, sponsorships, ticket sales, and merchandising. These income sources are not guaranteed and can be highly variable, often dependent on factors like team performance, star player presence, or fan engagement. For example, a losing season or

a lack of marquee talent can lead to declines in ticket sales, sponsorship interest, and merchandising revenue. Additionally, external factors such as economic downturns, global events (e.g., pandemics), [15] or shifts in consumer behavior can exacerbate revenue variability, creating financial vulnerabilities for teams and their investors.[1]

Injury Prevention:

A **Black Swan event** refers to a highly improbable and unpredictable occurrence that has a profound impact, often defying expectations and traditional risk assessments. Within the realm of sports and private equity investment in sports franchises, the implementation of an inadequate nutrition program may constitute an underlying risk factor with potentially significant consequences. Suboptimal nutrition compromises energy availability, recovery, and physical resilience, leading to a heightened risk of injuries among athletes. These injuries not only impair team performance but also jeopardize sponsorship agreements, ticket sales, and overall revenue streams, presenting a critical threat to the financial stability and valuation of the franchise. For private equity investors, such risks underscore the importance of adopting evidence-based nutrition strategies to mitigate injury-related disruptions and safeguard the long-term viability of their investment.[3,17]

Nutrition plays a pivotal role in the lives of athletes, serving as a foundation for both performance optimization and injury prevention. The demands placed on athletes' bodies during training and competition require strategic fueling to enhance endurance, strength, and recovery. Proper nutrition supports energy balance, muscle repair, and metabolic adaptation, ensuring that athletes can perform at their peak while reducing the risk of injuries.[4]

Inadequate nutrition, on the other hand, can lead to energy deficits, impair recovery, and increase susceptibility to fatigue-related injuries. Essential nutrients such as carbohydrates, proteins, and micronutrients are not only crucial for energy production but also for maintaining bone health, muscle integrity, and immune function. For instance, sufficient protein intake aids in muscle repair, while micronutrients like calcium, vitamin D, and iron are vital for bone strength and oxygen transport, reducing the risk of fractures and soft tissue injuries.[3]

Moreover, nutrition strategies tailored to an athlete's unique needs can address factors like training intensity, recovery time, and environmental challenges. By prioritizing personalized and evidence-based nutrition plans, athletes can mitigate the risk of overtraining injuries, optimize recovery periods, and sustain long-term health and performance. This document underscores the critical importance of integrating well-structured nutritional practices into athletic programs, offering insights into how nutrition impacts every aspect of sports performance and injury prevention.[3]

Nutrition Recommendation:

Nutrition is an essential component in the optimization of athletic performance and the prevention of injuries. It not only supports energy balance and physical endurance but also underpins key physiological processes such as muscle repair, adaptation to training, and immune function. The Academy of Nutrition and Dietetics, Dietitians of Canada, and the American College of Sports Medicine highlight that well-structured nutrition strategies are vital for both performance enhancement and recovery in athletes. These strategies must be tailored to individual needs and periodized to align with the varying demands of training and competition.[19]

One critical factor in athletic nutrition is **energy availability (EA)**, which refers to the energy remaining for bodily functions after accounting for exercise expenditure. Inadequate EA has been linked to the development of conditions such as Relative Energy Deficiency in Sport (RED-S), which affects not only physical performance but also long-term health. Athletes experiencing low EA are at risk of injuries, impaired recovery, and decreased metabolic function, emphasizing the need for precise energy intake tailored to activity levels.[7]

Carbohydrates, as a primary energy source, play a pivotal role in sustaining performance during high-intensity and endurance activities. Recommendations for carbohydrate intake vary based on the intensity and duration of activity, ranging from **3–5 g/kg** body weight per day for low-intensity exercise to **8–12 g/kg** per day for prolonged endurance events. Similarly, protein intake is critical for muscle repair and adaptation, with recommended daily intake for athletes falling between **1.2–2.0 g/kg** body weight. The timing and distribution of protein consumption, particularly post-exercise, have been shown to enhance muscle protein synthesis and recovery.[18]

Micronutrients also play a key role in athletic health. For example, **iron** and **vitamin D** are crucial for maintaining oxygen transport and bone health, respectively. Iron deficiency, particularly prevalent among female athletes, can impair performance and recovery. Meanwhile, vitamin D deficiency, common in indoor athletes or those at higher latitudes, has been linked to reduced neuromuscular function and an increased risk of fractures. Addressing these micronutrient deficiencies through diet and supplementation can significantly enhance both performance and injury resilience.[3,8]

Emerging evidence suggests that strategies like "train low," which involves training with low carbohydrate availability, may promote endurance adaptations. However, such practices must be carefully managed within a periodized training program to avoid impairing performance or recovery. Additionally, the interaction between nutrition and training underscores the importance of macronutrient periodization to meet the specific metabolic demands of different training sessions.[4]

In conclusion, nutrition is a cornerstone of athletic success, offering a means to optimize performance, support recovery, and minimize injury risk. For sports teams, particularly those backed by private equity investments, suboptimal nutrition programs represent a latent risk with potentially significant financial and operational implications. To safeguard athletes' health and ensure the sustainability of investments, evidence-based nutrition strategies must be integrated into the broader framework of sports management. This integration will not only enhance athletic outcomes but also protect the long-term viability of the investment.[4]

CONCLUSIONS:

The convergence of private equity and the sports industry highlights the sector's evolution from a niche market of trophy assets owned by a select group of wealthy individuals to a global institutional investment opportunity. Once primarily viewed as prestige-driven holdings, sports leagues, and franchises have emerged as key targets for private investment funds, supported by the parallel growth of sports-adjacent markets. Private capital has introduced new frameworks for valuing, managing, and monetizing sports assets, reshaping traditional operational and financial strategies.

Rising valuations, fueled by the increasing value of media rights, sponsorship agreements, and global fan engagement, underscore private equity’s transformative impact on the industry.

Despite persistent challenges such as illiquidity, regulatory hurdles, and operational complexities, the sector's resilience, robust demand drivers, and potential injuries affecting a professional athlete's performance – are therefore an investment. The sports sector continues to attract significant investor interest. The ongoing evolution of the sports industry positions it as a compelling and dynamic frontier for private equity investment.

To assure the market of investment stability, it has to be highlighted that an athlete's diet is a cornerstone of their performance, recovery, and overall well-being. To sustain peak performance, it is crucial to prioritize the intake of appropriate energy levels, macronutrients, and micronutrients, each of which plays a unique role in supporting athletic function. **Energy availability (EA)** is a fundamental metric, ensuring that athletes have sufficient energy to fuel both their exercise demands and essential physiological functions. A daily EA of at least 45 kcal/kg fat-free mass is recommended to maintain optimal health and prevent energy deficits that can lead to conditions such as Relative Energy Deficiency in Sport (RED-S).[9]

Carbohydrates serve as the primary energy source for high-intensity and endurance activities. Athletes should consume **3–12 g/kg body weight per day**, depending on the intensity and duration of their training. For sustained performance during competition or intense training, carbohydrate loading (10–12 g/kg/day for 36–48 hours before events exceeding 90 minutes) can help maximize glycogen stores. Post-exercise carbohydrate intake is equally important, with **1–1.2 g/kg/hour** recommended for the first 4 hours of recovery to replenish glycogen and support muscle repair.[5,11]

Proteins are vital for muscle synthesis, repair, and recovery. Athletes should aim for a daily intake of **1.2–2.0 g/kg body weight**, with adjustments for training intensity and goals. Protein should be evenly distributed across meals and consumed within **0–2 hours post-exercise** to optimize muscle protein synthesis. A single serving of **0.25–0.3 g/kg body weight** (or 15–25 g for most athletes) is recommended following exercise, with high-quality sources like dairy, lean meat, eggs, and soy being ideal options.[9,10]

Micronutrient intake is equally critical. **Iron** is essential for oxygen transport, particularly for endurance athletes, with women requiring 18 mg/day and men requiring 8 mg/day. **Vitamin D**, necessary for bone health and neuromuscular function, should be monitored, particularly in athletes training indoors or in low-sunlight regions. Athletes are advised to maintain vitamin D levels above 50 nmol/L through supplementation or fortified foods if necessary. Calcium, critical for bone strength, should meet the recommended daily intake of **1,000–1,300 mg**, with sources such as dairy, leafy greens, and fortified products.[4]

Neglecting these nutritional guidelines can have serious implications for performance and health. Insufficient carbohydrate intake leads to depleted glycogen stores, resulting in early fatigue, impaired cognitive function, and reduced endurance. Low protein intake can hinder muscle repair and adaptation, compromising recovery and increasing injury risk. Similarly, deficiencies in key micronutrients like iron or vitamin D can lead to fatigue, weakened bone structure, and a higher likelihood of stress fractures. Over time, these nutritional gaps can culminate in chronic conditions, decreased performance, and an increased risk of injury, threatening both individual athletes and team success.

Proper athlete nutrition plays a crucial role in preventing injuries, ensuring consistent performance, and safeguarding the overall value of sports franchises. Poor nutrition can lead to energy deficiencies, slower recovery times, and a higher risk of fatigue-related injuries, which can ultimately compromise a team's success on the field and its commercial appeal off the field. **For private equity investors, these risks translate into potential disruptions to revenue streams, whether from lower ticket sales, diminished sponsorship value, or declining team performance.** With nutrition closely tied to athlete health and performance, it becomes evident that mitigating injury risks is essential for protecting and enhancing the value of a PE-invested sports franchise. This aligns closely with how private equity investments can strengthen operational efficiencies and drive franchise value in the evolving sports market.[6]

The incorporation of private equity (PE) capital into the sports industry marks a pivotal transformation, redefining sports franchises and related assets as not only symbols of cultural prestige but also lucrative and resilient investment vehicles. This shift, driven by the loosening of ownership restrictions in major North American sports leagues since 2019, has allowed private equity firms to allocate record levels of capital into franchises, media rights, and stadium operations. As a result, sports investments have become increasingly attractive, offering a combination of stable returns, diversification, and significant long-term appreciation.[12]

The introduction of PE into sports has delivered three primary benefits. First, it has provided franchises with a vital source of liquidity, supplementing traditional funding avenues such as internally generated cash flow, league distributions, and debt financing. This was particularly critical during the COVID-19 pandemic when shortened seasons and attendance restrictions severely impacted revenue streams. The infusion of PE capital helped franchises maintain operations and address financial challenges during this period of uncertainty.[15]

Second, PE firms have introduced valuable expertise that enhances profitability and operational efficiency. For example, firms bring specialized knowledge in maximizing revenue from media rights, stadium operations, and brand-building efforts. High-profile cases, such as Sixth Street's partnership with Real Madrid to optimize the operations at Santiago Bernabéu Stadium, illustrate how these investments can boost revenue and improve the fan experience. Such strategic input not only enhances a franchise’s financial performance but also elevates the overall value proposition for investors.[12]

Third, PE investment has catalyzed a surge in franchise valuations. The limited supply of sports franchises combined with increased demand from a growing pool of investors—including high-net-worth individuals and institutional investors—has driven significant price appreciation.[11]

In conclusion, while private equity investment in sports is not without its challenges, the benefits far outweigh the drawbacks, offering significant financial returns, operational improvements, and robust asset appreciation. As private equity continues to integrate into the sports industry, its transformative impact is likely to grow, further solidifying the position of sports as a premier asset class for institutional investors.

Author`s contribution:

Conceptualization: Piotr Charzewski
Methodology: Piotr Charzewski, Agnieszka Starzyk, Aleksandra Religa
Software: Piotr Charzewski
Check: Aleksandra Religa
Formal analysis: Piotr Charzewski, Agnieszka Starzyk, Aleksandra Religa
Investigation: Piotr Charzewski, Agnieszka Starzyk, Aleksandra Religa
Resources: Piotr Charzewski, Agnieszka Starzyk, Aleksandra Religa
Data curation: Aleksandra Religa

Writing-rough preparation: Agnieszka Starzyk, Aleksandra Religa
Writing-review and editing: Piotr Charzewski
Supervision: Piotr Charzewski, Agnieszka Starzyk, Aleksandra Religa
Project administration: Agnieszka Starzyk
All authors have read and agreed with the published version of the manuscript.

Founding Statement: The study did not receive funding.
Institutional Review Board Statement: Not applicable.
Informed Consent Statement: Not applicable.
Data Availability Statement: Not applicable.
Conflict of Interest Statement: The authors declare no conflicts of interest.
Acknowledgments: Not applicable.

Bibliography:

1. Padrucci W, Miller J, Sings Balaj CFA, CAIA, Private Equity and the Evolution of Sports Assets, December 2024 Whitepaper. Available from: https://meketa.com/leadership/private-equity-and-the-evolution-of-sports-assets/
2. Goldberg M, CFA, Sterling A, From Billionaires' Toys to Thriving Investments: The Sports World is Benefiting from Private Equity Capital. Published on 2023 Apr 17. Available from: https://dbrs.morningstar.com/research/412702/from-billionaires-toys-to-thriving-investments-the-sports-world-is-benefiting-from-private-equity-capital
3. Emery CA, Pasanen K. Current trends in sport injury prevention. Available from: https://pubmed.ncbi.nlm.nih.gov/31431273/
4. Thomas DT, Erdman KA, Burke LM. American College of Sports Medicine Joint Position Statement. Nutrition and Athletic Performance. Available from: https://pubmed.ncbi.nlm.nih.gov/26891166/
5. Spriet LL. New insights into the interaction of carbohydrate and fat metabolism during exercise. Sports medicine. 2014;44(Suppl 1):S87–96
6. Manore M, Thompson J. Energy requirements of the athlete: assessment and evidence of energy efficiency. In: Burke L,Deakin V, eds. Clinical Sports Nutrition. 5th eds. Sydney, Australia: McGraw-Hill; 2015:114–139.

7. U.S. Department of Health and Human Services, U.S. Department of Agriculture. Dietary Guidelines for Americans, 2015–2020. 8th edition. Available from http://health.gov/dietaryguidelines/2015/guidelines/.
8. Loucks AB. Energy balance and energy availability. In: Maughan RJ, ed. Sports Nutrition, The Encyclopaedia of Sports Medicine, an IOC Medical Commission Publication. West Sussex, UK: John Wiley & Sons, Ltd.; 2013:72–87.
9. Moore DR, Robinson MJ, Fry JL, et al. Ingested protein dose response of muscle and albumin protein synthesis after resistance exercise in young men. The American Journal of Clinical Nutrition. 2009;89(1):161–168.
10. Areta JL, Burke LM, Ross ML, et al. Timing and distribution of protein ingestion during prolonged recovery from resistance exercise alters myofibrillar protein synthesis. The Journal of Physiology. 2013;591(Pt 9):2319–2331.
11. Burke LM, Kiens B, Ivy JL. Carbohydrates and fat for training and recovery. Journal of Sports Sciences. 2004;22(1):15–30
12. Acero, I., Serrano, R., & Dimitropoulos, P. (2017). Ownership structure and financial performance in European football. Corporate Governance: The international journal of business in society, 17(3), 511-523.
13. Andreff, W. (2015). Governance of professional team sports clubs: Agency problem and soft budget constraint. In Disequilibrium Sports Economics (pp. 175-227). Edward Elgar Publishing.
14. Chemmanur, T. J., Krishnan, K., & Nandy, D. K. (2011). How does venture capital financing improve efficiency in private firms? A look beneath the surface. The Review of Financial Studies, 24(12), 4037-4090.
15. Gompers, P. A., Kaplan, S. N., & Mukharlyamov, V. (2022). Private equity and Covid-19. Journal of Financial Intermediation, 51, 100968. https://doi.org/10.1016/j.jfi.2022.100968.
16. Meles, A., Monferrà, S., & Verdoliva, V. (2014). Do the effects of private equity investments on firm performance persist over time?. Applied Financial Economics, 24(3), 203-218.
17. When private equity comes calling for sports franchises - WSJ. (n.d.-b). https://deloitte.wsj.com/cfo/sharing-the-field-when-private-equity-comes-calling-for-sports-franchises-a7a598fc.
18. Vitale K, Getzin A. Nutrition and Supplement Update for the Endurance Athlete. Available from: https://pubmed.ncbi.nlm.nih.gov/31181616/

19. American College of Sports Medicine; Sawka MN, Burke LM, Eichner ER, Maughan RJ, Montain SJ, Stachenfeld NS. American College of Sports Medicine position stand. Exercise and fluid replacement. Available from: https://pubmed.ncbi.nlm.nih.gov/17277604/
20. Houlihan L, Sports Market Update – Fall 2024, Published on 2024 September 7