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Spending on the Summer Olympics Over the Last 24 Years: Trends, Impacts, and Analysis

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Abstract

The Summer Olympics, one of the world's most prestigious and watched sporting events, has a long history of attracting global attention and significant investments. Over the past 20 years, spending on hosting the Summer Olympics has surged, driven by rising expectations for infrastructure, security, marketing, and legacy projects. This article explores the trends in Olympic spending from the 2000 Sydney Olympics to the 2024 Paris Olympics, analyzing how different host cities allocated their resources and the economic, political, and social implications of these expenditures.

Keywords: Olympics, Sport Management, Social Benefit

Introduction

The modern Olympic Games have grown from a simple sporting event to a global spectacle that encompasses economic, political, and social dimensions. Hosting the Olympics requires significant financial investments in infrastructure, security, transportation, and facilities. Host cities often see the event as an opportunity to boost their global image, enhance tourism, and create long-term economic benefits. However, the costs associated with hosting the Olympics have escalated significantly in recent years, prompting

debates about whether the benefits justify the expenditures (Westerbeek 2009, Chappellet 2023, Miladin 2021, Sing, Hu 2008).

This article aims to review the financial spending associated with the Summer Olympics over the last two decades, highlighting key trends and evaluating the success of these expenditures in terms of economic returns and long-term legacy.

Hosting the Summer Olympic Games involves significant planning, investment, and international attention. Many cities have

faced criticism for the perceived financial risks and social disruptions that come with hosting such a grand event. Yet, the bid to host the Games remains highly competitive, with many nations vying for the honor. The key question addressed in this article is: Why is it worth organizing the Summer Olympics? The analysis covers various dimensions, including economic impacts, cultural influence, infrastructural development, and the long-term legacy benefits that can arise from hosting the Games (Malchrowicz-Mosko 2017, Widomski 2016, Prochazka 2015, Parent 2020, Gratton et al. 2013).

Economic Benefits of Hosting the Olympics

The Olympics attract visitors from all over the world, leading to a sharp increase in tourism in the host city and surrounding areas. Tourists, athletes, and international media outlets often spend weeks in the host country, contributing significantly to the local economy. Major cities, such as Sydney (2000), London (2012), and Tokyo (2021), have reported substantial increases in international visitors during and after the Games. The Olympics offer a unique platform to showcase a host city's attractions, encouraging long-term tourism even after the event.

For instance, Sydney experienced a 17% increase in international tourist arrivals following the 2000 Games, while London saw a rise in global visitors in the years following the 2012 Olympics (De Nooij 2014, Parent et al. 2015, Preuss 2016). One of the most noticeable effects of hosting the Olympics is the influx of visitors during the event itself. From athletes and their entourages to international media and sports enthusiasts, the host city experiences a surge in visitors, often numbering in the hundreds of thousands. For example, the 2016 Rio Olympics attracted approximately 500,000 visitors to Brazil, while London 2012 saw a similar number flood into the city.

This influx drives up demand for accommodations, with hotels and short-term rentals experiencing increased bookings and higher prices. Restaurants, local attractions, and transportation services also benefit from the surge in spending, contributing millions of dollars to the local economy. The Olympics can also lead to improvements in public services, as governments often invest heavily in upgrading infrastructure to support the influx of visitors.

However, this immediate boost is not without its challenges. The surge in visitors can strain local services and cause crowding, price inflation, and logistical difficulties. In some cases, regular tourists may avoid the city during the Olympics due to these issues, leading to a temporary decline in typical tourism numbers (Chappelet 2017, Fabry, Zeghni 2019).

Perhaps the most significant benefit of hosting the Olympics is the long-term increase in global visibility. The Olympics are broadcast to billions of people worldwide, giving the host city unprecedented exposure. This media coverage often emphasizes the city's landmarks, culture, and attractions, effectively turning the entire event into a global advertisement for tourism.

For many cities, the Olympics are a once-in-a-lifetime opportunity to redefine or enhance their image on the international stage. Barcelona, which hosted the 1992 Olympics, is one of the most successful examples of this. Prior to the Olympics, Barcelona was a relatively low-profile European city in terms of tourism. However, a combination of urban revitalization, improved infrastructure, and effective promotion transformed it into one of the top tourist destinations in the world. Post-Olympics,

Barcelona's tourism numbers soared, and it has remained a popular destination ever since.

Cities that plan effectively and invest in sustainable infrastructure often see long-term increases in tourism, sometimes referred to as the "Olympic legacy effect." Improved airports, public transportation systems, and modern sports venues can attract visitors for years after the Games conclude. In some cases, host cities become popular destinations for future international events and conventions, further bolstering tourism.

Despite the potential for long-term benefits, not every host city enjoys lasting success. Hosting the Olympics is an enormous financial undertaking, and the economic risks are significant. For example, the 2004 Athens Olympics left Greece with a multi-billion dollar debt and a number of unused, deteriorating sports venues. Similarly, Rio de Janeiro, host of the 2016 Summer Olympics, struggled with post-Games tourism due to unfinished infrastructure, safety concerns, and political instability.

A key factor in whether a city benefits long-term from hosting the Olympics is its ability to plan for sustainability. Over-investment in infrastructure that becomes obsolete after the Games, known as "white elephants," can burden a city with debt and maintenance costs. For instance, many of Rio's Olympic facilities were left unused, contributing to a decline in the city's post-Olympic economy.

Moreover, while global exposure can increase tourism, it doesn't always translate into sustainable growth. Cities must ensure that they have the infrastructure, safety measures, and appeal to attract repeat visitors. Poor management of the Olympic legacy can lead to short-lived tourism booms, with little lasting impact (Mihajlovic, Vidak 2019).

One of the immediate benefits of hosting the Olympics is the creation of jobs across multiple sectors. From construction workers involved in building new stadiums and infrastructure to hospitality, transportation, and event management, the Games provide an employment boost that lasts throughout the preparation and execution stages.

The most immediate and visible impact of the Olympics on job availability comes in the form of large-scale construction projects. Host cities invest heavily in building new sports venues, upgrading existing facilities, and improving public infrastructure such as roads, airports, and public transport systems. This requires a massive labor force and can generate thousands of jobs in the construction industry.

For example, the 2012 London Olympics created an estimated 46,000 construction jobs during the preparation period. In Rio de Janeiro, around 70,000 workers were involved in building infrastructure for the 2016 Olympics. These jobs, though temporary, can provide a significant boost to local employment and are often seen as a key short-term benefit of hosting the Games. As the Games draw closer, there is also a substantial need for event management, security, logistics, and operational staff. These roles are vital to ensuring the smooth functioning of the Olympics, covering everything from ticket sales and crowd management to transportation coordination and media support.

For instance, the 2000 Sydney Olympics employed more than 100,000 people in various operational roles during the event. In London, an estimated 8,000 additional security staff were hired to maintain public safety during the Games. Although these jobs are

typically short-term, they offer critical employment opportunities to a wide range of people, including students, part-time workers, and those looking for temporary positions.

The influx of visitors, including athletes, officials, media personnel, and tourists, generates an enormous demand for hospitality services such as hotels, restaurants, and entertainment. This spike in demand leads to the creation of temporary jobs in sectors like tourism, catering, and retail.

During the 2016 Rio Olympics, Brazil saw a boost in its hospitality sector, with thousands of additional workers hired to meet the needs of international visitors. Similarly, in London, the hospitality industry benefitted significantly, with an increase in temporary staff to accommodate the surge in tourists.

While the Olympics create many jobs, particularly in the lead-up and during the event, the temporary nature of these positions can present challenges. Many of the jobs created for the Games are short-term, and workers often face uncertainty about their future employment once the event ends. This can lead to a "boom-and-bust" cycle, where the surge in employment is followed by a sharp decline.

For example, Rio de Janeiro, after the 2016 Olympics, saw many of the jobs created for the event disappear, with limited long-term economic benefits. The city faced significant challenges in maintaining the infrastructure built for the Games, and many facilities fell into disrepair, leading to a loss of potential long-term jobs.

Additionally, the high costs of hosting the Olympics can strain public finances, limiting the ability of cities to invest in other job-creating initiatives post-Games. This financial burden can result in austerity measures or cuts to public services, which may further reduce employment opportunities.

While many of these jobs are temporary, the skills acquired by workers during the Olympic preparations often translate into long-term employment opportunities. Additionally, companies involved in the planning and hosting of the Games can use this experience to expand their business domestically and internationally (Chan 2011, Kennelly 2016, Schulenkorf et al. 2016).

Hosting the Olympics accelerates the pace of urban development in the host city. Governments and private companies invest heavily in upgrading transport networks, constructing new sports facilities, and building accommodations. These improvements often outlast the Olympics and provide long-term benefits for the local population.

One of the most significant areas of infrastructure growth driven by the Olympics is transportation. Host cities frequently invest in expanding and modernizing their public transit systems, airports, and road networks to accommodate the surge of visitors during the Games. These upgrades not only improve the experience for Olympic attendees but also provide long-term benefits for the city's residents.

For example, in preparation for the 2012 London Olympics, the city made significant investments in its transportation infrastructure, including the expansion of the London Underground, new rail lines, and upgrades to roads and airports. The construction of the £15 billion Crossrail project (now called the Elizabeth Line), which improved connectivity across London, was accelerated in part due to the Olympics. Similarly, the 2008

Beijing Olympics led to the expansion of the city's metro system and the construction of a new airport terminal, greatly enhancing Beijing's transportation capacity (Rohde 2018, Temnyk 2017).

In cities with congested or outdated transportation systems, these Olympic-driven upgrades can provide lasting benefits, helping reduce traffic congestion and improve air quality by encouraging public transit use. However, the success of these projects depends on how well they are integrated into the city's long-term development plans.

Cities like Barcelona (1992) and London (2012) have used the Olympics as a catalyst for urban regeneration. In Barcelona's case, the Games played a pivotal role in transforming the city's waterfront, improving its global standing and leading to a long-term economic revitalization. London's East End, previously underdeveloped, saw substantial regeneration through investments in housing, parks, and business districts (Beissel et al. 2022, Zawadzki 2022, Monica et al. 2015, Minnaert 2012). Hosting the Olympics often leads to increased foreign direct investment (FDI). The global exposure generated by the Games positions the host city as an attractive investment destination. International companies become more interested in collaborating with local industries, and the Games' infrastructure projects encourage long-term investments in the city's economy. This boost in FDI can help spur economic growth well after the Olympics conclude (Zhang et al. 2020, Panagiotopoulou 2013, Frawler).

The Olympics often serve as a catalyst for large-scale urban regeneration projects, particularly in underdeveloped or neglected areas of the host city. The need to build Olympic villages, venues, and other infrastructure can prompt the revitalization of neighborhoods, the creation of new housing, and the improvement of public spaces.

One of the most celebrated examples of urban regeneration spurred by the Olympics is Barcelona. Before the 1992 Summer Games, the city's waterfront and surrounding areas were in decline. The Olympics provided the impetus for a comprehensive redevelopment project that transformed the city's coastline, created new parks, improved public spaces, and developed residential areas. This transformation not only helped Barcelona become one of Europe's top tourist destinations but also provided long-term housing and economic opportunities for its residents.

Similarly, the 2012 London Olympics spurred the regeneration of East London, one of the city's most economically deprived areas. The development of the Olympic Park, now called the Queen Elizabeth Olympic Park, included the creation of new housing, schools, and commercial spaces, helping to revitalize the area and provide long-term benefits to the local community (Adair 2013).

Social and Cultural Benefits

The Olympics are a unique opportunity to unite a nation around a shared purpose and source of pride. During the Games, citizens rally behind their athletes, fostering national pride and creating a sense of unity that transcends regional or political differences. This was particularly evident during the 2012 London Olympics, where the British public embraced the "Team GB" spirit, reinforcing national identity.

In the aftermath of the Games, the sense of collective achievement can help strengthen social cohesion. The pride of hosting a successful international event has long-term effects on public morale and confidence (Sterken 2012, Leopkey, Parent 2012).

The Olympics provide a unique opportunity to promote sports and physical activity, particularly among young people. Host countries often develop grassroots programs in the lead-up to the Games to encourage participation in sports, with the aim of creating a lasting sporting legacy. This has the dual benefit of promoting healthier lifestyles and fostering future generations of athletes.

For example, Australia saw a significant increase in participation in swimming and track and field events after the Sydney 2000 Olympics. Similarly, the UK saw a surge in youth participation in cycling, swimming, and athletics after the 2012 London Games (WHO 2023, Weed et al. 2015, MacAloon 2023, Whitson, Horne 2006).

The visibility of diverse sports during the Olympics introduces new athletic disciplines to global audiences. While mainstream sports like soccer, basketball, and athletics tend to dominate global awareness, lesser-known sports such as gymnastics, fencing, archery, and handball often see a spike in popularity due to Olympic coverage. For example, the 2008 Beijing Olympics significantly boosted interest in table tennis and badminton, particularly in countries where these sports were less prevalent. Similarly, skateboarding and surfing, debuting in the Tokyo 2020 Olympics, saw increased participation among younger demographics following the Games.

This exposure often leads to a surge in enrollment in local sports clubs, schools, and community centers, with individuals—particularly children—wanting to try new sports they witnessed during the Games. Governments and local organizations frequently capitalize on this interest by offering introductory programs and events to increase participation, promoting long-term engagement in physical activities.

The success of athletes on the Olympic stage often transforms them into national heroes and global role models, especially for younger generations. Athletes such as Usain Bolt, Simone Biles, and Michael Phelps have transcended their sports, becoming symbols of determination, resilience, and physical achievement. These individuals inspire future generations to pursue sports, leading to increased participation across different age groups and demographics.

The appeal of Olympic athletes goes beyond their sporting abilities; their stories of perseverance and overcoming obstacles resonate with people worldwide. Many athletes share personal struggles—ranging from injuries to societal challenges—and their ability to succeed despite these adversities creates a powerful message: through hard work and dedication, anyone can strive toward a healthier, more active life (Pop et al. 2016, Ritchie et al. 2009).

Hosting the Olympics enhances a nation's cultural diplomacy and soft power on the global stage. The Games offer an unparalleled platform to showcase the host nation's culture, history, and values to a worldwide audience. Through ceremonies, cultural exhibits, and media coverage, host nations can cultivate a positive international image.

Countries such as China (2008) and Japan (2021) used the Games as a platform to project their cultural heritage and modern advancements. By promoting national culture, host countries can strengthen international relations and improve their global standing (Tomlinson 2017, MacIntosh, Parent 2017, Jinxia, Mangan 2013).

The Olympics often leave a lasting legacy of volunteerism. Tens of thousands of volunteers typically work during the Games, gaining valuable experience and developing a sense of civic pride. Many volunteers continue to participate in community events and programs long after the Olympics, creating a lasting culture of civic engagement.

The volunteer movement in the UK, for example, grew substantially following the 2012 Games. Many of the London 2012 volunteers have since become involved in other major sporting and cultural events, continuing to contribute to society (Fairley et al. 2016, Nichols, Ralston 2011, Dickson, Benson 2014, Kaplanidou, Karadakis 2010).

Long-Term Legacy: Sustainability and Innovation

In recent years, the International Olympic Committee (IOC) has placed a greater emphasis on sustainability, urging host cities to adopt environmentally-friendly practices. This shift has led to a greater focus on creating sustainable venues, reducing the environmental footprint of the Games, and repurposing infrastructure for long-term use.

The 2024 Paris Olympics, for instance, has committed to being the "greenest" Olympics ever, with 95% of the venues being either temporary or pre-existing, and with a goal of halving the carbon footprint compared to previous Games (Hayes, Karamichas 2012, Guthoff 2016).

One of the most critical aspects of sustainability in the Olympics is reducing the environmental impact of the Games. Hosting the Olympics requires massive infrastructure development, including the construction of sports venues, athletes' villages, and transportation networks, all of which consume significant resources and generate carbon emissions.

To mitigate these environmental impacts, host cities have adopted various strategies aimed at minimizing resource consumption, reducing waste, and promoting the use of renewable energy. For instance, the 2016 Rio de Janeiro Olympics introduced several green initiatives, such as using solar power for some venues and investing in sustainable transportation options like electric buses and bicycles.

Similarly, the 2020 Tokyo Olympics, which positioned itself as the "most sustainable" Games, introduced a number of innovative environmental initiatives. Tokyo's organizing committee aimed to reduce the Games' carbon footprint by using 100% renewable electricity, recycling 99% of waste from venues, and building medal podiums from recycled materials. Even the medals themselves were crafted from metals extracted from recycled electronics.

Sustainable urban development is a major component of the Olympic Games, as the event often serves as a catalyst for long-term city planning. Many host cities use the Olympics as an opportunity to invest in sustainable infrastructure, such as energy-efficient buildings, public transportation systems, and green spaces.

The London 2012 Olympics is widely regarded as one of the most successful examples of sustainable urban development. London's Olympic Park was designed with sustainability in mind, incorporating extensive use of recycled materials, rainwater harvesting systems, and energy-efficient technologies. The Olympic Village was later transformed into affordable housing,

and the park itself became a public green space, fostering biodiversity and improving the quality of life for local residents (Miladin 2021, Miladin, Tolban 2022).

In addition to reducing environmental impacts, sustainable urban planning associated with the Olympics can help address broader social and economic goals. By investing in public transportation and affordable housing, host cities can improve accessibility, reduce social inequality, and create long-lasting benefits for local communities.

With the growing global awareness of climate change, the Olympics have increasingly emphasized the need to reduce carbon emissions and promote climate action. The IOC has committed to making the Olympic Games carbon neutral by offsetting any emissions that cannot be eliminated through renewable energy, energy efficiency, and waste reduction strategies.

The 2024 Paris Olympics, for example, aims to be the first carbon-neutral Summer Games, with ambitious plans to halve the carbon footprint compared to previous Olympics. The organizing committee has pledged to use renewable energy for all venues, minimize construction by reusing existing facilities, and promote low-carbon transportation options. Additionally, Paris plans to offset any remaining emissions through carbon sequestration projects, such as reforestation and wetland restoration (Kim et al. 2019).

Technological Innovation

Hosting the Olympics can lead to advancements in technology and innovation. The sheer scale of the event drives technological improvements in areas such as broadcasting, logistics, and digital connectivity. The 2020 Tokyo Olympics showcased cutting-edge technologies, including 5G networks, advanced robotics, and virtual reality, further advancing the host country's technology sector.

Innovations developed for the Olympics often benefit other industries and sectors, contributing to economic growth and improving the quality of life in the host city and country (Thirusanku, Ai 2024, Schevchenko et al. 2022)

The 1964 Tokyo Olympics marked the first time that the Games were broadcast live via satellite, bringing the events to a global audience in near real-time. This was a major technological milestone, showcasing the potential of satellite technology for global communications.

In 1996, the Atlanta Olympics saw the debut of high-definition television (HDTV), a major leap forward in broadcast quality that eventually became the global standard for television. The 2008 Beijing Olympics introduced widespread use of digital broadcasting and high-definition coverage, setting new standards for sports broadcasting. More recently, the 2020 Tokyo Olympics showcased 8K ultra-high-definition (UHD) broadcasting and virtual reality (VR) experiences, providing audiences with unprecedented levels of detail and immersion.

These advancements in broadcasting technology, spurred by the demand for high-quality Olympic coverage, have had lasting impacts on the media industry. Today, the technology that was once cutting-edge for the Olympics is standard for live sports, entertainment, and even everyday television programming.

The rise of digital platforms and live streaming has also been accelerated by the Olympics. The 2016 Rio de Janeiro Olympics

saw an explosion in online viewing, with billions of hours of content streamed across digital platforms. This shift reflected the growing demand for on-the-go, mobile access to Olympic content.

Technological innovations in compression algorithms, content delivery networks (CDNs), and cloud computing have enabled seamless streaming of high-definition content to devices worldwide. The Olympics have driven improvements in these areas, facilitating the widespread availability of live streaming services for sports, news, and entertainment.

The Olympics have always been a showcase for human physical achievement, but in recent years, they have also become a proving ground for advanced data analytics and performance-enhancing technologies. With the help of sensors, artificial intelligence (AI), and machine learning, athletes and coaches now have unprecedented access to real-time data to optimize performance.

Wearable technology, such as biometric sensors and GPS trackers, has transformed the way athletes train and compete. These devices provide detailed data on an athlete's heart rate, speed, acceleration, and other vital metrics, allowing coaches to fine-tune training regimens and monitor an athlete's condition during competition.

At the 2016 Rio Olympics, for example, wearable sensors were used by athletes across various sports to track performance and recovery. These devices measured everything from muscle activity to hydration levels, providing critical insights that helped athletes reach peak performance. Such technology has since become a staple in elite sports training, but also trickled down to consumer-level wearables, promoting fitness and health tracking in everyday life.

The use of AI and predictive analytics has grown significantly in recent Olympic Games, enhancing not only athlete performance but also competition management. AI-powered tools analyze vast amounts of data on athletes' movements, strategies, and historical performances to provide actionable insights.

AI-driven systems can predict outcomes, identify optimal training techniques, and even prevent injuries by detecting subtle changes in movement patterns that might indicate strain or fatigue. These advancements have reshaped sports science, helping athletes push the boundaries of human performance while reducing the risk of injury.

Ensuring the safety of athletes, spectators, and officials is a paramount concern for the Olympics, particularly in light of the large crowds and international attention the Games attract. This has spurred significant advancements in security technology, including the development of sophisticated surveillance systems, biometric identification, and crowd management tools (Balmer et al. 2012, Kassens-Noor, Fukushima 2018).

The Tokyo 2020 Olympics introduced one of the most advanced facial recognition systems ever deployed for a global event. The system, developed by NEC Corporation, was used to authenticate athletes, officials, and staff as they entered venues, improving security while reducing bottlenecks. Biometric security technologies like facial recognition, fingerprint scanning, and iris recognition have become more widely adopted in airports, stadiums, and other public spaces as a result of innovations spurred by the Olympics.

Drones equipped with AI-powered cameras have been increasingly used for crowd monitoring and security at the Olympics. These

systems can analyze crowd movements in real-time, identifying potential safety risks or suspicious activities. The technology has broad applications beyond the Games, such as in disaster management, law enforcement, and large-scale event planning (Muniz-Pardos et al. 2021).

Diplomatic and Geopolitical Gains

Hosting the Olympics brings significant global visibility, putting the host city and country on the world stage. The media coverage of the Games extends far beyond the sporting events themselves, focusing on the host city's culture, infrastructure, and governance. This visibility can help attract international business, tourism, and political partnerships.

Nations often use the Games as a platform to demonstrate their capabilities and assert themselves as major players in global geopolitics. The 2008 Beijing Olympics, for example, allowed China to project itself as a rising global superpower (Salazar 2016, Ando 2015, Clausen, Bayle 2017).

The Olympics provide an opportunity for host nations to engage in diplomacy and strengthen international relations. The presence of heads of state, government officials, and international dignitaries during the Games creates a platform for dialogue and collaboration. For instance, countries often use the Olympics to initiate or strengthen trade agreements, cultural exchanges, and tourism partnerships (MacAloon 2013, Botelho, Zavestoski 2014, Jackson 2016).

Overview of Spending Trends (2000–2021)

2000 Sydney Olympics

The **Sydney 2000 Olympic Games** were hailed as one of the most successful Olympic events in modern history, but they also came with significant costs. The financial expenditures for Sydney 2000 included the construction of venues, infrastructure development, security, and operational costs, as well as efforts to ensure a positive legacy for the city. The total costs, though debated, are generally estimated at around **\$5.6 billion** (about USD 3.8 billion at the time).

Infrastructure and Venues

One of the largest portions of the budget went into the development of new sports venues and upgrading existing facilities, as well as building essential infrastructure like transportation and accommodation. Some key aspects include:

Olympic Park: The construction of Sydney Olympic Park, including major venues such as Stadium Australia (now Accor Stadium), cost approximately **\$2.5 billion**. This included not only sports venues but also environmental cleanup and urban development for the site.

Transport Infrastructure: To improve the city's ability to handle the large influx of visitors, major investments were made in public transportation, such as new rail lines, buses, and road upgrades. Transport improvements amounted to approximately **\$1.5 billion**.

Athletes' Village: The construction of the Olympic Village to house athletes and officials cost an estimated **\$400 million**. This facility was later transformed into residential housing.

Operational Costs

The organizing committee for the Sydney 2000 Olympics (SOCOG) was responsible for the day-to-day operational expenses of hosting the Games, which included event management, logistics,

security, and marketing. These costs amounted to around **\$2.2 billion**.

Security: Enhanced security measures, necessary due to the scale of the event and the threat of terrorism, accounted for a significant portion of this budget.

Marketing and Broadcasting: The global broadcasting of the Games and related marketing campaigns also required large investments, although these were partially offset by revenues from international media rights and sponsorships.

Public Funding

Of the total estimated cost of \$5.6 billion, approximately **\$1.5 billion** came from the New South Wales (NSW) government, while the federal government contributed about **\$2.1 billion**. Additional funding came from the Sydney Organizing Committee for the Olympic Games (SOCOG) through ticket sales, sponsorship, and broadcast rights.

Revenue and Economic Impact

While the Games were costly, the Sydney Olympics generated revenue and had positive economic impacts:

Broadcasting Rights and Sponsorships: The Games brought in substantial revenue through the sale of international broadcasting rights, corporate sponsorships, and licensing agreements. These revenues are estimated to have exceeded **\$2.5 billion**.

Tourism and Economic Boost: The Sydney Olympics were expected to boost tourism and the local economy significantly, with some estimates suggesting that the Games generated between **\$6 billion to \$7 billion** in direct and indirect economic benefits. This included the influx of tourists, business investments, and long-term gains from improved infrastructure.

Legacy and Long-Term Costs

Sydney 2000 is often cited as a model for "sustainable Olympics" due to its long-term focus on environmental sustainability and legacy. However, post-Games costs related to the maintenance and repurposing of Olympic venues have been a point of contention. Some of the venues, like Stadium Australia, have continued to be used for major sporting events, while others have required ongoing public funding for upkeep.

Final Estimate of Costs

While the official estimates for the cost of the Sydney 2000 Olympics are around **\$5.6 billion**, various analyses suggest that when indirect costs (like infrastructure and operational costs) are considered, the total might be higher. Some studies put the broader economic cost at closer to **\$6.5 to A\$7 billion**, but this includes longer-term costs that extend well beyond the Games themselves.

Despite these high costs, the Sydney Olympics are often remembered positively for their organizational success, environmental efforts, and lasting infrastructure, which has continued to serve Sydney's residents and visitors.

(Corrigan, Kazlauskas 2003, Brown et al. 2002, Burton 2003, Gordon 2003).

2004 Athens Olympics

Infrastructure and Venues

A significant portion of the budget was spent on the construction of new sports venues, as well as on upgrades to existing ones. Athens also made major investments in infrastructure projects that were intended to improve the city's long-term functionality. The final

costs for infrastructure development and venue construction are estimated to be around **€7 billion**.

Sports Venues: Athens 2004 saw the construction of numerous new venues and the refurbishment of older ones. The Olympic Stadium and its surrounding complex, which includes several sports facilities, cost hundreds of millions of euros to build and upgrade.

Athens Metro Expansion: To cope with the increased demand for transportation during the Games and improve the city's long-term public transport system, the Athens Metro was expanded. This, along with other transportation improvements (like new roads and rail lines), cost around **€2.3 billion**.

Athletes' Village: The Olympic Village, built to house athletes and officials, was another significant expense, costing **€230 million**. After the Games, the village was repurposed for housing, though many of the buildings fell into disrepair over the years.

Operational Costs

The operational costs of running the Athens Olympics, which include organizing the events, security, staffing, logistics, and ceremonies, were estimated to be around **€2 billion**.

Security: Following the 9/11 attacks in the U.S., the 2004 Athens Olympics faced heightened concerns about security. As a result, Greece spent approximately **€1.2 billion** on security measures, making it one of the most expensive Olympic security operations at the time. This included advanced surveillance systems, military involvement, and cooperation with international security agencies.

Event Management: The operational costs also covered the organization of over 300 events across 28 sports, the handling of international media, and the logistics of hosting athletes and spectators from around the world.

Public Funding and Debt

The Athens Olympics were largely financed through public funds, which significantly contributed to Greece's rising national debt. The Greek government was responsible for around **€7 billion** of the total costs, funded by a combination of public budget allocations and borrowing. The reliance on loans to finance the Games meant that Greece faced long-term financial obligations, with debt repayments continuing for years after the event.

Overruns: Initial budget estimates for the Games were much lower, around **€4.5 billion**. However, costs ballooned due to construction delays, security concerns, and the need for last-minute upgrades. This overspending contributed to Greece's debt burden, which became a significant issue in the country's financial crisis in the late 2000s.

Revenue and Economic Impact

While the Athens Olympics generated some revenue from ticket sales, sponsorships, and broadcasting rights, the overall financial returns were far below the costs.

Ticket Sales: The Games sold about 3.5 million tickets, bringing in **€183 million**, which was a relatively small amount compared to the overall expenditure.

Broadcast Rights and Sponsorships: The sale of broadcasting rights and international sponsorship deals brought in additional revenue. However, the total revenue generated by the Athens Olympics was estimated to be only about **€2.1 billion**, leaving a significant gap between income and expenses.

Despite the economic burden, proponents argued that the Games boosted tourism and helped to modernize Athens, particularly in terms of infrastructure like the expanded metro system and the new international airport, which was built before the Olympics and has been a lasting benefit to the city.

Post-Games Legacy and Venue Maintenance

One of the major criticisms of the Athens 2004 Olympics is the underutilization of the venues after the Games. Several Olympic venues became "white elephants," meaning they were left unused or underused, falling into disrepair.

Maintenance Costs: The ongoing maintenance costs for the Olympic venues were a significant financial burden for the Greek government. Many venues were not repurposed effectively, and some were abandoned entirely due to a lack of funds for upkeep.

Tourism and Economic Boost: While the Olympics did lead to a temporary boost in tourism during the Games, the long-term economic impact was less pronounced than expected. Greece saw a sharp decline in tourism in the years following the Games, compounded by the financial crisis that hit the country later in the decade.

The Role in Greece's Financial Crisis

The financial strain from hosting the 2004 Olympics is often cited as a contributing factor to Greece's debt crisis, which erupted in 2009. While the Olympics were not the sole cause of the crisis, the Games added billions of euros to Greece's already-growing debt burden. The financial mismanagement and cost overruns of the Olympics highlighted broader economic issues that eventually led to Greece's fiscal collapse and the need for international bailouts (Poulios 2006, Gold 2011, Jastrzabek 2017).

2008 Beijing Olympics

The 2008 Beijing Olympics set a new standard for Olympic spending. With an official budget of \$40–44 billion, China's approach to the Games was unique in that it was not just a sporting event but a showcase of the country's rising global influence.

The **Beijing 2008 Olympics** were among the most expensive Olympic Games in history, with total costs estimated at around **USD 40 billion**. This figure includes both the direct costs associated with hosting the event (venues, security, operations) and indirect costs related to large-scale infrastructure projects that were designed to modernize Beijing and its surrounding areas.

Infrastructure and Venues

A significant portion of the total expenditure for the Beijing Olympics went into infrastructure development, both directly related to the Games and for long-term urban improvements. This included the construction of new sports venues, transport networks, and other facilities.

Venues: The construction and renovation of Olympic venues cost approximately **USD 2 billion**. Key venues included the iconic **Bird's Nest** (National Stadium), which cost around **USD 450 million**, and the **Water Cube** (National Aquatics Center), which cost around **USD 140 million**. In total, Beijing built or upgraded 37 competition venues.

Infrastructure Development: The most significant portion of the budget was allocated to infrastructure projects, totaling **USD 25-30 billion**. This included:

Transportation: Major expansions of Beijing's transportation infrastructure, including new subway lines, highways, and the

expansion of Beijing Capital International Airport, which cost around **USD 3.6 billion**. The city added over 200 kilometers of new subway lines, which had a lasting benefit for the city's public transportation system.

Urban Redevelopment: Large-scale urban improvement projects were undertaken to modernize the city, clean up pollution, and beautify public spaces. This included the demolition of old housing and the construction of modern facilities, adding to the overall cost.

Environmental Initiatives: In efforts to combat air pollution and improve the city's environmental footprint, billions were spent on pollution control measures, including shutting down factories, relocating industries, and introducing cleaner energy sources. This was a major focus given Beijing's air quality concerns.

Operational Costs

The operational costs of the Games, which included event management, security, logistics, and ceremonies, were estimated at around **USD 2 billion**.

Security: Given the scale of the event and concerns about safety, China invested heavily in security, with estimated costs around **USD 6.5 billion**. This included deploying more than 100,000 security personnel, installing extensive surveillance systems, and implementing strict security protocols across the city.

Event Management and Logistics: The Beijing Organizing Committee for the Olympic Games (BOCOG) was responsible for the operational costs, which included organizing over 300 events, accommodating athletes, and handling logistics. These costs were estimated at around **USD 2 billion**.

Public Funding and Government Support

The majority of the costs for the Beijing Olympics were covered by the Chinese government, both at the national and local levels. The government viewed the Games as an opportunity to showcase China's rising status on the global stage, and thus, substantial public funds were allocated.

National and Local Government Contributions: The central government contributed the bulk of the funding, particularly for infrastructure projects, while the Beijing city government also invested heavily in urban development and venue construction. The Games were seen as a part of China's long-term development strategy, rather than just a two-week sporting event.

Revenue from the Games

Despite the high costs, the Beijing Olympics did generate significant revenue through ticket sales, broadcasting rights, sponsorship deals, and merchandise sales.

Ticket Sales: Approximately 7 million tickets were sold for the Beijing Olympics, generating around **USD 140 million** in revenue.

Broadcasting Rights and Sponsorships: The sale of international broadcasting rights was a major source of income, with total revenues exceeding **USD 1.7 billion**. Sponsorship deals with global brands, including the Olympic TOP (The Olympic Partners) sponsors like Coca-Cola, Visa, and McDonald's, also brought in substantial revenue.

However, even with these revenues, the total financial intake fell far short of covering the massive expenses incurred by the Games, especially given the high costs of infrastructure development.

Long-Term Economic Impact

The Beijing 2008 Olympics were part of China's broader strategy to boost its international image and modernize its infrastructure. While the direct financial returns from the Games were limited, the long-term economic impact was more significant in some areas:

Tourism: The Beijing Olympics were seen as an opportunity to boost China's tourism industry. In the short term, the Games brought around **500,000 international visitors** to Beijing. However, long-term tourism growth following the Games was less significant than anticipated, in part due to economic downturns in other parts of the world.

Infrastructure Legacy: Many of the infrastructure projects built for the Olympics, such as the expanded subway system, new roads, and airport improvements, had a lasting positive effect on Beijing's economy and quality of life for its residents.

Venue Maintenance: Some Olympic venues, such as the Bird's Nest and Water Cube, have been repurposed for sporting events and tourism, but others have struggled to find regular use. Maintaining these large, iconic structures has been costly, and some have been underused, similar to the "white elephant" venues seen in other Olympic cities.

Environmental Costs and Benefits

The environmental measures taken before and during the Beijing Olympics had a mixed impact. While the city made significant efforts to reduce pollution and improve air quality ahead of the Games, many of these measures were temporary. Factories were shut down, and traffic was restricted during the Games, leading to improved air quality, but pollution levels rebounded afterward.

However, some environmental initiatives, such as the expansion of cleaner energy sources and investments in public transportation, provided longer-term benefits for the city and helped reduce its overall environmental footprint (Preuss 2007, Gottwald, Duggan 2008, Zhang, Zhao 2009).

2012 London Olympics

Construction and Venues

One of the largest portions of the budget went into the construction of sports venues, including the main Olympic Park in East London. This amounted to around **£2.1 billion**.

Olympic Park: The construction of the Olympic Park, which housed many of the major venues, was a centerpiece of the Games. The site included venues such as the **Olympic Stadium, Aquatics Centre**, and the **Velodrome**. These projects were designed not only for the Olympics but also to serve the community in the future.

Olympic Stadium: The construction of the Olympic Stadium itself cost **£486 million**. After the Games, it was converted for use by football club West Ham United, a key element of the legacy plan.

Aquatics Centre: The **Aquatics Centre**, designed by architect Zaha Hadid, cost approximately **£269 million** and has since been repurposed for public use.

Athletes' Village: The **Athletes' Village**, which housed more than 17,000 athletes and officials, cost **£1.1 billion**. After the Games, it was converted into residential housing, forming part of the regeneration of East London.

Infrastructure and Regeneration

A significant portion of the costs were tied to infrastructure improvements, especially in East London, where the Olympic Park was located. The total infrastructure spending is estimated to have been around **£6.5 billion**.

Transport Infrastructure: Transport improvements, including upgrades to the London Underground, Docklands Light Railway (DLR), and new rail links like the Javelin high-speed train service, were essential for moving spectators, athletes, and officials around the city. These transportation upgrades cost approximately **£6.5 billion**.

Regeneration of East London: The London 2012 Olympics were designed as a catalyst for regenerating East London, one of the city's most deprived areas. The urban renewal projects in this area were focused on improving housing, public spaces, and local infrastructure, making the Games part of a broader strategy for long-term economic and social benefits.

Security

The security budget for the Games was substantially higher than originally estimated, amounting to about **£900 million**. This covered physical security, cyber security, and other measures needed to protect athletes, visitors, and residents.

Military Involvement: Around **18,000 military personnel** were deployed during the Games, helping to ensure the safety of the events.

Surveillance Systems: A comprehensive surveillance and security system was implemented, including additional security cameras, drones, and anti-terrorism measures.

Operational Costs

The operational budget for running the Games, which included logistics, event management, staffing, and ceremonies, was around **£2 billion**. This was managed by the **London Organising Committee of the Olympic and Paralympic Games (LOCOG)**, which handled the day-to-day operations.

Ceremonies: The opening and closing ceremonies were major highlights of the Games, with the **opening ceremony** alone costing an estimated **£27 million**. Directed by Danny Boyle, the ceremony was praised for its creative and cultural representation of Britain.

Event Management and Staffing: Over 70,000 volunteers were trained and deployed to assist with the event, helping with crowd control, information, and logistics.

Public Funding and Government Support

The UK government and the **National Lottery** provided the bulk of the funding for the London 2012 Games.

Public Funding: About **£9.3 billion** was allocated from public funds, which included contributions from the central government, the Mayor of London's office, and the National Lottery.

Lottery Funding: The National Lottery provided significant funding for both venue construction and legacy projects.

Revenue and Economic Impact

While the costs were high, the London 2012 Olympics generated considerable revenue from broadcasting rights, sponsorships, and ticket sales, which helped offset some of the expenses.

Ticket Sales: About 8.2 million tickets were sold, generating **£659 million** in revenue. Ticket prices were set to be accessible, with a range of affordable options to encourage public participation.

Broadcast Rights and Sponsorships: London 2012 attracted major global brands as sponsors, and the sale of international broadcasting rights contributed an estimated **£2.6 billion** to the overall revenue. Key sponsors included companies like McDonald's, Coca-Cola, and Adidas.

Tourism Boost: The Games were expected to boost tourism significantly, with an estimated **£2 billion** in additional tourism revenue coming from the influx of visitors during the Games and in the years following.

Legacy and Long-Term Impact

A key focus of the London 2012 Olympics was ensuring a positive and lasting legacy for the city, particularly in terms of urban regeneration, sports participation, and economic growth.

Venues Repurposed: Many of the Olympic venues were designed to be used after the Games. For example, the **Olympic Stadium** was converted into a multi-use venue, the **Aquatics Centre** became a public swimming facility, and the **Velodrome** was repurposed for cycling events and public use.

Housing and Urban Renewal: The **Athletes' Village** was converted into affordable housing after the Games, providing around 2,800 new homes in East London. The regeneration of the area around the Olympic Park was a long-term goal, with plans to create jobs, improve local amenities, and attract new businesses to the area.

Economic Boost: The London Games had a positive economic impact, with estimates suggesting that the total economic benefit to the UK could be between **£16.5 billion and £41 billion** over a 20-year period. This includes the benefits of increased tourism, business investment, and the development of new infrastructure (Raco 2012, Blake 2005).

2016 Rio de Janeiro Olympics

Initial Budget and Final Costs

Initially, the bid for the Rio 2016 Olympics projected costs around **USD 2.8 billion** for sports-related expenses, but the final costs escalated significantly due to inflation, economic instability in Brazil, and various delays.

Final Cost: The total cost of the Games reached **USD 13.1 billion**, with much of the overrun coming from delays, changes in construction plans, and inflation.

Funding Sources: The Brazilian government, along with local authorities and private sponsors, provided most of the funding. Public funds accounted for more than 70% of the total cost.

Construction and Venues

A significant portion of the budget went toward the construction of sports venues and related facilities, though many of these were criticized for their underuse post-Games.

Olympic Park: The **Barra Olympic Park**, the central hub for the Games, included venues such as the **Olympic Aquatics Stadium** and the **Carioca Arenas**. The park cost over **USD 2.5 billion** to build.

Maracanã Stadium: The iconic **Maracanã Stadium** hosted the opening and closing ceremonies, as well as the football final. Renovations to the stadium cost around **USD 500 million**.

Athletes' Village: The construction of the **Athletes' Village** cost approximately **USD 800 million**. After the Games, the village was meant to be converted into luxury apartments, though many units remained unsold due to Brazil's economic downturn.

Deodoro Sports Complex: This venue hosted various events like equestrian, rugby, and modern pentathlon and was built at a cost of around **USD 240 million**.

Infrastructure and Urban Development

One of the selling points of the Rio Olympics was the promise of urban renewal and infrastructure upgrades that would leave a positive legacy for the city. However, these efforts met with mixed success.

Transport Infrastructure: About **USD 2.9 billion** was spent on transportation improvements, including the expansion of the **Rio de Janeiro Metro** (Line 4), new bus rapid transit (BRT) routes, and improvements to roads and airports. The Metro extension was completed just in time for the Games but faced delays and cost overruns.

Port Area Revitalization: Known as the **Porto Maravilha** project, this major urban redevelopment aimed to revitalize Rio's port area. It cost around **USD 3.5 billion** and included a new museum (the **Museum of Tomorrow**), a public square, and residential developments.

Environmental Projects: Several environmental cleanup projects were promised, such as improving water quality in **Guanabara Bay** and removing waste from Rio's rivers. These projects faced significant challenges, and many were incomplete or only partially successful by the time the Games began. The cleanup of Guanabara Bay, where sailing events were held, was especially criticized for falling short of promised targets.

Security and Operations

Security was a major concern leading up to the Games due to Brazil's high crime rates and political instability, prompting massive investment in safety measures.

Security Costs: Approximately **USD 1 billion** was spent on security. Over 85,000 police, military personnel, and private security forces were deployed to ensure the safety of the event, making it one of the most highly secured Olympic Games.

Operational Costs: The operational budget for organizing the Games, including the ceremonies, logistics, and staffing, was approximately **USD 2.1 billion**. This included the management of over 10,000 athletes and 30,000 media personnel from around the world.

Economic Impact and Revenue

Despite the massive spending, the economic returns from the Rio Olympics were significantly lower than anticipated. Brazil's struggling economy and political crisis at the time of the Games also dampened the potential long-term benefits.

Ticket Sales: Ticket sales were lower than expected, generating only around **USD 323 million**. Many venues had empty seats, and domestic ticket sales were sluggish due to Brazil's economic troubles.

Broadcast Rights and Sponsorships: The sale of broadcast rights generated around **USD 4 billion**, and sponsorship deals brought in additional revenue, but much of this went to the International

Olympic Committee (IOC), leaving Rio with a smaller share of the profits.

Tourism: The expected tourism boom was smaller than forecast, with around **500,000 international visitors** coming to Rio during the Games. The economic benefits from tourism, estimated to be **USD 1.2 billion**, were lower than anticipated due to global economic conditions and concerns over safety and infrastructure.

Post-Games Legacy and Venue Utilization

The long-term impact of the Rio Olympics has been controversial, with several venues falling into disrepair or remaining largely unused.

White Elephants: Many of the Olympic venues, including the **Olympic Aquatics Stadium** and parts of the Olympic Park, were abandoned or underutilized after the Games. Some facilities were closed shortly after the event, with maintenance costs becoming an issue for local authorities.

Athletes' Village: The Athletes' Village, which was intended to become luxury housing, struggled to attract buyers, and many apartments remained vacant due to Brazil's economic slump.

Deodoro Complex: The Deodoro Complex, which was meant to serve as a community recreation area, faced challenges with upkeep and has seen limited use since the Games.

Political and Economic Context

The Rio 2016 Olympics took place during a time of political and economic upheaval in Brazil. The country was in the midst of a severe recession, and President Dilma Rousseff was impeached just months before the Games began.

Economic Recession: Brazil's economy shrank by over 3% in 2016, leading to widespread unemployment and reduced public spending. This economic crisis overshadowed much of the excitement surrounding the Games and contributed to difficulties in completing infrastructure projects and maintaining Olympic venues afterward.

Political Instability: The impeachment of President Rousseff and the political turmoil that followed led to instability in the government's ability to manage and fund the Olympics properly, contributing to financial mismanagement and budget overruns (Vannuchi, Crieckingen 2015, Hofman-Moura, Rocha 2016)=).

2020 Tokyo Olympics (held in 2021)

Initial Budget and Final Costs

Originally, the budget for Tokyo 2020 was estimated at **USD 7.3 billion**, but the final costs more than doubled, due in large part to the pandemic, which forced postponement, operational changes, and additional health and safety measures.

Final Cost: The official figure given by organizers was **USD 13.6 billion**, though the **National Audit Board of Japan** suggested the actual cost could be over **USD 28 billion** if all related expenditures are included, such as long-term infrastructure upgrades and maintenance.

COVID-19 Impact: The one-year delay and pandemic precautions added **USD 2.8 billion** in additional costs. These included health measures like COVID-19 testing, quarantines, medical facilities, and additional security.

Construction and Venues

One of the largest portions of the budget went to the construction of new venues and the renovation of existing ones. Tokyo used a mix of new constructions, refurbished venues from past events, and temporary structures to host the Games.

New National Stadium: The centerpiece of the Tokyo Games was the **New National Stadium**, which cost about **USD 1.43 billion**. Originally designed by Zaha Hadid but later redesigned by Kengo Kuma, the stadium hosted the opening and closing ceremonies, athletics, and some football matches.

Olympic Village: The **Athletes' Village** cost about **USD 2 billion** and was built on reclaimed land in Tokyo Bay. After the Games, it was planned to be converted into residential housing, much like in previous Olympic cities.

Tokyo Aquatics Centre: The **Tokyo Aquatics Centre**, another key venue, cost around **USD 540 million** and was used for swimming, diving, and artistic swimming.

Ariake Arena: This multi-sport venue hosted volleyball and other events, with a cost of about **USD 320 million**.

Infrastructure and Urban Development

The Tokyo Olympics also saw significant spending on infrastructure improvements to help modernize the city and improve its capacity to handle the influx of visitors and athletes.

Transport Infrastructure: Tokyo's transport system was already world-class, but further improvements were made. Investments in public transport, including additional train services and station upgrades, amounted to around **USD 7 billion**. These were aimed at easing congestion during the Games and increasing capacity for tourists and residents in the long term.

Urban Development: Projects in and around the Olympic venues included upgrades to Tokyo's waterfront and the Odaiba area, which hosted many of the Games' events. The development of green spaces and new roads were also key elements of the legacy projects.

Pandemic-Related Costs

The COVID-19 pandemic had an unprecedented impact on the Tokyo 2020 Olympics, both in terms of logistics and financial strain.

Health and Safety Measures: The organizing committee spent nearly **USD 900 million** on measures to ensure the safety of athletes, staff, and spectators. This included frequent COVID-19 testing, setting up isolation facilities, and providing personal protective equipment (PPE) for all involved.

No Spectators: The decision to ban most spectators from attending the events to limit the spread of the virus dealt a significant financial blow. Ticket sales, originally projected to bring in around **USD 800 million**, were severely curtailed, resulting in a major revenue loss.

Operational Costs

The operational budget for running the Games, including logistics, staffing, and organizing the events, was around **USD 5.8 billion**.

Volunteers: More than 80,000 volunteers were trained to assist with the events, though the pandemic meant many had their roles altered or reduced.

Technology and Broadcasting: Significant investments were made in broadcasting and technology to enhance the viewer experience, especially since the Games were held without spectators. Advanced broadcasting technology, including 8K broadcasts, and virtual reality enhancements were employed.

Economic Impact and Revenue

Tokyo 2020 had mixed economic outcomes. While it incurred massive costs, the expected benefits in terms of tourism, business, and economic stimulus were severely limited by the pandemic.

Broadcast and Sponsorship Revenue: The International Olympic Committee (IOC) generated substantial revenue from broadcasting rights and sponsorship deals, estimated at **USD 3.5 billion**. Sponsors included companies like Toyota, Bridgestone, and Panasonic.

Tourism Shortfall: Japan had hoped to see a major boost in tourism, with predictions of over **40 million international visitors** in 2020. The pandemic, however, caused these numbers to plummet, with virtually no foreign visitors allowed during the Games. The loss of expected tourism revenue was a major blow to the overall economic impact of the Olympics.

Ticket Sales Loss: With no spectators allowed for most events, the loss of ticket sales, which was expected to generate around **USD 800 million**, further strained the budget.

Legacy and Long-Term Impact

The Tokyo Olympics were intended to leave behind a positive legacy, similar to the goals of past Games, with a focus on sustainability, urban development, and increased global visibility for Japan.

Sustainability Initiatives: Tokyo 2020 was marketed as a "green" Olympics, with efforts to promote sustainability. Initiatives included building podiums from recycled plastic, using medals made from recycled electronic waste, and powering the Games with renewable energy sources where possible.

Venue Utilization: Post-Olympics, many venues were designed for continued use, similar to the **New National Stadium**, which will host sports events and concerts. The **Aquatics Centre and Ariake Arena** are also intended for public use in the future.

Urban Development: Improvements in transportation and infrastructure, including those in the Odaiba and Tokyo Bay areas, are expected to benefit the city in the long term, although some projects faced criticism for being rushed or unnecessary (Osada et al. 2016, Baade, Matheson 2016).

Paris 2024

Initial Budget and Cost Estimates

Paris 2024's initial budget was designed to keep costs under control, with a focus on utilizing existing infrastructure, temporary venues, and a strong commitment to sustainability.

Total Estimated Cost: The current estimate for the Paris 2024 Games is **USD 9.7 billion**. This is divided between the **Organizing Committee for the Olympic Games (OCOG)** budget and the **Olympic infrastructure (SOLIDEO)** budget, which are responsible for preparing the venues and other infrastructure.

Organizing Committee Budget: About USD 4.85 billion is allocated to the OCOG, which covers the operational costs of hosting the Games, including logistics, security, staffing, and event

management. The majority of this budget is expected to be covered by ticket sales, sponsorships, and broadcast rights.

Infrastructure Budget (SOLIDEO): The remaining USD 4.85 billion is dedicated to infrastructure projects, such as upgrading existing venues and constructing new ones where necessary. Public funds will contribute about USD 1.87 billion to this part of the budget, with the rest coming from private investors.

Construction and Venues

Unlike previous Olympics that involved significant new construction projects, Paris 2024 is focused on using existing and temporary venues to reduce costs and minimize the environmental impact.

Existing Venues: About **95%** of the venues for Paris 2024 will use existing facilities. For example, the historic **Stade de France** in Saint-Denis will host the opening and closing ceremonies as well as athletics events. Other well-known locations like **Roland Garros** (tennis) and the **Parc des Princes** (football) will also be used.

Temporary Venues: Paris 2024 will use temporary venues for certain events to avoid the creation of “white elephants” — expensive facilities that are difficult to repurpose after the Games. Notably, the **Beach Volleyball** event will be held at the foot of the **Eiffel Tower** in a temporary arena.

New Construction Projects: Only a few new venues are being constructed, including the **Aquatics Centre** in Saint-Denis, which will host swimming and diving events. This venue is estimated to cost USD 191 million and is being designed to have long-term community use after the Games. Another major project is the **Olympic Village**, which is expected to cost around USD 1.43 billion. After the Games, the village will be converted into residential housing.

Infrastructure and Urban Development

The Paris 2024 Olympics is leveraging the Games as a catalyst for urban development, especially in the northern suburbs of Paris, like Saint-Denis. This area is set to receive substantial investments to improve infrastructure and public spaces.

Transport Infrastructure: A significant portion of the budget is being allocated to transport improvements, including the extension of metro lines, upgrades to existing public transport systems, and the development of new cycling lanes. The expansion of the **Grand Paris Express** metro system, in particular, is seen as a key legacy project, costing USD 38.4 billion, although this project is part of a broader regional plan and not entirely linked to the Games.

Environmental Projects: Paris 2024 has made sustainability a core principle. For example, many of the Olympic venues will run on **100% renewable energy**, and the Olympic Village will be a model of eco-friendly construction, designed with energy-efficient buildings and green spaces. The Games also aim to reduce carbon emissions by 50% compared to previous editions.

Sustainability and Cost Control

Paris 2024 is promoting itself as the first “**climate-positive**” Olympic Games, with a strong emphasis on sustainability and cost control. The focus on existing venues, the use of renewable energy, and the reduction of waste are central to achieving this goal.

Environmental Sustainability: The organizers aim to minimize the environmental impact by using **low-carbon technologies**,

promoting public transport, and designing venues to have a lasting community legacy. The Games will feature energy-efficient buildings, green transportation options, and widespread recycling initiatives.

Temporary Structures: Temporary venues are being used extensively, which reduces long-term costs related to maintenance and operation post-Games. This approach is also intended to avoid the costly infrastructure legacy problems faced by other Olympic host cities.

Economic Impact and Revenue

While the final costs are still evolving, the Paris 2024 Olympics is expected to generate significant revenue from various sources, which could help offset the overall expenditure.

Broadcast Rights: Paris 2024 is expected to generate **USD 4.5 billion** from broadcasting rights, making it one of the most lucrative aspects of the Games. Television contracts with global networks, especially from the United States (NBC), Europe, and Asia, are a key revenue source.

Sponsorship Deals: Corporate sponsorships are projected to bring in about **USD 1.2 billion**. Major sponsors include French companies like **EDF, Orange, and BNP Paribas**, as well as global brands like **Coca-Cola and Visa**.

Ticket Sales: The organizers expect to generate approximately **USD 1.2 billion** from ticket sales, with around **10 million tickets** available for the Games. The organizers have committed to making a large proportion of tickets affordable to ensure widespread access for the public.

Security and Operational Costs

Security is always a significant concern for Olympic Games, and Paris 2024 is no exception. The French government is expected to spend around **USD 900 million** on security operations, with tens of thousands of police officers, military personnel, and private security being deployed.

Operational Costs: These include the cost of organizing the events, managing logistics, and ensuring the smooth functioning of the Games. The overall operating budget for Paris 2024 is estimated to be around **USD 4.85 billion**.

Long-Term Legacy

The Paris 2024 Games are designed with a focus on creating lasting legacies in urban development, environmental sustainability, and sports infrastructure.

Olympic Village: After the Games, the **Olympic Village** in Saint-Denis will be transformed into a residential neighborhood, providing around **3,000 housing units**. It is expected to be a key part of the regeneration of the northern Paris suburbs.

Sports Participation: Paris 2024 is also intended to boost participation in sports across France, with investments being made in local sports clubs and community programs. The focus is on encouraging physical activity and promoting a healthier lifestyle, particularly among young people (Lefort 2024).

Key Drivers of Olympic Spending

1. **Infrastructure Investments** One of the largest components of Olympic spending is infrastructure development, which includes the construction of new venues, transportation systems, and urban regeneration

projects. While these investments can provide long-term benefits, they often come with high upfront costs and significant debt burdens. Many host cities struggle to repurpose Olympic venues after the Games, leading to concerns about "white elephant" projects that offer little economic return.

2. **Security Costs** Security spending has increased significantly over the past two decades, particularly in the wake of global terrorist threats. The 2004 Athens Olympics, for example, saw a major increase in security spending due to concerns about terrorism following the 9/11 attacks. Subsequent Olympics, such as Beijing and London, also allocated significant resources to security, contributing to the overall rise in Olympic budgets.
3. **Pandemic-related Spending** The COVID-19 pandemic presented unprecedented challenges for the Tokyo Olympics, with additional spending required for health and safety measures. These costs included extensive testing, quarantine measures, and restrictions on international travel, which added to the already substantial budget.
4. **Legacy and Regeneration Projects** Recent host cities have increasingly emphasized the importance of legacy projects—investments designed to leave a lasting impact on the host city. The London 2012 Olympics, for example, was praised for its urban regeneration initiatives, particularly in the East End. However, the success of these projects varies widely, with some host cities struggling to sustain economic growth post-Olympics.

Economic Impact and Legacy

The economic impact of hosting the Olympics remains a topic of debate. While proponents argue that the Games can boost tourism, create jobs, and improve global visibility, the actual economic returns often fall short of expectations. In many cases, the costs of hosting the Olympics far exceed the revenues generated from ticket sales, sponsorships, and tourism.

Post-Olympic legacy projects, such as the redevelopment of Olympic venues and urban areas, can provide long-term benefits, but these outcomes depend on effective planning and management. For example, Sydney and London have successfully repurposed their Olympic parks for public use, while other cities, like Athens and Rio de Janeiro, have struggled with underutilized venues and economic stagnation (Wills, Kelly 2021).

Conclusion

Over the last 20 years, spending on the Summer Olympics has risen dramatically, driven by growing expectations for infrastructure, security, and legacy projects. While the Games continue to offer a platform for host cities to showcase their capabilities and enhance their global profiles, the financial risks associated with hosting the Olympics have become more pronounced.

As costs continue to rise, future host cities must carefully weigh the potential benefits against the significant financial burdens. Effective planning, long-term vision, and post-Olympic management will be crucial in ensuring that the Games deliver lasting economic and social value for host cities.

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