Thematic Insights

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ASSET MANAGEMENT LIMITED

Data Centers: The Backbone of the Digital World

- **Rapid AI advancements will propel significant demand growth in the data centers sector…**
- **…while the supply growth is likely to remain constrained by power availability…**
- **…thereby resulting in higher utilization rates and lower vacancy rates in existing facilities…**
- **…while also causing the preleasing rates to rise sharply through the next year or two.**

What are data centers?

A data center is a physical facility where organizations store their critical applications and data, consisting of a network of computing and storage resources such as routers, switches, firewalls, storage systems, servers, and application-delivery controllers. Its capacity is often measured in terms of power available to IT systems, typically expressed in kilowatts (kW) or gigawatts (GW), underscoring the vital role of power in its operations. Over time, data centers have evolved to become the backbone of enterprise IT, serving as a core element for businesses and supporting critical applications. They enable a wide range of activities, including email and file sharing, productivity applications, Customer Relationship Management (CRM), Enterprise Resource Planning (ERP) and data management, as well as advanced technologies such as big data, Artificial Intelligence (AI), and Machine Learning (ML). They also support virtual desktops, communications, and collaboration services. Based on ownership, data centers can be broadly classified into four categories: enterprise data centers, which are built, owned, and operated by companies; managed services data centers, which are operated by third parties on behalf of companies through leases; colocation data centers, which provide infrastructure such as buildings, cooling, bandwidth, and security while companies supply and manage their own components; and cloud data centers, where data and applications are hosted by cloud service providers. The infrastructure of a data center can further be grouped into three main categories: network infrastructure, which connects servers to end-user locations; storage infrastructure, which safeguards data as a valuable commodity; and computing resources, which process data through various applications.

Why invest in data centers?

Investor interest in the data centers market has grown significantly, driven by the evolving demand and supply dynamics of the sector. The rapid rise of AI-related activities has prompted hyperscalers such as Amazon, Microsoft, Alphabet, and Meta, along with other corporations, to invest heavily in power-intensive graphics processing units (GPUs) for training Large Language Models (LLMs), as monetization prospects improve meaningfully. On the supply side, hyperscalers, third-party data center operators, and asset managers are committing substantial capital to build new high-capacity facilities, despite the constraints of limited power availability from traditional grids. According to Statista, the total amount of data created, captured, copied, and consumed globally is expected to grow from 149 zettabytes in 2024 to more than 394 zettabytes by 2028, providing strong support for continued demand in the sector. AI adoption is also projected to accelerate in the coming years, with 2025 marking a significant inflection point as wider applications across industries and expanding use cases drive demand. Gartner forecasts that by 2026, over 80% of enterprises will be using generative AI APIs or models, or deploying GenAI-enabled applications in production, compared with less than 5% in 2023. Technological advancements are further fueling this trend, as the latest GPU technology has reduced tasks that once took 32 hours to just one second, enabling training on larger datasets and enhancing the overall value of the AI ecosystem. Each new generation of GPUs is expected to further accelerate innovation. At the same time, Goldman Sachs research indicates that global power demand from data centers is set to rise by 50% by 2027 and by as much as 165% by 2030 compared with 2023, underscoring the critical role of energy in shaping the future of the industry.

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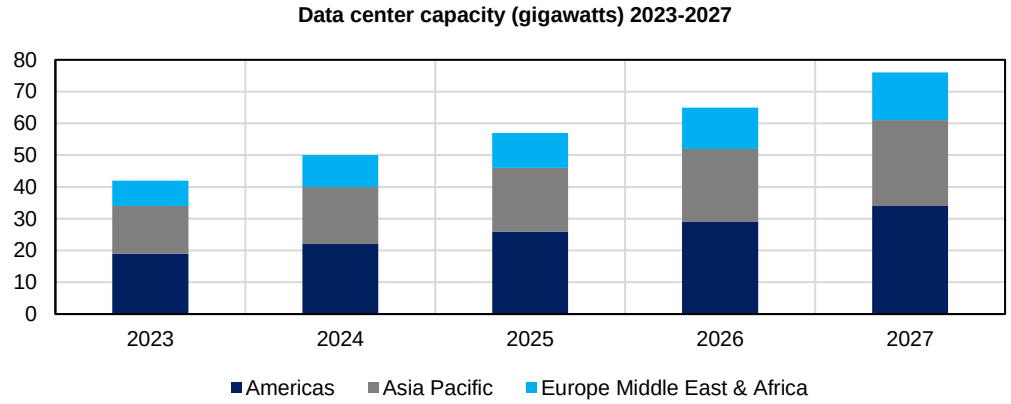
Supply-demand of the asset class dynamic remains supportive

According to the global real estate services company Jones Lang LaSalle Incorporated (JLL), global data center capacity is projected to grow at a rate of 15% per year (exhibit 1); however, this expansion will still fall short of meeting the rapidly increasing demand. One of the key challenges lies in power infrastructure bottlenecks, as JLL notes that in many markets it can take more than four years to extend high-capacity power lines to new development sites, with much of the delay stemming from the process of securing contracts and regulatory approvals. As a result, projects that already have power connections or agreements in place are expected to see strong uptake. This imbalance between supply and demand has contributed to the outperformance of data center real estate investment trusts (REITs) over the past couple of years, a trend that is anticipated to continue in the near future (exhibit 2).

Exhibit 1: Global data center capacity is projected to grow 15% per year, which may not be sufficient to meet increasing demand

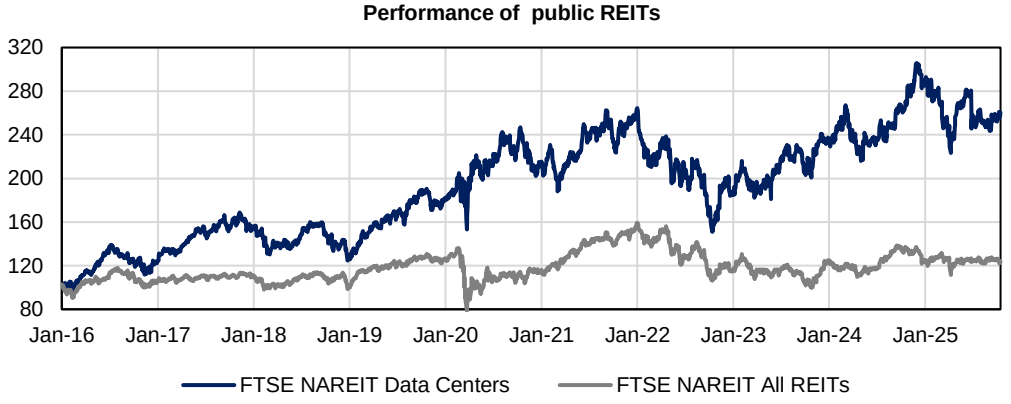


Source: JLL Research, and ADCB Asset Management

Emerging trends influencing the asset class

Nuclear power is increasingly being considered as a potential solution to meet the rising energy demands of data centers, particularly for AI and high-performance computing applications. At the same time, growing pressure to secure reliable power is driving innovation in alternative energy solutions such as microgrids. The surge in power density is also reshaping thermal management strategies, with liquid cooling becoming essential for high-density racks and immersion cooling expected to emerge as a common approach. In parallel, data centers are shifting toward decentralized architectures with edge computing to handle the massive influx of data generated by IoT, AI, and 5G technologies. By processing data closer to the source, edge computing reduces latency and enhances performance, which in turn is fueling the development of data centers in secondary and emerging markets.

Exhibit 2: Data centers REITs have outperformed and this outperformance can last for a while longer



Source: FTSE, NAREIT, LSEG Workspace, and ADCB Asset Management

Risks

Datacenter construction is expected to remain strong for at least the next five years, supported by advancements in AI and solid pent-up demand. Beyond that horizon, however, a potential medium-term risk lies in reduced capital expenditure by hyperscalers if fewer GPUs are required to achieve improved model performance, as highlighted by the DeepSeek saga. Another significant concern is technological obsolescence, with the rise of quantum computing posing the possibility of rendering current infrastructure less useful, though not entirely obsolete. In addition, immigration crackdowns could reduce the availability of construction workers, as well as mechanical, electrical, and plumbing specialists, thereby affecting both the building and maintenance of data centers. Other risks, which are common to all real estate investments, include high capital outlays, environmental challenges, regulatory and compliance pressures, and the potential impact of a global recession.

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