Principal Real Estate

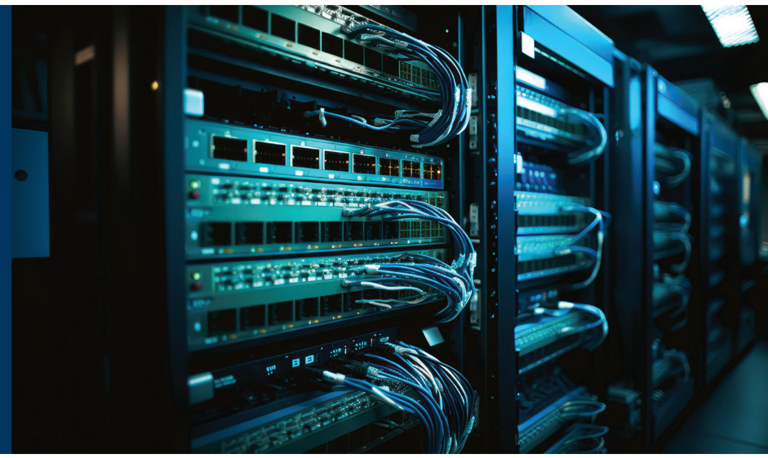
Principal Asset Management℠

The data center investment opportunity

Authors:

CASEY MILLER
Managing Director,
Portfolio Management

SEBASTIAN DOOLEY, CFA
Senior Fund Manager



AT-A-GLANCE

- The data center investment opportunity is characterized by enormous demand that's outpacing supply and an unprecedented amount of capital required.
- The sector is becoming increasingly attractive to institutional investors. Advantages include portfolio diversification, long-term stable cash flows from high-quality tenants, and scalability.
- For most investors, a fund investment is likely the most viable way to enter the data center market today, considering that a single facility can cost several hundred million to upwards of a billion dollars.
- Given the highly specialized nature of the data center industry, experience, access to technical knowledge, and existing relationships with the end users are critical to successful execution.

The data center industry is experiencing explosive demand growth driven by expanding use of technology and structural shifts in how data is consumed. Developers are building but they can't keep up with demand—driving vacancy rates to all-time historic lows and rents to rise. The amount of capital required to develop the capacity to fill forecasted demand is unprecedented in the industry.

Those dynamics create a landlord-friendly market attractive to institutional investors looking for opportunities to diversify their portfolios with a viable alternative asset class. Advantages of the data center sector include the opportunity to invest in an alternative asset class, long-term stable cash flows from high-quality tenants, and scalability. For most investors, the most viable way to enter the data center market today is via a fund investment.

Opportunity drivers

Already exponential, demand growth is accelerating

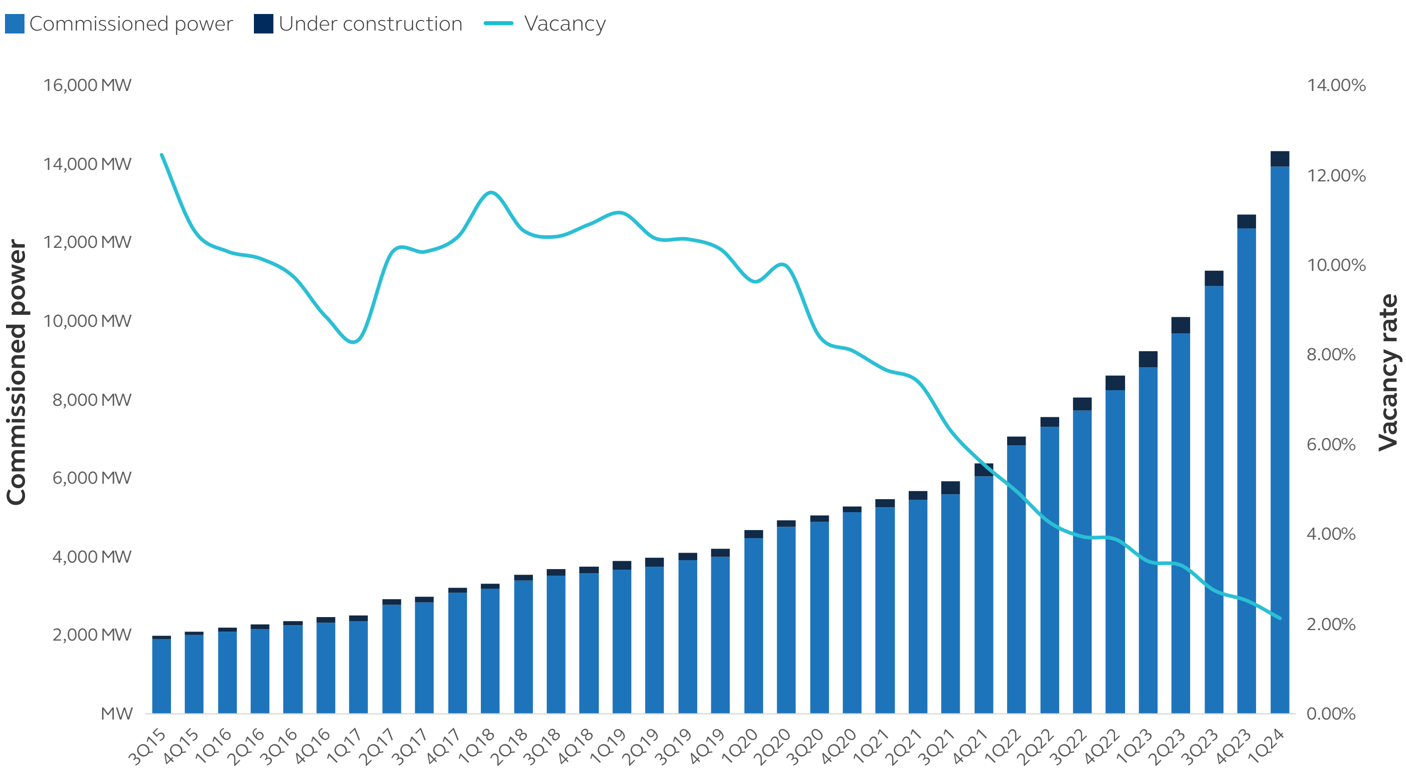
Growth in demand for data center capacity is fueled by surging digital data creation, cloud computing, and the widespread adoption of new technologies like artificial intelligence (AI). AI workloads, such as machine learning and natural language processing, are exceptionally computationally intensive. Training sophisticated AI models like GPT-4 can require thousands of specialized processors running for weeks. As AI proliferates across industries, the need for infrastructure to support these workloads is skyrocketing.

Traditional and cloud workloads continue to grow rapidly as well. Spending on cloud infrastructure is projected to reach $156.7 billion by 2027, according to IDC[1]—over a third of total compute and storage infrastructure spend. In fact, hyperscale companies' massive and growing cloud platforms are subsidizing their AI investments, as cloud businesses are typically very profitable. (For example, Amazon's cloud business, AWS, is the company's most profitable segment.[2])

Demand is outpacing supply

The amount of data center capacity coming online is also rising, rapidly—but not as fast as demand. As a result, vacancy rates are at all-time historic lows and rents continue to rise.

EXHIBIT 1: Data center capacity in the U.S. is growing, but not as fast as demand



Source: datacenterHawk, 4Q 2023

[1] Source: IDC, October 2023
[2] Source: Nasdaq, January 2024

The amount of capacity required is unprecedented

In a single 90-day period in 2023, end users in the U.S. signed data center leases totaling a staggering 2.1 gigawatts (GW), according to research by TD Cowen.[3] That's about 20 percent of the size of the entire third-party U.S. data center market. Aggregate data center capacity is set to more than triple by 2030, and AI could drive demand up much more than that. (Dell CEO Michael Dell predicts that AI will drive a 100x increase in data center demand over the next 10 years.[4])

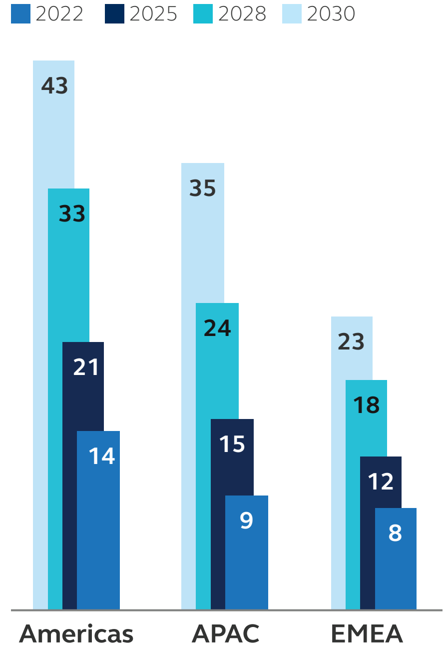
Developing this massive amount of data center capacity will require a huge amount of capital—a single facility can cost upwards of a billion dollars (dependent, of course, on its size, but facilities continue to grow in scale).

For additional detail on these opportunity drivers, see our recent paper 10 trends driving the global data center market.

EXHIBIT 2: Aggregate data center capacity is set to more than triple by 2030

World live capacity projection

Capacity, gigawatts (GW)



Source: IDC 2022, Principal Real Estate, December 2023.

[1] Source: TD Cowen, July 2023
[2] Source: AI Business, March 2024

Data centers are increasingly attractive to institutional investors

Demand/supply dynamics create a landlord-friendly market attractive to institutional investors looking for opportunities to diversify their portfolios with a viable alternative asset class. In fact, 97% of respondents to CBRE's 2024 Global Data Center Investor Sentiment Survey,[5] many of whom are the world's largest institutional real estate investors, reported plans to increase their capital deployment in the data center sector while 3% of respondents are looking to maintain their current allocation.

Advantages of the data center sector include portfolio diversification, long-term stable cash flows from high-quality tenants, and scalability.

Portfolio diversification

As part of a broader real estate portfolio, data centers are a smart diversification strategy due to low correlations to other assets and a favorable risk/return profile. A diversified real estate portfolio with industrial and data center assets yields (in the example shown in Exhibit 3) a much larger return for the same level of risk as a portfolio with industrial and apartment assets.

Long-term stable cash flows from high-quality tenants

While a relatively small number of tenants consume the vast majority of data center capacity, these are the world's largest technology companies with excellent credit profiles—Google, Amazon, Microsoft, and Meta, in addition to a few others. Investors can reduce concentration risk with a larger fund vehicle that provides exposure to multiple assets in multiple markets.

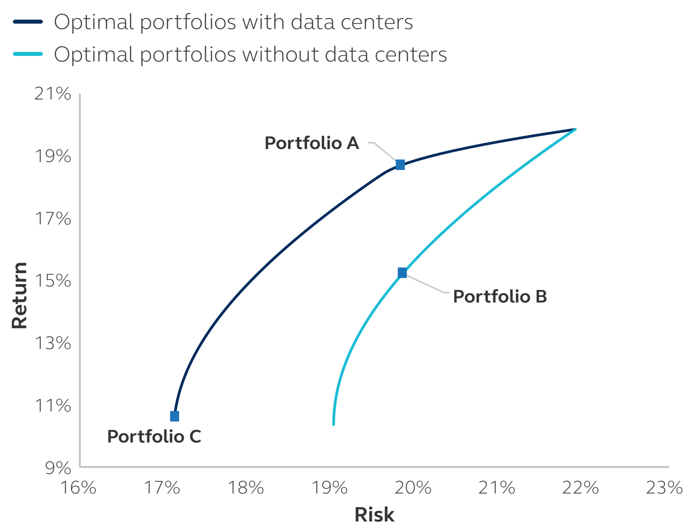
Longer leases, many times in excess of 10 years, give investors exposure to cash flows from high-quality credit tenants at higher yields than most other property types.

Scalability

As investors look to diversify their portfolios to include more alternative investments, data centers can help to quickly achieve allocation goals. The individual deal sizes for other attractive alternatives —self-storage, manufactured housing, and single-family residential, for example—are quite small. Data centers are one of the few alternatives that can be done at scale without having to assemble large portfolios of assets. Given the outsize magnitude of data centers relative to other alternative investments, they represent a major shift in the investment portfolio.

EXHIBIT 3: Optimal portfolios with data centers generate higher returns for the same level of risk
(sample listed REITs portfolio)

Portfolio risk/return allocations



	Portfolio A	Portfolio B	Portfolio C
Industrial	65%	67%	0%
Data Centres	35%	0%	44%
Apartments	0%	33%	51%
Office	0%	0%	0%
Retail	0%	0%	5%
Returns	18.7%	15.2%	10.6%
Volatility	19.8%	19.8%	17.1%
Return/Risk Ratio	0.9435	0.7674	0.6210

Correlations	Industrial	Data centers	Apartment	Office	Retail
Industrial	1.00	0.64	0.72	0.68	0.54
Data centers	0.64	1.00	0.42	0.37	0.23
Apartment	0.72	0.42	1.00	0.81	0.77
Office	0.68	0.37	0.81	1.00	0.78
Retail	0.54	0.23	0.77	0.78	1.00

Source: Principal Real Estate, FTSE-NAREIT Monthly Data, 12/31/2015–12/29/2023

[5] Source: CBRE Global Data Center Investor Sentiment Survey, June 2024

A new approach: Data center fund investment

Because of the advantages—portfolio diversification, long-term stable cash flows from high-quality tenants, and scalability—data centers are a growing component in some open-end diversified core equity (ODCE) funds and are becoming a larger share of the net lease sector. Where investors historically might have bought a large office building leased to a corporate tenant based on the fact that it had a long-term net lease in place, that's not a particularly attractive opportunity in today's market. Data centers represent an opportunity for those types of investors to get similar cash flow profiles (long-term stable income) with a high-quality credit tenant while growing exposure to an alternative asset class.

For most investors, a fund investment is likely the most viable way to enter the data center market today, given that a single facility can cost upwards of a billion dollars.

In addition to higher-than-ever and still-rising aggregate demand, individual data centers are becoming ever larger, and thus require much more capital to develop. Those dynamics have changed the optimal investment approach.

Collaboration is key

Given the highly specialized nature of the data center industry, experience and access are critical to successful execution. Data center investing requires a high degree of specialization to source, build, and lease the properties. If you're looking to invest in a data center fund, look for an investment firm partner with:

- Data center sector-specific experience
- A track record of high-quality investments sourced and closed
- A network of developers with technical and location-specific expertise
- Ability to attract strong tenants

As an active commercial real estate investor for more than 60 years—including more than 18 years in the data center sector—Principal Real Estate has witnessed the asset class evolve and adapt to the changing needs of occupiers. Our experience has resulted in a historically favorable track record and meaningful industry relationships.

Risk Considerations

Investing involves risk, including possible loss of principal. Past Performance does not guarantee future return. Potential investors should be aware of the risks inherent to owning and investing in real estate, including value fluctuations, capital market pricing volatility, liquidity risks, leverage, credit risk, occupancy risk and legal risk. All these risks can lead to a decline in the value of the real estate, a decline in the income produced by the real estate and declines in the value or total loss in value of securities derived from investments in real estate. Data center properties and will only be attractive to a unique type of tenant. A limited tenant base increases the risk of vacancy. Additionally, a property designed to be a data center property, may be difficult to relet to another type of tenant or convert to another use. Thus, if operating a data center were to become unprofitable, the liquidation value of properties may be substantially less than would be the case if the properties were readily adaptable to other uses.

Important information

This material covers general information only and does not take account of any investor's investment objectives or financial situation and should not be construed as specific investment advice, a recommendation, or be relied on in any way as a guarantee, promise, forecast or prediction of future events regarding an investment or the markets in general. The opinions and predictions expressed are subject to change without prior notice. The information presented has been derived from sources believed to be accurate; however, we do not independently verify or guarantee its accuracy or validity. Any reference to a specific investment or security does not constitute a recommendation to buy, sell, or hold such investment or security, nor an indication that the investment manager or its affiliates has recommended a specific security for any client account.

Subject to any contrary provisions of applicable law, the investment manager and its affiliates, and their officers, directors, employees, agents, disclaim any express or implied warranty of reliability or accuracy and any responsibility arising in any way (including by reason of negligence) for errors or omissions in the information or data provided. All figures shown in this document are in U.S. dollars unless otherwise noted.

This material may contain 'forward looking' information that is not purely historical in nature. Such information may include, among other things, projections and forecasts. There is no guarantee that any forecasts made will come to pass. Reliance upon information in this material is at the sole discretion of the reader.

This material is not intended for distribution to or use by any person or entity in any jurisdiction or country where such distribution or use would be contrary to local law or regulation.

This document is issued in:

- The United States by Principal Global Investors, LLC, which is regulated by the U.S. Securities and Exchange Commission.
- Europe by Principal Global Investors (Ireland) Limited, 70 Sir John Rogerson's Quay, Dublin 2, D02 R296, Ireland. Principal Global Investors (Ireland) Limited is regulated by the Central Bank of Ireland. Clients that do not directly contract with Principal Global Investors (Europe) Limited ("PGIE") or Principal Global Investors (Ireland) Limited ("PGII") will not benefit from the protections offered by the rules and regulations of the Financial Conduct Authority or the Central Bank of Ireland, including those enacted under MiFID II. Further, where clients do contract with PGIE or PGII, PGIE or PGII may delegate management authority to affiliates that are not authorised and regulated within Europe and in any such case, the client may not benefit from all protections offered by the rules and regulations of the Financial Conduct Authority, or the Central Bank of Ireland. In Europe, this document is directed exclusively at Professional Clients and Eligible Counterparties and should not be relied upon by Retail Clients (all as defined by the MiFID).
- United Kingdom by Principal Global Investors (Europe) Limited, Level 1, 1 Wood Street, London, EC2V 7 JB, registered in England, No. 03819986, which is authorized and regulated by the Financial Conduct Authority ("FCA").
- This document is marketing material and is issued in Switzerland by Principal Global Investors (Switzerland) GmbH.
- United Arab Emirates by Principal Global Investors LLC, a branch registered in the Dubai International Financial Centre and authorized by the Dubai Financial Services Authority as a representative office and is delivered on an individual basis to the recipient and should not be passed on or otherwise distributed by the recipient to any other person or organisation.
- Singapore by Principal Global Investors (Singapore) Limited (ACRA Reg. No. 199603735H), which is regulated by the Monetary Authority of Singapore and is directed exclusively at institutional investors as defined by the Securities and Futures Act 2001. This advertisement or publication has not been reviewed by the Monetary Authority of Singapore.
- Australia by Principal Global Investors (Australia) Limited (ABN 45 102 488 068, AFS Licence No. 225385), which is regulated by the Australian Securities and Investments Commission and is only directed at wholesale clients as defined under Corporations Act 2001.
- Hong Kong SAR (China) by Principal Asset Management Company (Asia) Limited, which is regulated by the Securities and Futures Commission. This document has not been reviewed by the Securities and Futures Commission.
- Other APAC Countries/Jurisdictions, this material is issued for institutional investors only (or professional/sophisticated/qualified investors, as such term may apply in local jurisdictions) and is delivered on an individual basis to the recipient and should not be passed on, used by any person or entity in any jurisdiction or country where such distribution or use would be contrary to local law or regulation.

Principal Global Investors, LLC (PGI) is registered with the U.S. Commodity Futures Trading Commission (CFTC) as a commodity trading advisor (CTA), a commodity pool operator (CPO) and is a member of the National Futures Association (NFA). PGI advises qualified eligible persons (QEPs) under CFTC Regulation 4.7.

Principal Funds are distributed by Principal Funds Distributor, Inc.

MM14040 | 06/2024 | 3636178-122025