

Bond investors join the AI infrastructure boom

October 28, 2025 | Nathaniel Liddle, Senior Analyst, Investment Grade Credit; Siao Lu, CFA, Analyst, Structured Products; Richard Gross, CFA, Senior Analyst, High Yield; Todd Czachor, CFA, Global Head of Fixed Income Research

The AI infrastructure boom is more than a tech story – it’s a fixed-income story. Discover how this capital-intensive transformation is creating new opportunities and risks for bond investors.



The artificial intelligence (AI) infrastructure buildout is not just a technological revolution – it’s a capital markets event of historic proportions, akin to the railroads in the late 1800s and the internet a generation ago. As hyperscalers and emerging players race to deploy data centers and AI accelerators, the scale and structure of financing are reshaping the investment landscape. And currently, this transformation is presenting fixed-income investors with compelling opportunities. Understanding the scale, financing mechanisms and potential pitfalls is essential for navigating this rapidly evolving landscape.

AI infrastructure spending transforms capital markets

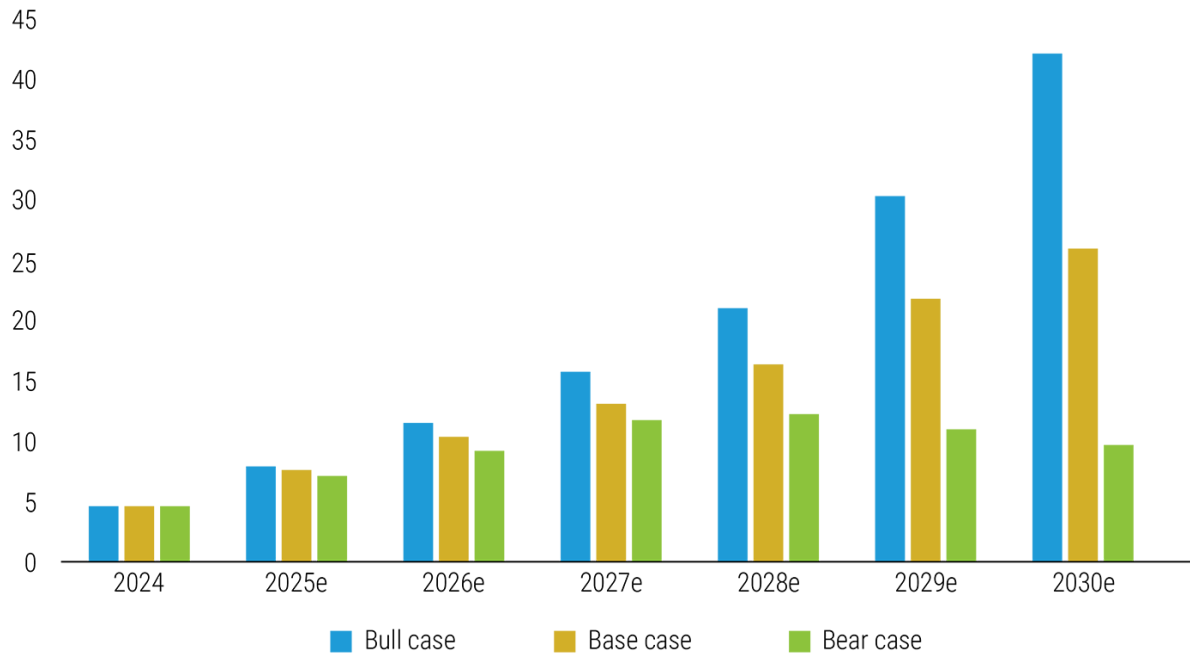
As AI applications proliferate, the race to build the infrastructure supporting them has triggered one of the largest capital expenditure (capex) cycles in recent history. Technology giants such as Microsoft, Google, Amazon, Meta and Oracle are at the forefront, with combined annual capital expenditures expected to surpass \$530 billion by the end of the decade.¹

This surge is driven by explosive growth in consumer and enterprise demand for AI-powered services. We estimate the cumulative investment required between 2025 and 2030 could approach \$5.8 trillion.² Even this may be conservative, as companies view this as a critical, non-negotiable investment window.

The result is a multiyear, multitrillion-dollar demand shock for capital, with direct implications for the size, structure and risk profile of the global bond market.

Strong AI demand growth forecast through 2030

Projected graphics processing unit demand (in thousands of units)



Source: Columbia Threadneedle Investments estimates. Data as of October 15, 2025.

Tech giants pursue new funding strategies for AI growth

This massive buildout creates unprecedented financing requirements. While technology giants generate substantial operating cash flow, the sheer scale of investment needed is pushing companies to explore multiple funding avenues. Several factors are driving a shift to alternative financing structures, including:

- The absolute amount of debt potentially required by individual issuers
- Sector-level debt concentration relative to broader indices
- Managing cost of funds and maintaining liquidity
- Diversifying funding sources
- Limiting disruption to current capital allocation policies

AI Boom brings new structure to bond investing

While operating cash flow remains the primary funding source for the largest technology companies, the sheer scale of investment is pushing issuers to diversify:

- **Traditional corporate debt:** Companies are issuing more bonds, but index concentration and risk premiums are rising as technology's share of the corporate bond market grows. For example, traditional corporate debt issuance could run up against index concentration limits.
- **Securitized credit structures (data center):** Data center assets are increasingly packaged into securities. Data center securitization issuance, including commercial mortgage-backed securities (CMBS) and asset-backed securities (ABS), has totaled \$17.4 billion year to date in 2025, which exceeds the 2024 full-year total of \$11.6 billion by 50%.³ These bonds are structured such that the principal repayment is reliant on refinancing. While attractive versus investment-grade-rated corporate bonds for their yield and rating, relative value versus other securitized products deserves more nuanced discussion and the transparency remains limited.
- **Joint ventures and off-balance sheet structures:** Innovative deals, such as the Oracle-Vantage-OpenAI structure, involve complex arrangements where infrastructure is funded by guarantees and revenue streams from multiple parties.
- **Asset-based lending:** Data centers themselves are increasingly used as collateral, though valuation volatility and technological obsolescence are key concerns.

For fixed-income investors, the proliferation of new structures requires careful underwriting. Investors must assess not just the credit quality of the issuer, but also the durability of the underlying assets, the strength of tenant contracts and the refinancing environment at maturity.

Risks investors should consider

As with any transformative investment cycle, the AI infrastructure boom brings a range of risks that demand rigorous due diligence. Historic capital market transformations – like the railroad and the internet – were marked by credit quality challenges and defaults. That's why, although the opportunities are significant, the current surge in AI infrastructure investment presents a host of risks that investors must carefully assess. These include:

- **Payment funding risk:** Many financing arrangements depend on continued access to capital markets and equity financing to support long-term lease agreements.

- **Asset-liability mismatch:** Companies often sign short-term computing contracts (3–4 years) but commit to long-term data center leases (5–20 years). This creates potential imbalances if demand shifts or technology evolves.
- **Collateral valuation uncertainty and technological obsolescence:** Data center valuations have soared, sometimes with appraisals far above construction costs. While the physical infrastructure has a long lifespan, rapid advances – such as the shift from air cooling to liquid cooling – can impact asset values and refinancing prospects. Loan-to-cost ratios are often close to 100%, despite conservative loan-to-value optics.
- **Tenant concentration and operator risk:** Heavy reliance on specific AI companies or cloud providers creates vulnerability if those tenants fail to achieve expected growth. Data center ABS bonds expose investors to the performance of the operator, not just the underlying real estate.
- **Refinancing risk and maturity wall:** A significant volume of data center ABS bonds will require refinancing in the coming years. Any downturn in valuations or changes in capitalization rates could pose challenges.
- **Returns on investment uncertainty:** Historically, technology companies have generated strong returns on investment, but the economics of AI infrastructure at scale remain unproven. The ratio of incremental revenue to capex has declined, and the timing of revenue realization is uncertain.

The bottom line

The massive AI infrastructure buildout could have profound implications for fixed-income markets. Just as previous historical capital market events brought about sweeping changes along with significant risk – the sector’s rapid growth today is reshaping credit markets and demanding a more sophisticated approach to risk assessment. As the AI era unfolds, fixed-income investors who adapt their frameworks and employ rigorous credit research and analysis will be best positioned to capture value.

¹ Columbia Threadneedle Investments forecast.

² Columbia Threadneedle Investments forecast.

³ Columbia Threadneedle Investments. As of October 15, 2025.

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There are risks associated with **fixed-income** investments, including credit risk, interest rate risk, and prepayment and extension risk. In general, bond prices rise when interest rates fall and vice versa. This effect is usually more pronounced for longer term securities.

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