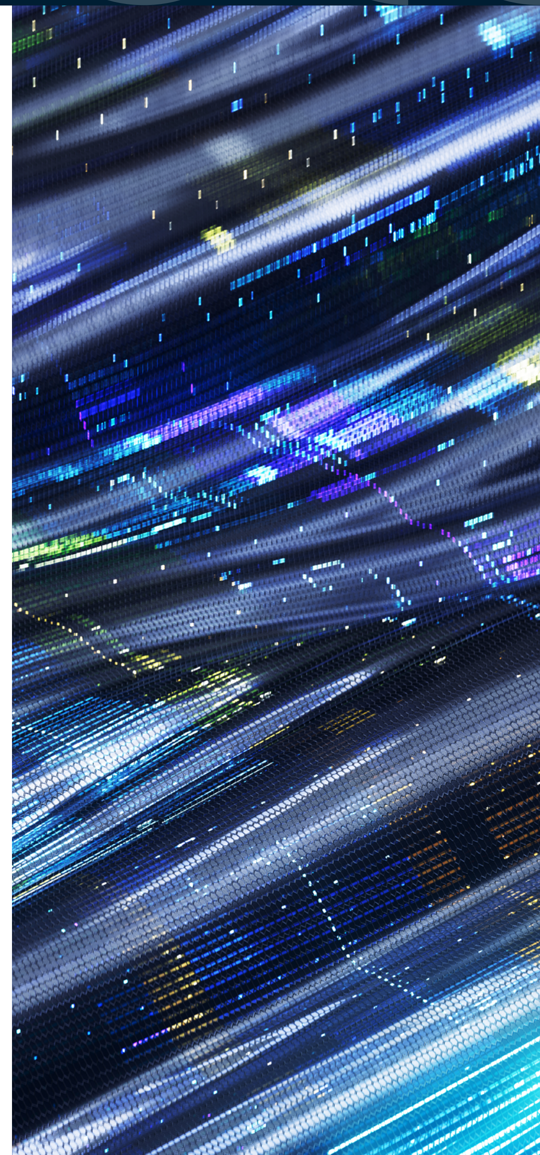
AI, Caramba!



A shifting risk landscape

July marked a notable shift in the risk landscape across U.S. fixed income markets. U.S. Treasury yields rose during the month, the curve steepened and the yield on the 30-year bond briefly surpassed 5.25% for the first time in almost 20 years.

In part, we believe this dynamic reflects skepticism about the Federal Reserve's (Fed) commitment to addressing persistently high inflation. While the Federal Open Market Committee left the target fed funds rate unchanged at its July 29 meeting (as was expected), notably, three out of 12 Fed governors dissented in favor of a hike. Chair Warsh's tough talk during the post-meeting press conference did little to assuage investors' concerns about the Committee's resolve to combat inflation.

Of equal concern to bond market participants, persistent fiscal deficits, combined with the incremental costs of a protracted conflict in Iran, continue to pressure the United States' longer-term debt fundamentals. This past spring, Fitch Ratings, Inc. characterized the widening U.S. deficit and rising debt as key ratings challenges for the U.S. sovereign rating.

Additionally, market concerns recently arose about potential U.S. Treasury liquidations from the Bank of Japan. The U.S. Treasury then announced a rare coordinated "yen-tervention" with Japan's Ministry of Finance to help arrest the yen's persistent slide. Additionally, U.S. Treasury Secretary Bessent publicly called on the Fed to consider expanding existing swap lines — which were put in place during the Great Financial Crisis to provide liquidity in support of potential currency operations by foreign central banks.

While monetary and fiscal policy remain important drivers, we believe the most consequential development for fixed income markets is the rising cost of artificial intelligence (AI) and related infrastructure buildout. Issuers are tapping a variety of debt financing options across taxable, municipal, direct-lending and structured notes, as well as turning to some equity issuance. Concerns about the growth in aggregate debt across both sovereign and corporate issuers are pressuring inflation-adjusted funding costs, driving up the real cost of capital and leading investors to reconsider the feasibility and timing of returns on these investments.

Risk considerations for hyperscaler exposure

Just as fixed income investors have seen increased U.S. Treasury issuance lead to higher concentrations of government debt in benchmark indices, the market is adjusting to material shifts in the risk attributes of the corporate credit market. Through mid-July, technology and AI-related issuance topped $200 billion, or nearly 20% of total supply. As issuers focus on extending the duration

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profile of their liabilities, the impact farther out the yield curve is more pronounced; issuance of 10-year and longer paper approached $80 billion, or almost 40% of long-end supply in the first half of 2026.

From an index volatility perspective, longer-duration issuance along with widening spreads are leading to more pronounced risk concentrations, when considering both contribution to duration (CTD) and duration times spread (DTS) metrics. These metrics are core to how our PNC Capital Advisors team evaluates relative risk in portfolios as outlined in our white paper Managing Risk in Taxable Fixed Income Portfolios.

In the current environment, our approach to managing our risk exposure is to tier hyperscaler and adjacent issuers into three primary buckets:

- Data centers and hyperscalers
- Hardware suppliers
- Potentially disrupted companies/industries (i.e., "SaaSpocalypse," etc.)

For illustrative purposes, we will focus this paper on the five primary hyperscalers — Amazon.com, Inc. (AMZN), Alphabet Inc. (GOOGL), Meta Platforms, Inc. (META), Microsoft Corp. (MSFT) and Oracle Corp. (ORCL) — as well as Nvidia Corp. (NVDA), which, while a supplier, is often included.

As of June 30, the market value concentration in these six issuers reached 4.3% for the U.S. Credit Index, largely due to Meta Platforms, which began issuing debt in August 2022. The concentration rises to 6.5% in the A-or-better index, and excludes Oracle, which, due to more aggressive shareholder-friendly policies, lost its single-A ratings in the first quarter of 2021 (**Figure 1**).

The dynamic becomes even more pronounced within the AA category, in which the combined exposure of Meta Platforms, Alphabet, Nvidia and Amazon has more than doubled in the last three years and now accounts for approximately one-third of the AA index. Widening spreads and growing concentration led to AA spread compression relative to single A, while the long-AA segment now trades wide relative to single A (**Figure 2**).

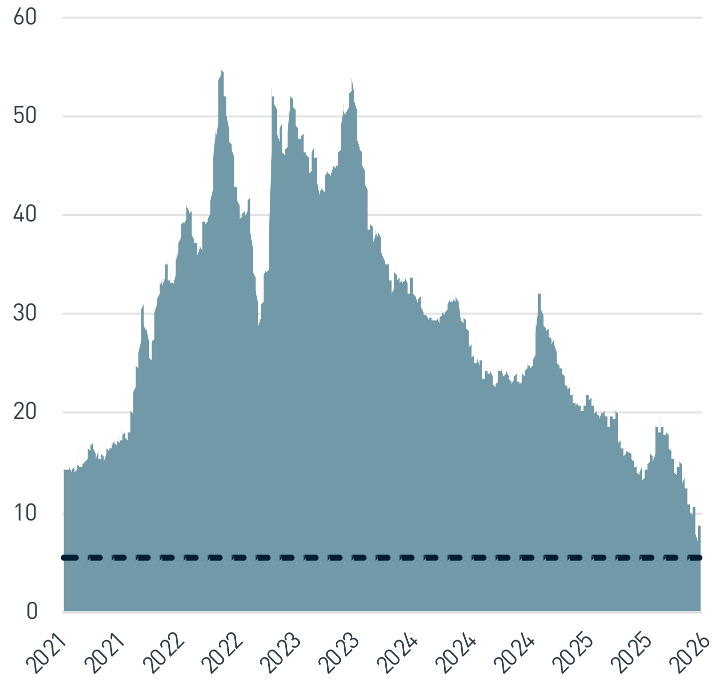
Figure 1. Hyperscalers' Risk Exposures

U.S. Credit Index	2026	2021
AMZN	1.01%	0.67%
GOOGL	0.54%	0.15%
META	0.92%	0.00%
MSFT	0.28%	0.72%
NVDA	0.36%	0.15%
ORCL	1.18%	1.02%
Hyperscalers	**4.29%**	**2.71%**

U.S. Corporate A-or-Better Index	2026	2021
AMZN	2.10%	1.61%
GOOGL	1.13%	0.37%
META	1.91%	0.00%
MSFT	0.58%	1.74%
NVDA	0.74%	0.35%
Hyperscalers	**6.47%**	**4.07%**

As of 6/30/2026. Source: Bloomberg, L.P.

Figure 2. Bloomberg U.S. A-AA Corporate Spread



As of 7/24/2026. Source: Bloomberg, L.P.

Figure 3. U.S. Credit Index Risk Exposures 2026 vs. 2021

2026	**Sum of DTS**	**Sum of % Index**	**Sum of CTD**
Oracle Corp.	18.9	1.2	0.1
United Mexican States	15.2	1.1	0.09
AT&T Inc.	10.8	1.0	0.09
Meta Platforms, Inc.	10.5	0.9	0.09
Charter Communications, Inc.	9.8	0.5	0.05
Credit DTS	551.7		
Total	**11.8%**		

2021	**Sum of DTS**	**Sum of % Index**	**Sum of CTD**
AT&T Inc.	28.9	1.4	0.17
Verizon Communications Inc.	19.8	1.3	0.15
United Mexican States	19.7	0.8	0.08
Anheuser-Busch InBev Worldwide Inc.	16.9	0.9	0.11
The Bank of America Corp.	15.7	2.2	0.15
Credit DTS	978.8		
Total	**10.3%**		

As of 6/30/2026. Source: Bloomberg, L.P.

Both Oracle and Meta Platforms are now among the top five U.S. Credit Index risk exposures ranked by DTS, illustrating the seismic shift in index concentration over the past five years (**Figure 3**).

The starting point matters

Apart from Oracle, for which ratings already reflect a more aggressive leverage profile, the primary hyperscalers are entering this acceleration in the AI buildout from a position of strength. Net leverage ratios for these companies are modest, and free cash flow has been healthy; that said, the leverage and cash flow profiles have been evolving rapidly, and quarterly free cash flow has recently turned negative for Amazon and Alphabet (**Figure 4**).

With many of the commercial applications for this technology largely untested at scale, we believe the fundamental investment thesis for the AI theme remains dynamic. We continue to monitor the capital expenditures ramp-up and the mismatch between cash flows from contract bookings, which we expect will continue to pressure balance sheets in the near term. Market valuations, in part, reflect this uncertainty as well as discounts related to the serial issuance and supply overhang.

Figure 4. Hyperscalers by the Numbers: 2026 vs. 2021

2026	**MSFT**	**GOOGL**	**NVDA**	**AMZN**	**META**	**ORCL**
	AAA	AA	AA	AA-	AA-	BBB
Revenue $M	331,839	445,866	253,491	775,680	228,247	67,358
Capex/Revenue	35%	30%	3%	22%	39%	83%
Free cash flow	66,987	53,273	119,077	(11,625)	40,976	(23,686)
Net debt/EBITDA	-0.1	-0.8	-0.4	0.1	0.0	3.2
Lease adj. net debt/EBITDA	0.3	-0.7	-0.4	0.6	0.2	4.3

2021	**MSFT**	**GOOGL**	**NVDA**	**AMZN**	**META**	**ORCL**
	Aaa/AAA	Aa2/AA+	Aa1/AA	A1/AA/AA-	Aa3/AA-	Baa2/BBB-/BBB
Revenue $M	168,088	220,265	19,256	443,298	104,790	40,479
Capex/Revenue	12%	10%	7%	12%	16%	5%
Free cash flow	56,118	58,536	5,516	7,065	32,141	13,752
Net debt/EBITDA	-0.8	-1.6	-0.7	-0.4	-1.2	2.0
Lease adj. net debt/EBITDA	-0.6	-1.4	-0.6	0.5	-1.0	2.1

As of 6/30/2026. Source: Bloomberg, L.P.

From a valuation perspective, return symmetry has improved and risk premiums are reasonably attractive, in our view — particularly against similarly or lower-rated credit issuers, for whom valuations remain near all-time tights. We are modestly overweight Information Technology, including Amazon (**Figure 5**), and importantly, we maintain sufficient flexibility to shift risk exposures as opportunities evolve.

While the long-term implications of AI technology remain uncertain, the impact on fixed income markets is already apparent through increased issuance, index concentrations and evolving risk profiles. For fixed income investors, we believe understanding these nuances and how strategies are positioned accordingly is paramount.

Figure 5. Risk Positioning

Relative Overweight (CTD)	Core Strategies	Intermediate Strategies
Cable, Media, Telecom	0.08	0.03
Information Technology	0.06	0.07
Amazon.com, Inc.	0.07	0.02
Total	**0.21**	**0.12**

Top 5 Contributors to DTS	Core Strategies
AT&T Inc.	8.1
Amazon.com, Inc.	6.7
Comcast Corporation	4.8
Mexico's 10-year Government Bond	-4.1
Xcel Energy Inc.	3.7

Top 5 Contributors to DTS	Intermediate Strategies
Equinix Inc.	3.2
Meta Platforms, Inc.	3.2
Oracle Corp.	-2.4
AT&T Inc.	2.1
Novartis AG	1.8

As of 7/31/2026. Source: Bloomberg, L.P.

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