

# 2025 Credit Outlook: Defying Gravity

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## KEY TAKEAWAYS

- ➔ Following the strong performance of 2024, credit markets are entering 2025 in a solid position. While at first glance, it may appear that risks are one-sided given spreads are near multi-year tightness across several segments of the credit market, we expect the fundamental and technical backdrop to remain strong.
- ➔ Still, we believe there could be some headline risk associated with the implementation of the incoming US administration's policies—from tariffs, immigration, and fiscal policy—which could potentially inject more volatility into markets.
- ➔ We expect the relationship between banks and private credit firms will continue to turn more symbiotic through strategic alliances. Initially targeted at the sub-investment grade market, we expect these partnerships will eventually extend to investment grade (IG) companies as well: While public IG funding is widely accessible, the lack of flexible financing solutions available today can create an opportunity for private credit providers.
- ➔ Another key theme for the new year will likely be the rising demand for data center capacity and associated infrastructure, which we estimate will require more than \$2 trillion over the next five years. Given the sheer size and unique characteristics of many of these projects, we think that bespoke, privately originated IG financing will be part of the capital solution to finance this investment.
- ➔ As 2025 progresses, we expect investors will turn their attention to the next sub-investment grade maturity wall, with over \$620 billion of high yield bonds and loans set to come due in 2026 and 2027.<sup>1</sup> We saw some notable differences in the way many of the 2024/25 maturities were addressed, which could suggest a large opportunity for private credit to reprise its role as an alternative financing option for companies with upcoming maturities.

<sup>1</sup> Sources: JPMorgan, Bloomberg, S&P/IHS Markit

## I) Introduction

With 2024 behind us, it's now clear that the past year followed a very different path than most market participants had anticipated at its outset. Entering last year, economists were betting on a 50% chance of a recession, while analysts were projecting a decline in the S&P 500 Index and a widening of investment grade and high yield credit spreads.<sup>2</sup> Instead, the US economic expansion continued and risk assets rallied. In 2024, the S&P 500 Index eclipsed 6,000, notching a 23% annual return, while investment grade spreads narrowed to a 25-year low, ending the year at 80 basis points, and high yield spreads narrowed to a 17-year low, ending the year at 287 basis points.<sup>3</sup> Looking forward, although the new year has begun with credit spreads at or near historical tights, **we continue to believe that the fundamental and technical backdrop in credit markets remains strong and expect valuations to remain well supported at least through the first half of 2025.** At the same time, we believe there could be some headline risk associated with the implementation of the incoming administration's policies, which could potentially inject more volatility into the macroeconomic backdrop as the year progresses.

In this credit outlook, we discuss our expectations for credit markets, including the fundamentals, technical backdrop, and key areas of focus for the year. We will also introduce three key themes for the credit markets in 2025:

- ➔ The emerging alliance between banks and private credit asset managers
- ➔ The opportunity to finance the rising demand for data centers and related infrastructure
- ➔ The evolving role private credit is playing in addressing maturity walls

## II) Overview

As Apollo Chief Economist Torsten Sløk details in his [2025 Economic Outlook](#), the US economy has charted its own path in the post-pandemic world and is diverging both from its own historical performance and that of other developed economies. This robust economic growth, the start of the Federal Reserve's (Fed's) easing cycle and, most recently, the election of Donald Trump, along with Republican control of both the House and Senate, have led to a strong rally in risk assets. Entering 2025, equity valuations are at all-time highs, while credit spreads across corporate and securitized credit markets sit at multi-year tights. US investment grade and high yield spreads narrowed to their tightest levels in more than 15 years in November while US CLO spreads—with the exception of AAAs—are near their tightest levels since the Global Financial Crisis (GFC). As spreads have tightened, beta compression has

been a key theme across credit, with the CLO BB-AAA basis narrowing by ~175 basis points in 2024. Similarly, CCC-rated corporate bonds in the US, which lagged the broader market earlier in 2024, have since caught up with their spreads tightening by 250 basis points vs. BB-rated credit over the last six months. This has resulted in strong total returns across credit, led by lower-quality segments of the market, with both CCC-rated corporate bonds and BB-rated CLOs each delivering total returns of more than 15% in 2024.

**Following the strong performance of 2024, we expect the markets will carry this momentum into the new year despite the tight spread environment.** We continue to believe the strong fundamental and technical backdrop in credit markets remains intact. **However, the outlook for the second half of 2025 is more tenuous, given uncertainty around the new administration's fiscal, tariff, and immigration policies.** The implementation of any of the more extreme versions of these policies—such as a broad-based implementation of tariffs, higher deficits tied to tax cuts or an aggressive crackdown on illegal immigration, including large-scale deportations—could drive inflation higher, undoing the Fed's progress over the past year. Five-year inflation breakevens remained between 2%-2.5% for most of last year, and a breakout from this range would be negative for both risk and risk-free valuations. While this is a tail risk we are watching, it is not our base case. If the US economic expansion can stay on track, potentially aided by deregulation and lower corporate taxes, we believe the positive fundamental backdrop for credit should persist. While tariff and immigration policies as well as potential cuts to government spending could prove disruptive, we expect their impact will be contained to a subset of individual companies and sectors. In summary, we expect a market environment where index-level valuations are range-bound, even as uncertainty around monetary and fiscal policy drives higher sector and single-name dispersion.

### FUNDAMENTALS REMAIN ROBUST

The consensus forecast is for 2025 US economic growth to slow marginally to 2.1%<sup>4</sup> from 2.7%, which is still high enough to support corporate fundamentals. Earnings have continued to grow, alleviating pressure on interest coverage and leverage ratios. The beginning of an easing cycle by the Fed and Europe's major central banks has also offered relief to the highest leveraged/most floating-rate sensitive parts of the market. With monetary policy likely to ease further in 2025—notwithstanding the ongoing debate about the appropriate pacing of cuts—funding cost stress is expected to continue to decline. Further, primary markets remain wide open for most issuers: In 2024, more than 80% of the leveraged loan market was refinanced/repriced<sup>5</sup> suggesting most sub-investment grade companies retained access to the market.

<sup>2</sup> Survey of the largest banks' projections for 2024.

<sup>3</sup> Bloomberg, December 2024.

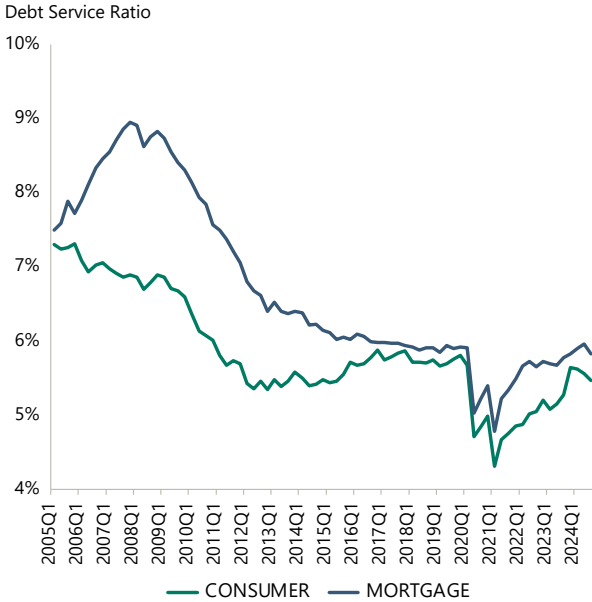
<sup>4</sup> Bloomberg, December 2024.

<sup>5</sup> Based on JPM Leveraged Loan Index.

2025 CREDIT OUTLOOK: DEFYING GRAVITY

For households, robust wage growth both in nominal and real terms has boosted consumer fundamentals offsetting the increase in borrowing costs since 2019. Although household debt-service ratios (debt cost as % of disposable personal income) have increased from their 2021 lows, they

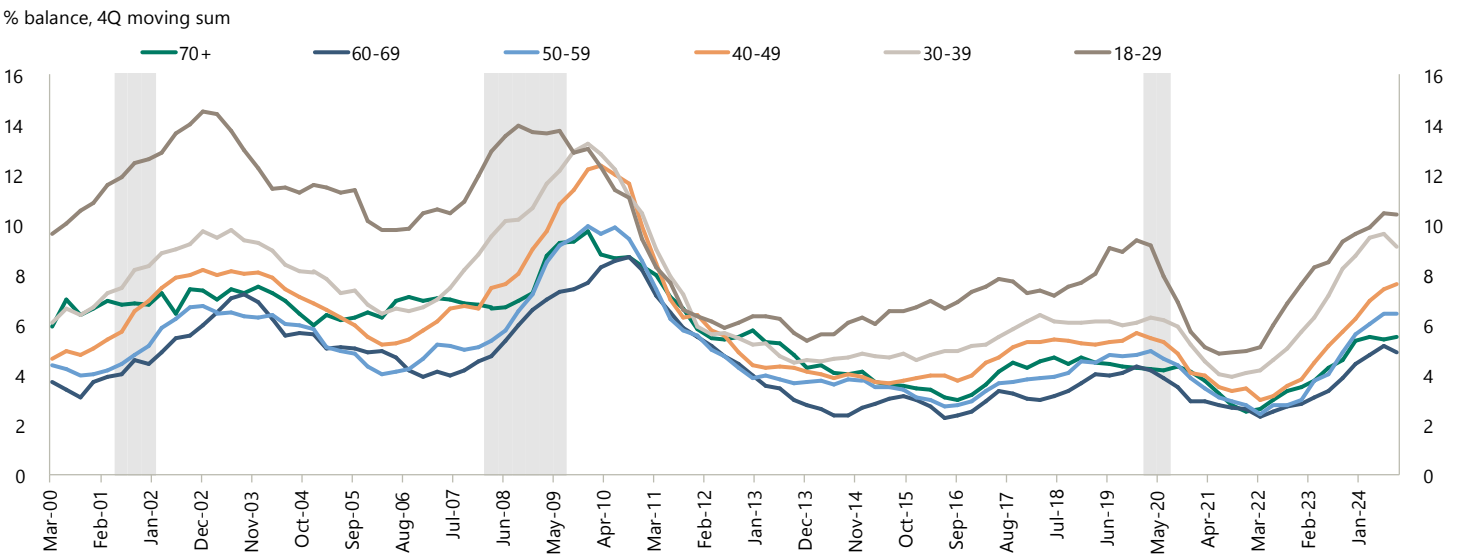
**Exhibit 1: Household debt service ratios have increased from 2021 lows**



Data as of the third quarter of 2024.  
Source: Federal Reserve

While we remain sanguine on credit quality across corporates and consumers, there are a few pockets of risk worth monitoring. The right tail of leveraged loan issuers—those with the lowest interest coverage/highest leverage ratios—could face stress if rates remain elevated for longer or revenues decline.

**Exhibit 3: Credit card transitions to serious delinquencies have been particularly severe for the 18-29 and 30-39 age groups**

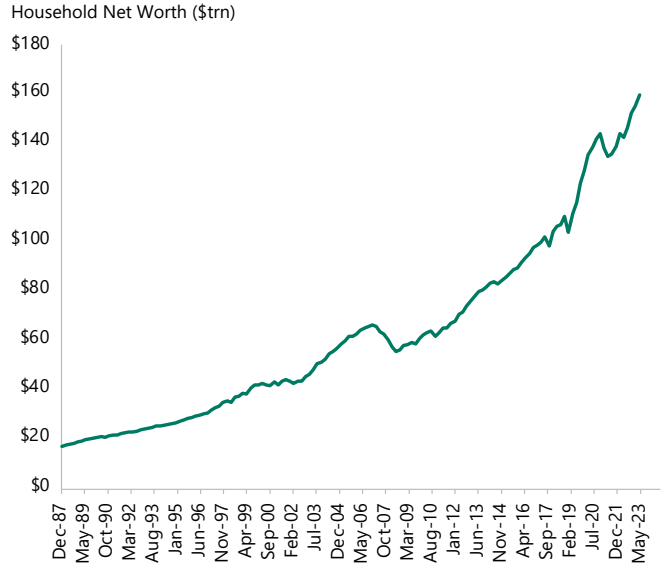


Data as of the third quarter of 2024.  
Source: Federal Reserve

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are still in line to slightly lower than pre-Covid levels across both mortgage and consumer debt (**Exhibit 1**). Further, household net worth has risen to record levels, supported by the rally in risk assets and rising real estate values (**Exhibit 2**).

**Exhibit 2: Household net worth has risen to record levels supported by the rally in markets**



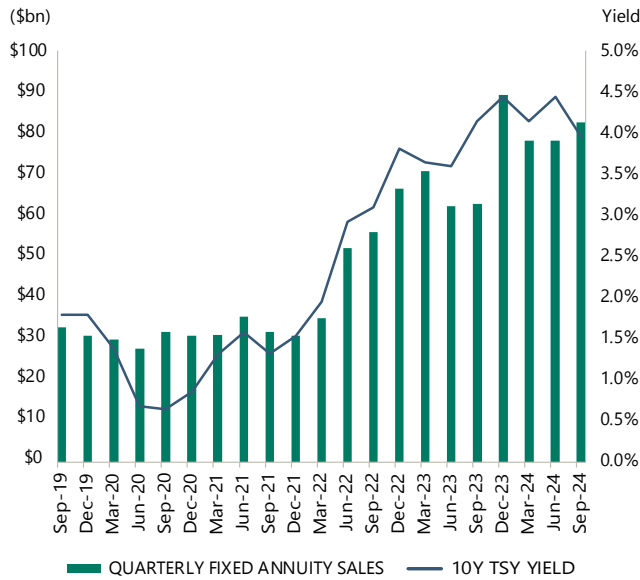
Data as of the third quarter of 2024.  
Source: Federal Reserve

For consumers, the rise in serious delinquency (90+ days) transition rates for credit cards since the lows of 2021 has been particularly severe for the 18-29 and 30-39 age groups, leaving these cohorts particularly vulnerable to a decline in wages if the economic backdrop weakens (**Exhibit 3**).

**TECHNICAL BACKDROP: STRONG AND IMPROVING**

While credit spreads have rallied, all-in yields remain elevated, driven by the increase in Treasury yields. For instance, the US investment grade bond yield has been at its 75<sup>th</sup> percentile since 2005. This has driven strong inflows into fixed income

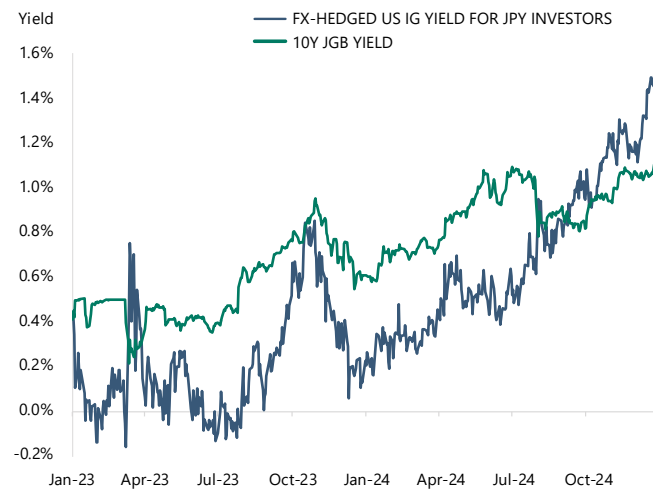
**Exhibit 4: Fixed income has seen strong inflows from annuity products**



Data as of September 2024.  
Sources: LIMRA, Bloomberg

Elevated all-in yields are likely to continue to support inflows into fixed income. Two other notable factors could also sustain demand: First, the steepening in the yield curve—the 2s/10s Treasury curve has steepened about 70 basis points in 2024, which has made US fixed income attractive for foreign buyers (Exhibit 6). Second, with the commencement of the

**Exhibit 6: Steepening of the yield curve has made US fixed income attractive for foreign buyers**

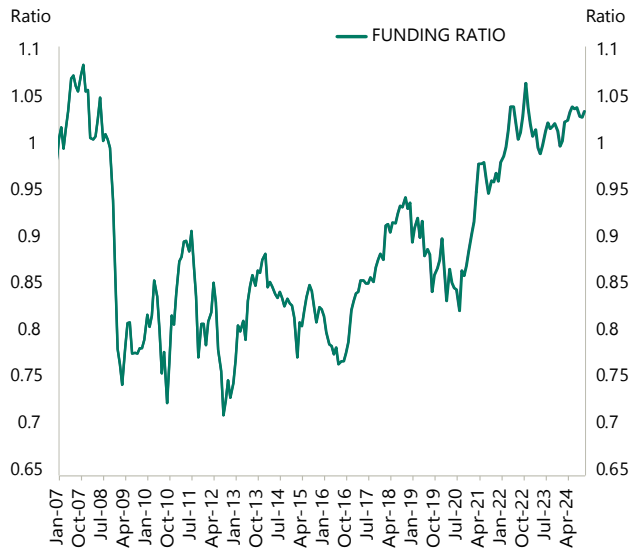


Data as of December 2024.  
Source: Bloomberg

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across bond funds and annuity products (Exhibit 4). Further, with improving pension funding ratios over the past few years, defined benefit pension plans have continued to increase their allocation to fixed income (Exhibit 5).

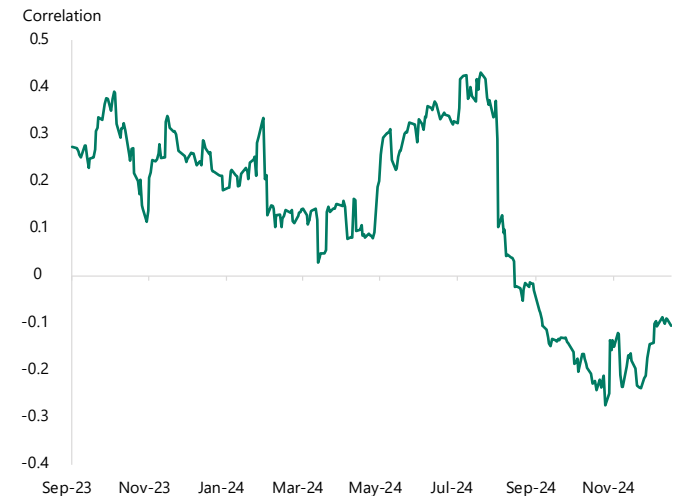
**Exhibit 5: Pension funding ratios have increased sharply over the last few years**



Data as of October 2024.  
Sources: Milliman, Bloomberg

Fed easing cycle, the correlation between stocks and bonds has reverted to its usual inverse relationship, improving the diversification benefit of fixed income in multi-asset portfolios (Exhibit 7). However, the correlation has turned positive in the last few weeks, a relationship we are monitoring closely, given the potential implications for fixed income.

**Exhibit 7: The correlation between stocks and bonds has reverted to its usual inverse relationship**



Data as of December 2024.  
Source: Bloomberg

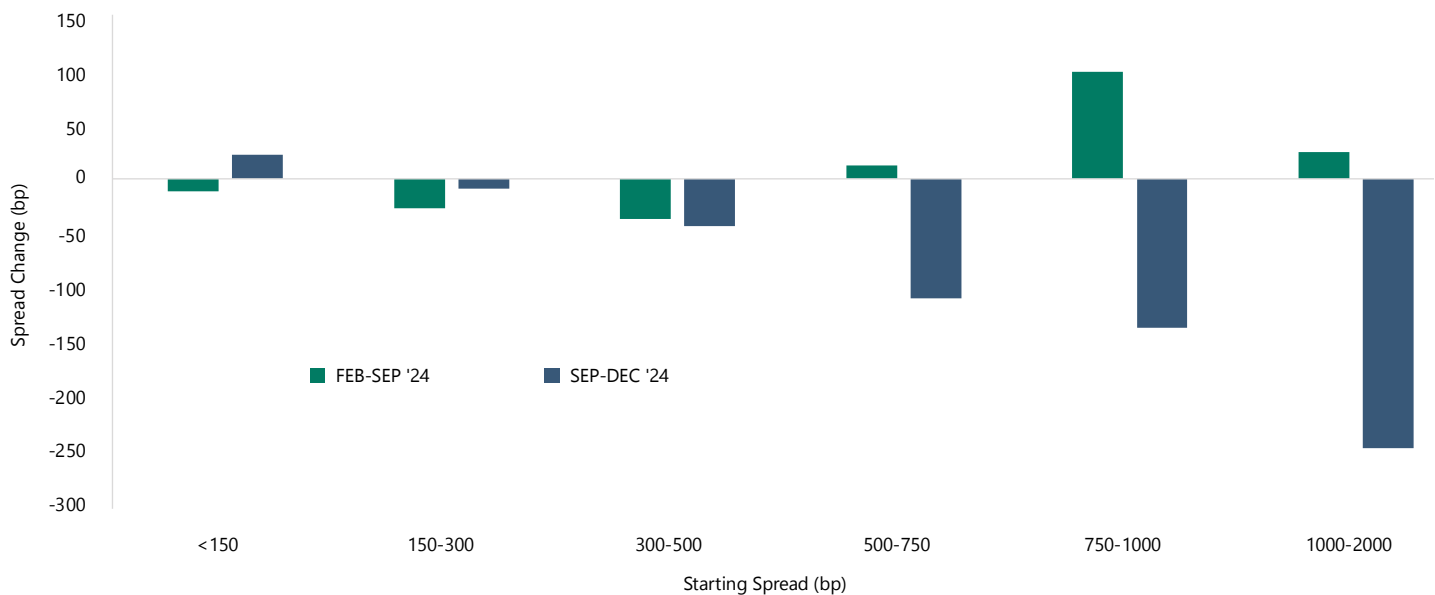
## Key Themes for 2025

Although we expect index-level valuations will be range-bound in 2025, we still anticipate that there will be a rich set of idiosyncratic opportunities, stemming in part from policies of the incoming administration.

1. **Elevated single-name dispersion:** While CCC-rated bonds lagged during the initial move tighter in high yield spreads that began in late 2023, there has been meaningful beta compression over the last few months. This is evident in **Exhibit 8** which shows the high yield spread change between two periods in 2024: February to September, and September to December. In both periods, high yield index spreads tightened by ~15 basis points,

but while the rally in the first period was driven by tighter trading/higher-rated credits, the latter has seen significant outperformance among the wider trading/lower-quality parts of the market. We believe the recent beta compression is not entirely justified by fundamentals and likely more a result of investors stretching for yield as overall spreads compress. Indeed, as per Morgan Stanley, the count of HY/LL issuers with interest coverage below 1.5x has remained unchanged/increased slightly in the last two quarters.<sup>6</sup> As a result, we expect the recent compression to eventually reverse, leading to relative underperformance of lower quality credits and an increase in dispersion.

**Exhibit 8: We have witnessed meaningful beta compression since September of last year**



Data as of December 2024.  
Sources: BofA Indices, Apollo

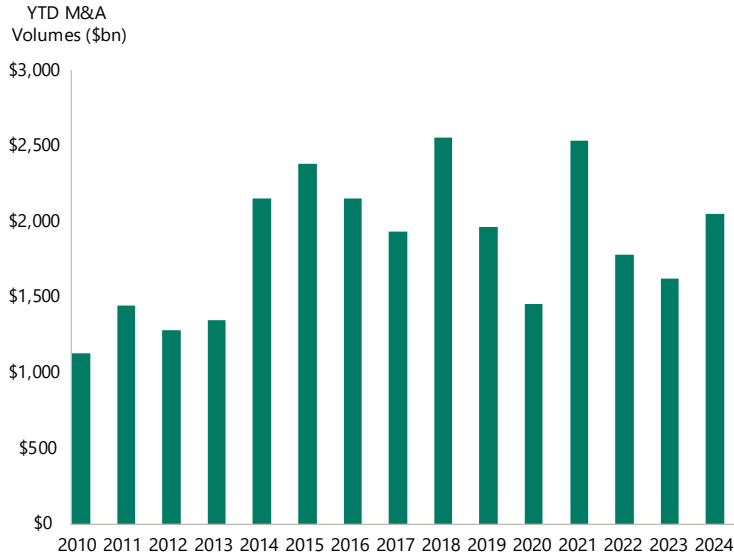
2. **US vs. Europe:** The European-US credit spread basis compressed throughout 2024 but still looks wide relative to its historical relationship. However, we prefer US credit in the current environment given the weaker growth backdrop in Europe and ongoing political uncertainty. Specifically, the wide OAT-Bund basis acts as a soft spread floor for French corporate risk which makes up about 20%

of the European investment grade index. Given continued political uncertainty in France, we expect OATs will remain under pressure—a headwind to tighter credit spreads in Europe. The weaker growth backdrop in Europe combined with the potentially negative impact of US tariffs will likely pressure lower-quality credit in the region as the year progresses.

<sup>6</sup> Morgan Stanley, January 2025.

3. **M&A:** US M&A volumes rose more than 25% year-on-year in 2024 (**Exhibit 9**), a trend we expect to continue in 2025, driven by robust economic growth, lower equity volatility, and a more supportive regulatory backdrop. M&A volumes

**Exhibit 9: US M&A volumes were up more than ~25% year-on-year in 2024...**



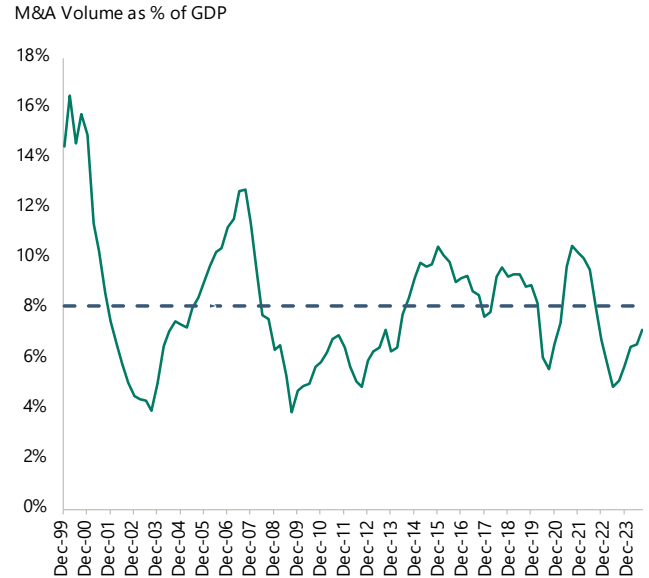
Data as of December 2024.  
Source: Bloomberg. M&A volume based on M&A deals where the target or acquirer is US based and excludes withdrawn and terminated deals.

4. **Corporate taxes & tariffs:** The Republican election sweep raises the possibility of a relaxation of the corporate tax regime. We expect that the limitation on interest deductibility, which was implemented as part of the 2017 tax bill and is currently set at 30% of an issuer’s EBIT, will be replaced with a more lenient EBITDA-based test. The easing of the interest deductibility limitation can be especially helpful for leveraged issuers with low interest rate coverage ratios. Morgan Stanley estimates that for loan issuers, the disallowed interest could decline by over 50%.<sup>7</sup> A less likely but more impactful outcome would be an overall decrease in the corporate tax rate. Trump has proposed<sup>8</sup> a reduction in the corporate rate from 21% to 15%—a potential boost to corporate after-tax free cash flow levels. Further, a lower tax rate would decrease the benefit of the interest tax shield from debt financing, potentially reducing the incentive for companies to issue debt.

<sup>7</sup> Morgan Stanley, October 2024.  
<sup>8</sup> Committee for a Responsible Federal Budget, US Budget Watch 2024, September 2024.

as a fraction of GDP are still below their long-term average, and we expect this to normalize in 2025—implying an ~15% year-over-year increase in volumes, with a bias to the upside (**Exhibit 10**).

**Exhibit 10: ...but M&A volumes as a fraction of GDP are still below their long-term average**



Data as of September 2024.  
Source: Bloomberg

Trump has also positioned higher tariffs as the cornerstone of his economic policy, calling for up to a 20% across-the-board tariff on all imports as well as a 60% tariff on Chinese imports, which if implemented, would formalize a reversal in the liberalization of trade that began following World War II. Higher tariffs risk not only companies that are large importers (e.g., retailers) but also large exporters due to the prospect of retaliation from trading partners. Higher tariffs also risk derailing the Fed’s fight against inflation, given at least some of the cost of higher tariffs will be borne by consumers in the form of higher prices. Already, Trump has threatened to impose an additional 10% tariff on goods from China and 25% tariffs on all products from Mexico and Canada. We expect more clarity on the breadth of Trump’s tariff policies in the first quarter.

5. **DOGE:** Since the new administration announced the creation of the Department of Government Efficiency (DOGE), we have seen some bifurcation among expected “winners” and “losers” as the market prices in sector-specific risks and opportunities. Certain industries which have relied on government demand, historically considered a dependable and recurring revenue stream, are facing uncertainty as the newly commissioned DOGE looks to identify cost savings and sources of government waste and inefficiency. Sectors vulnerable to DOGE-related initiatives include:

- Business Services – Government consultants and contractors reliant on government spending may face

headline risk as more details emerge regarding DOGE’s specific initiatives.

- Healthcare – Although the incoming administration has pledged to maintain Medicare spending, we believe Medicaid, which is one of the largest federal budgetary line items, could come under increased scrutiny, given the size and growth of the program. This in turn has prompted some Republican policymakers to call for the reform of the healthcare program. We are also cautious on the pharmaceutical industry, which is exposed to “stroke of the pen” risk related to Medicare drug pricing policies.

### III) Key Areas of Focus:

#### 1) PUBLIC-PRIVATE CONVERGENCE

Long viewed as competitors, the relationship between banks and private credit firms has recently grown more symbiotic. Over the past 12 months, more than a dozen banks have struck deals with private credit firms to partner, up from only two such transactions announced in the preceding year.<sup>9</sup> For instance, Barclays and AGL Credit Management announced in April that they will work together on originating private credit loans; Apollo and Citigroup disclosed in September that they are teaming up in a partnership that will target up to \$25 billion worth of private credit deals over the next five years; and a news report in October indicated that JPMorgan was teaming up with Cliffwater, FS Investments, and Shenkman Capital Management in an effort to broaden its reach in the private credit market.<sup>10</sup>

These ventures can enhance capital market access for a wide variety of issuers. **Banks can now marry their extensive Rolodex of client relationships with the tenor and flexibility of capital managed by private credit firms to offer tailored solutions to borrowers.** Further, rather than distributing these loans to a broad list of investors, banks, through these partnerships, can place these loans with a single, or select group of investors. This arrangement can allow for an expedited negotiation process as well as more customized structures that better fit the funding requirements of certain borrowers.

The emergence of these partnerships is occurring as the total assets under management (AUM) of private credit funds have increased to \$1.6 trillion, up 15% over the past five years.<sup>11</sup> As more issuers entertain private financing options, it's only natural that banks would look to leverage their strengths in order to maintain relevance in this growing part of the credit market. Most of the partnerships referenced above are currently focused on sub-IG corporates. Over time, we expect that similar partnerships will extend to the IG market as well. **Although funding is widely available for IG-rated companies in the public markets, the homogenous nature of the public IG market leaves a diverse set of borrowers with few options to customize their debt financings to meet their specific capital needs.** This has created the opportunity to provide more flexible solutions, with many IG-rated issuers increasingly looking to private credit as a more versatile financing source. We believe private credit and bank partnerships can help address this.

<sup>9</sup> Oliver Wyman, October 2024.

<sup>10</sup> Bloomberg, 2024.

<sup>11</sup> Preqin data, December 2024.

<sup>12</sup> Securities Industry and Financial Markets Association, December 2024.

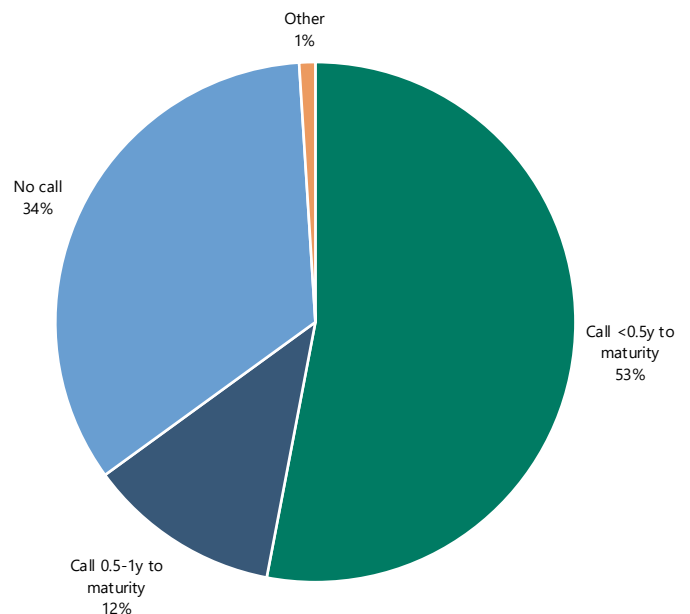
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#### ONE SIZE DOES NOT FIT ALL

The US corporate bond market has seen tremendous growth in the past quarter century, with the total amount of debt outstanding nearly tripling from ~\$3.5 trillion to ~\$11 trillion, of which nearly 90% is IG-rated.<sup>12</sup> One of the more curious features of the IG debt universe is the uniformity in structure: **Almost all corporate IG bond debt is senior unsecured that carries fixed, non-deferrable coupons with a bullet maturity.** Unlike high yield bonds, most IG securities offer limited optionality for issuers to call their bonds prior to maturity. Nearly 87% of the public IG bond universe (by amount outstanding) is either non-callable or callable less than six months prior to maturity, with another 12% callable within a year of maturity, offering little flexibility to issuers (**Exhibit 11**).

Standardization is not without benefits. With a consistent debt structure applied across most IG bond issues, investors can more readily price and value bonds and assess relative value which can help the syndication and tradability of deals across a wide set of investors. This has likely been an important driver of the significant growth witnessed in the IG market. However, what has been a feature of the IG market, may now

**Exhibit 11: Nearly 87% of the IG universe is either non-callable or callable less than six months prior to maturity**

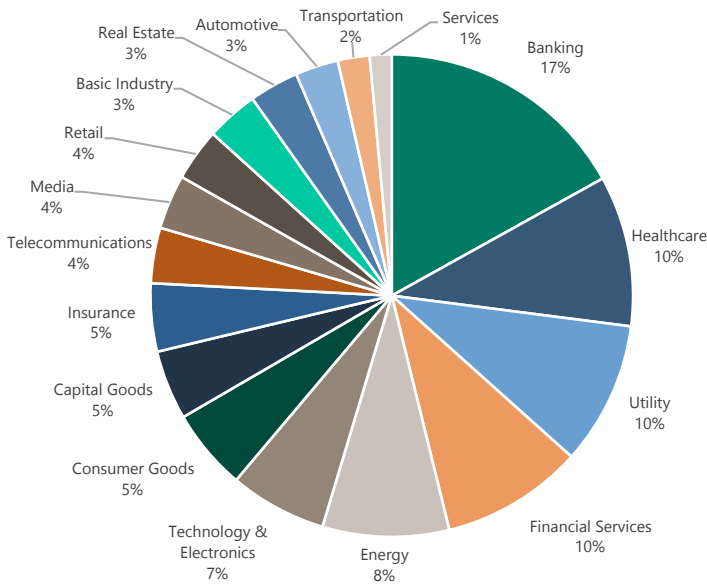


Data as of December 2024.  
Sources: BofA Indices, Apollo



be developing into a bug in certain situations. The IG market currently encompasses 1,300 different issuers across 19 sectors and 68 sub-sectors (Exhibit 12). It includes businesses of different sizes and in different stages of their life cycle, facing varying degrees of capital intensity and with revenue profiles that exhibit a broad range of cyclicalities. Further, IG issuers are domiciled in more than 50 countries, with varying tax laws and accounting rules.

**Exhibit 12: The IG market currently spans 1,300 different issuers across 19 sectors**



Data as of December 2024. Total may not sum to exactly 100 due to rounding. Sources: BofA Indices, Apollo

**The fact that such a diverse set of companies relies on an identical debt structure to raise funding appears highly inefficient.** While more frequent issuers can at least stagger their maturities across multiple issuances, this only partially modulates the cash flow demands on a company, and less regular issuers must settle for a largely monolithic capital structure with a few bullet maturities.

A bespoke solution that provides a company with more flexibility is clearly a better option for many borrowers, but it may also benefit lenders by more closely synchronizing debt

servicing requirements with a company’s underlying cash flow profile. For instance, a company with significant upfront capex needs for projects which may not generate revenue in the near-term would benefit from the option to defer initial coupons. Conversely, a company with aging manufacturing facilities—which are generating steady but diminishing cash flows—may secure increased upfront borrowing capacity through the addition of amortization payments.

Companies will likely be more willing to pay for the added flexibility provided by these bespoke solutions. There may be a question then about how these options affect the underlying credit risk of an issuer. If appropriately structured, we believe these financing alternatives can empower management teams to optimize their operational decision-making by more naturally matching the cash flows of their business with their funding structure, which may ultimately reduce risk versus fixed-coupon bullet-maturity debt. Furthermore, in return for more flexibility, borrowers may be willing to pledge collateral and/or provide structural seniority, enhancing downside protection. The result is a bespoke financing solution that provides borrowers with the flexibility they desire while offering investors an avenue to pick up spread over conventional IG debt in a downside protected manner. Indeed, corporate hybrid securities—with partial equity credit, deferrable coupons and embedded call options—are a prime example of a flexible funding solution that is gaining popularity among IG-rated issuers.

We believe that bank-private partnerships will accelerate the adoption of these alternatives, addressing the uniformity in structure across the IG-corporate bond universe. Through these alliances, banks can offer custom solutions to issuers that leverage the capital of their partners, which is typically more flexible and longer duration in nature. The bilateral relationship between the partnership and borrower can also simplify the structuring and negotiation process because terms must only address a single investor’s requirements as opposed to those of a broad syndicate. Furthermore, the growing AUM of private credit firms provides funding at a scale that is meaningful for IG-rated issuers.

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## CONVERGENCE OF PUBLIC AND PRIVATE CREDIT

We expect to continue to see the relationship between banks and private credit firms turn more symbiotic through alliances, which can be broadly classified into two categories:

1. **Forward-flow agreements:** Arrangements where banks originate loans on behalf of private credit buyers. Recent examples include Oaktree-Lloyds, PNC-TCW, Centerbridge-Wells Fargo, and AGL-Barclays.<sup>13</sup> Most of the forward-flow agreements are currently focused on loans to middle-market companies. However, as we discussed above, we expect that similar partnerships will eventually extend to IG companies as well.
2. **Risk transfer trades:** Existing risk on bank balance sheets is also being actively transferred to private investors. For instance, in February 2024, Barclays announced an agreement to sell \$1.1 billion of credit card receivables to Blackstone.<sup>14</sup> More broadly, banks have sold a significant amount of first-loss risk through Significant Risk Transfer (SRT)

trades—with some estimates indicating that as of late October, loans tied to such transactions have exceeded \$1 trillion<sup>15</sup>—alleviating risk-weighted asset pressures on bank balance sheets.

**We believe these partnerships will continue to blur the distinction between public and private markets that is already underway in some segments of the credit market.**

In the leveraged loan space, issuers actively choose between public and private markets for a variety of reasons, including the market environment and the timing and complexity of their funding needs. Companies with more immediate capital needs/more complexity tend to choose the private market, while those with more traditional needs opt for the public route. We expect something similar will develop in the IG credit markets: Companies will choose the broadly syndicated route for regular-way issuance but will choose to work with private lenders for more structured and complex financing solutions.

<sup>13</sup> Lloyds Bank and Oaktree Partner; Citi and Apollo; PNC and TCW; Wells Fargo - Centerbridge Partners; AGL Credit and Barclays.

<sup>14</sup> Barclays and Blackstone Credit & Insurance Agree to Sale of Credit Card Receivables - Blackstone.

<sup>15</sup> Bloomberg, October 2024.

## 2) FINANCING THE DATA CENTER BOOM

To read the 2025 Apollo Credit Outlook, you probably downloaded this document from the [Apollo Academy website](#), or possibly received an email inviting you to read this paper, or perhaps those of you who are AI adopters may have prompted ChatGPT to summarize Apollo’s perspectives on the credit markets contained herein. Regardless of what action you took to get here, one thing is certain: it was facilitated by a data center.

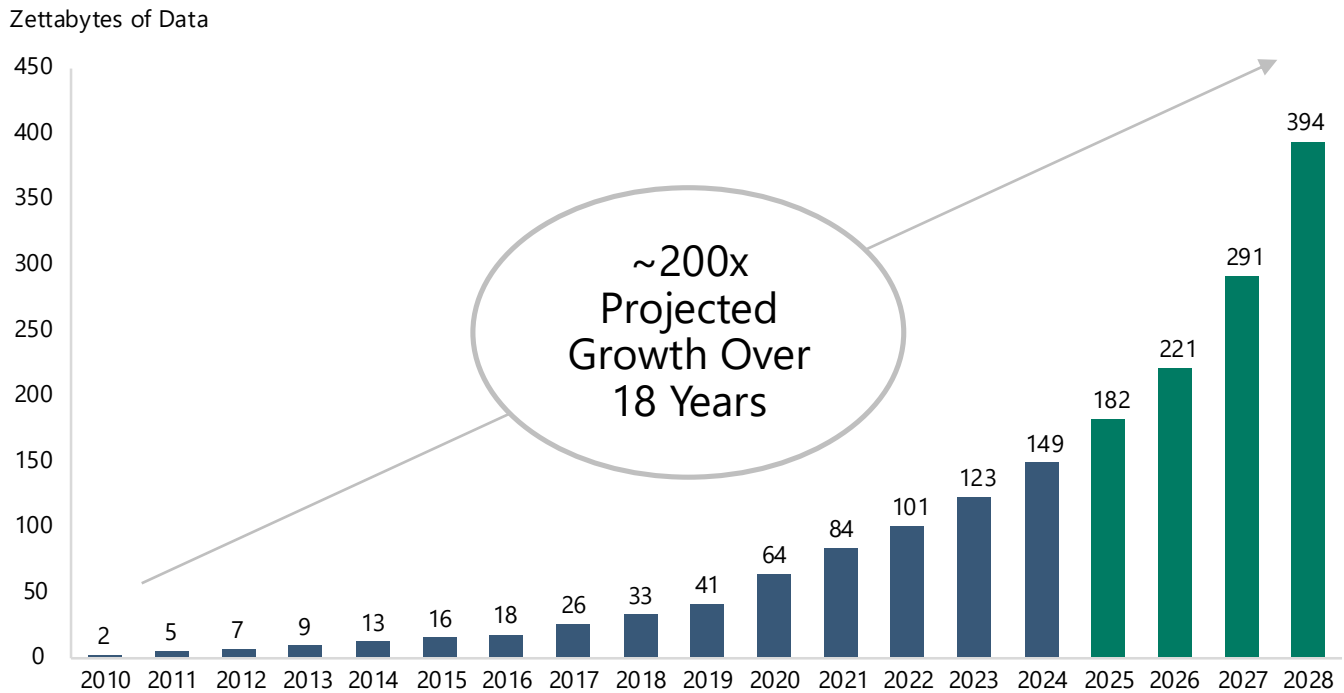
### CURRENT LANDSCAPE

The exponential increase in data has fueled the growing need for servers and data centers in the US. With the rise of cloud computing, artificial intelligence, and the Internet of Things, businesses and consumers are generating vast amounts of data that need to be stored, processed, and analyzed. This surge in data is further supported by the expansion of digital

services, remote work, and online entertainment. As a result, cloud service providers and enterprises are investing heavily in data center infrastructure to ensure they can handle the increased data load, maintain performance, and provide reliable services, as well as expand capacity for AI training and inference functions.

The exponential growth in data has been so immense that traditional units of measurement like gigabytes or terabytes are now insufficient to capture the associated scale forcing the industry to adopt zettabytes (one quadrillion megabytes) as its preferred measure of data usage. As shown in **Exhibit 13**, the total amount of data created, captured, copied, and consumed globally is estimated to have reached a record 149 zettabytes in 2024 and projected to more than double to 394 zettabytes by 2028.<sup>16</sup> To put this into perspective, if you stored one zettabyte of music, you would have a playlist that could play continuously for 194 million years without repeating a single song.<sup>17</sup>

**Exhibit 13: Exponential growth in data has been so immense that traditional units of measurement are insufficient to capture the industry**



Data as of May 2024.  
Source: Statista

<sup>16</sup> WHAT'S THE BIG DATA, *How Much Data Is Generated Every Day*, May 2024.

<sup>17</sup> TopTenReviews, Petabyte, Exabyte, Zettabyte, Yottabyte - just how big are they? September 2020.

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Looking forward, a major part of the future growth in data and computing demand will likely come from the widening use of generative AI. The inherent nature of this technology, which necessitates continuously training larger and larger foundational models, requires significant computational power. According to some estimates, the compute demands for training frontier AI models has grown by 4-5x per year from 2010 to 2024.<sup>18</sup> The revenue market size of generative AI companies—at ~\$40 billion in 2022—is expected to grow at a compound annual growth rate (CAGR) of 42% over the next 10 years and could reach \$1.3 trillion by 2032.<sup>19</sup> According to results from a survey administered by McKinsey<sup>20</sup> in April 2023 to 1,700 participants across a variety of industries and companies, nearly one-quarter of surveyed C-suite executives said they are personally using generative AI tools for work. Additionally, 40% of respondents indicated that their organizations will increase their investment in AI overall.

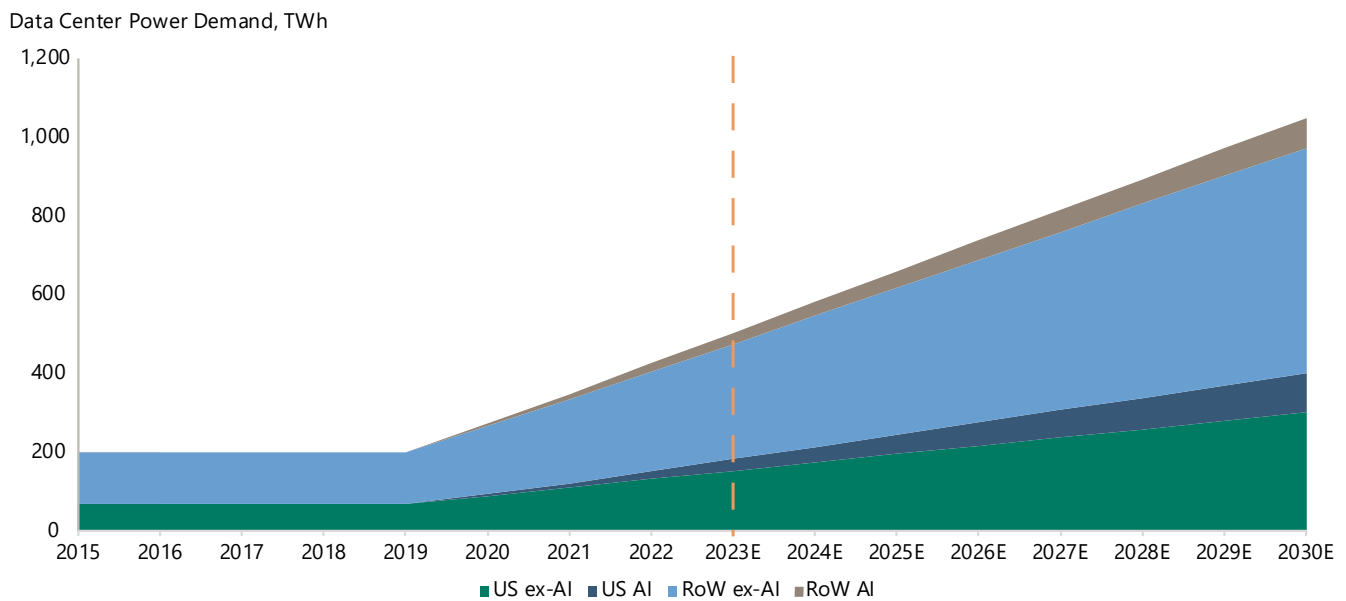
To illustrate what this AI-related growth could mean in terms of data center demand, consider the fact that if we were to deploy the latest ChatGPT into every search done by Google, it would require half a million servers backed by more than 4 million graphics processing units (GPUs), which carry an estimated price tag of \$100 billion.<sup>21</sup> Goldman Sachs estimates that AI will represent about 19% of data center power demand by 2028.

This anticipated rise in data, storage, and computational demand has positioned data centers as a critical bottleneck within the broader digital infrastructure space.

**FUTURE COSTS**

After limited growth in 2015 to 2019, data center-related power demand has doubled in the three years to 2023 and is expected to increase 160% through the rest of the decade **(Exhibit 14)**.

**Exhibit 14: Data center power demand is expected to increase 160% through the rest of the decade**



Data as of April 2024.  
Source: Goldman Sachs

<sup>18</sup> Epoch AI, Training Compute of Frontier AI Models, May 2024.  
<sup>19</sup> Bloomberg Intelligence, June 2023.  
<sup>20</sup> McKinsey, April 2023.  
<sup>21</sup> Source: Semianalysis, February 2023

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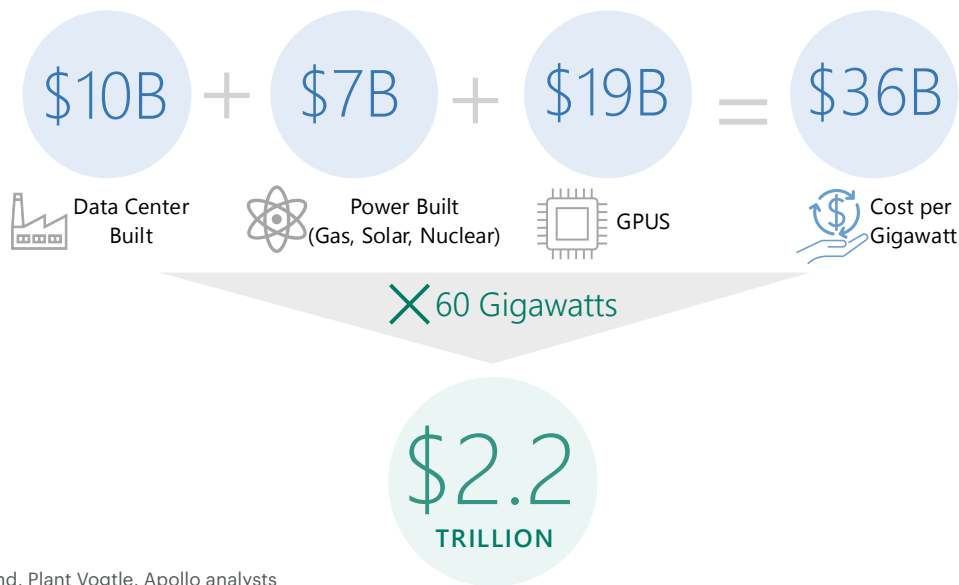
The meteoric rise in data consumption and processing needs has propelled the emergence of mega-scale gigawatt data centers—facilities with a power capacity of one gigawatt (a unit of power that is equal to 1 billion watts)—to serve these growing compute needs. Current estimates indicate that the US will require about 80 gigawatts of data center capacity by 2030, an increase of 60 gigawatts from 2024.<sup>22</sup> The largest hyperscalers, including cloud service providers Amazon, Microsoft, and Google, are aggressively expanding data center capacity to support the growing demand for their services as well as their AI-related investments. The top three hyperscalers currently control close to 15 gigawatts of capacity today and we expect ~90% of data center growth will be driven by five hyperscalers—Microsoft, Amazon, Google, Meta, and Oracle—by 2030.

The initial investment related to building this digital infrastructure can vary depending on the size and scope of the project. Current estimates scope data center build costs at around \$10 billion per gigawatt of data center capacity.<sup>23</sup>

If we accept the estimates that the digital infrastructure scale-up is going to require over 60 gigawatts of capacity to be built by 2030, then the associated upfront development cost could reach nearly ~\$600 billion.

These estimates exclude the electricity generation capacity required to power these data centers as well as the GPUs and related hardware installed in these data centers. A 1.5 gigawatt newly built combined-cycle gas turbine—enough power for about 1 gigawatt of critical IT load—costs ~\$1.6 billion,<sup>24</sup> a gigawatt of solar production cost \$3.1 billion<sup>25</sup> and a gigawatt of nuclear power capacity in the US costs about ~\$15-\$16 billion.<sup>26</sup> Finally, this scale-up will require fabs—semiconductor fabrication facilities where chips are produced—to manufacture the logic and memory chips used in servers—which carries an expected cost of \$19 billion per gigawatt of corresponding data center capacity.<sup>27</sup> Factoring in this supporting infrastructure pushes the total cost of 60 GW of data center capacity to over \$2 trillion (**Exhibit 15**).

**Exhibit 15: Total cost for data center build could surpass \$2 trillion**



Sources: Turner & Townsend, Plant Vogtle, Apollo analysts

We believe that the quantum of investment supporting this capacity buildout will surpass any industrial scale-up in history. In comparison, the transcontinental railroad buildout in the 19<sup>th</sup> century, which involved 21,000 workers laying

1,776 miles of track to connect the US from east to west, cost about \$60 million<sup>28</sup> at the time, which is equivalent to \$1.4 trillion in inflation-adjusted dollars.<sup>29</sup>

<sup>22</sup> McKinsey, Digital Infrastructure Development. October 2024.

<sup>23</sup> Turner & Townsend, Data Center Cost Trends, DCCI 2024.

<sup>24</sup> Apollo analysts.

<sup>25</sup> McKinsey, September 2024. Due to intermittent generation, renewables have low capacity factors. Additional cost is required to firm generation through the integration of battery storage and / or overbuilding capacity.

<sup>26</sup> Apollo analysts, Third Act, Plant Vogtle: The True Cost of Nuclear Power in the US. May 2024. Calculation based on the \$36 billion cost for \$2.4GW of unit 3 and unit 4 of Plant Vogtle.

<sup>27</sup> Nvidia, Semianalysis, Apollo analysts. Calculation based on compute/server costs.

<sup>28</sup> History Channel. 10 Ways the Transcontinental Railroad Changed America. September 2019.

<sup>29</sup> Assuming average annual inflation of 2.1%.

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## HOW ARE DATA CENTERS FINANCED

Construction loans or project finance, mostly provided by banks, are typically the avenue most companies will choose when planning the construction of a new data center. The sponsors—which can either be developers or investors—provide equity funding which is used to acquire the land, secure the necessary permits, and provision the site with power. The sponsor can then secure a lease with a hyperscaler or other creditworthy anchor customer based on their compute and geographic needs. Once the lease is signed, the sponsor can then solicit construction financing that is released based on construction milestones and loan-to-cost calculations of the buildout, with the initial security typically consisting of a first mortgage on the real asset, paid-in equity, and completion guarantees provided by the sponsor.

While large tech companies have the capacity and expertise to build data centers themselves, the volume and capital that is needed is part of the reason why they choose to outsource a portion of their data center needs to large developers, who can streamline the project management complexity through a replicable model across multiple builds, while providing an alternative source of financing through a leasing arrangement. This solution is attractive for both parties. Investors can secure an 8%-10% stabilized lease yield with a creditworthy counterparty while the tenant, typically a hyperscaler, can limit its upfront cash outlay, eliminate cost overrun risk, and reduce their ownership of long-dated real estate. Hyperscalers, including Microsoft, Google, Meta, and Amazon, have historically preferred to self-build, but they also rely on third party data center developers to lease capacity—typically 20%-45% of their data center capacity needs—with the exception of Oracle, which only leases.

Construction financing is typically structured as a three- or four-year facility—depending on the expected duration of the construction—with extension options, that is typically refinanced via the asset-backed securities (ABS) market. ABS are pools of loans collateralized by underlying assets that generate a regular cash flow and are packaged together into investable securities. The ABS market finances a variety of assets including automobile loans, credit card receivables, aircraft lease receivables, equipment leases, and music royalties in addition to digital infrastructure. This market is separate from the agency MBS and agency CMBS markets.

The overall ABS market is a \$1.6 trillion market and makes up 3% of the total fixed income market in the US.<sup>30</sup> Morgan Stanley estimates that around 5% of total US data center capacity sits in ABS trusts, or about \$25 billion outstanding.<sup>31</sup>

<sup>30</sup>Guggenheim, *The ABCs of Asset-Backed Securities (ABS)*, July 2024.

<sup>31</sup>Morgan Stanley, *The AI Angle of ABS: Data Center ABS to Double by 2007*. September, 2024.

<sup>32</sup>Apollo analysts, S&P Global. October 2022.

If the percentage of data centers financed by the ABS market remains constant over the next three years, this would imply growth of around 20% per year, resulting in the data center ABS market reaching ~\$49 billion by 2027.

Still, given the sheer size and unique characteristics of many of these projects (the expected average useful life of a data center facility is 40 years, a power plant is almost 40 years, and a chip fab is at least 20 years),<sup>32</sup> as well as the large quantum of capital that will be needed to finance the buildout of data centers and the associated infrastructure, we believe that the current financing options and the depth of the existing capital markets will be insufficient to address the needed buildout.

The key challenge with the current approach is the size of the builds. The ABS market historically has supported up to ~\$1 billion per issuance, which can scale with a master trust across issuances, but requires diversity. The newest generation of data centers can cost up to ~\$2 billion for a single asset, which will complicate the task of building a diverse pool of assets that the ABS market can digest. Further, the banks that originate the construction financing for these facilities are also starting to reach obligor concentration limits and will soon have to address the maturities of the 2020-2022 vintage of construction loans.

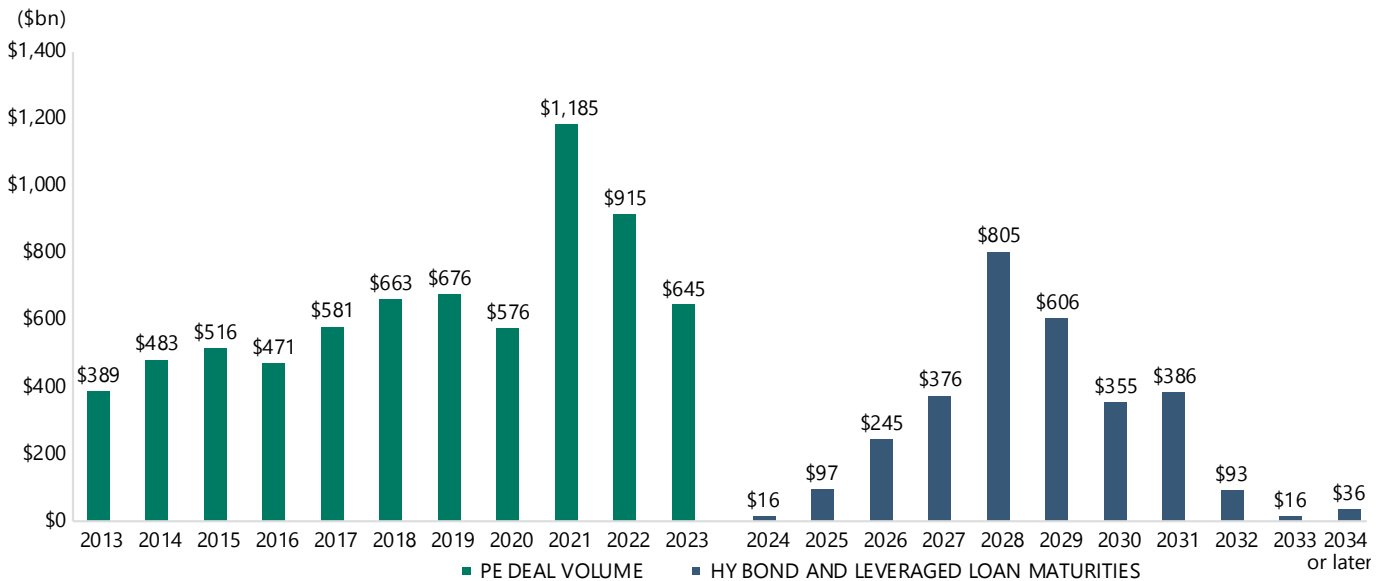
We think that **bespoke, privately originated, investment-grade financing (Private IG) will be part of the capital solution to meet the increased demand for AI-related infrastructure, including data centers, semiconductors, and power generation**, given the unique characteristics of the asset class: Data centers are long-lived, durable assets that generate predictable cash flow through leasing arrangements with creditworthy counterparties. Due to the flexibility and duration of capital that can be offered by Private IG solutions, developers and tenants can creatively finance many of these projects utilizing non-dilutive capital to reduce balance sheet leverage and support credit ratings.

### 3) MATURITY WALL: RISK OR OPPORTUNITY?

In March of 2024, the Organisation for Economic Co-operation and Development cautioned investors about the dangers in the bond market given the looming maturity wall, warning “market supervisors need to monitor closely both debt sustainability in the corporate sector and overall exposures in the financial sector.” At the end of 2022, nearly \$700 billion of debt was set to mature prior to 2025 across the US high yield bond and leveraged loan markets.<sup>33</sup> Today, that figure—sub-investment grade debt set to mature prior to 2025—sits below \$100 billion as most issuers have successfully rolled their near-dated maturities. This turn of events follows a now familiar pattern in credit markets, where investors will fixate on an upcoming maturity wall supposedly lurking over the horizon, only to see it addressed by refinancing activity in the capital markets.

Looking forward, we suspect investors will soon focus on the upcoming 2026/2027 maturity wall—and for good reason: In 2026 and 2027, over \$620 billion of high yield bonds and loans are set to mature. This is a direct result of the record shattering pace of private equity (PE) deployment during and following the pandemic, fueled by ultra low interest rates. For context, PE deal making hit \$1.2 trillion and \$915 billion in 2021 and 2022, respectively—twice the average annual pace over the five years preceding the pandemic (**Exhibit 16**). High yield and leveraged loan issuance in 2021 rose to \$465 billion and \$615 billion, respectively, the most on record and nearly 50% of sub-investment grade debt issued that year was sponsored, according to data tracked by PitchBook LCD.

**Exhibit 16: The 2026-2027 maturity wall is a direct result of the PE dealmaking in 2021-2022**



Data as of December 2023/August 2024.  
Sources: PitchBook, JPMorgan, S&P/IHS Markit

Despite the cyclical nature of maturity walls, we have seen some notable differences in the way the 2024/2025 cohort of maturities was digested that we think hints at a growing opportunity looking forward. Unlike earlier maturity wall extensions, over the past two years, many companies have looked beyond the syndicated markets for refinancing

alternatives. Private credit, sometimes employing complex and innovative structures, along with out-of-court distressed exchanges, has played a key role in addressing these maturities for more levered issuers unable to access the broadly syndicated markets.

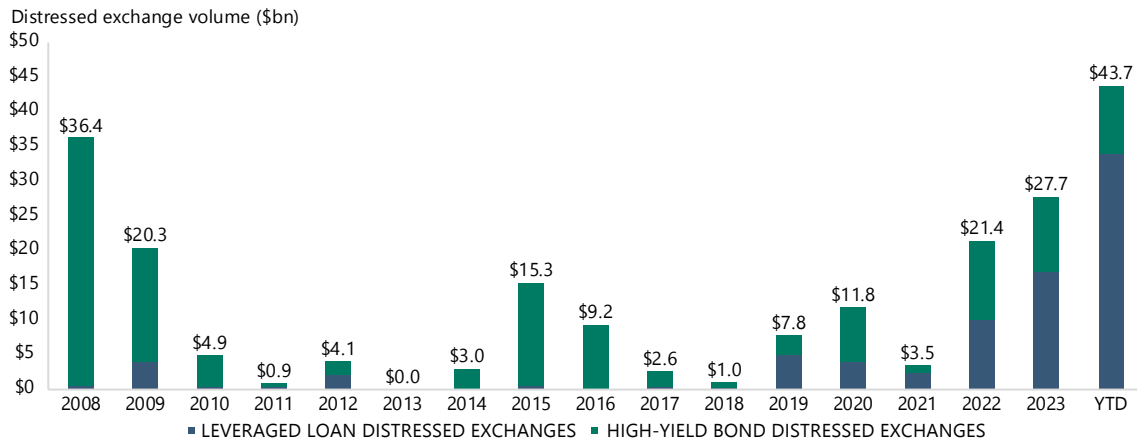
<sup>33</sup> PitchBook LCD, JPMorgan, Morgan Stanley. November 2024.

## 2025 CREDIT OUTLOOK: DEFYING GRAVITY

We estimate that since 2022, \$40 billion of syndicated loans have been refinanced with private credit solutions.<sup>34</sup> Undoubtedly, a sizable portion of this activity has targeted maturities through 2025. It's also probably no coincidence

that distressed debt exchange activity through the end of November 2024—at \$44 billion—has already set a new annual record (**Exhibit 17**).

### Exhibit 17: Distressed exchange activity in 2024 is at a record



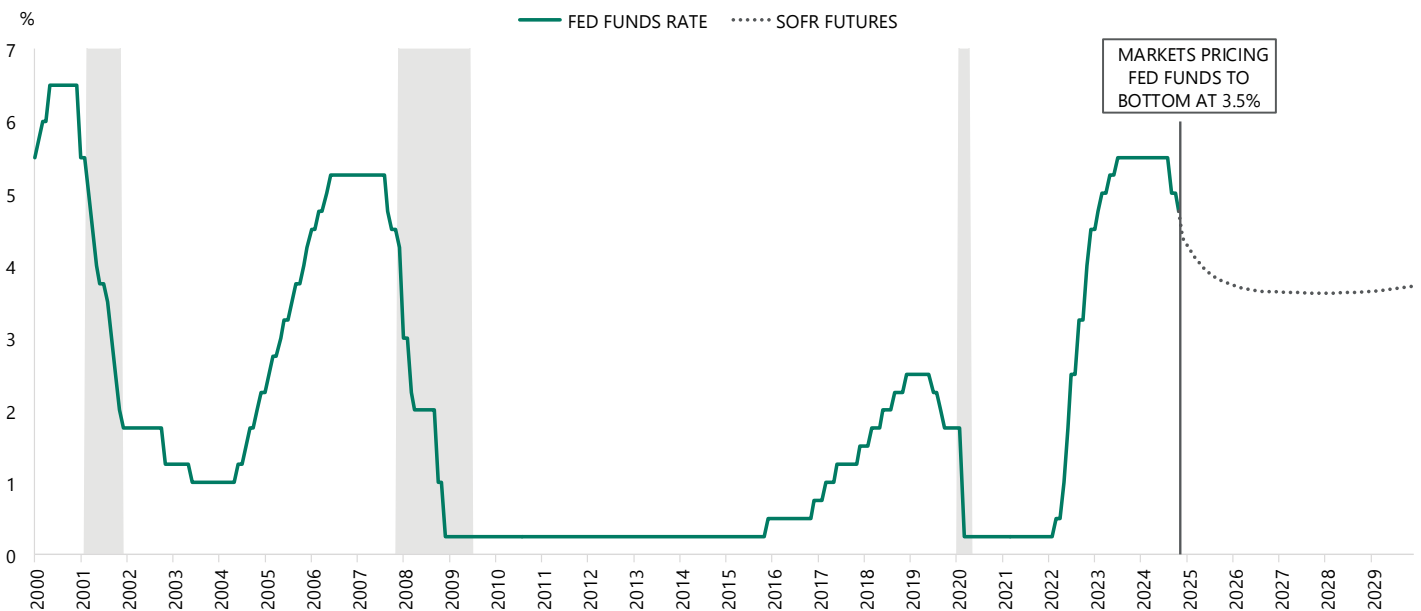
Data as of December 2024.

Sources: JPMorgan, PitchBook Data, Bloomberg, S&P/IHS Markit

Higher rates are forcing companies to think more creatively about how they finance themselves, and we think this has created attractive opportunities for asset managers who can straddle both the public and private markets and provide bespoke financing solutions. While the Fed has embarked on a monetary-policy easing cycle—having lowered the upper

bound of the federal funds rate since September by 100 basis points to 4.5%—we believe interest rates will stay relatively higher for longer compared to historical standards (**Exhibit 18**). Even after this latest series of rate cuts, short-term rates are still at their highest level since 2007, excluding the most recent rate-hike cycle.

### Exhibit 18: We believe interest rates will remain higher for longer



Data as of November 2024.

Sources: Bloomberg, Apollo Chief Economist

<sup>34</sup>PitchBook LCD, November 2024.

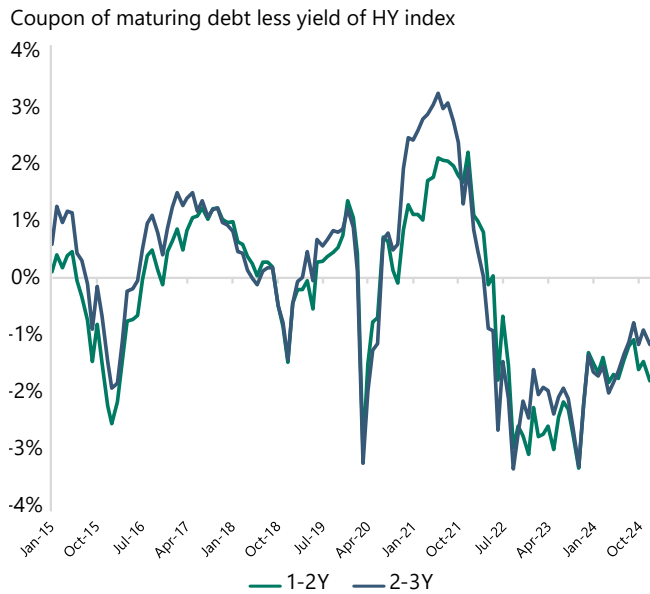
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With yields still meaningfully higher than their 2021 lows, the coupon of high yield maturing debt is 1%-2% lower relative to the high yield index (**Exhibit 19**), suggesting that the cost of refinancing upcoming bond maturities will be meaningfully higher. Given this dynamic, along with a total volume of maturing high yield debt that is at its highest level in nearly 10 years (**Exhibit 20**) and the expected higher rate environment, many issuers are likely to look for outside-the-box alternatives.

The precedent set by the explosion of out-of-court maturity extension activity and structured private credit solutions over the past two years may also serve as a tailwind for the broader adoption of these deal structures. Companies, advisors, and investors have steadily formalized the blueprint for these types of deals. We expect that this accumulated

**Exhibit 19: Coupon of maturing debt is lower than refinancing yield**

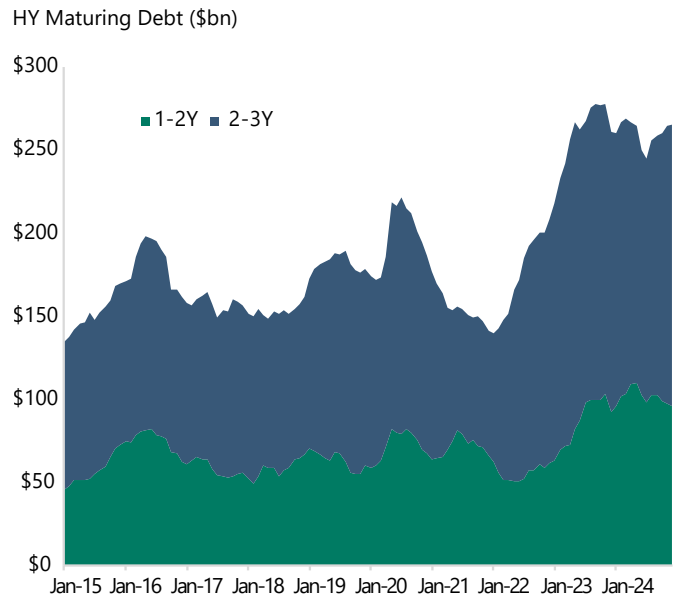


Data as of December 2024.  
Source: BofA indices, Apollo

experience will push these newer deal structures and related liability management exercises (LMEs) from the vanguard toward the mainstream, potentially expanding the opportunity set in addition to the ramping maturity schedule detailed above.

**We believe providing companies with bespoke solutions to address this maturity cliff amid a higher rate environment could represent one of the largest private credit and creative capital deployment opportunities in the history of the sub-investment grade market.** Its magnitude will be partially dictated by the state of the capital markets over the next few years, but we expect companies will start thinking about their refinancing strategies for 2026 and 2027 maturities as 2025 unfolds.

**Exhibit 20: The amount of maturing high yield debt is at the highest in nearly a decade**



Data as of December 2024.  
Source: BofA indices, Apollo

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Mr. Cortese is a Partner in Credit at Apollo, where he is responsible for its Global Trading business and is the Deputy Chair of its Multi-Credit Committee. Prior to joining in 2021, John was Co-Head of US Credit Trading at Barclays. Previously, he was a High Yield and Distressed credit trader at Lehman Brothers. John is a board member of the Make-A-Wish Foundation's Metro & Western NY branch, as well as Dartmouth College's Hopkins Center for the Arts. John graduated from Dartmouth with a BA in Economics and is a CFA charterholder.



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### **Rob Bittencourt, Partner** Corporate Credit

Since joining Apollo in 2006, Rob has focused on Apollo's credit businesses in a variety of capacities, including as Co-Head of Liquid Opportunistic Credit, Head of Research for Global Corporate Credit, and currently as Co-Head of Opportunistic Credit. He has also led research coverage of a variety of sectors including consumer/retail, technology, telecom/media and chemicals. Rob currently serves as the Co-Chair of the Opportunistic Investment Committee and as a member of several investment committees across the Apollo platform. He co-founded Apollo's digital asset strategy and is a member of Apollo's Credit Management Committee.

Rob graduated cum laude from Harvard College with a BA in economics.

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Shobhit Gupta joined Apollo in January 2024 as the Head of Multi-Credit Strategy and is responsible for identifying key themes and opportunities across global credit.

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Mr. Gupta has a PhD in Operations Research from MIT, and a Bachelor's degree in Mechanical Engineering from IIT Bombay.



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Head Credit Writer

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