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H1 2025 ALTERNATIVE CREDIT INSIGHTS

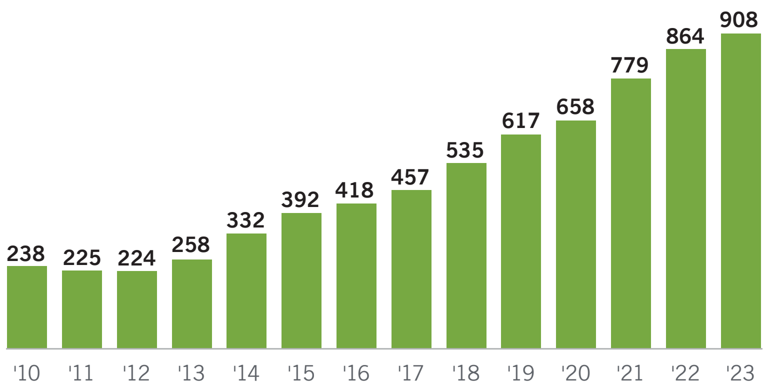
Sourcing new pathways

The evolution of alternative credit

Alternative credit is not a new phenomenon, however, up until the 2008 Global Financial Crisis (GFC), it was largely overlooked by investors, reserved primarily to real estate debt, collateralized loan obligations and investment grade private credit. The crash was a catalyst for the market. Banks froze traditional lending options and limited those capabilities due to tighter regulations shortly after. Borrowers had to look elsewhere for financing, opening up the world of alternative credit.

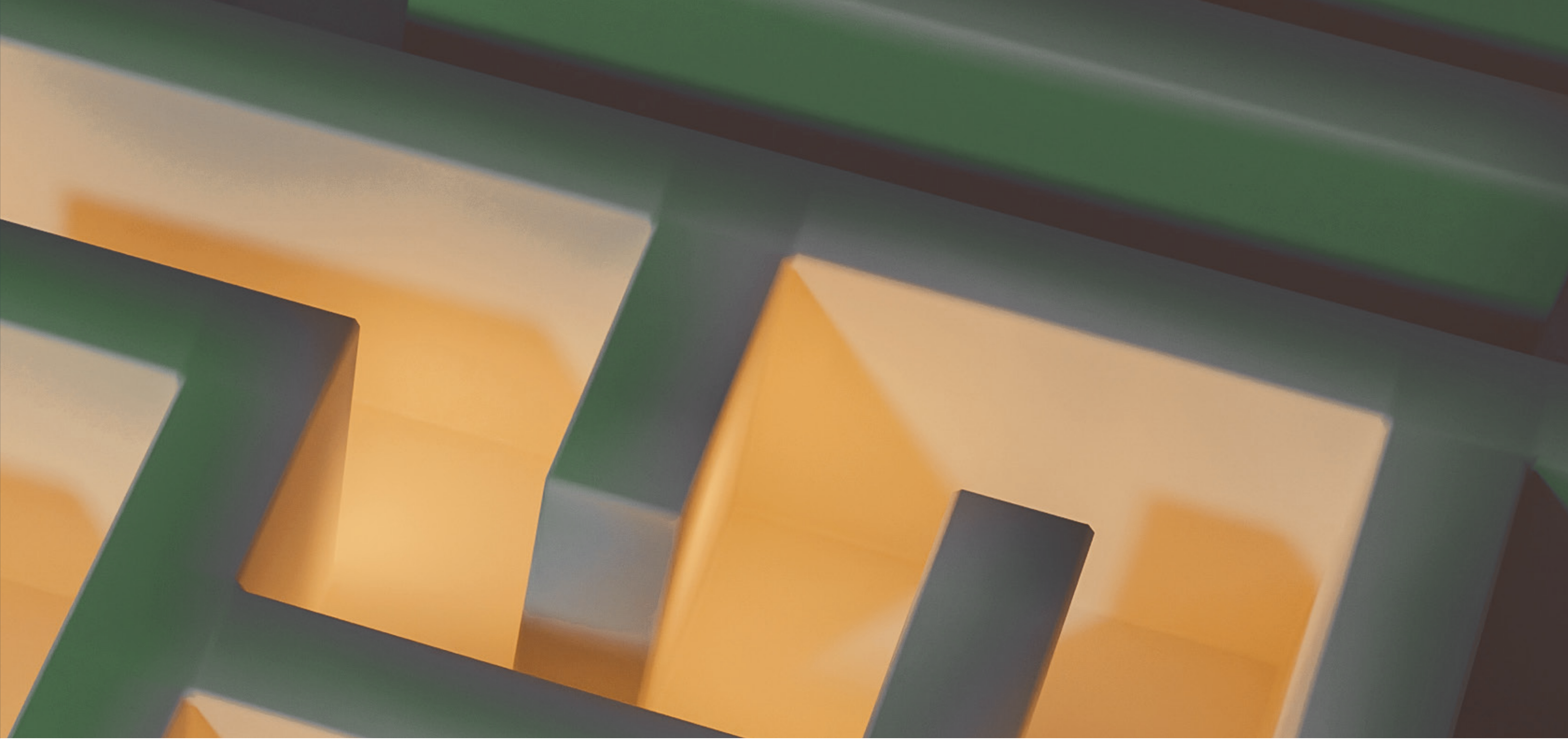
Figure 1: The growth of alternative credit

U.S. BSL CLOs outstanding ($ billions)



Source: Bank of America CLO Factbook as of November 2024.

OPINION PIECE. PLEASE SEE IMPORTANT DISCLOSURES IN THE ENDNOTES.

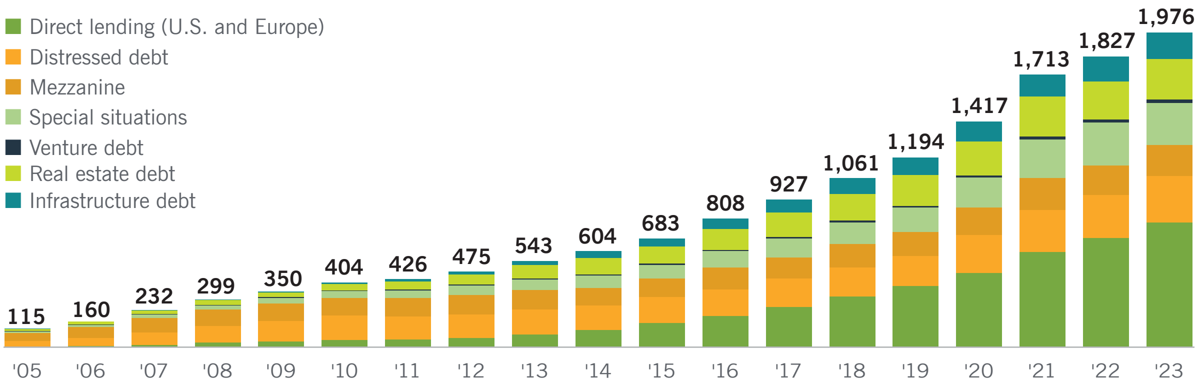


The GFC was the spark allowing for innovation

Alternative credit is made up of asset classes that provide financing options outside of traditional fixed income markets. Investors were drawn to these investments following 2008, as public markets faced challenges — initially from extreme volatility during the crisis and then challenges in providing adequate income in the ensuing ultra-low interest rate environment.

While the GFC was the spark, what has carried alternative credit through the last 15 years is more than just a "right place, right time" sentiment. The private market has sought to differentiate itself from its public counterpart, becoming an attractive option for new companies as well as larger, more established companies, seeking financing through different vehicles. The development of different asset classes in the alternative credit market has allowed for greater innovation, both in how we finance loans and how issuers are able to borrow, offering new opportunities across the risk/return profile for investors.

Global private debt AUM by strategy ($ billions)



Source: Preqin as of November 2024.

Key points to know

New market, new risks

Alternative credit is now functioning in a very different environment compared to the last 15 years. Interest rates have returned to normal historical levels — albeit still relatively higher since the GFC. This is good news for investors overall, but there are questions over what will happen to the quality of alternative credit investments.

Segments of the alternative credit markets are relatively young and remain untested in different market conditions. The volatility following the COVID-19 pandemic was quickly contained by central bank and government stimulus, so the impact of a full-blown recession on some asset classes remains to be fully understood. However, this is not true for all alternative credit asset classes, while some are in their infancy, others provide a strong track record across different market cycles.

From a lending perspective, new entrants to the market inevitably leads to competition for market share, and the potential for underwriting standards to waver as lenders fight for business.

These risks underline the importance of a methodical investment process. Across alternative credit asset classes, risks can be mitigated through a rigorous fundamental credit underwriting process and a disciplined approach to risk-taking. For investors, mitigating risks will be based on identifying managers with proven track records in the alternative credit markets, who can access the spectrum of assets to deliver diversified income.

More to come

The rise of alternative credit was borne from necessity, for borrowers seeking financing and for investors seeking alternative income streams. Since the GFC, the alternative credit market has blossomed, driven largely by the success of direct lending. However, the market contains a catalogue of asset classes which provide the now essential diversification for investors, and we are confident that a similar growth story will be seen across these investment options (Figure 2).

Figure 2: Credit sectors can provide equity beta and reduced inflation sensitivity

15-year period ending 31 Dec 2023

	Correlation	
	U.S. equities	**Inflation**
U.S. equities	1.0	0.1
Global equities	0.9	0.2
Direct lending	0.7	0.4
Real estate debt	0.4	0.1
Private placements – BBB-rated corporates	0.6	0.0
Senior loans	0.7	0.4
CLOs BB-rated debt	0.7	-0.1

Source: Bloomberg, ICE BofA, JPMorgan, S&P, Cliffwater Direct, and Gilberto Levy as of 31 Dec 2023.

Data for direct lending is from 31 Mar 2023. Data for CLO BB-rated is only available from 30 Jun 2014. Representative indexes: **U.S. equities:** S&P 500 Index; **Global equities:** MSCI ACWI ex USA Index (ND); **Direct lending:** CDLI Total Return Index; **Real estate debt:** Gilberto Levy G1; **Private placements – BBB-rated corporates:** ICE BofA BBB U.S. Corporate Index; **Senior loans:** S&P LSTA Leveraged Loan Index; **CLOs BB-rated debt:** JPMorgan U.S. CLO Index – BB rated. **Performance data shown represents past performance and does not predict or guarantee future results. It is not possible to invest directly in an index.**

Alternative credit strategies in focus

- **Direct lending:** The market continues to see opportunities across senior and junior loans. The falling rate cycle in Europe and the U.S. should provide ample opportunity.
- **Collateralized loan obligations (CLOs):** The multi-decade tested asset class continues to provide attractive opportunities across the capital structure. Higher for longer-base rates support healthy relative yields across the CLO debt spectrum. On the equity side, the long-term, non-marked-to-market nature of CLOs complements the current market dynamics with CLO equity.
- **Energy infrastructure credit:** The sector continues to benefit from structural tailwinds, as the demand for power to support generative AI, cloud storage, and electrification are driving investment opportunities within both the sustainable infrastructure and energy security sectors.
- **Commercial real estate debt:** Following a challenging period, the overall real estate market has undergone systemic shifts. Opportunities are appearing as borrowers return to this new-look market.
- **Commercial Property Assessed Clean Energy (C-PACE):** The green loan market continues to expand, while opportunities to support environmental construction and social issues support demand for the real estate financing instrument.
- **Investment grade private credit (IGPC):** The market continues to benefit from a diverse risk-return profile. Borrowers continue to enter the market as private credit provides strong buckets of capital, while lenders continue to benefit from attractive risk-adjusted returns.

The following sector insights do not showcase all of our alternative credit capabilities, nor all our expectations for the asset classes. To learn more about the alternative credit services available, reach out to your Nuveen representative or visit nuveen.com/alternativecredit.

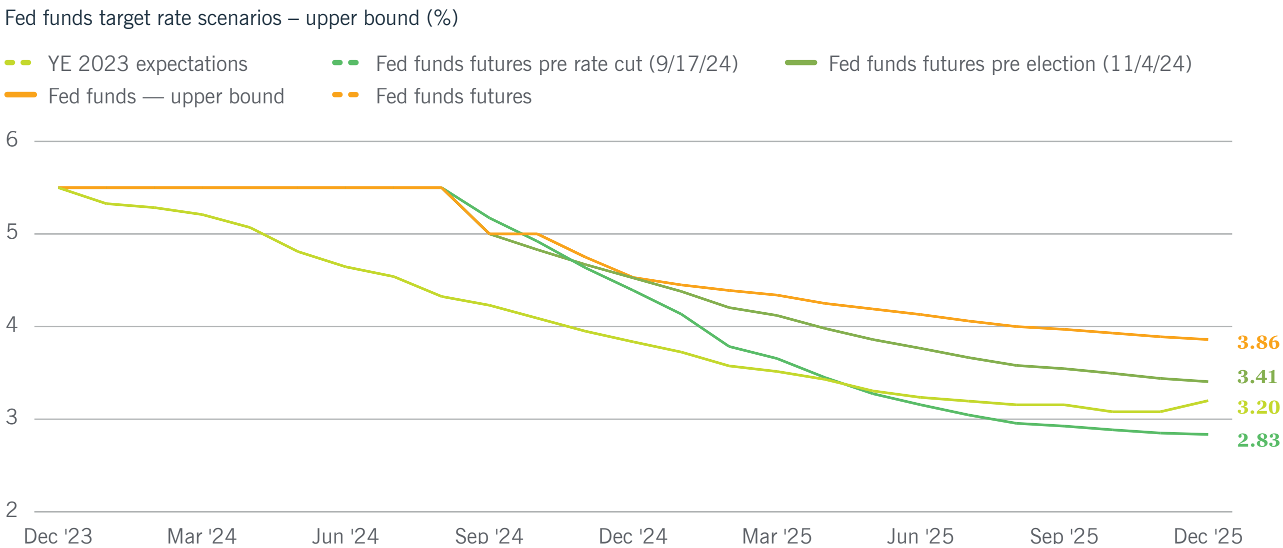
> “
> **Alternative credit contains a catalogue of asset classes that can provide essential diversification for investors.**

Sector outlook

Direct lending

- **United States:** As we enter 2025, the U.S. Federal Reserve appears to have pulled off a tricky balancing act, taking the heat out of inflation while also keeping the U.S. economy running smoothly. Yet any further cuts are expected to come through slowly through 2025 (Figure 3) and we appear to have reached terminal rate levels. This should sustain the investor-friendly private debt terms – lower borrower leverage and higher yields – that supported the golden age moment we have experienced over recent years.
- With reference rates down by 100bps in 2024, companies have had some relief in the cost of capital and interest burden. As more stable interest rates create greater certainty around valuations, we expect to see a sustained and meaningful pick-up in merger and acquisition (M&A) activity. Lower financing costs should help bring private equity buyers and sellers closer together on valuations, narrowing what has until recently been a stubbornly wide price expectations gap.
- Private debt investors should benefit from higher all-in yields for longer, which, although lower than during peak interest rates, are still close to historic highs. With businesses having proven they can withstand and expand in the current rate environment, we see the potential for highly favorable risk-adjusted returns in 2025.
- Investor focus could shift back to the fundamentals of company earnings as the shock of peak interest rates is now behind us and there is greater certainty for the 12 months ahead. Valuations will be less sensitive to interest rates than they have been over the past two years. Improved valuation certainty kicks off a virtuous cycle as more realizations increase private capital fundraising, which leads to more deployment. This, combined with solid U.S. GDP growth, creates favorable currents for private capital investment, a set of circumstances that could make 2025 a notable vintage for returns and income generation.
- The interest rate environment has led to a dispersion in performance among managers, exposing cracks in portfolios for those with less disciplined approaches. However, defaults across the industry remain very low, and we believe scaled, disciplined managers will continue to separate from the pack.

Figure 3: The new higher rate market will continue to put pressure on borrowers



Source: Bloomberg. YE 2023 expectations as of December 29, 2023; Fed Funds futures pre-rate cut as of September 17, 2024; Fed Funds futures pre-election as of November 4, 2024; current Fed Funds futures as of November 25, 2024.

- **Europe:** European direct lending enters 2025 with optimism. While some European economies may not be in growth mode, and the geopolitical situation remains a concern for the continent, we are likely going to be in a stagnant or low growth environment in the coming quarters.
- Fortunately, direct lending has a focus on defensive/non-cyclical industries. Hence, it is not dependant on GDP growth excelling, slow and steady is sufficient for healthy portfolios and provides ample opportunity for deal activity as well.
- Softening inflation will ease the burden on issuer earnings, and declining interest rates will ease pressure on cashflows (Figures 4 and 5).
- Rate cuts will eat into returns. However, the senior segment of loans remains an attractive position, making up for returns impacted by rate cuts through early repayment fees, and the spreads of these loans.
- Market conditions will require a expert understanding of the direct lending environment in 2025. The underlying risks will not shift significantly, with expected default and loss rates being a focus point but likely to remain muted within our portfolio. In this regard, our investment focus pays off: Non-cyclical, defensive sectors with companies reporting EBITDA between €50 and €100 million — the upper middle market.
- We see changes in two developments of the market.
  - The first is the continued split between the small cap market and the upper middle market. To invest in the upper middle market private debt funds require fund sizes of €10 billion or more – and only a minority of GPs qualify, hence, competition is limited. This is in stark contrast to the small cap market, where every private debt fund can invest and competition is fierce. In this polarized environment, upper middle market lending remains an attractive space for investors. Market entry conditions remain difficult to achieve for many in the lower end. The upper middle market also avoids riskier or untested borrowers because larger companies are less exposed to defaults. This bifurcation presents excellent conditions for GPs active in the upper middle market.
  - The second focus point is impact strategies, which have been an increasingly important area for investors. We believe direct lending has the potential to deliver impact-focused goals for investors. We have also seen greater demand from borrowers in impact-specific loans, and we believe impact strategies allow further options for how the asset class will develop over time.

Figure 4: Softening core inflation projected in the medium term

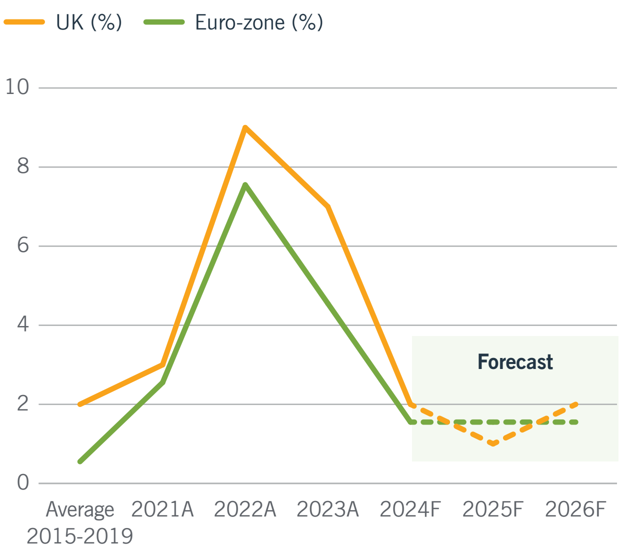
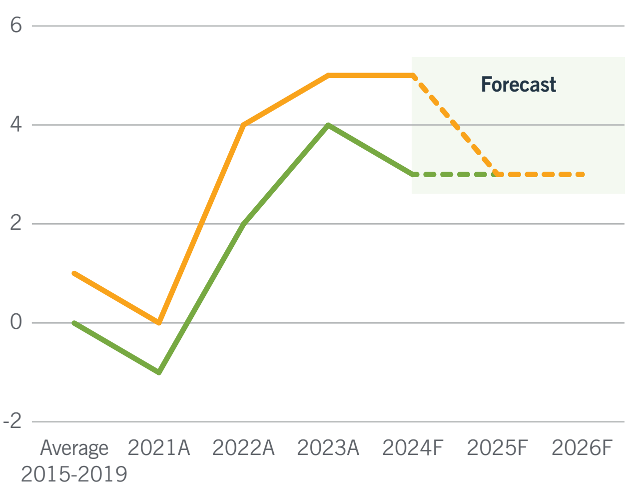


Figure 5: "Higher for longer"

Central bank deposit interest rates and forecasts (%)

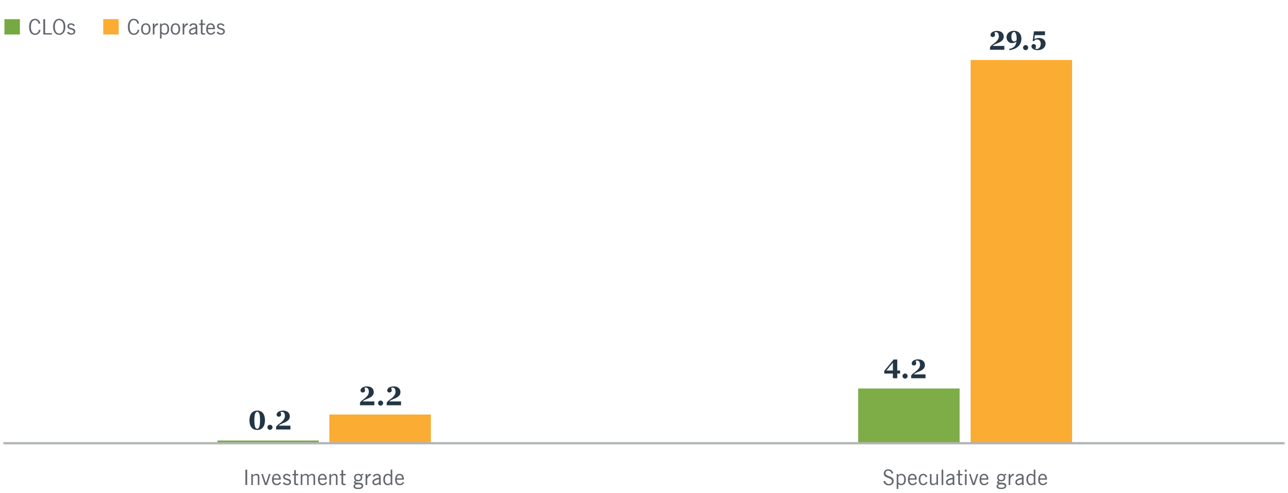


Source: Bloomberg as of 1 Nov 2024.

Collateralized loan obligations (CLOs)

- Senior loan new issuance activity dropped in 2024, as M&A activity remained muted in the higher rate environment. As a result, CLOs were reliant on the secondary market for collateral, contributing to rising loan prices. However, as rates begin to decline and potential fiscal and regulatory changes from the U.S. election become apparent, risk appetites and M&A activity are expected to bolster leading to new loan issuance throughout 2025. This mix of new issuance alongside the continued opportunities in the secondary market should provide a balanced supply profile which may benefit CLOs through healthy asset spreads.
- Despite falling loan issuance, CLO activity boomed in 2024 driven by robust reset and refinancing activity. The declines in CLO liability spreads allowed transactions issued during the last couple years to reduce their financing costs. U.S. broadly syndicated loan CLO issuance volume in 2024 totaled $429 billion, breaking the previous record set in 2021 ($381 billion). Both new issue ($163 billion in 2024 vs. $161 billion in 2021) and reset/refinance ($266 billion in 2024 vs. 219 billion in 2021) volumes exceeded 2021's banner year.[1]
- The long-term, non-marked-to-market nature of CLOs complements current market dynamics. CLO liabilities pushed tighter throughout 2024 and will likely continue trending in that direction, providing attractive financing for CLO equity in 2025. Combined with active portfolio management, CLO equity is ideally positioned to capitalize on future market volatility, given the locked-in cheap financing. The liquid nature of the underlying loan portfolios provides greater freedom for trading into attractively priced loans, or exiting positions in issuers that begin to show signs of distress. In addition, the 2024 rate cuts should improve capital market access for lower-quality borrowers, reducing defaults and downgrades, though the benefits will not be universal.
- CLO market growth is set to continue as more investors enter the space, attracted by the potential for yield enhancement and portfolio diversification. Tested throughout a variety of market cycles, CLOs have moved into the mainstream as an attractive complement to other alternative asset classes as well as traditional fixed income, with the CLO capital structure offering a spectrum of risk-return options for investors of all types.

Figure 6: CLO default rates have been relatively low (%)

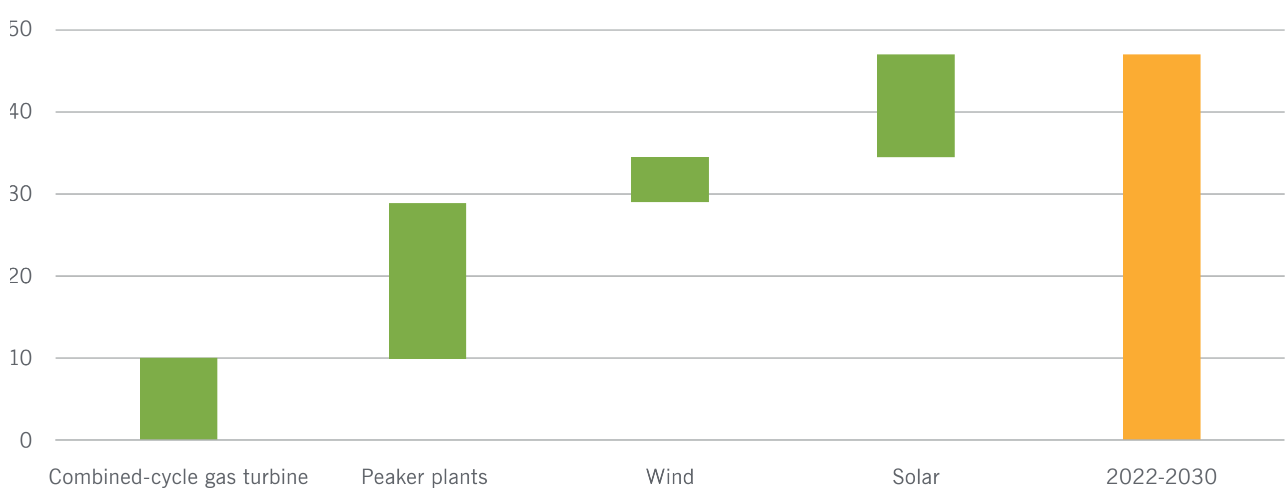


Sources: Corporates: 10-year horizon average cumulative issuer-weighted global default rates by alphanumeric rating, 1998-2023 from Moody's "Default Trends – Global: Annual default study: Corporate default rate to moderate in 2024 but remain near its long-term average"; CLOs: US CLOs, 10-year horizon WR-unadjusted cumulative impairment rates by original rating, 1993-2023 from Moody's "Impairment and loss rates of global CLOs: 1993-2023"

Energy infrastructure credit

- Energy Infrastructure Credit (EIC) continues to benefit from the megatrend of sharply increasing U.S. electricity demand with estimated annual growth of 2.4% for 2022-2030 relative to a base of 0.1% experienced during 2011-2021.[2] This demand is fueled by the power needs of generative AI and data centers, and the onshoring of manufacturing for energy intensive industries such as semiconductors and large-scale batteries. For example, the New York-based Micron semiconductor facility when fully operational is estimated to use as much electricity as the states of Vermont and New Hampshire combined.[3]
- This growth in electricity demand was catalyzed by decarbonization efforts and net-zero commitments which support renewable energy generation. Given intermittency challenges, energy storage which can be installed alongside existing and new renewable generation is poised to grow. Furthermore, the cost of solar generation with four-hour storage is now at parity with gas-fired generation augmenting demand for this solution.[4] Due to the 24/7 reliable nature of traditional power, essential for datacenters, EIC believes gas-fired generation will experience increased demand alongside renewables and energy storage – an "all of the above" approach will be needed for energy supply. In parallel, energy efficiency has emerged as a promising investment segment that should benefit from increasing power prices.
- From the policy standpoint, President Trump supports the removal of emissions restrictions which should positively impact traditional power as less regulation decreases operating costs. Additionally, he champions the oil and gas industry and LNG exports, which should experience tailwinds in the new administration. Outside of conventional energy, Doug Burgum, Secretary of the Interior nominee, is expected to be an advocate for biofuels, carbon capture, and grid-connected battery storage to accommodate increased power demand from data centers and domestic manufacturing and Secretary of Energy nominee, Chris Wright is expected to support nuclear and geothermal.
- Since 2021, $161B of approximately $200B of clean energy manufacturing investments have been located in Republican districts. While largely supported by the Inflation Reduction Act (IRA), these projects have brought jobs and economic benefits to these areas, so EIC believes a complete repeal of the IRA, which would require Republican support, is unlikely.[5,6]
- EIC's investment platform intentionally targets sustainable infrastructure and energy security, enabling EIC to invest in the best risk-adjusted returning credit opportunities. Due to the team's multi-decades of experience investing in energy and infrastructure credit, EIC has successfully navigated structural shifts, such as governmental leadership and policy changes, commodity price cycles, and evolving energy technology landscapes. We believe the certainty of increased energy demand set against a changing backdrop means EIC is positioned to succeed in a variety of potential future investing environments.

Figure 7: ~47 GW of incremental capacity to serve data center demand



Source: Goldman Sachs Global Investment Research.

Real estate debt

- Valuations of U.S. commercial real estate (CRE) have been hit hard over recent quarters, impacted by uncertainty over inflation and the future of rate cuts. The effect of higher interest rates on real estate cap rates beginning in 2022 was the catalyst for much of the volatility around CRE valuations. The same was seen in European markets, as higher rates pushed valuations lower, making entry to real estate on both the debt and equity side less palatable. We believe we are now past the worst of this environment.
- Even as rate cuts in the U.S. and Europe seem likely to continue, we believe borrowers will begin to more fully access the market, buoyed by a level of certainty in CRE that was missing in recent years. The prospect that we are now past the worst of the correction allows for opportunities to catch the upside of a market recovery. It is a case of when, not if, buyers return to the market.
- We are now returning to historical norms for interest rates with long-term rates (Figure 8). This higher base rate means real estate debt investors will likely be well-placed to achieve higher returns in exchange for taking less risk, as we enter this new real estate cycle.
- A risk-off tone will likely persist in the CRE debt market for some time, with an onus being placed on quality from a debt perspective. The lead up to this new cycle affected sectors differently. Factors, such as the pandemic, continue to shape the office sector. The last two years have seen a shakeup of where real estate will see growth, and different themes continue to affect sectors and regions in wholly new ways.
- We continue to favor sectors which benefit from long-term tailwinds, such as student accommodation in Australia, which is likely to benefit from an increasingly affluent and youthful demographic in surrounding countries. We see similar strength in European student accommodation, which should also benefit from supply and demand imbalances. Self storage in Europe and the U.S. continues to be an exciting alternative for debt investors.
- Despite the short-term challenges in U.S. industrial, we believe the sector remains one of the most interesting from a debt perspective. While there are pockets of over-supply currently, new construction across all major asset classes is falling rapidly, and the sector will likely be well-placed to benefit from rising valuations. Alongside this, multifamily remains a steady sector with strong demand.
- In short, lending opportunities are attractive as we witness a new vintage for real estate debt, supported by compelling fundamentals in several of the sectors noted above, in an overall higher base-rate environment.

Figure 8: RIP "lower for longer"

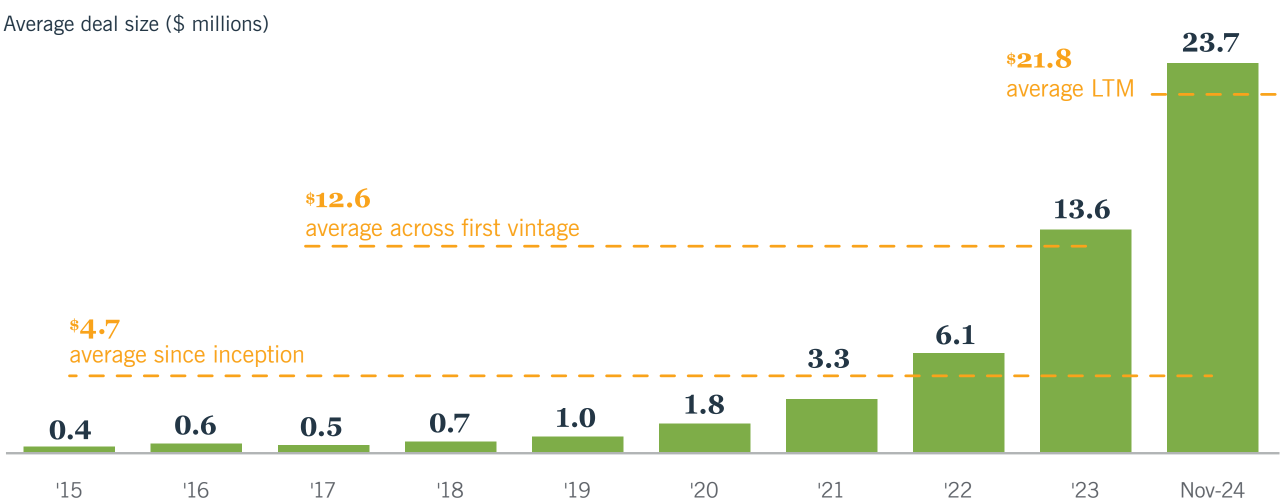
U.S. 10-Year Treasury yield and professional rate forecasts (%)

Source: Bloomberg as of 1 Nov 2024

Commercial Property Assessed Clean Energy (C-PACE)

- C-PACE continues to mature as an asset class, giving way to new opportunities for investors and borrowers. While volatility muted much of the real estate activity in 2024, the C-PACE market excelled as liquidity tightened, offering a flexible alternative financing mechanism for CRE owners and developers. C-PACE loans provide CRE owners with attractive financing to fund energy efficiency upgrades to the built environment. Investors in C-PACE loans benefit from structural seniority as well as clean energy and impact opportunities. 2024 was an unprecedented year for both originations and capital raising (Figure 9) driven by continued investor interest in the unique structural enhancements of the asset class, such as the senior position C-PACE financing takes in the capital stack.
- C-PACE's resiliency enabled Nuveen Green Capital (NGC) to take a countercyclical approach throughout 2024 and establish new markets and partnerships as a result. Insulation from national political issues continues to provide an attractive backdrop for C-PACE activity, as programs are established and managed at the state or municipal level through state legislation, shielding it from federal oversight. In addition, C-PACE continues to have bipartisan appeal as an economic development tool including creating over 49,000 jobs to date from financed projects.[7]
- Tighter regulations and emissions mandates in some cities and states have meant C-PACE is an attractive way for real estate owners and developers to meet new building standards, while investors can leverage it to more easily meet environmental and socially-focused impact goals.
- Increasing climate-related disasters in the U.S. have driven further need for resilient real estate. We have seen greater demand for C-PACE to address extreme weatherproofing and seismic needs, whether in Florida for hurricane resiliency, California for earthquake hardening, or in Texas for water conservation.
- Against the backdrop of a rapidly growing C-PACE market, we are focused on balancing originations and portfolio risk. This includes ensuring underwriting terms work for borrowers, while also remaining attractive for lenders and their investors; and appropriately monitoring construction project progression to mitigate delays in construction. NGC has invested heavily in its underwriting, credit, asset management, and special servicing teams, which has enabled us to weather the volatility in the real estate and capital markets in recent years. NGC remains in a strong position to identify

Figure 9: 2024 was an unprecedented year for both originations and capital raising

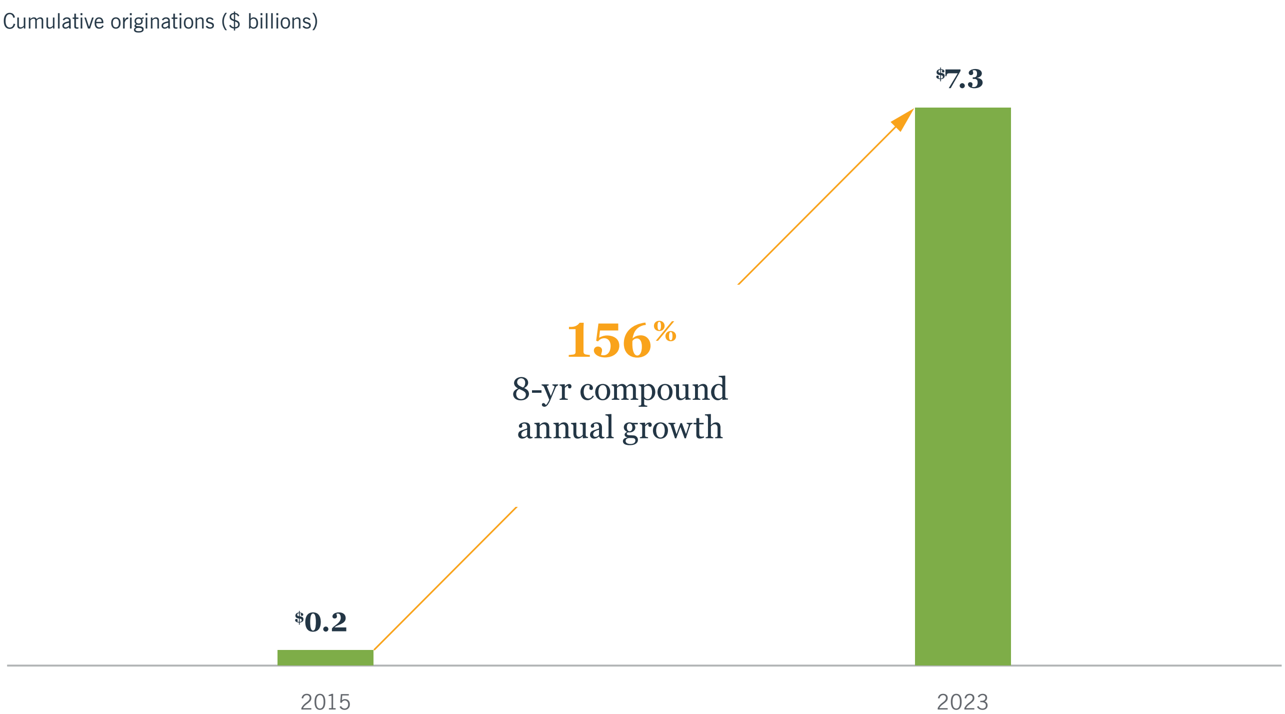


Source: Nuveen and is reflective of the Nuveen Green Capital Portfolio as of 30 Nov 2024.

challenges and opportunities in the market and react quickly to changing dynamics.

- Moving into 2025 and beyond, macroeconomic conditions for real estate developers are becoming more favorable, and we believe new construction activity will accelerate as borrowers seek to meet regulations and tap into the end-user demand for better-performing and more resilient buildings.
- C-PACE has been a story of rapid growth (Figure 10). Alongside that narrative, policy, climate change and other socially-focused issues are accelerating the expansion of C-PACE further. These factors are likely to become more embedded in the coming years, and C-PACE is well-placed to provide solutions to borrowers and investors as expansion continues across markets.

Figure 10: C-PACE expansion is accelerating



Source: Cumulative C-PACE originations as reported by PACE Alliance as of 31 Dec 2023.

Investment-grade private credit

- The investment grade private credit (IGPC) market continues to develop despite being among the most mature asset classes within alternative credit. IGPC has delivered attractive yield and recoveries over the decades, offering effective diversification to public market credit across different market cycles.
- The predominantly fixed-rate nature of IGPC protects investors from much of the negative impact a rate cutting cycle could have on returns. As rates start to decline, all-in yields will likely compress. But if this compression occurs in a recessionary environment, we expect spreads will widen, meaning all-in yields will stabilize over time (Figure 11).
- A recession or slowdown is unlikely to significantly impact IGPC. Private market lending is growing across sectors, with healthy deal flow expected to continue into 2025. Lenders will likely be more selective with loans through research and underwriting, to best identify borrowers which are able to repay.
- A further benefit in the private asset-backed securities (ABS) market is the vacuum of capital being left as banks continue to be limited by lending regulations. These restrictions have left a substantial lending gap, placing a greater emphasis on alternative lenders. The influx of new deal flow into the private ABS market has attracted new investors: there is an increase of insurance-backed investors looking to capitalize on the new interest rate environment of recent years, while continuing to enjoy the benefits of the private market. Lenders such as Nuveen, with over 50 years of experience in IGPC, understand market transactions are driven by relationships which can yield attractive deal flow and strong performance. New investors entering the markets, that partner with experienced lenders, will be well placed to navigate through the opportunities and challenges of the asset class.

Figure 11: Strong relative value, structural protection despite public market spread widening and high demand

Spread premiums vs. A-rated public corporates as of 30 Sep 2024

Corporates	• Non-public offerings • Issued by private firms or small to mid-sized public companies	***121 bps***
Credit tenant loans	• Non-recourse debt • Secured by real estate or equipment • Single-tenant lease payment stream	***120 bps***
Asset-backed securities	• Typically, non-recourse • Backed by a pool of loans, leases, or receivables	***235 bps***
Infrastructure debt	• Non and limited recourse • Senior secured debt	***133 bps***

Source: Bloomberg and Nuveen as of 30 Sep 2024. Private Premium is calculated as the spread premium of Nuveen originations above the spread of the Single A US Corp Index (C0A3).

> **Lenders such as Nuveen, with lengthy experience in alternative credit, understand market transactions are driven by relationships which can yield attractive deal flow and strong performance. New investors entering the markets, that partner with experienced lenders, will be well placed to navigate through the opportunities and challenges of the asset class.**

Partnering to invest with an eye on the future

We invest across the alternative credit spectrum to add diversification, resilience to market swings and cashflow-driven return profiles to portfolios. Through these investments, we provide investors opportunities in sustainable and traditional credit solutions; financing the growth of businesses, and powering the energy transition.

For more information, please visit nuveen.com/alternativecredit.

Endnotes

1 J.P. Morgan: "CLO Weekly New Issue Datasheet" as of 06 Jan 2025.

2 U.S. Energy Information Administration and Goldman Sachs Global Investment Research

3 Syracuse.com: "Micron project moves forward as National Grid files plans for extra-high-voltage lines", March 2024, https://www.syracuse.com/business/2024/03/micron-project-moves-forward-as-national-grid-files-plans-for-extra-high-voltage-lines.html&subscribed=g%E2%80%A6. Accessed 02 Jan 2025.;

4 Lazard (Jun 2024): LCOE+

5 Bloomberg (20 Jun 2024): Biden Is Giving Red Districts an Inconvenient Gift: Green Jobs

6 Analysis was completed before 2024 election, based on 2020 election results.

7 Data is of Jan 2025, is calculated based on the number of jobs per $1M of revenue by key sectors, as stated by the American Council for an Energy-Efficient Economy (www.aceee.org/files/pdf/fact-sheet/ee-job-creation.pdf), and factored against the AUM that the Nuveen Green Capital actively manages.

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