APOLLO

Demystifying the Opportunity in Investment Grade Private Credit

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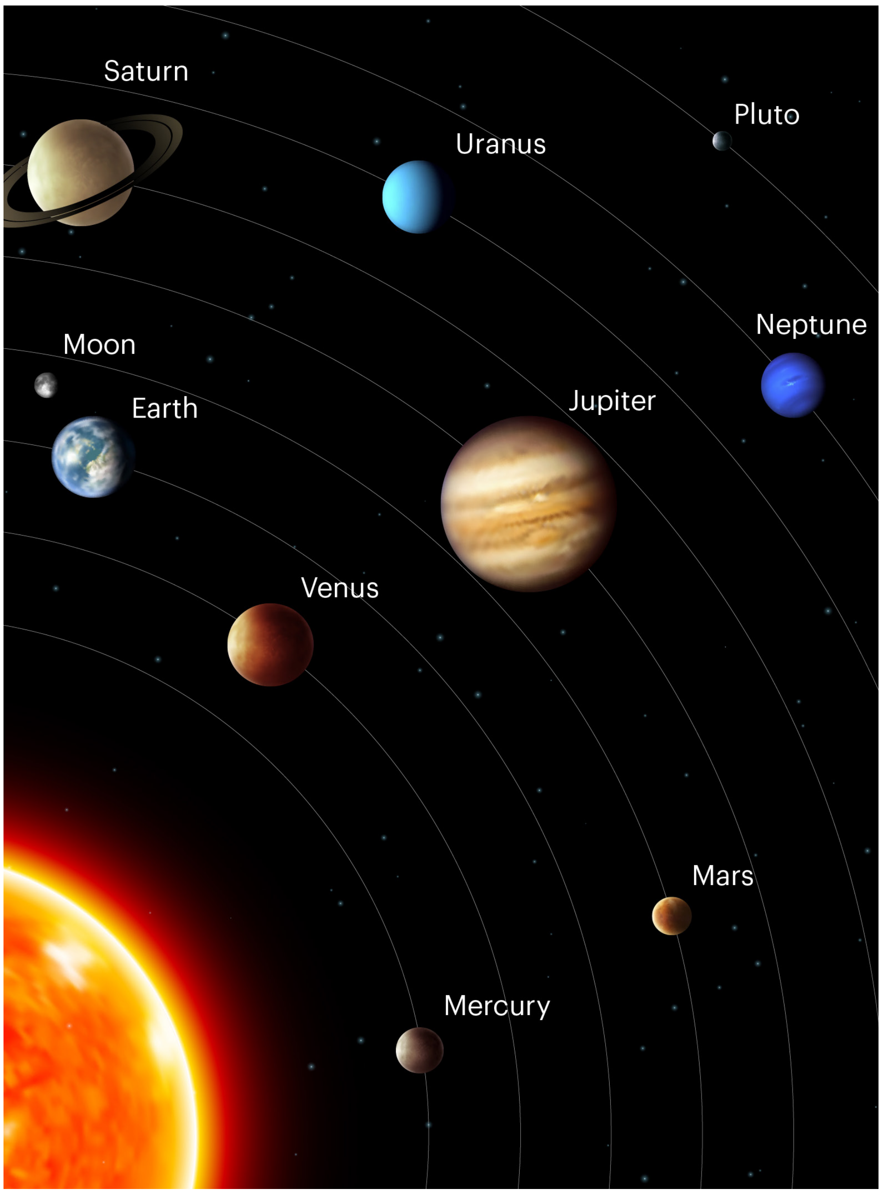
KEY TAKEAWAYS

- Investment Grade Private Credit (Private IG) is a growing part of the credit market that has evolved over the past 15 years from predominantly corporate private placements to a much broader investable universe that spans both asset-backed finance (ABF) and bespoke corporate financing solutions, with an estimated addressable market of $40 trillion.[1]
- We believe Private IG offers attractive risk-adjusted returns but has been overlooked because it doesn't fit neatly into the current asset allocation framework, which has not kept up with the pace of innovation in credit markets.
- The conventional assumption that private investments inherently carry more risk than public investments—in terms of liquidity, transparency, regulation, and issuer quality—is growing increasingly outmoded, in our view. The clearest rebuttal to this assertion is the decision by many of the largest issuers of public investment grade bonds to diversify their capital sources by tapping the private credit markets. We believe that the two markets are converging and increasingly carry similar risk profiles.
- In our view, Private IG offers several attractive characteristics, including higher spread premia, lower historical losses, enhanced seniority and downside protection, as well as greater diversification within an investment portfolio.
- We believe that a key pillar of growth for Private IG is the critical need to support retirement income. As retirement portfolios are often weighted toward fixed income, enhancing the return profile of a retirement fixed income portfolio with Private IG can play an important role in helping to address the financial challenges facing future retirees.

[1] Apollo analysts. Valuation is based off the market size of the asset classes within the investable universe.

I) Introduction

What is a planet? The answer to such a simple question has a surprisingly long and tortured history. By the eighth century BCE,[2] ancient Greek astronomers classified the five planets visible to the naked eye—Mercury, Venus, Mars, Jupiter, and Saturn—as *asters planetai* or "wandering stars." This planetary quintuplet endured for two millennia until the mid-16th century when Nicolaus Copernicus mathematically demonstrated that Earth revolved around the Sun and therefore deserved to be classified as a planet. By the early 19th century, the list of known planets had grown to eight with the discovery of Uranus and Neptune. In 1930, an American astronomer discovered Pluto, seemingly ending the European stranglehold on planetary identification. Yet, it was a discovery that would barely survive the 20th century. In August 2006, the International Astronomical Union revised the definition of a planet, stripping Pluto of its rarified rank and relegating it to "dwarf planet" status. The reclassification sparked a scientific and cultural controversy that rages on today. In April this year, Katie Hobbs, the governor of Arizona—where Pluto was discovered—signed a bill proclaiming Pluto the official state planet.



The controversy surrounding astronomical nomenclature—specifically, the definition of a planet—is not surprising. Categorization can be a useful tool for simplifying and understanding the environment around us, but it sometimes fails to adapt to changes in the world. Asset allocators, for instance, typically build portfolios based on asset class categories that carry similar rate-of-return targets and risk profiles. A fixed-income allocation usually includes government bonds, public corporate bonds, and money market instruments that tend to yield between 4% and 8%.[3] An allocation to alternative investments, which sits farther along the risk spectrum, can include private equity, private credit, and hedge funds, generally targeting double-digit returns.[4] **Yet we believe a growing part of the credit market – one that could unlock attractive risk-adjusted returns – has been overlooked because it doesn't fit neatly into the current asset allocation framework: Investment Grade Private Credit.**

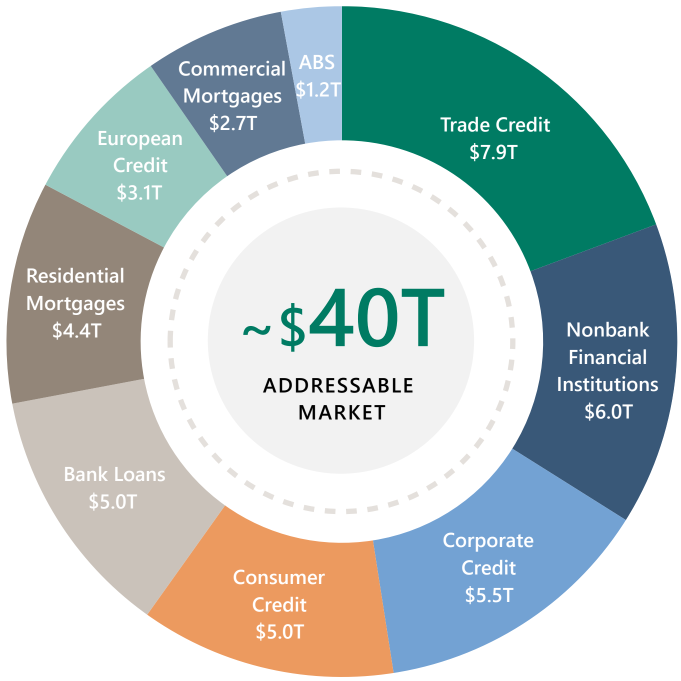
In this paper, we'll describe the characteristics of Private IG and the history of the asset class. We'll discuss the structural changes that have occurred over the past 15 years that have catalyzed the rediscovery of this "new" asset class and the potential benefits that we think Private IG offers. Finally, we'll introduce three examples of private investment grade portfolio implementation that illustrate why we believe traditional fixed income portfolios could benefit from Private IG exposure.

[2] Early Astronomy in the University of Michigan Collections | Babylonian and Greek Astronomy (umich.edu).
[3] The Income Is Back in Fixed Income - RBC Wealth Management - Asia.
[4] Principles for Alternatives | J.P. Morgan Asset Management (jpmorgan.com).

II) What Is Private IG?

Investment Grade Private Credit ("Private IG") has historically been synonymous with a narrow segment of the fixed income market: corporate private placements. At Apollo, we believe Private IG is a much broader opportunity. We estimate that private credit commands an addressable market value of $40 trillion,[5] which is predominantly investment grade-rated and includes bank loans, trade credit, corporate credit, consumer credit, mortgages, and asset-backed securities **(Exhibit 1)**. We believe that these assets, which typically sit on the balance sheets of banks and insurance companies, will increasingly be financed by the private investment marketplace.

Exhibit 1: Private credit presents a ~$40 trillion market opportunity, most of which is IG



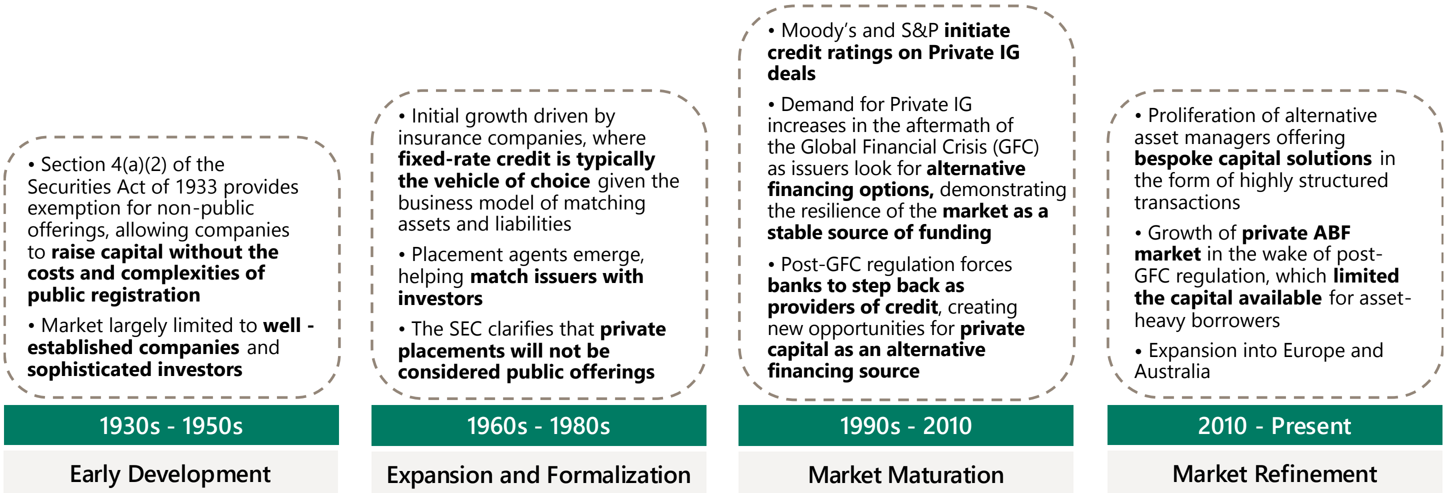
Sources: Federal Reserve Board, PitchBook, Morningstar indexes, SIFMA, ICE BofA. Represents the views and opinions of Apollo Analysts. Not an exhaustive list

HISTORICAL OVERVIEW AND EVOLUTION OF THE MARKET

The first examples of modern-day corporate bonds can be traced back more than 160 years ago[6] as a major financing source for the railroad and canal construction boom of the 19th century in the US and Europe. **Exhibit 2** shows a timeline of how Private IG has evolved and expanded over the past century. As the 20th century arrived, large capital-intensive industrial, electric, and utility companies, like steel and automobile manufacturers, tapped the corporate bond market to fund their investments. Initially, corporate bonds were sold through private placements.[6] This type of financing provided more flexibility than bank loans and allowed companies to raise capital while avoiding the equity dilution of a stock offering. In essence, these transactions were the original Private IG deals and predated the development of a large public corporate debt market.[7] A new, reformed public bond market was promoted in the aftermath of the Wall Street Crash of 1929, through federal legislation and the creation of the US Securities and Exchange Commission (SEC) in the 1930s which established specific disclosure rules for selling securities to the general public. This marked the formal separation of private and public bond markets.

[5] Valuation is based off the market size of the asset classes within the investible universe. Source: Apollo analysts
[6] Source: National Bureau of Economic Research, Trends and Cycles in Corporate Bond Financing, 1952
[7] Source: HIMCO Strategy Insights, November 2013

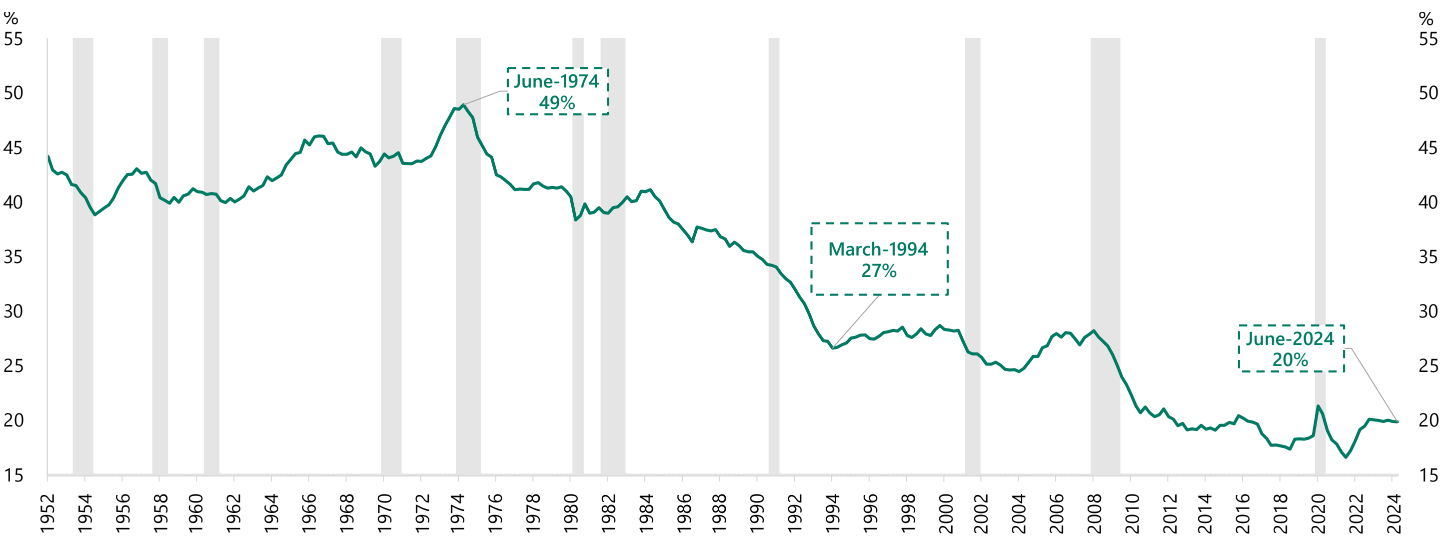
Exhibit 2: Evolution of Private IG Throughout the Years



Source: Apollo Analysts, Delaware Funds, Finance Unlocked, CMS Law

Since the 1980s, funding for long-term loans to corporates has steadily shifted away from banks to fixed income investors such as insurers and pensions, as well as mutual funds and retail investors **(Exhibit 3)**. The share of bank lending peaked at 49% in the mid-1970s and declined to 27% by the mid-1990s, which coincided with the dramatic growth of the syndicated investment grade and high yield bond markets. Regulation in response to the GFC further pressured banks' lending activity. The residential mortgage market is a great example of how banks' lending activity has slowed since the GFC. In 2007, the volume of bank mortgage originations was close to $1.2 trillion, but nearly halved to ~$650 billion by 2017. Nonbank mortgage originations surpassed bank mortgage activity in 2016, with the former commanding a market share of 53% in 2017,[8] compared to the banks' 47%. This evolution has resulted in a "democratization of credit," allowing a broader set of fixed income investors and market participants to finance the economy. Diversified sources of funding have also served as a critical alternative source of credit during times of crises. We've seen the benefits of this diversification over the past five years: A global pandemic, elevated geopolitical risk, rising inflation, and market volatility have periodically constrained access to financing for borrowers.

Exhibit 3: Bank lending share of total nonfinancial corporate debt



Data as of June 2024.
Sources: FRB, Haver Analytics, Apollo Chief Economist

[8] Source: FDIC Quarterly Report, Bank and Nonbank Lending Over the Past 70 Years, 2019

The most recent step in the development of Private IG is the evolution of Private Asset-Backed Finance (ABF). The ABF market—a type of financing that utilizes a discrete pool of assets as collateral for loans—is a critical tool for financing activities for millions of businesses and consumers globally. It encompasses a broad set of lending activity that touches everyday life from residential mortgages, credit cards, student loans, to automobiles, planes, trains, sports, and entertainment royalties. While the Public ABF market has existed for decades, the growth of Private ABF accelerated in the wake of the GFC as banks reduced lending due to higher regulatory and capital constraints, limiting the capital available for asset-heavy borrowers.[9] You can read more on this asset class in the ABF White Paper we authored last year.

Through a historical lens, Private IG can be viewed as the first scaled, nonbank source of credit, predating the development of a large, publicly traded syndicated debt market. It played a critical role in financing the railroads and eventually the manufacturing companies that shaped the industrial-led economy of the late 19th and early 20th centuries. In yet another example of the inherent circularity of history, **we believe Private IG is now emerging as a key source of funding for the broad economy including many of the major infrastructure projects of the 21st century ranging from semiconductor fabs to utility-scale renewable power projects.**

III) Is Private IG More Risky Than Public Credit?

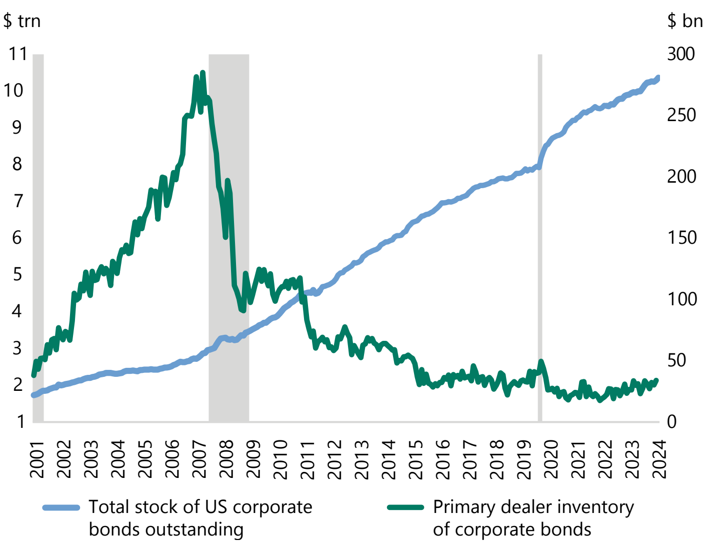
To better understand the Private IG opportunity, we need to further explore the distinction between public and private markets. As we noted in the introduction, we often seek unambiguous classifications to organize the world around us. In the world of modern finance, private investments, which historically encompassed higher return, equity-focused strategies such as private equity and venture capital, were associated with higher risk, while public debt and equity markets were considered safer asset classes. As the private credit market has gained a larger share of the overall credit market, some have argued that private credit is inherently riskier than its public counterpart, citing a variety of concerns ranging from a lack of liquidity to regulatory and transparency considerations.[10] However, as the private credit market has evolved, we think the conventional assumptions concerning the relative riskiness of public and private markets are growing increasingly outmoded.

Let's examine the characteristics of public markets that support the idea that they carry lower risk:

I) LIQUIDITY:

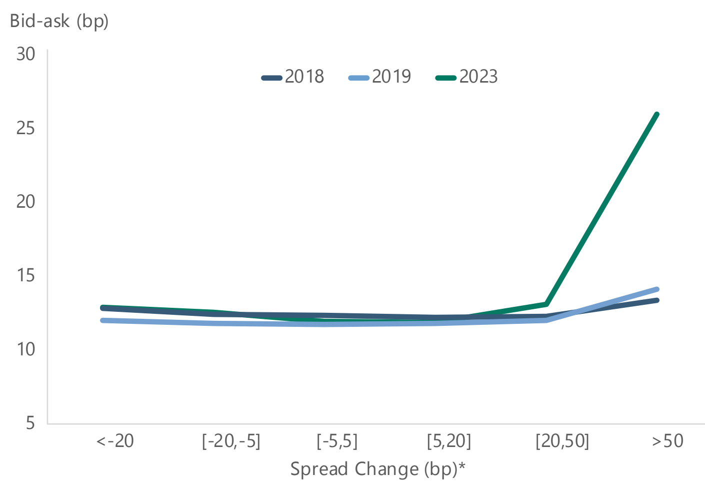
Regulatory constraints over the past 15 years have pressured banks' balance sheets, resulting in shrinking dealer bond inventories that are now a tenth of what they were, on an aggregate basis, prior to 2008. At the same time, the size of the corporate bond market has grown 3x, as shown in **Exhibit 4.** This has driven a shift to more agent trading, where a dealer simply matches buyers and sellers, in contrast to principal trading where a dealer commits their own balance sheet. This shift in the supply and demand for liquidity has led to elevated transaction costs in periods of market stress **(Exhibit 5)**.

Exhibit 4: Liquidity in public markets is not what it seems



Data as of August 2024.
Source: Bloomberg, Apollo Chief Economist

Exhibit 5: Transaction costs have increased over periods of volatility

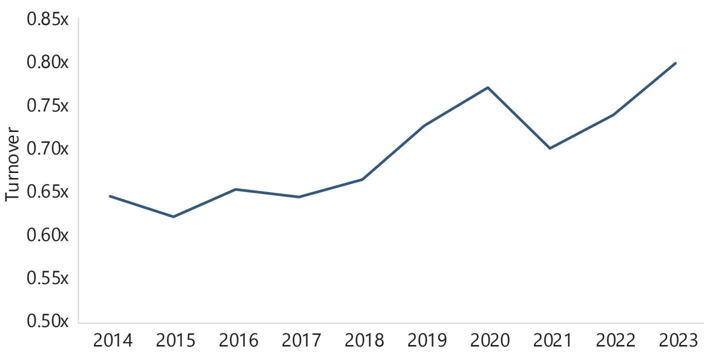


Data as of June 2024.
*Based on one month Spread Change. For bonds with <= $500mn outstanding, issued >two years ago.
Sources: Barclays, BofA Indices, Apollo Analysts

[9] Source: Bank of International Settlements, *Structural Changes in Banking After the Crisis, 2018*
[10] Source: *The Credit Markets Go Dark, Duke Law School Public & Legal Theory Series, Posted July 2024*

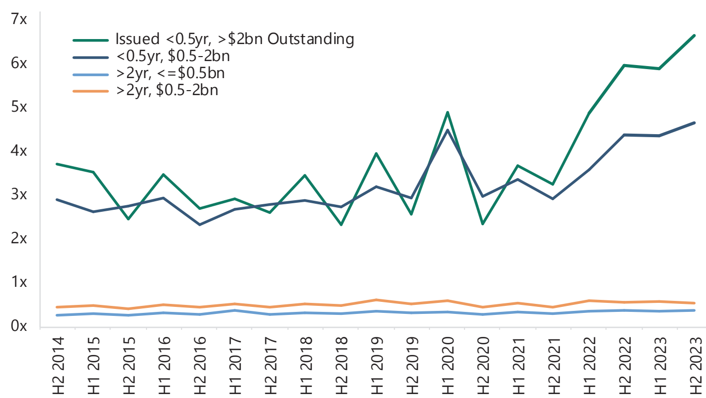
In addition, changes in market structure over the past decade have resulted in rising fragmentation in liquidity in the investment grade corporate bond market. The most liquid segments of the market have seen an improvement in trading volumes, while the liquidity profile of older vintage and smaller bond tranches has deteriorated. The turnover for the US investment grade market—typically defined as trading volume as a fraction of total outstanding debt—has increased from mid-60% in the 2015-2018 period to more than 80% in 2023 **(Exhibit 6)**. In our view, the increase in turnover has been driven in part by the advent of portfolio trading, which allows investors to transact in large, diversified blocks of bonds in a single trade, as well as the growth of mutual funds and ETFs, which have daily liquidity needs. However, we believe the aggregate data only tells part of the story given that the increase in turnover is primarily the result of the pickup in trading volumes of on-the-run bonds—recent debt vintages issued in the prior six months **(Exhibit 7)**. The turnover of on-the-run debt has nearly doubled in the last five years. Meanwhile, turnover for bonds issued more than two years ago—a universe that includes more than $6 trillion of debt, or about 70% of the total investment grade debt market—has largely remained unchanged at around 55%.

Exhibit 6: US IG turnover



Data as of January 2024.
Sources: TRACE, BofA Indices, Apollo Analysts

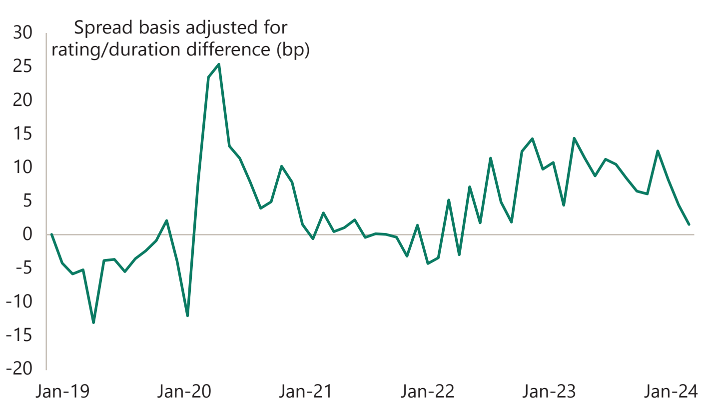
Exhibit 7: Turnover by vintage and size



Data as of January 2024.
Sources: TRACE, BofA Indices, Apollo Analysts

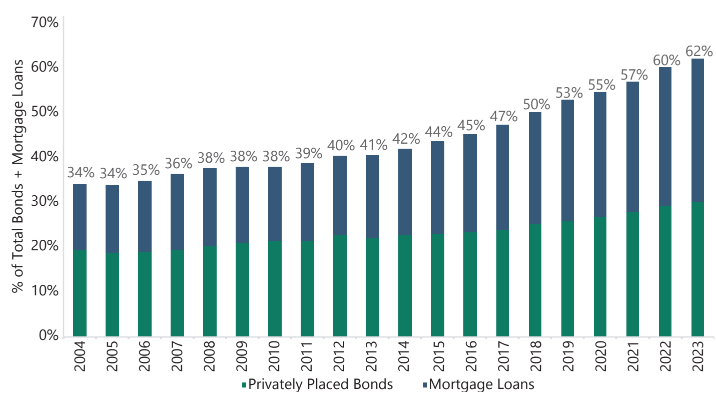
These changes in the market structure have coincided with a diminishing liquidity premia in public IG markets **(Exhibit 8).** The spread basis between small and large bond issues, after adjusting for differences in rating and duration, which serves as a proxy for liquidity premia, is almost back to pre-Covid levels. **This suggests that investors are receiving less compensation in return for holding bonds that are increasingly illiquid.** As liquidity premia have compressed, capital has moved into the Private IG credit and securitization markets, as investment grade credit investors look to replace the excess spread which they had been accustomed to receiving in public markets by owning off-the-run corporate bonds. We've witnessed this trend with insurers increasingly opting for private assets: The share of privately placed bonds and mortgage loans held by life insurance companies surpassed 60% last year from a little over 50% in 2019 and a little over 30% in 2004 **(Exhibit 9)**.

Exhibit 8: Sacrificing liquidity in public markets no longer provides meaningful excess spread



Data as of February 2024.
Source: Barclays Research

Exhibit 9: Traditional credit investors are increasingly turning to private markets



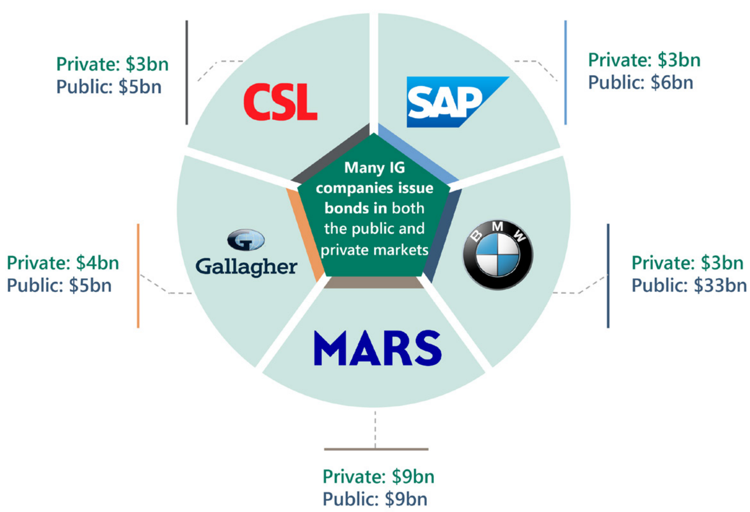
Data as of December 2023.
Source: S&P Capital IQ

As the private credit market evolves, we expect liquidity differentials in public and private debt will continue to converge over time. Over the past year, news reports indicated[11] that multiple industry participants plan to build out secondary trading desks focused on transacting in private debt across high yield and investment grade markets. While these initiatives are in their early stages, we believe additional avenues to create liquidity for private credit should continue to grow as more market participants allocate to the asset class and the size of the market expands.

II) CREDIT QUALITY:

Private credit is often, incorrectly, associated exclusively with loans to smaller, more highly levered middle-market companies, yet a survey of the companies that have turned to the Private IG market over the past decade paints a much different picture. Some of these companies are among the largest issuers of public investment grade bonds in their respective sectors. In fact, many investment grade-rated companies choose to raise capital through *both* the public and private credit markets. **This fact is perhaps the clearest rebuttal to the argument that private credit is fundamentally riskier than its public counterpart. How can this maxim hold when, in many cases, the issuers in each market are identical?** As shown in **Exhibit 10**, we've seen several high-grade issuers tap both the public and private markets. These companies tapped the private market, not because of a lack of public market access, but because they specifically chose a private solution. These transactions can serve multiple use cases for the end borrower, ranging from balance sheet optimization/de-leveraging, to supporting large capital expenditure programs, or providing strategic financing for M&A. Diversifying their funding sources away from banks to achieve quick execution often fills an important gap in the capital markets by providing flexible, long-term capital to IG issuers while banks are retracting.

Exhibit 10: The Coexistence of public and private debt markets



Data as of June 2024. For illustrative purposes only.
Source: Private Placement Monitor, Bloomberg, Apollo Analysts. All rights to the trademarks and/or logos presented herein belong to their respective owners and Apollo's use hereof does not imply an affiliation with, or endorsement by, the owners of these logos. Private debt market figures refer to private debt issuance as of June 2024

We're also seeing increased convergence of the private and public markets with respect to partnerships between alternative investment managers and banks to facilitate origination. While the interplay between banks and private credit markets is often characterized as a zero-sum game by the media, 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 in the previous year.[12] Barclays and AGL announced in April that they will work together on originated private credit loans, Apollo and Citigroup said in September that 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 agreed to partner with Cliffwater, FS Investments, and Shenkman Capital Management in an effort to broaden its reach in the private credit market. These types of partnerships, which we expect to see more of in the coming years, should bolster the volumes of private credit origination and broaden the range of companies that access the market.

[11] Source: Bloomberg, August 2024
[12] Source: Oliver Wyman, October 2024

We believe that investors will increasingly struggle to differentiate between public and private markets, as issuers of public debt pursue private financing solutions with ratings and deal sizes that are comparable to their public counterparts. We believe the growth and durability of the Private IG market is starting to challenge this conventional wisdom that public markets are safe and private markets are risky, presenting an attractive investment opportunity.

III) FINANCIAL MARKET STABILITY & ALIGNMENT:

In our view, the growth of private credit markets has strengthened the resiliency of the overall financial system, given its depth and diversity of funding sources. Private IG—which is typically financed with more permanent, longer dated sources of capital—can provide borrowers with duration-aligned funding for complex projects such as infrastructure, energy transition, and next-generation power versus traditional bank lending which is typically funded with short-term deposits. Additionally, when credit leaves the banking system and moves into the investment marketplace, which includes insurers, mutuals funds, and other institutional investors, it can create a de-leveraging effect given nonbank sources of capital are unlevered (or significantly less levered) than traditional bank balance sheets.

There's also a common misperception that the Private IG market enjoys far less regulatory oversight than bank-based lending. Despite benefiting from exemptions to some of the registration requirements applied under the Securities Act of 1933, the market is far from unregulated. Insurers, which comprise 90% of the investors in private corporate IG,[13] are overseen by state and national regulators. On the state level, all US insurers are subject to regulation by the state legislature in their local domicile, as well as states where they are licensed to operate. These state-based entities are the de facto regulators, setting policy, enacting legislation and overseeing the regulatory framework for insurance providers. Nationally, the National Association of Insurance Commissioners (NAIC) oversees, regulates, and sets standards for the insurance industry in the US. The NAIC's Securities Valuation Office (SVO) is responsible for the day-to-day credit quality assessment of securities owned by state regulated insurance companies.[14]

Insurance companies are subject to the disclosure requirements of credit rating agencies such as Moody's and S&P and are required to meet periodic stress tests, closely mirroring the regulatory requirements for banks. Specifically for Private IG, most deals are typically rated by one of the three largest credit rating agencies, as well as smaller ratings agencies, such as Kroll and DBRS. Consequentially, Private IG operates within a robust regulatory framework designed to maintain market integrity and protect investors.

IV) What Are The Benefits of Private IG?

Investing in Private IG can offer several advantages. Unlike the traditional fixed income market, we believe Private IG offers higher spread premia, lower historical losses, greater diversification within an investment portfolio, often with the benefit of stronger investor protections **(Exhibit 11)**. In this section, we'll closely examine the benefits of the asset class.

Exhibit 11: Public vs. Private IG credit characteristics

How Can Investment Grade Private Credit Add Value?

	Investment Grade Public Credit	Investment Grade Private Credit
Issuer	Corporate	Corporate, Asset-Backed
Origination	Broadly syndicated	Typically executed on bi-lateral basis or through direct sourcing platforms and partnerships
Security	Unsecured	Majority secured or structurally senior with ability to embed additional protections to enhance downside risk
Covenants	Limited	Comprehensive
Excess Spread	N/A	~50-150+ basis points

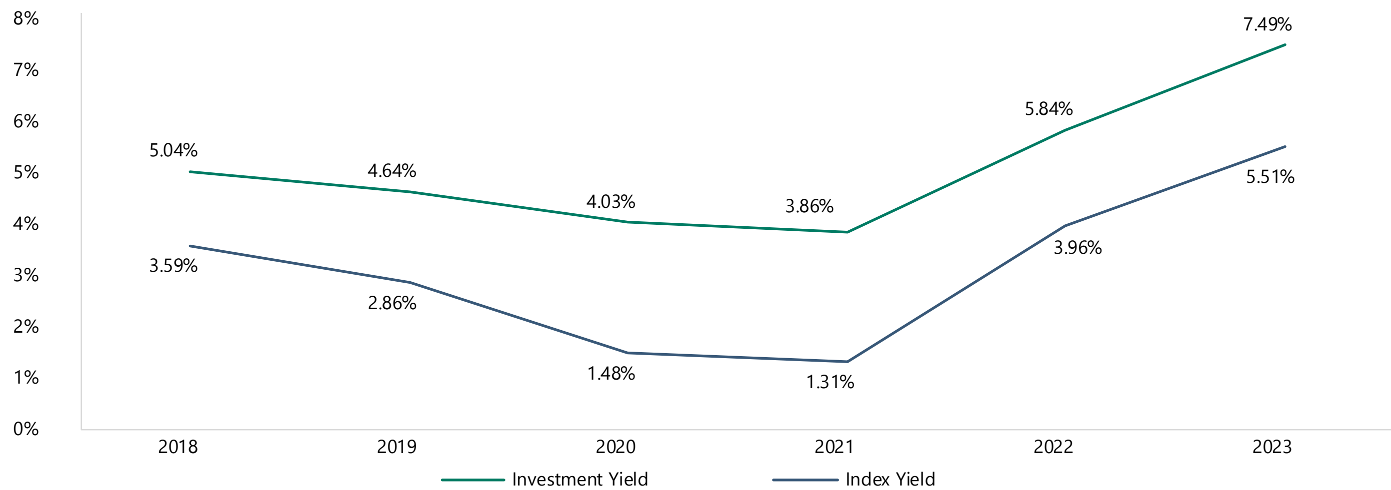
Source: Apollo Analysts

[13] Source: Apollo Analysts
[14] Source: NAIC (naic.org)

1) ECONOMICS:

I) Spread Premium: Whereas the traditional investment grade corporate private placement market has offered a spread premium of ~40[15] basis points tied to the lower liquidity of the asset class, we believe the emerging opportunities in Private IG from bespoke high grade capital solutions and asset-backed financings can offer attractive risk-adjusted returns while maintaining comparable credit quality. These transactions, where the investor originates and structures the deal, often result in a spread premia to comparable public deals of 100-200+ basis points[16] due to the added structural complexity and the investor's involvement in the origination process **(Exhibit 12)**. Alternative asset managers are increasingly looking to control their own origination—the business of structuring private credit investments for themselves as well as third-party investors—in order to retain the spread premium that is typically lost through the syndication process. The ability to direct the origination process allows for greater control and visibility around the risks associated with an asset across the underwriting, structuring, and post-investment monitoring functions. This can take the form of direct relationships with borrowers/ counterparties, enhanced access to diligence, and control of credit documents and covenants, each of which can help reduce potential risk and losses.

Exhibit 12: Private IG has generated excess spread over time



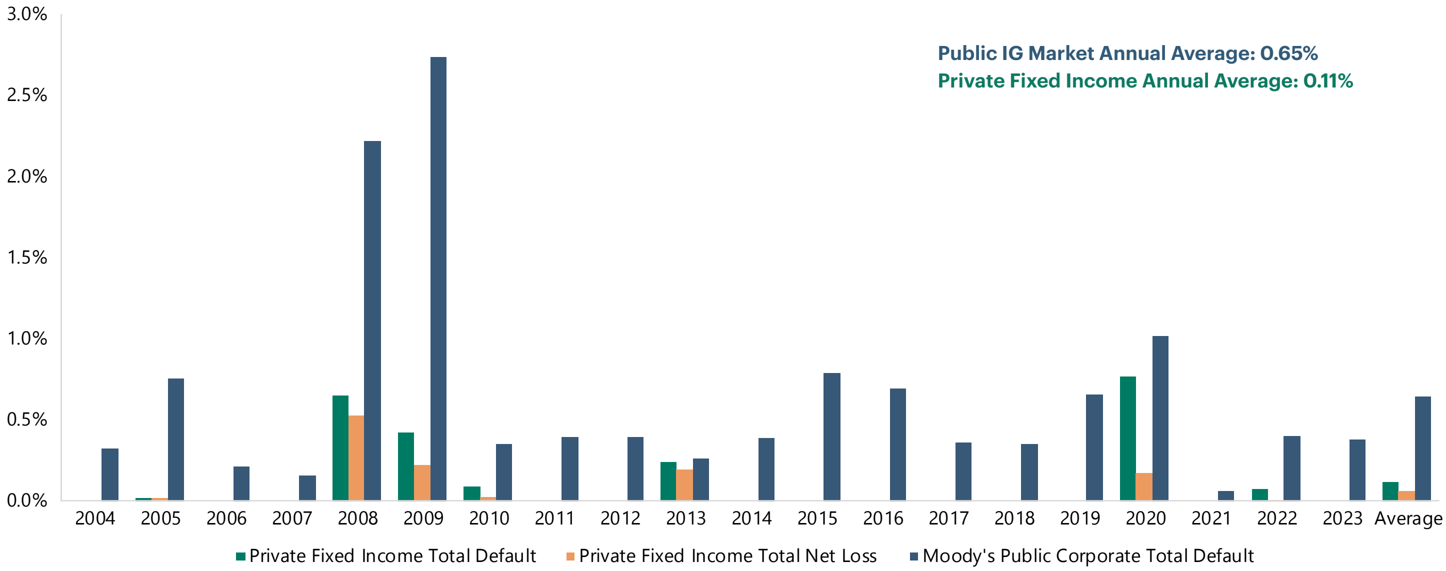
Excess Spread to Public	2018	2019	2020	2021	2022	2023	ITD Average
	+145bps	+178bps	+255bps	+255bps	+188bps	+198bps	+216bps

Data as of December 2023.
Sources: Apollo Investment Yield illustrates Apollo's experience in investment grade asset-backed finance and corporate assets on behalf of Apollo's Insurance Solutions Group (AISG) over the last 6 years (2018-2023). Data includes all investment grade asset-backed finance and corporate asset investments made by AISG. Data is organized by underlying collateral type and Apollo deployment yield data is compared against that of the Bloomberg US Intermediate Corporate Index (LD06TRUU) split into individual duration adjusted cohorts (i.e., 1-3yr, 3-5yr, 5-7yr, 7-10yr) to calculate "Spread to Public" figures for each period. Average is calculated as volume weighted excess spread to public from 2018-2023 time period

II) Lower Historical Losses: A recent analysis of Apollo's Private IG corporate deals has demonstrated lower realized loss rates relative to public credit over time. In the two decades to 2022, the average default rate for public IG bonds was 0.65%, while the average recovery rate was 37.6%. This compares to a 0.11% default rate and recovery rate of 68.6% for Apollo Private IG corporate deals during the same period **(Exhibit 13).**

[15] Source: Bank of America
[16] Source: Apollo Analysts

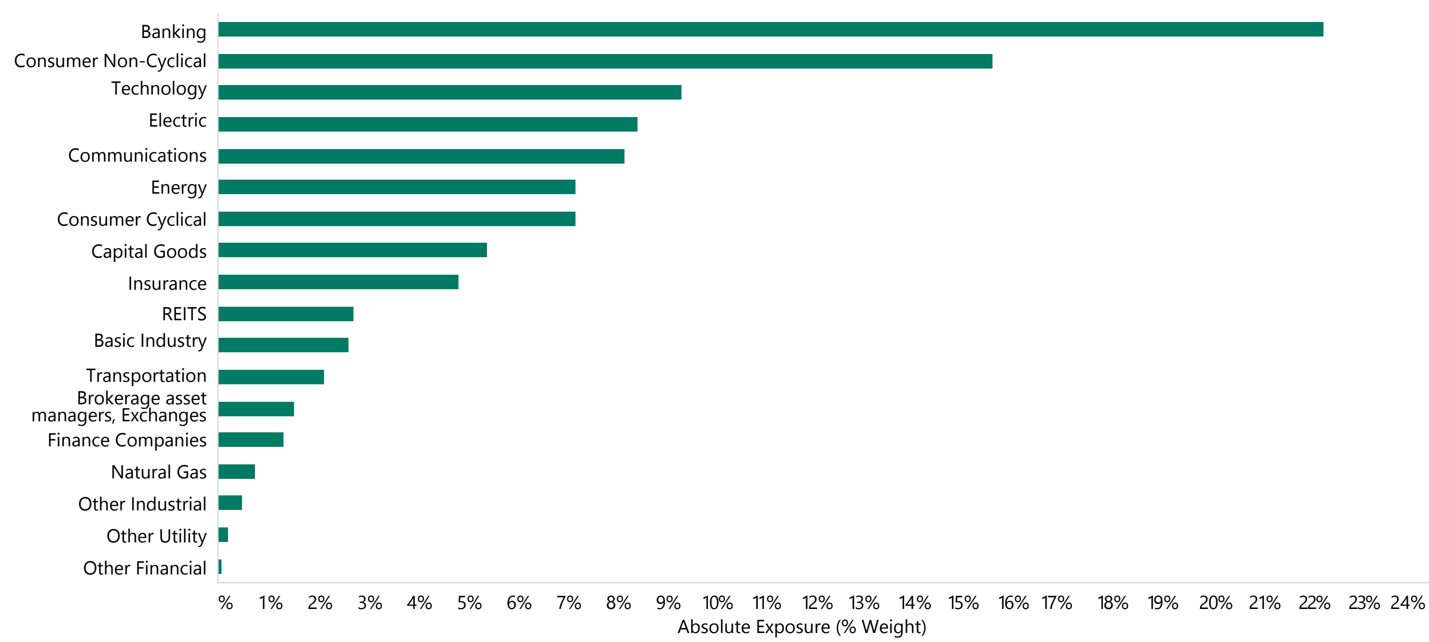
Exhibit 13: Default experience in public corporate and private corporate bonds



Data as of December 2023.
Sources: Apollo Private IG deals over the past 20 years, Moody's

<u>III) Diversification:</u> As most traditional active and passive investment grade public bond strategies are benchmarked to the same indices, market participants can end up with significant overlap with respect to both subsector and issuer concentration. The Bloomberg Investment Grade Corporate Index for example has nearly half of its exposure concentrated in three sectors: banking, consumer non-cyclical, and technology **(Exhibit 14).** We believe integrating private assets into fixed income allocations can potentially enhance both the yield and overall diversification of their portfolios.

Exhibit 14: IG Corporate Bond Index Sector Exposure



Data as of September 2024.
Source: Bloomberg

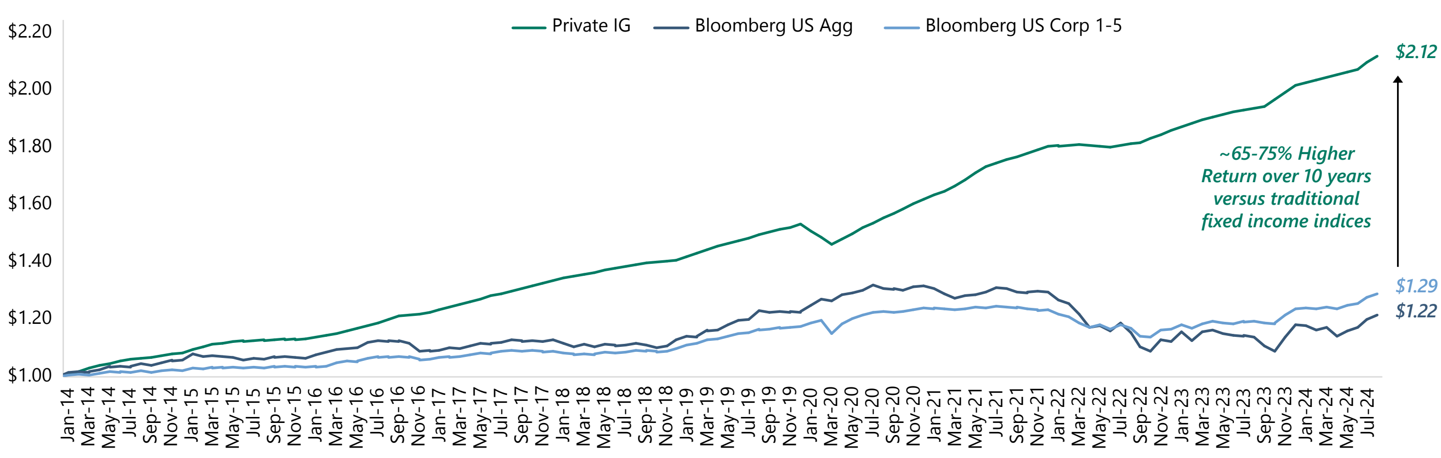
2) SENIORITY & DOWNSIDE PROTECTION:

Since private transactions are negotiated on a bilateral basis, lenders are typically able to bargain for more rigorous legal and contractual protections, and, in some cases, secure priority positions in the capital structure versus deals in the public markets. Private lenders are usually more selective, defensive, and focused on credit documentation. Seniority in capital structure can take several forms. Having a secured debt claim is the most practical and enforceable way to maintain seniority. However, as investment grade companies grow in size, they typically graduate to capital structures that are largely unsecured. A typical hallmark of corporate Private IG transactions are protections against "priming" or layering by other debt. This protection can be implemented in various ways, but the most common mechanisms are priority debt baskets, which limit the amount of debt that a company can issue that is senior to the debt in question, or a negative pledge, which is a contract provision prohibiting the debtor from creating security interests over specified assets. Certain Private IG investments that are unsecured enjoy some level of structural protection often including restrictions or strict governors on subordination.[17] Looking specifically at Private IG ABF, we believe the inherent nature of the asset class—composed of diversified pools of assets that span a range of sectors—mitigates against single points of failure. Additionally, ABF structures include performance covenants that seek to protect lenders. If collateral performance deteriorates, the borrower is required to "trap" cash and/or post more collateral to derisk the loan. Finally, assets in securitizations can benefit from legal separation from their sponsor. If the securitization sponsor files for bankruptcy, the creditworthiness of the securitization itself is unaffected as the assets contributed to the securitization are ring fenced within a bankruptcy-remote vehicle.[18]

3) THE RETIREMENT OPPORTUNITY:

We believe the growth of Private IG will play an expanding role in generating income that can improve the diversification and durability of a portfolio, and support the growing population of retirees. As retirement portfolios are often weighted toward fixed income, and with the US contending with an aging population and insufficient savings, enhancing the return profile of a retirement fixed income portfolio can play an important role in helping to address the financial challenges facing future retirees. But a change in asset allocation strategy is needed. Typically, pension, retirement, and endowment funds, which employ a long-term investment horizon, mirror the long-dated nature of their liabilities through a large allocation to fixed income investments with similar durations. For example, a study of the 100 US public companies with the largest defined benefit pension plans indicates that these accounts currently manage $1.3 trillion in assets, of which, 54% or $702 billion, is allocated to fixed income, largely in liquid bonds, according to Milliman.[19] Unfortunately, overweighting toward liquid investments can carry an opportunity cost for retirees as they potentially forgo the incremental returns that we believe are offered by an alternative allocation to less-liquid Private IG. In our view, moving out on the liquidity spectrum—especially for investors who have a long-term investment horizon—can be a prudent way to enhance the return profile of fixed income portfolios **(Exhibit 15). This creates a significant opportunity for Private IG, given the largest pool of investor capital globally— $7.4 trillion—is currently held in 401(k) accounts.[20]**

Exhibit 15: The power of compounding



Data as of September 30, 2024.
For discussion purposes. Represents the views and opinions of Apollo Analysts. Subject to change at any time. There is no guarantee that similar allocations or investments will be available in the future.
Source: Apollo Analysts, Bloomberg, ICE BofA

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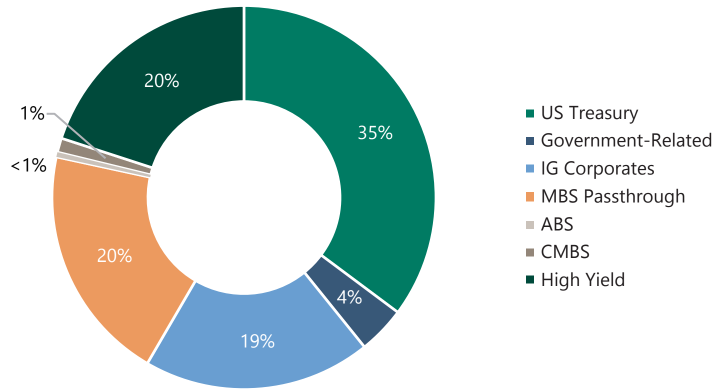
[17] Source: Apollo Analysts
[18] Source: Apollo, Asset-Backed Finance: The Next Evolution of Private Credit, October 2023
[19] Source: Milliman 2024 Corporate Pension Funding Study
[20] Source: Investment Company Institute, December 2023

V) Revisiting the ABCs of Portfolio Construction

In the following section, we will illustrate three hypothetical scenarios in which implementing Private IG in overall asset allocation can help generate excess yield while maintaining comparable credit quality. For the purpose of this analysis, we'll look at a representative Core Plus fixed income allocation by assuming 80% of the model portfolio is allocated to the Bloomberg US Aggregate Index subsectors and the 20% "Plus" portion of the portfolio is allocated to the Bloomberg US High Yield Index **(Exhibit 16)**. We also demonstrate how Private IG can potentially enhance fixed income allocations to public IG and high yield corporate bonds. A representative Private IG Fund is used as proxy for a Private IG allocation.[21]

Exhibit 16: Traditional core plus asset allocation



Source: Bloomberg, Apollo Analysts. For illustrative purposes only

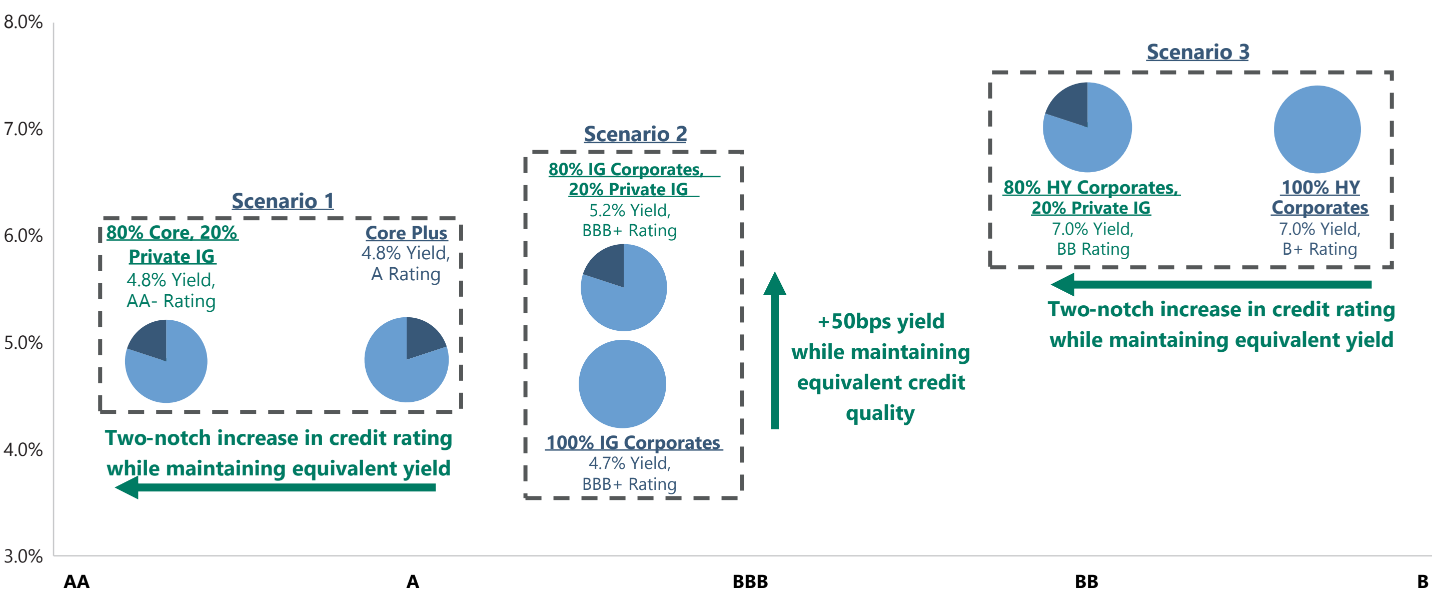
In **Exhibit 17**, we compare the credit quality and yield differentials following portfolio implementation of adding Private IG.

Scenario 1: When replacing the "Plus" high yield allocation of a Core Plus Fund with Private IG, the average portfolio credit quality increases two notches while maintaining an equivalent average yield to maturity.

Scenario 2: When replacing 20% of a Public IG corporate allocation with Private IG, the portfolio average yield increases 50 basis points while maintaining equivalent average credit quality.

Scenario 3: When replacing 20% of a Public high yield allocation with Private IG, the average portfolio credit quality increases two notches while maintaining an equivalent average yield to maturity.

Exhibit 17: The potential benefits of taking modest liquidity risk in traditional fixed income allocation



*We believe Investment Grade Private Credit can **enhance returns and income generation**, while exhibiting lower volatility than traditional fixed income investments*

For illustrative purposes only. Data as of September 30, 2024. Reflects the views and opinions of Apollo Analysts. Subject to change at any time without notice. The investment process described above may change over time.

[21] Source: Apollo Analysts

Exhibit 18 illustrates that moving out modestly on the liquidity spectrum through an allocation to Private IG can offer fixed income portfolios a mechanism to either increase portfolio yields or upgrade credit quality.

Exhibit 18: Index and fund comparison

	US Agg	Core Plus	Private IG Allocation
Credit Quality	AA-	A	**A**
Spread (bps)	36	88	**~300+**
Yield to Worst	4.2%	4.8%	**~7%+**
Liquidity	Daily	Daily	**Monthly**

For illustrative purposes only. Source: Bloomberg, Apollo Analysts. Data as of September 30, 2024.

VI) Conclusion

Generations of astronomers have enriched and expanded our understanding of the universe around us over the past 2,000 years. New discoveries and advancements have forced the rethinking of many long-held beliefs, including something as fundamental as the definition of a planet. This cycle of innovation and progress is not unique to the world of astronomy. In finance, the traditional asset allocation model—which typically segments a portfolio into equity, fixed income, and alternatives—has served investors well. However, major changes in the financial markets over the last 15 years require investors to rethink this approach and reevaluate traditional assumptions held about liquidity and risk in public and private markets. **We believe that Private IG will play a key role in addressing the financial challenges facing future retirees by offering investors a new tool to help enhance the return profile of their fixed income asset allocation while maintaining a similar credit profile of their portfolio.**

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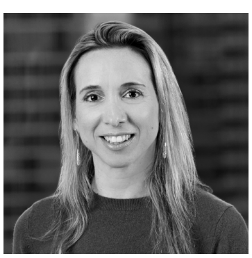

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The Bloomberg US Intermediate Corporate Index measures the investment grade, fixed-rate, US dollar-denominated securities. The index includes publicly issued securities by industrial, utility, and financial issuers with at least USD 300mn amount outstanding.

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The Bloomberg US High Yield Index measures the USD-denominated, high yield, fixed-rate corporate bond market. Securities are classified as high yield if the middle rating of Moody’s, Fitch and S&P is Ba1/BB+/BB+ or below.

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