

CFA INSTITUTE RESEARCH FOUNDATION / BRIEF

AN INTRODUCTION TO ALTERNATIVE CREDIT

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EDITORS



CFA Institute
Research
Foundation

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CONTENTS

1. INTRODUCTION	1
<i>Alfonso Ricciardelli, CFA</i>	
2. MAIN FEATURES OF ALTERNATIVE CREDIT INVESTMENTS	2
<i>Trevor Castledine, Kathryn Saklatvala, and Thibault Sandret</i>	
3. SUBASSET CLASSES	19
Direct Lending	19
<i>Stephan Connelly, CFA, and Trevor Castledine</i>	
Collateralized Loan Obligations	30
<i>David Preston, CFA</i>	
Consumer Loans	42
<i>Nils Hertzner and Nikita Saygakov, CFA</i>	
Trade Finance	50
<i>Qing Fan and Dave Skirzenski</i>	
Real Estate Loans	59
<i>Adil Hasan</i>	
Infrastructure Debt	67
<i>Nick Cleary</i>	
Venture Debt	74
<i>Zack Ellison, CFA</i>	
4. THE FUTURE OF ALTERNATIVE CREDIT IS BRIGHT	84
<i>Mike Dowdall, CFA</i>	



1. INTRODUCTION

Alfonso Ricciardelli, CFA

Noask

Private markets have grown in the past decade to become an ever-larger part of investor portfolios. As opportunities for alpha generation dwindled in public markets due to central banks compressing volatility, a steady search for outsized return potential drove many investors to increase their allocations to private equity, private credit, venture capital, and real assets.

Alternative credit in particular gained prominence after the Global Financial Crisis (GFC), when bank lending became increasingly constrained by stricter regulation. Before the GFC, it only served a niche market, consisting mostly of small businesses and shorter-term loans that commercial banks would not consider. After the crisis, it became more widespread and increasingly covered more of the space left empty by retrenching financial institutions.

Precisely because of the bespoke nature of alternative credit transactions, gathering alternative investments under a single umbrella can at times be a daunting and inefficient exercise. There are no standardized features—such as with public market fixed income—and few similarities between, for instance, an infrastructure debt transaction and direct-to-consumer lending. But alternative credit can be defined by exclusion; it broadly encompasses transactions that happen outside the traditional public fixed-income market.

The prevailing narrative in the alternative credit space, shared by regulators across the globe, is that the deal-unique nature of each transaction, the high levels of illiquidity, the longer time horizon, and the costs of due diligence make these investments unfit for the majority of less sophisticated stakeholders—that is, retail investors.

Despite these facts, alternative credit investments often have features that make them a valuable addition to a portfolio. The bespoke nature of these transactions highlights idiosyncratic risk, making these investments less sensitive to broader macro risks. Their illiquidity can be an advantage because it can make them less prone to panic selling; as Richard Thaler proved, the human brain is ill suited to react rationally to market moves. Finally, their longer time horizon makes them potentially ideal investments in a retirement portfolio, while for some transactions, adjustable yields are well suited for investors trying to match liabilities and cash flows.

All in all, because the space is likely due for exponential growth, in our view the time has come to shed more light on the due diligence process, intrinsic features, risk profiles, and potential perks of each type of alternative credit transaction.

The remainder of this brief is organized into three broad sections and into further subsections. Following this introduction, Section 2 includes an overview to highlight the main features of this asset class. Section 3 is a deep dive into the various types of alternative credit transactions. Section 4 highlights the prospects and potential evolution of alternative credit.

2. MAIN FEATURES OF ALTERNATIVE CREDIT INVESTMENTS

Trevor Castledine, Kathryn Saklatvala, and Thibault Sandret

bfinance

Alternative credit investing covers any type of lending that is not included in the traditional fixed-income category. Several distinguishing characteristics set it apart from traditional investment strategies and over the past decade have contributed to the asset class's increasing appeal to institutional—and more recently also retail—investors.

Key attractive features include higher running cash yield, higher total return expectations, and lower volatility compared to publicly traded fixed income of similar credit quality. The main trade-offs for these *prima facie* benefits are

- lack of liquidity and transparent valuation;
- some regulatory barriers to ownership (e.g., higher capital charges for insurers);
- in many cases, lower credit quality and/or lack of a public credit rating;
- structural complexity and/or perceived lack of transparency; and
- higher costs of ownership.

The broadest definition of alternative credit can include some forms of widely traded paper, such as asset-backed securities (ABSs), typically arising from securitizations of various forms of mostly consumer or real estate borrowing and broadly syndicated loans.¹ However, ABSs retain many of the key characteristics of traditional fixed income—such as widely distributed ownership, transferability, public credit ratings, and (theoretical) liquidity—which leave them firmly in the public markets category.

This section of the brief focuses on private market alternative credit, including corporate and real estate direct lending and more esoteric classes of alternative credit and debt.

While public market securities can be attractive because of liquidity and price discovery, they can suffer from volatility due to exogenous market factors. When a borrower appears to be in financial difficulty or in the event a credit rating is downgraded, overselling can create a mismatch between price and fundamental value. Should a bond issuer enter a form of bankruptcy, recovery rates on unsecured bonds with diversified ownership, which rarely coordinate effectively, are typically disappointing.

In contrast to publicly traded instruments, private loans are normally structured as bilateral contracts² that are infrequently (in most cases, *never*) traded. They are typically "secured," which, combined with the

¹These loans are also known as *leveraged loans*, typically made to finance corporate merger and acquisition activity but too large for a single lender to hold.

²Most loans are bilateral contracts between a lender—typically, a private credit manager acting on behalf of a discretionary fund—and a borrower. In some cases, a small number of managers will combine their resources to lend on a "club" or group basis. There may be multiple fund investors with an economic interest in a loan, but they do not hold the loan directly nor are they able to make independent decisions relating to how it is managed.

ability to act more coherently and decisively due to the very small ownership group, means that a significantly higher recovery rate is expected in the event of a default compared to unsecured bonds.

While it is always, in theory, possible to transfer a private loan to another party, in practice, alternative credit is illiquid; there is no clear "market price" for such instruments. Private loans are thus treated for accounting purposes as Level 2 or Level 3³ assets, and valuations involve a level of subjectivity. In practice, this situation results in the widespread use of a mark-to-model methodology, which is undertaken only infrequently (typically quarterly) to establish a "fair value."

Under international accounting standards, the decision to designate a loan as an asset to be held to maturity is for the holder of the loan to make. If such treatment is adopted, the valuation methodology is based on the amortized acquisition cost, with adjustments reflecting only

- the release of any original issue discount or origination fees and
- a reduced recovery expectation if the loan suffers an actual credit impairment.

Private loans also often have floating rates, and irrespective of the accounting treatment, historical volatility has been much lower than in public markets.

While people familiar with public markets find the lack of transparent and consistent valuation methodology in private loans vexing, it hardly matters in our view. At inception, entry is typically at par minus an original issue discount of $\approx 1\%$ – 3% , so market value is not a relevant factor at the point of acquisition. Realization is only possible at maturity when in normal circumstances it would be repaid at par, so market value is not a relevant factor at the point of exit either.

Subasset Class Attributes

There are several subcategories in the alternative credit landscape. Direct lending (or corporate lending) is the most widely understood—some would say mainstream—sector. Yet there is a plethora of strategies to consider, such as real estate debt, infrastructure debt, and even esoteric niches that include trade finance, consumer loans, equipment leasing, and venture debt.

As stated previously, alternative credit has several appealing features. We have listed a number of structural characteristics, but there are also potential market-driven advantages, such as the current availability of supply (capital to lend) and demand (organizations seeking loans), that may lead to better investment outcomes.

Fundamental advantages can include low volatility—a byproduct of lower liquidity—steady income, protection against interest rate risk (since loans are generally issued with floating rates), and diversification of return drivers from public fixed-income and equity asset classes.

Cyclical perks may include yield enhancement vis-à-vis traditional fixed income, low default rates, and potential downside protection—as demonstrated during the economic downturn of 2020 caused by the COVID-19 pandemic. One further useful attribute of the asset class is its ability to offer the potential for targeted approaches to environmental, social, and governance (ESG) investing; diversity, equity, and inclusion (DEI); or even impact investing.

³Level 2 assets are financial assets and liabilities that do not have regular market pricing but whose fair value can be determined on the basis of other data values or market prices. Level 3 assets can be valued only on the basis of internal models and have no observable market prices.

Risk and Return in Alternative Credit

Next, we consider diversification, historic return profiles, and the liquidity of alternative credit investments in more detail.

Diversification can be a major driver of demand for alternative credit to be included in institutional portfolios. Although all borrowers—in fixed income and in alternative credit—are exposed to certain common underlying forces that will likely affect their ability to borrow and repay, correlations between valuations and default experiences have historically been low.

Alternative credit managers access investments that are highly unlikely to overlap with the traditional constituents of an investor's listed market portfolio. Borrowing companies tend to be smaller and more focused, and their success often depends more on their ability to compete within (or even disrupt) their industry than on the high-level fortunes of the industry.

A second factor, more often overlooked, is that private credit investments offer access to a different mix of sectors compared to public market investments. Private credit often (but not always) involves lending to companies owned by private equity sponsors, and it is well documented that the exposure to different industries accessible through private equity investment is quite different from that available through investing in public markets.

Portfolios tend to be concentrated and "high conviction" in nature, with a relatively modest number of positions compared to a typical fixed-income portfolio (an alternative credit fund will usually target 30–60 underlying positions). Even when looking at different alternative credit managers, we see low correlations between the composition of their funds. If further diversification from traditional asset classes is desired, investors can lean more heavily toward niche opportunities and countercyclical strategies.

In recent years, investment professionals have highlighted the relatively lower volatility of alternative credit and, more specifically, its ability to withstand market turmoil. The caveat is that all illiquid asset classes benefit from an optical reduction in volatility—the benefit of not having to mark a portfolio to market each day and the lack of external pricing reference points.

In practice, however, the reduced volatility is also driven by fundamentals. First, alternative credit assets nearly always offer a floating rate, which means they have very little interest rate duration. Furthermore, the lack of tradability in the asset class and the long-term fund structures reduce the ability to behave irrationally (panic selling) at times of market turmoil and engage in fire sales or crystallize losses.

Valuations in Alternative Credit

Alternative credit investors do have a further distinct advantage compared with other illiquid asset classes: They do not require an exit via the sale of the asset. Investors in private equity, infrastructure, and real estate can ultimately realize the value of their investment only by exiting their positions. Although valuations may appear robust prior to exit, assets may not achieve such valuations at sale. Private credit positions, meanwhile, simply mature at par value (typically after five years or less); the state of the market thus does not affect the exit valuation (absent an actual default).

Exhibit 1 presents an overview of the characteristics of the main types of alternative credit transactions.

Exhibit 1. Characteristics of Alternative Credit

	Expected Valuation Impact of Interest Rates	Expected Correlation with Equity Valuations	Expected Valuation Impact of Credit Spreads	Theoretical Inflation Protection (e.g., Floating Rate Or Other Component of Return)	Term (Typical Fund Structure Lock-In)	Current Cash Yield
Corporate lending: senior	Low	Low	Medium	Yes	5yr+	Yes
Corporate lending: levered	Low	Low	Medium	Yes	5yr+	Yes
Corporate lending: mezzanine	Low	Low	Medium	Yes	5yr+	Yes
Real estate debt: core	Low	Low	Medium	Yes	5yr+	Yes
Real estate debt: transitional and value-add	Low	Low	Medium	Yes	5yr+	Yes
Real estate debt: mezzanine	Low	Low	Medium	Yes	5yr+	Yes
Real estate debt: niche	Low	Low	Low	Yes	5yr+	Yes
Trade and receivables finance	Low	Low	Low	Yes	1yr+	Yes
Asset leasing	Medium	Medium	Medium	Yes	5yr+	Some
Special situations/ distressed	Low	Medium	Medium	Some	5yr+	Some
Bank risk transfer	Low	Low	Medium	Yes	5yr+	Yes
Collateralized loan obligation (CLO) equity	Low	Low	High	Yes	5yr+	No
CLO subordinated debt	Low	Low	High	Yes	5yr+	Yes
Intellectual property and royalties	Medium	Low	Medium	Some	5yr+	Yes
Litigation finance	Low	Low	Low	No	3yr+	No
Consumer finance	Low	Low	Low	Yes	1yr+	Yes
Fund and net asset value finance	Low	Low	Low	No	3yr+	No

Source: bfinance (September 2022).

Opportunities for Return Enhancement

The opportunity to generate superior risk-adjusted returns versus traditional fixed income—with better yields for similar or lower credit risk in practice—became particularly clear after 2012, when banks reduced their lending activities under the influence of regulations enacted after the Global Financial Crisis. So-called alternative lenders were able to step in and fill the gaps that had been left and notably gained significant market share, especially where more flexible or complex financing solutions were required or with borrowers who sought slightly higher levels of leverage than banks were now willing to work with.

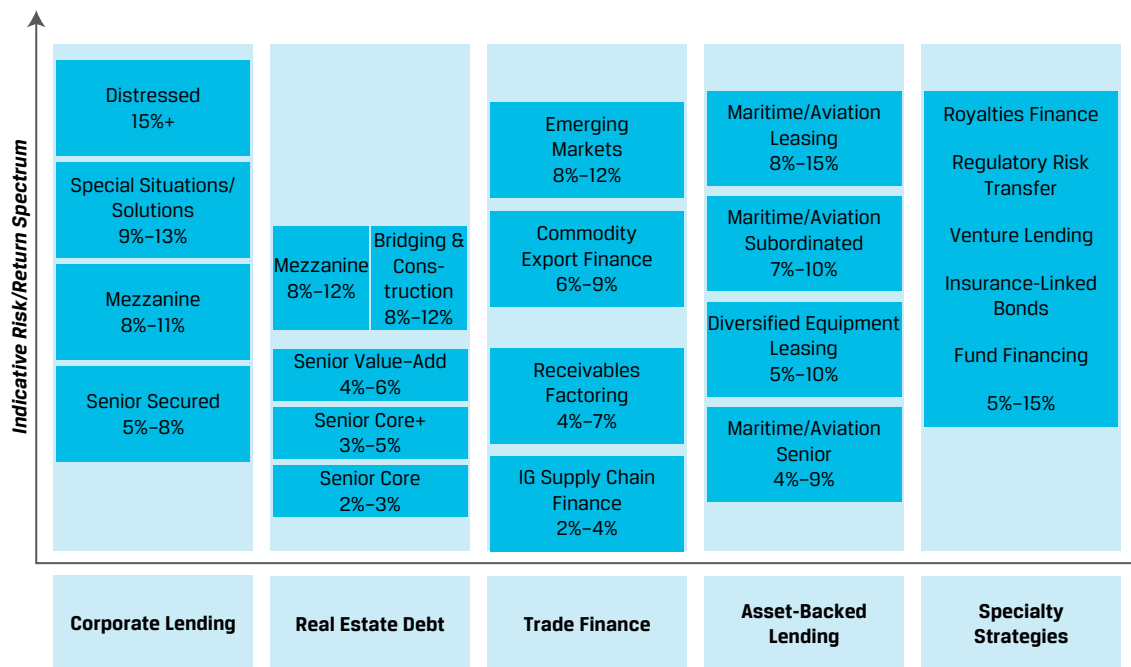
Meanwhile, consistent, historically low interest rates worked to the advantage of all parties. Lenders were able to obtain a meaningful premium above the very low yields that were available in traditional fixed income, while borrowers could comfortably afford that premium. "Sponsors" (namely, the private equity manager that might own the controlling equity stake of the borrowing company) were keen to take advantage of relatively cheap debt in order to increase the return on their equity investments.

Exhibit 2 lays out potential earnings from different types of alternative credit transactions. These figures are purely indicative and should be used for reference only.

Private credit continued to deliver stronger performance compared to traditional fixed income throughout the 2012–22 period. Going forward, the popularity and performance of the asset class will be tested in an era of relatively higher interest rates (which can be expected to also correspond to a period of higher corporate credit stress). Rising interest rates erode traditional fixed-income capital values whereas the same is not true for private credit; of course, when the expectation once again turns to rates falling, the argument runs the other way.



Exhibit 2. Examples of Credit Strategy Gross Yields



Source: bfinance.

Overall, most of the professionals involved in the industry believe that illiquidity and complexity premiums should persist over the long term and that default performance should not be significantly worse than that of non-investment-grade fixed income—in part because of the stronger protections available to investors—something we discuss further in the following section.

Incorporating Alternative Credit in an Institutional Portfolio

While the investment characteristics of alternative credit support its inclusion in an institutional investment portfolio, creating and maintaining an allocation to alternative credit can be a relatively complex and challenging process.

Several factors contribute to the challenges, but the following are especially important:

- Traditional public market portfolio construction concepts must be adapted when constructing an asset allocation policy.
- Risk management requires different considerations and a greater degree of qualitative input.
- Deploying and recycling capital can be a relatively intensive exercise.

Designing an Allocation

Alternative credit is extremely diverse and is incorporated into portfolios in diverse ways by different investors, depending on their bespoke objectives.

Alternative credit can be used as a replacement for a portion of traditional fixed-income assets, offering cash yield enhancement while reducing overall expected volatility. The inclusion of alternative credit diversifies credit risk exposure drivers and reduces valuation exposure to rates. There is no clear evidence that realized losses for a portfolio are likely to be significantly worse through a period of stress compared to high-yield bonds.

Other investors use alternative credit to pursue a growth strategy—replacing a portion of their allocation to public equities—with the intention of compounding the potentially high cash returns. A typical net return target from a private credit portfolio is likely to be inferior to the one expected from a public equity portfolio, but private credit portfolios traditionally suffer from significantly lower levels of volatility.

Increasingly popular strategies such as cash flow-driven investments (i.e., selecting assets that will match an institutional investor's known cash needs over a defined horizon) can also benefit from an allocation to alternative credit. While the floating-rate nature of most assets does create a limitation in this sphere, it is balanced by the extra credit margin (which is essentially fixed) that can be earned versus traditional bonds, for example.

Some investors also incorporate alternative credit into an allocation in real assets. Real estate debt or infrastructure debt, for example, can complement allocations to real estate or infrastructure equity, reducing overall risk and volatility, with lower entry costs, faster deployment, and redemptions at par conferring flexibility without exposure to exit at an unpredictable future market price.

Whatever the investor objectives, these should be attained through the choice of strategies, styles, and managers. The portfolio that is developed must reflect the original intentions behind the allocation—in terms of risk exposures, return targets, liquidity profile, and other requirements or constraints. However, the process cannot simply be a "top-down" one. Setting appropriate objectives requires a working understanding of the available vehicles and structures, up-to-date risk/return expectations, costs, ESG practices, and probable time frames.

Alternative credit strategies are typically actively managed. Each manager's portfolio will likely look different from others in the peer group, and the amount of overlap between managers in terms of individual positions can be expected to be extremely limited. Each underlying position has idiosyncratic risk drivers, unlike in a fixed-income portfolio, where valuations (and therefore returns) are strongly correlated given their dependence on two common factors—interest rates and credit spreads.

Although a number of data sources show historical performance, no universally accepted "index" or benchmark exists for alternative credit, certainly nothing as useful as the widely accepted and used benchmarks for listed equities and bonds. The main obstacle to developing such an index is the idiosyncratic nature of different managers' portfolios, as described above.

Finally, nearly all underlying assets are unrated, meaning that it is not possible to use historical default histories (or predictions) associated with widely recognized credit rating methodologies. As a result, many investors choose to rely on "proxy" data when modeling the impact from the inclusion of alternative credit into their portfolios, which tends to overstate volatility and correlation effects.

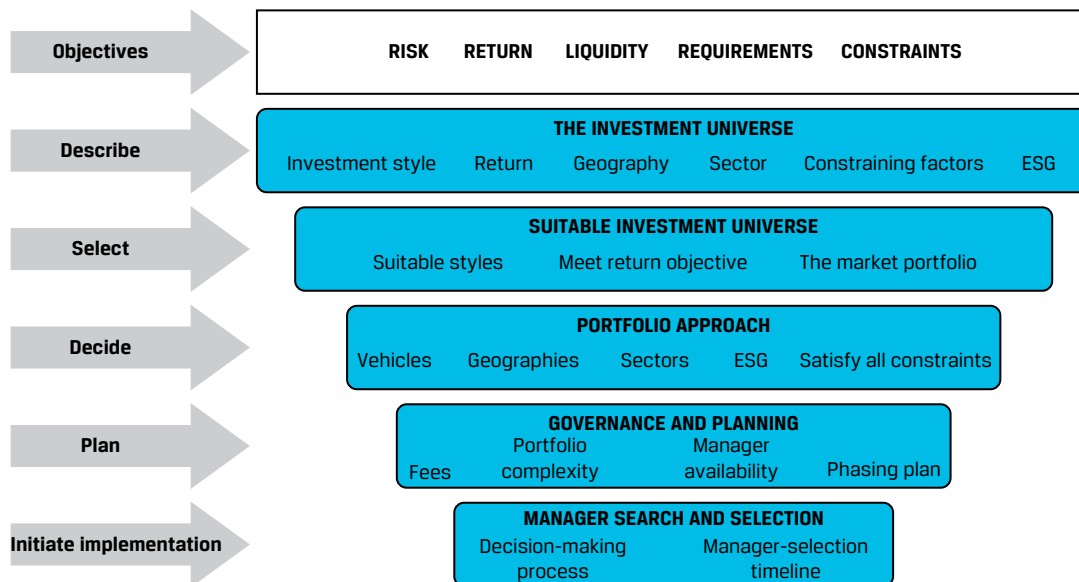
Using the very low levels of correlation and volatility that an alternative credit portfolio is likely to exhibit as inputs to portfolio optimization tools, however, tends to lead to oversized recommended allocations. One limiting factor in incorporating alternative credit into an institutional investment portfolio is that most institutional investors have (rightly or wrongly) a limited tolerance for illiquidity, and defining such a limit is a method that most investors use to determine the final allocation to alternative credit.

Implementation is also of crucial importance, given the low correlation between different managers and substrategies, and any discussion about incorporating alternative credit must be founded on a strong understanding of implementation considerations and the role that alternative credit is expected to play.

Exhibit 3 shows the decision-making process of a typical alternative credit investor.



Exhibit 3. From Defining Objectives to Executing Investment: A Stylized Decision Tree



Source: bfinance.

Managing the Risks

Due to the lack of liquidity and dampened mark-to-market (MTM) volatility (and, in any event, the lack of possibility of readily crystallizing an MTM "loss"), the downside risks in alternative credit are relatively limited. The only way to lose money over time is through credit defaults when the cumulative realized losses outweigh the interest income earned on a portfolio.

By contrast, the main downside risk in private equity, infrastructure, or real estate would be the need to sell assets at a discount to the acquisition price.

In the case of liquid strategies, the downside risks typically take the form of MTM losses, although as has been seen on multiple occasions, it can be necessary to crystallize these losses. In addition, MTM movements, particularly in government-issued or investment-grade (corporate) bonds, can more than outweigh in a single year the cumulative coupon income generated over a much longer period. This story appears incredibly positive for alternative credit, but the asset class generally lacks the upside return potential that other asset classes can deliver. As such, alternative credit managers must focus on mitigating potential losses and left-tail risks.

There are two main areas of focus: minimizing the risk of defaults occurring and maximizing the probability of good outcomes for the lender in the event of a default or credit event.

To minimize default risk, particular attention to the process of asset selection, credit underwriting, and loan structuring is key. Most assets are not "rated" by a credit rating agency, though this does not necessarily mean that the risk of a default is comparable to that of sub-investment-grade assets. In the absence of third-party credit work to rely on, strong credit analysis capabilities are crucial, although information from the borrowing company (or about the asset being financed) can be of better quality and a higher level of detail than is the case in public markets.

Alternative credit assets typically have several structural protections that can prevent the incidence of defaults. Most loans include covenants, which can help reduce the incidence of enforcement action: If a covenant breach is imminent, it is in the borrower's interests to rectify the situation because a covenant breach typically gives the lender the ability to take enforcement action at an earlier stage than would be the case if lenders had to wait for a payment default to occur. The ability to negotiate and structure the right level of covenant protection is a key manager skill that should be assessed.

When enforcement is necessary, alternative credit investors tend to have further advantages versus traditional fixed-income investors. Most loans are bilateral or involve small clubs of investors, which can be helpful in practical terms during workout scenarios. Most loans are also secured, allowing lenders to step in more easily and recover capital. In the case of debt secured by real assets, lenders may be allowed to take possession of the underlying asset and maximize the realized value. The overall outcome is that the expected level of recovery from a defaulted asset is considerably higher in alternative credit than in traditional fixed income. Indeed, it is not an unusual event for enforcement action to lead to recoveries of 100% or even more in some cases. Investors with well-diversified alternative credit portfolios should, therefore, be able to tolerate a few troubled positions before seeing a major impact on overall risk/return expectations.

When managing the risks of alternative credit portfolios versus fixed income, portfolio liquidity must be considered as an additional factor on the risk dashboard. While illiquidity can be a strength (by dampening valuation volatility and preventing irrational crystallization of losses on money-good assets), it can also be a source of difficulty in the event that unforeseen events occur. At the time of writing, we have seen

significant growth in the private debt secondary market, which could in principle help address investors' liquidity needs, but price discovery is still fundamentally inefficient and the time taken to execute a transaction can be substantial.

The more likely value of the secondary market is to address a second drawback of illiquidity, sometimes referred to as the "denominator effect." When significant drawdowns occur in public markets, less liquid assets with more stable prices can become overweight within a portfolio, and depending on an institution's approach to portfolio construction, this situation can lead to the inability to make further commitments to private market assets. While secondary markets may address an overweight position in the short term, they can create a hard-to-address underweight in the longer term and lead to a lack of portfolio diversification over different lending vintages (discussed in the next section). Trimming existing private market positions using secondary transactions is a potential solution to this dilemma.

Implementation Challenges

Several complexities are involved in implementing an alternative credit allocation, but we focus here on four of the most prominent: deploying and recycling capital in an illiquid asset class, fees and costs, performance monitoring and valuations, and manager sourcing and selection.

Deploying and Recycling Capital

The illiquidity of private, alternative credit investments not only presents challenges when return of capital is required but is also an impediment to deploying capital in the first place.

Unlike traditional fixed-income assets, which are typically exchanged in open markets, alternative credit investments must be originated by the manager to whom an investment commitment has already been made in advance. Managers typically cannot start originating assets until they have certainty of capital, and will likely have portfolio construction and credit underwriting standards—meaning a typical allocation to alternative credit may take several years from the date of capital commitment to fully deploy.

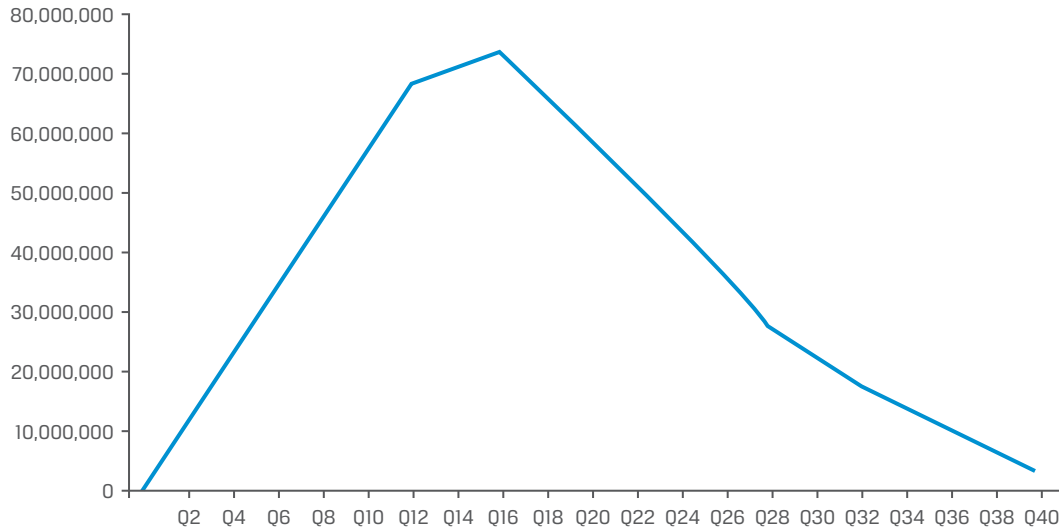
In addition, the asset class pays regular interest (which traditional portfolio modeling often presumes is reinvested immediately) and reliably but somewhat stochastically returns capital to investors as underlying loan positions mature, which creates scope for inefficiencies in capital deployment. As a result, many institutional investors have struggled to reach and maintain the deployment levels that their strategic asset allocation had called for without appropriate resources and constant attention to the deployment patterns of their underlying managers.

Exhibit 4 illustrates a timeline for the deployment of funds in a typical closed-end alternative credit investment vehicle.

Investors in closed-end funds must be able to manage the cash flows around the asset class. This involves holding committed funds in an appropriately liquid form until they are "called" and making new fund commitments at an appropriate pace to ensure that capital returned from existing investments is rapidly redeployed.

To optimize this exercise requires sophisticated cash flow modeling and has implications for resourcing. The investor must also work out how committed capital should be invested before or after deployment to minimize cash drag. Broadly syndicated (leveraged) loans or short-duration fixed-income strategies, such as multiasset credit (MAC), are sometimes used for this purpose since target returns are not dissimilar, but

Exhibit 4. Typical Closed-End Deployment Profile



performance and liquidity can become problematic, meaning that a degree of cash buffer is typically also required.

Historically, asset managers have been able to offer separately managed accounts to large investors, which can help to some degree with these challenges by allowing the investor more flexibility on the timing of investments and by handing the problem of managing redeployment of capital to the manager. Smaller or less well-resourced teams can also find "fund-of-fund" structures helpful to outsource some of the complexities of building a portfolio.

Recent years have seen a trend toward open-end or "evergreen" structures, which can also reduce the investor's cash flow management burden, as capital is typically automatically reinvested. While closed-end funds tend to be fully deployed only for a relatively short period of their life cycle, evergreen funds should be expected to remain fully or near-fully deployed for longer, giving investors consistent and ongoing exposure to the underlying strategy.

Evergreen structures will, of course, have their own distinct challenges, including setting the valuation and liquidity terms that are offered to investors both joining and leaving the fund. It is important to bear in mind that the underlying assets in these funds are not liquid and if liquidity terms become mismatched, a wave of redemption requests in a less benign fundraising climate could place portfolio maintenance under strain.

Fees and Costs

Alternative credit can appear expensive relative to traditional fixed income, and a wide variety of management fees, performance fees, and hurdle rates is available from different managers in the various asset class subsectors. Costs vary depending on the size and duration of the investment and the level of specialization required.

Base fees (i.e., management fees), which are typically charged on invested capital (although some strategies still seek to charge on committed capital), can range from 0.5% to more than 1.5% per annum, with a median at the time of writing of around 1%. Performance fees vary from about 10% to 20%, with 10% being by far the most common figure.

The hurdle rate and catch-up mechanism are crucial in determining the overall fee load—the level of returns that a manager must deliver before performance fees will kick in and the rate at which a manager will participate in returns once that hurdle rate is exceeded. A well-designed performance fee structure and hurdle mechanism can act to align interests between manager and investor, but it is not a cure-all, because this alignment may be broken.

Performance Monitoring and Valuations

Alternative credit managers do provide reports on performance, but these are typically delivered with a time lag of at least 30 days and valuations are essentially "synthetic": The positions are not traded, so until positions are actually realized, the assessments are a result of modeling rather than observed transactions.

Investors can also take a variety of approaches to judging the success of a manager's performance, which could involve using a proxy benchmark or considering the initial performance targets. Other qualitative methods used to assess performance include evaluating portfolio construction and the rate of deployment, as well as monitoring and migration in key metrics, such as portfolio- and position-level loan-to-value ratios (LTVs) and interest cover ratios.

It can, therefore, be challenging to assess the success of alternative credit portfolios at any given time. If issues do arise, investors may have to examine individual positions more deeply but are likely to be reliant on their chosen managers' "workout" skills.⁴ The sale of an individual underlying position is not typically a desirable or even achievable option.

Manager Sourcing and Selection

Manager selection is of critical importance in this asset class because of the wide variety of strategies and returns in the alternative credit space. Investors must have sufficient sophistication or access appropriate third-party advice to conduct robust investment due diligence and ensure that the manager selected is pursuing a strategy that is likely to satisfy the aims of the allocation.

Operational due diligence is also important in private market asset classes, especially where managers may still be relatively small (in terms of firm assets under management), with the practical and economic constraints that may bring in terms of staffing levels in compliance, risk management, and other "control" departments.

Exhibit 5 indicates a variety of characteristics that may need to be assessed in undertaking investment due diligence and selecting a manager most appropriate to an institutional investor's needs.

⁴A workout is any arrangement in which the loan obligations of the borrower, lender, or third parties are modified in a default situation or to prevent a default.

Exhibit 5. Due Diligence Characteristics of Alternative Credit Investments

Parameters	Typical Range/ Requirement	Prevalence of Question	bfinance Comments
Type of Strategy	Corporate debt/ Real asset debt/ Specialty finance	This is usually a clear requirement of the search.	<ul style="list-style-type: none"> • Broader 'multi-strategy' searches are possible, but comparing different strategies 'like-for-like' is not straightforward. • This may be a relevant question if a 'fund-of-funds' or multi-strategy proposal is being sought.
Manager AuM	>\$2bn AuM	Nearly all investors ask this.	<ul style="list-style-type: none"> • Managers with larger AuM have a stronger fee income and may be more financially stable. • Larger AuM may also imply more sophisticated back-office, risk, and compliance approaches.
AuM in Specific Strategy	>\$1bn AuM	Nearly all investors ask this.	<ul style="list-style-type: none"> • The AuM in the specific strategy can be an indicator of team stability and relevance as well as indicating a track record of successful deployment.
Size of Specific Fund Being Offered	>\$500m	Nearly all investors ask this.	<ul style="list-style-type: none"> • Larger funds are likely to have greater diversification. • Many clients are not permitted to be more than a certain percentage of fund vehicle.
Experience with Investors	Existing investor type and geography	More prevalent in certain industries, such as insurance, where there could be specific reporting requirements.	<ul style="list-style-type: none"> • Some clients take comfort from selecting a manager with existing clients in the same region/industry.
Track Record Length	>3–5 years	Nearly all investors ask this.	<ul style="list-style-type: none"> • Proposals are typically considered 'credible' if they can demonstrate a certain track record of successful deployment. • The longer the track record, the more comfort can be taken that problem positions will have become evident.

(continued)

Exhibit 5. Due Diligence Characteristics of Alternative Credit Investments (*continued*)

Parameters	Typical Range/ Requirement	Prevalence of Question	bfinance Comments
Capital Raising Status	Pre-marketing/First close/Final close	Some investors ask this.	<ul style="list-style-type: none"> • Different investors have different views. • Participating in early closes can deliver fee discounts. • Later closes carry less fundraising risk and can have greater visibility of a seed portfolio.
ESG Credentials	UNPRI signatory/ Article 8/Article 9	Increasing numbers of investors ask this.	<ul style="list-style-type: none"> • Many investors have minimum ESG requirements. • The strength and integration of ESG are usually considered in deep dive IDD.
Regulatory	SEC/FCA or equivalent regulated	Most investors ask this.	<ul style="list-style-type: none"> • Investors will typically only consider offerings that are managed by regulated entities.
Deployment Speed	Typically 0–24 months	Nearly all investors ask this.	<ul style="list-style-type: none"> • How quickly managers can put their 'capital to work' is considered by most institutions.
Fund or SMA?	Commingled fund vs. Segregated account	Nearly all investors ask this.	<ul style="list-style-type: none"> • Investors who have a customizable account with nuanced requirements may consider SMAs. • Investors who want cheaper implementation costs may choose the pooled fund route.
Domicile/ Currency	Domicile: <ul style="list-style-type: none"> • Luxembourg/ Cayman Currency: <ul style="list-style-type: none"> • USD/EUR/GBP 	Nearly all investors ask this.	<ul style="list-style-type: none"> • Investors typically consider products denominated in 'hard' currencies to avoid currency risks in local markets. • Implementation is considered by nearly all investors to achieve tax efficient structures.
Geographical Focus (borrowers)	US/Europe/ Emerging markets/ Global	Nearly all investors ask this.	<ul style="list-style-type: none"> • Investors have different risk appetites across developed versus emerging markets. • Typical mandates will include a cap on exposure to borrowers in nascent markets.

(continued)

Exhibit 5. Due Diligence Characteristics of Alternative Credit Investments (*continued*)

Parameters	Typical Range/ Requirement	Prevalence of Question	bfinance Comments
Closed-/ Open-End	Closed-end/ Open-end/ Evergreen	Nearly all investors ask this.	<ul style="list-style-type: none"> • Different asset owners will have different views. • Open-end structures deliver higher average investment levels across the life of the program. • Closed-end funds will offer less liquidity but a predetermined return of capital.
Industry Focus	Generally not specified	Nearly all investors ask this.	<ul style="list-style-type: none"> • Investors generally seek diversified, cash-generative, non-cyclical sectors. • These are typically not specified or limited to certain sectors of interest.
Target Return Gross	Typically 5%–12% subject to risk/ return profile	This is usually a clear requirement of the search.	<ul style="list-style-type: none"> • The risk/return profile of the investor is almost always considered as part of the mandate. • It is typically a knockout criteria for most mandates.
Target Return Net	Typically 3%–10% subject to risk/ return profile	This is usually a clear requirement of the search.	<ul style="list-style-type: none"> • The risk/return profile of the investor is almost always considered as part of the mandate. • It is typically a knockout criteria for most mandates.
Number of Underlying Investments	10–30 depending on underlying strategy	Some investors ask this.	<ul style="list-style-type: none"> • The desired granularity of the target portfolio is an important aspect of portfolio construction in determining suitable products. • Investors typically prefer funds offering a larger volume of underlying investments within their portfolio.
Expected Income Yield/ Frequency of Distributions	Income Yield: <ul style="list-style-type: none"> • 0–100% of return delivered in cash Frequency: <ul style="list-style-type: none"> • Quarterly/ Semi-annually/ Annually 	Nearly all investors ask this.	<ul style="list-style-type: none"> • Investors generally seek at least part of the overall return to be delivered in the form of a cash yield. • Different investors will require a differing frequency of yield paid in cash distributions.

(continued)

Exhibit 5. Due Diligence Characteristics of Alternative Credit Investments (*continued*)

Parameters	Typical Range/ Requirement	Prevalence of Question	bfinance Comments
Levered/ Unlevered	Limit on leverage within the portfolio	Nearly all investors ask this.	<ul style="list-style-type: none"> More conservative investors will seek a limit on the leverage employed by the manager. Leverage can enhance returns but involves taking on additional risk.
Local Currency Exposure	0–100% of proposed portfolio	Nearly all investors ask this.	<ul style="list-style-type: none"> Asset-level exposure to local currencies can introduce risk into investor portfolios. Mandates typically see caps on local currency exposure within the target portfolio.
Debt Type (Capital Structure Position)	First lien/Second lien/Subordinated/ Equity	Nearly all investors ask this.	<ul style="list-style-type: none"> Capital structure positioning within the portfolio will drive the risk/return profile of the mandate. Conservative investors will seek allocations concentrated in the senior-secured spectrum, while investors seeking higher returns may desire allocations to higher octane allocations.
Target Borrower Size	<ul style="list-style-type: none"> Lower Mid-Market: Ccy 5m–25m: (EBITDA) Core Mid-Market: Ccy 25m–75m: (EBITDA) Upper Mid-Market: Ccy 75m + (EBITDA) 	Nearly all investors ask this.	<ul style="list-style-type: none"> While larger companies may have more stable cash flows, this approach can generate concentrated portfolios. Lending to smaller companies can be seen as riskier but will allow for a larger volume of smaller loans to be underwritten.
Average Loan: EBITDA Ratio	Mandate dependent	Nearly all investors ask this.	<ul style="list-style-type: none"> It measures the level of a borrower's debt relative to its ability to generate cash. Companies with high EBITDA ratios can be seen as riskier investments given the levels of debt already present within the company.

(continued)

Exhibit 5. Due Diligence Characteristics of Alternative Credit Investments (*continued*)

Parameters	Typical Range/ Requirement	Prevalence of Question	bfinance Comments
Average Loan Duration (yrs.)	Mandate dependent	Nearly all investors ask this.	<ul style="list-style-type: none"> Investment horizons are an important consideration when designing a mandate and meeting investor liquidity needs. Longer term loans will usually offer a liquidity premium as the capital is locked away for an extended period of time.
Max Loan: EBITDA Ratio	Mandate dependent	Nearly all investors ask this.	<ul style="list-style-type: none"> Restrictions on EBITDA ratios are sometimes put in place to limit the profile of a company an investment manager can buy debt from.
Liquidity Terms	TBC	Nearly all investors ask this.	<ul style="list-style-type: none"> Open-end/Evergreen structures will offer liquidity windows. Closed-end structures will 'lock away' until the positions are realized. It is important for investors to understand the liquidity profile of the offerings and match it to their own investment objectives.
Local Relationship Management	Typically 'preferred'	Nearly all investors ask this.	<ul style="list-style-type: none"> A local presence of investment managers can be seen as a benefit, particularly in situations where investments deteriorate. The bigger firms will usually have multiple local touch points in markets they interact in.
Base Fee	Typically 20 bps-150 bps (depending on underlying strategy)	Nearly all investors ask this.	<ul style="list-style-type: none"> Expensive fee proposals can erode the overall returns of a program. The fee is usually dependent on the complexity of the strategy being employed.

(*continued*)

Exhibit 5. Due Diligence Characteristics of Alternative Credit Investments (*continued*)

Parameters	Typical Range/ Requirement	Prevalence of Question	bfinance Comments
Performance Fee	Typically 10%–20%	Nearly all investors ask this.	<ul style="list-style-type: none"> Investors will have different views on incentive fees. Performance fees are important for aligning interests between money managers and underlying clients. More conservative private debt products typically won't include a performance element as they do not want to incentivize excessive risk-taking.
Hurdle	Typically 5%–8% (depending on the target returns)	Nearly all investors ask this.	<ul style="list-style-type: none"> Investors will typically only consider offerings with sensible hurdles that match the risk/return profile of the overall strategy. Hurdles set too low will too easily reward managers for performance. Hurdles set too high may incentivize investment teams to take on unnecessary risk.
GP Catch-Up	0%–100% catch-up (typically 100% catch-up for private debt strategies)	Nearly all investors ask this.	<ul style="list-style-type: none"> Investors will need to consider the level of fees paid out once an offering has reached its preferred return. Full catch-ups allow managers to take a fee on the entire return.

Notes: AuM = assets under management; IDD = investment due diligence; SMA = separately managed account; Ccy = unit of currency; TBC = to be confirmed; and GP = general partner.

Source: bfinance.

3. SUBASSET CLASSES

DIRECT LENDING

Stephan Connelly, CFA, and Trevor Castledine
Star Mountain Capital and bfinance

Direct lending is the activity of investment funds that directly extend loans to companies. A typical transaction generates a return in the form of floating-rate interest payments and usually has a guarantee.

The most common form of corporate direct lending is a loan to the equity owner of a company (often to a vehicle owned by a private equity fund, or sponsor, in order to fund the purchase of the company) secured by a guarantee from and by a lien over the shares of the company itself. The goal is typically for the loan's interest costs to be met by the cash flows generated by the company.

Most transactions are bilateral, with just one lender and one borrower. Terms and conditions for each loan are individually negotiated, and although they do maintain some common characteristics, each one will have its own specific set of investor protections and covenants.

Larger transactions may be syndicated by a small "club" of investor funds, but it is unusual for loans to change hands after they have initially been advanced. A typical fund will hold a loan to maturity.

The floating-rate nature of the loans, as well as the lack of trading, has typically kept their valuations stable, and the documentation of the loans can give significantly more protection to investors compared to public market debt. This extra protection comes from the fact that in the event a company experiences trading difficulties, it is easier for the lender to step in before there is an actual default. In addition, the remedies available to the lender are much broader, typically because of the first-ranking security and the fact that the borrower does not have to be put into liquidation as the first step in enforcement by the lender.

These protections can also facilitate lending to companies that require special support or are in financial distress. A large part of the corporate direct lending market and, certainly, some of the biggest funds that are raised now focus on special situations, financing solutions, or plain old distressed debt—areas less suited to commoditized traded markets or to the more conservative lending parameters imposed on regulated banks.

History

Corporate direct lending funds first came into existence to plug the gap between borrower needs and what was on offer, typically from traditional banks. Especially for borrowers that were too small to access the capital markets, debt funding was limited to the banking system. Its traditionally conservative approach to lending led to practical limitations on the amount of debt funding that could be raised and on how flexible its terms could be.

As a result, corporate direct lending funds focused on topping up loans that had been made by banks by adding mezzanine debt. The main goal was to increase the overall amount of leverage that corporates or their equity owners could potentially achieve.

Before the Global Financial Crisis (GFC), a small number of funds competing in traditional lending with banks did exist, but it was the post-GFC regulatory spree, with increasing limitations being imposed on banks, that led to an explosion in the popularity of corporate direct lending funds among borrowers and investors alike.

As banks were forced to focus on rebuilding their balance sheets and, therefore, to focus on more conservative lending strategies, a gap in the market appeared and was rapidly filled by new entrants. Perhaps ironically, many of them had previously worked in the banking system as corporate lending officers.

Market Size Evolution

The direct lending market has grown significantly over the past 15 years. Because of the private nature of the transactions, estimating the size of this market is difficult, but in 2023, of the \$1.3 trillion invested in private credit, 44% was invested in direct lending.⁵

The market's size has evolved over time. Between 2008 and 2012, many newly established funds attempted to raise money for the first time. These funds were often established by lending teams that had emerged from the banking system in the wake of the GFC. The banks no longer being willing (or in some cases, able, for regulatory reasons) to lend as they did before the GFC led to a pool of talent in the marketplace, whose skills could no longer be used by the banking system.

Initial fundraising was typically a few hundred million dollars per fund, with some of the larger and more established brand name players managing to cross the \$1 billion barrier. As the success of these early pioneers was noted, more and more competitors entered the market and there was steady growth in both the number of funds seeking to raise capital and the amounts being raised.

More recently, while the amount of capital being raised has broadly continued to grow, the absolute number of funds has decreased. It is far from unusual for funds to now have final close values of several billion dollars. As shown in **Exhibit 6**, in 2021, three of the largest players had raised funds exceeding \$10 billion in value, while the other funds had raised between \$5 billion and \$8.8 billion. These figures are only marginally lower for 2022.

This consolidation in the number of funds reflects several factors, including the increasing institutional acceptance of corporate direct lending as an asset class to which substantial allocations can be made but where institutional standards and size are required to give investment committees some comfort.

Smaller, niche players continue to specialize in specific regions (particularly in Europe and Asia) or industries (such as health care, life sciences, and hospitality), but they can struggle for oxygen in a highly competitive environment that is dominated by a number of very large players. **Exhibit 7** displays the evolution of private credit fundraising by product type.

⁵BlackRock, "The Growth of Direct Lending: An Investor Q&A" (February 2023). www.blackrock.com/institutions/en-us/literature/market-commentary/direct-lending-qa-feb-2023.pdf.

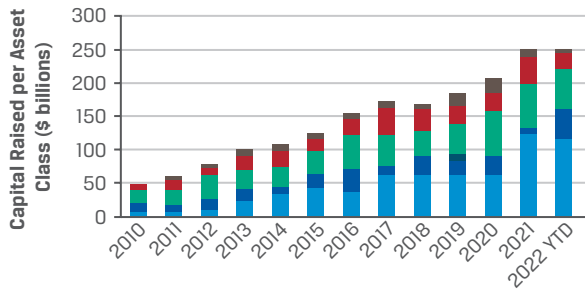
Exhibit 6. Largest Direct Lending Fund Closes in 2021 and 2022

Fund Name	Capital Raised (\$ bn)	Region
<i>Largest fund closes, 2021</i>		
Oaktree Opportunities Fund XI	16.0	Multi-regional
Ares Capital Europe V	13.0	Europe
HPS Specialty Loan Fund V	11.7	North America
GSO Capital Opportunities Fund IV	8.8	Multi-regional
ICG Senior Debt Partners IV	8.1	Europe
Areas Senior Direct Lending Fund II	8.0	North America
Broad Street Loan Partners IV	7.1	North America
Senior Loan Fund II	5.9	Europe
Ares Private Credit Solutions II	5.1	North America
Strategic Value Special Situations Fund V	5.0	Multi-regional
Hayfin Direct Lending Fund III	5.0	Europe
<i>Largest fund closes, 2022</i>		
West Street Mezzanine Partners VIII	11.7	North America
ICG Europe Fund VIII	8.5	Europe
Barings Europe Private Loan Fund III	7.4	Europe
Ares Special Opportunities Fund II	7.1	Multi-regional
CVC European Direct Lending III	6.6	Europe
Crescent Direct Lending Fund III	6.0	North America
Ardian Private Debt V	5.3	Europe
AMP Capital Infrastructure Debt Fund V (IDF V)	5.0	Multi-regional
Monroe Capital Private Credit Fund IV	4.8	North America
Carlyle Credit Opportunities Fund II	4.6	Multi-regional
Apollo Hybrid Value Fund II	4.6	North America

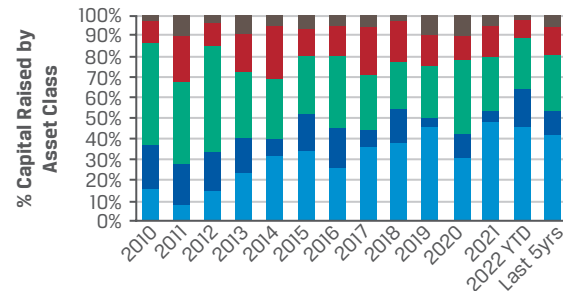
Source: *Private Debt Investor* magazine.

Exhibit 7. Private Credit Fundraising by Product Type

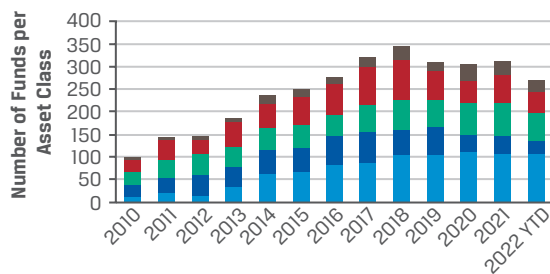
Direct lending remains strong throughout 2022, with mezzanine and distressed debt also picking up steam



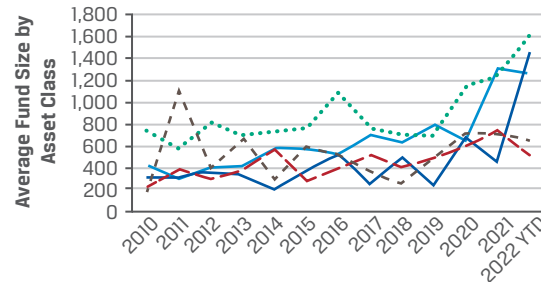
Direct lending picking up steam, accounting for circa 50% of fundraising in 2022



Continued market consolidation in 2022 as no. of funds declines



Average fund sizes increasing across most products as the private credit market matures



Source: bfinance.

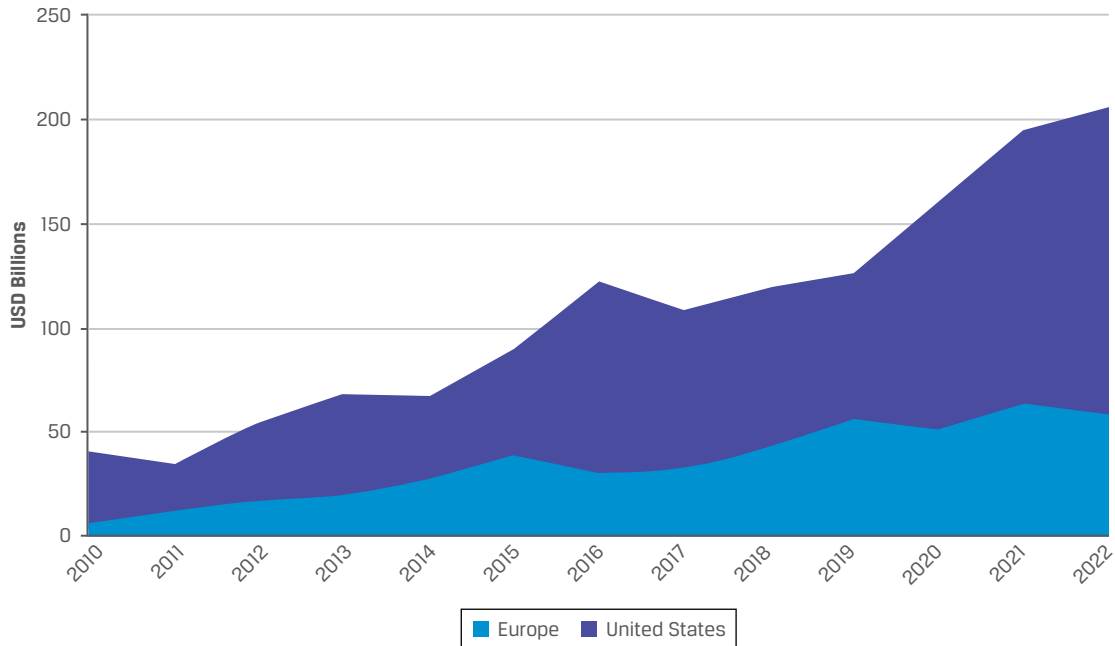
Geographies

Corporate direct lending tends to be geography specific due to the demands involved in originating transactions and the need to structure loan documentation under a specific legal system. As a result, there are few truly global funds, with managers tending to focus on a single jurisdiction or sets of jurisdictions with similar characteristics. In effect, this means that direct lending strategies can broadly be classified as US, European, or "rest of the world."

As shown in **Exhibit 8**, the United States is the largest market, representing between 60% and 70% of funds raised over previous years. Europe is the second largest, representing approximately 30% of funds raised. Although Europe consists of a number of different jurisdictions, European Union rules guarantee limited barriers and sufficient similarities that enable the effectiveness of a pan-European strategy even as some jurisdictions appear to be more creditor friendly than others.

The rest of the world represents a much smaller proportion, estimated at less than 10% of the global market. This smaller proportion is due in part to the relatively smaller size of the open economies that are available to invest in (outside Europe and the United States) and to the cultural reluctance to borrow as well as a lack of familiarity with the legal system and tax rules, which have led to minimal commitments from Western investors. The one exception may be Australia, whose legal system is familiar and relatively friendly to creditors, but despite its large geographic size, the country's economy is relatively small in global terms and historically highly concentrated on commodities.

Exhibit 8. Direct Lending Fundraising in the United States and Europe, 2010–2022



Source: bfinance.

Typical Investors

Corporate direct lending currently forms a significant part of a number of institutional investors' portfolios. It is popular with corporate and state pension funds, for which stability of valuation, reliable cash generation, and diversification are key objectives.

Sovereign wealth funds have long been investors, as have charitable foundations and university endowments. Again, the diversification potential and strong cash flow generation have been seen as desirable properties.

Floating rates and lack of liquidity and credit ratings have made the asset class less accessible to the other major source of institutional capital—insurance companies—although these investors are increasingly finding ways to make investments as well.

Until a few years ago, although there was some investment from very large family offices, this asset class was not easy to access by mass-affluent or retail investors. This situation was largely due to regulatory constraints around liquidity but also to a lack of familiarity with the asset class among retail investor advisers and possibly the relatively high costs.

More recently, a number of products targeting the mass-affluent market have emerged, although these might not be considered "pure" direct lending strategies, because they often involve a combination with some liquid assets. How this market will develop remains to be seen. Corporate direct lending has some desirable characteristics that make it worth an allocation in any well-constructed long-term investment portfolio.

Definition and Goals of a Direct Loan

Funds raised from a direct loan are typically used by the private equity industry to support leveraged buy-outs of companies. A private equity sponsor will establish a special purpose company in order to acquire its target, and that vehicle will be funded by equity capital and debt from a corporate direct lending fund. The debt will typically be secured by a charge over the shares in the company being acquired.

The inclusion of debt in the capital structure to finance an acquisition is intended to increase the overall return on equity for the acquiring party. It also enables the construction of a more diverse portfolio; a typical leveraged buyout structure is financed by approximately 50% debt and 50% equity, increasing the fund's firepower.

Companies can also use direct lending facilities to fund organic growth, working capital, and investment in plant and machinery or to finance add-on acquisitions for inorganic growth.

Finally, as mentioned previously, corporate direct lending can be the only source of funds for a company in financial distress, when banks are no longer willing to lend and capital markets are off limits. The flexibility of direct lenders, which are free from regulatory constraints and have security and transaction structuring skills, may be able to finance a company long enough to stave off bankruptcy and allow for restructuring and recovery.

Market Segmentation

Direct lending funds tend to focus on specific size segments of the potential universe of borrowers. The size of a borrower is usually measured in terms of EBITA (earnings before interest, taxes, and amortization), which is a proxy for the cash generation of a company.

Companies reach different sizes in different stages of growth, which means they may face different challenges in terms of competition and strategy and have different alternative sources of financing open to them. Therefore, it is appropriate for managers to focus on an individual sector where they can provide solutions most relevant to the needs of companies of that size.

Because there are no absolute definitions of size, some overlap will occur at the top and bottom ends of each of these categories, but broadly speaking, lenders will describe themselves as targeting loans to small and medium-sized enterprises (SMEs) or lower mid-market, core mid-market, or upper mid-market companies.

SMEs may be rapidly growing in an organic way and may not find that their traditional bank lender is able to keep pace with their requirements. Lower and core mid-market companies may still be growing organically but may also need to finance international expansion or acquisitions to continue to grow and maintain their competitive edge. Upper mid-market companies may, in principle, be able to access capital markets but may not want to deal with some of the additional administrative burdens and costs (filing requirements and the need to maintain a public credit rating) or may need additional flexible financing solutions and certainty of execution.

Type of Owner

Broadly speaking, direct lending fund managers will target lending to companies in one of two categories: sponsor-owned or non-sponsor-owned companies. A small number of fund managers will lend to either category, but that is the exception rather than the rule.

Sponsor-owned companies are ultimately controlled by private equity funds, whereas non-sponsor-owned companies may be family owned or controlled by institutional capital that is not a private equity fund.

Financial sponsors typically have access to greater financial resources and are able to provide more detailed diligence and financial information about the companies they own or are seeking to acquire. They also tend to own multiple companies, which means a direct lender may have access to numerous opportunities to lend through a single relationship.

Direct lenders who focus on non-sponsor-owned businesses may have to work harder to generate a pipeline of transactions, may have more limited access to financial support from the equity owners of companies, and overall may have access to less extensive levels of due diligence and financial reporting materials. It is generally—although not universally—the case that non-sponsor-owned companies tend to be at the smaller end of the spectrum as well.

While there are certainly pros and cons to each type of strategy, the majority of the market is focused on sponsor-owned companies.

Industry

The majority of corporate direct lending funds will have broad discretion to lend across a variety of industries, although, increasingly, the insistence by investors on the integration of environmental, social, and governance (ESG) factors into the assessment means that certain industries are effectively off limits, such as oil and gas extraction, tobacco, gambling, and the manufacture of certain types of weapons.

Broadly speaking, however, managers will seek to lend to companies in less cyclical industries, such as business services, health care, consumer staples, and logistics, in order to minimize the risk of default, especially taking into account the fact that most target companies are carrying a heavier burden of debt. This means that although a fully constructed portfolio will likely seek to lend across a variety of industry sectors, such industries as entertainment, travel, and lodging, as well as other consumer discretionary industries, will tend to make up a much smaller proportion of typical direct lending funds' exposures.

This does mean that there is a gap in the market for debt financing to participants in these industries, and there are specialist funds that lend to specific industries on the basis of a particular expertise. These funds would claim that the lack of competition in their segments can lead to higher returns, but they suffer from high exposure to certain industries and lack of diversification.

Key Terms

While each individual corporate direct lending position will have been specifically negotiated, one can expect to see a number of common terms that characterize most loans. A typical loan term sheet will need to specify a variety of factors, including but not limited to the following.

Cost

The return from a direct lending transaction will come from a combination of the floating-rate interest, which will typically be defined as the relevant rate for the currency in question (SOFR, SONIA, or ESTER), and a credit margin. The floating rate will typically be subject to a floor to prevent it from falling below a certain level. The margin charged will depend on the relative risk in the transaction, although a typical corporate direct lending transaction will include a margin that is somewhat wider than the credit spread on high-yield bonds.

Usually, a borrower will also pay an up-front structuring or origination fee, and there may be an early prepayment penalty for the first year or two of a transaction.

Interest costs typically must be paid regularly, most often quarterly. However, it is possible for some part of the interest cost to roll up into the face value of the loan in what is sometimes referred to as a PIK (payment-in-kind) note. This feature is more commonly seen in special situations or highly leveraged strategies, where the cash flow generation of the company is expected to improve but may not be sufficient to service debt in the short term.

Covenants

Perhaps the most important investor protection—and the key distinguishing feature of corporate direct lending transactions—is the inclusion of covenants. Broadly speaking, a covenant is a promise by the borrower to maintain a certain level of financial health, and the breach of such a covenant can lead to the lender being able to call a default on the loan.

Covenant levels are usually set such that the lender will be able to step in and take enforcement action before an actual payment default occurs, thereby maximizing recovery levels and possibly even avoiding the need to liquidate a company in order to recover funds.

Typical covenants may include the maintenance of a certain level of interest rate cover (EBITDA: interest cost) and/or a maximum level of leverage (debt: EBITDA), but covenants can also be broader and specific to a company's situation.

Security

Nearly all corporate direct lending transactions are secured. This security may cover the physical assets of the borrowing entity or entities but most often also include security over the shares of the main operating company in the borrowing group.

Companies in the group usually will also guarantee the loan to complete a security package, which will give the lender broad powers of enforcement in the event that a transaction becomes distressed.

Maturity

Transactions can be written for a variety of maturities, but the vast majority of loans are written with a five-year term and a bullet repayment profile.

Enforcement and Default Process

Most corporate direct lending transactions reach maturity without a payment default and are refinanced successfully. However, one must always plan for a potential default.

A company's compliance with the covenants is typically certified by the management every quarter, and a good investment manager will also verify compliance through active monitoring of the company's financial reporting. If a company is compliant with its loan covenants, it should be generating sufficient cash flow to make the regular interest payments on its debt.

However, should a company breach one of its loan covenants or fail to meet an interest payment, the lender would be able to commence enforcement proceedings by calling a default under the loan documentation. In practice, the lender would be in a strong position to call the equity owners of a company into negotiations to provide further capital or undertake other actions with the goal of improving the creditworthiness of the company and bring it back to financial health.

As a last resort, the lender can apply to court to enforce the security that it has under the loan documentation. Under most circumstances, this situation will involve liquidating the special purpose vehicle that owns the underlying operating company and enforcing security over the shares in the company. This process leaves the lender in control of the company—and thus in a position to determine whether liquidation or restructuring and workout is the better option—rather than forcing the liquidation of that company and the fire sale of its assets.

Even where the security package and, therefore, the workout process differ from that described previously, a key strength of corporate direct lending transactions is the fact that there is typically only one lender or certainly only a very small group of lenders. Having such a small number of lenders means that decision making and the subsequent taking of action on decisions can occur much more rapidly, avoiding further deterioration in the credit status of a company in trouble and, importantly, preventing other creditors from being repaid while the main lenders are prevaricating about what to do.

Typical Fund Structure/Life Cycle

Most corporate direct lending funds are structured using a partnership structure often referred to as LP/GP. The fund manager takes the role of the general partner (GP), and the investors take the role of limited partners (LPs).

Fundraising takes place in several stages. The manager first seeks to acquire sufficient commitments to form a fund in premarketing, and once a sufficient level of commitment is reached, the manager holds what is often referred to as a first close of the partnership. Investors in the first close of a partnership quite often benefit from favorable fee terms, which are offered by managers in order to incentivize investors to commit early.

The first close in a fund usually starts the clock for a period of 12–18 months, until the partnership must stop taking on further capital commitments. During this period, the partnership can start making investments but can also accept new capital commitments.

There is usually a mechanism by which investors who participate after the first close have the price at which they participate established. This mechanism may be one by which they pay a share of the fund's net asset value rather than participating at "par," or it may be a mechanism whereby in addition to their par capital contribution, they make a payment equivalent to an amount of interest that should have been earned by investors in earlier closes.

Once a fund's final close has been held, there is usually a further period (which may be established by reference to the first close or by reference to the final close, depending on the documentation of any particular fund) during which the commitments made by the LPs can be called by the fund manager and invested in loans.

During this investment period, the proceeds of any loans that are repaid early can also be reinvested, although interest payments that are received are normally paid to investors. Once the investment period has come to an end, the proceeds of any loan redemptions will be passed back to investors, in addition to any income receipts.

Assuming the loans were originally written with a maturity of five years, all funds would have been returned to the investors by five years after the end of that investment period. However, the fund manager usually has the option to extend the final maturity of the fund by a year or possibly two years, which will give time for any problematic positions to be refinanced or have enforcement action taken.

Return Profile

Factors Affecting Returns

Once a loan has been made, the cash flows from it should be reasonably predictable, although as a floating-rate asset, the actual amount of interest paid could vary slightly from one period to the next. The largest portion of the income is usually the credit margin, rather than the floating-rate portion of the interest, which delivers a degree of stability.

Therefore, a key factor that determines the overall return from a fund is the speed at which the investors' commitments are drawn down and invested and, indeed, the ability of a manager to reinvest the proceeds from any loans that are repaid early. However, speed of deployment needs to be balanced against an appropriate level of risk management, because credit loss is, of course, the main risk when making loans. Moreover, poor-quality underwriting or loose negotiation of investor protections in order to maximize the speed of deployment can easily backfire.

Valuation Methodology and Challenges

Once a loan has been made, it is typically valued on a quarterly basis. In the absence of an observable price, because most loans are not traded, it is typical for a manager to use a mark-to-model approach in order to establish a fair value for the loan.

While this sounds straightforward, it obviously has its own challenges because there is an extremely limited secondary market in corporate direct lending transactions (and certainly no public price discovery of private transactions that do take place). Therefore, the choice of which discount rate to use in order to value alone is a matter of wide discretion.

New Fund Structures

As the private credit market continues to grow and prove its resilience in various economic environments, additional private credit fund structures with various liquidity, return, and structural elements are being created outside of the more traditional LP/GP funds. These new structures also facilitate the continued democratization of alternatives by more efficiently providing access to this asset class among high-net-worth investors and other less traditional allocators to the space. Although these innovative developments are bringing positive growth features and potentially increasing wealth creation by diversifying away from traditional stock/bond portfolios, new investors should ensure that proper diligence is exercised and that they have a thorough understanding of the duration, liquidity, and risk elements of these new fund structures.

Evergreen Funds

Unlike many traditional illiquid private credit funds, evergreen funds offer increased liquidity features and a potentially greater overall utilization of their capital compared to drawdown funds. Evergreen funds are open-end funds so long as they perform well, with investors continuing to elect to remain in the fund and the manager appropriately maintaining operations.

Investors in evergreen funds can typically seek liquidity from their position through redemptions, which are granted in some intervals set by the manager at various predetermined schedules, such as quarterly or monthly. In order to avoid a "run on the bank" in times of uncertainty, fund managers can impose a fund

gate to limit the redemptions granted. With a fund gate, the fund maintains the necessary reserves and available assets to continue funding and managing its investments. The fund manager then must engage in fundraising to replace the commitments they lose from redemptions so that the fund maintains the same size and buying power capabilities. While the underlying assets in these vehicles remain illiquid, which makes it more difficult to provide accurate valuations, the theory is that with proper portfolio diversification, the manager is able to provide liquidity features for investors. These vehicles continue to proliferate, expand, and innovate. Their ability to perform will likely be tested as economic conditions change.

Liquid Vehicles

Liquid funds lie in the middle of the private credit fund spectrum. They are closed-end vehicles that offer intermittent liquidity at some intervals. These funds are regulated under the Investment Company Act of 1940, which requires heightened regulation by the US Securities and Exchange Commission, providing investors with additional comfort in the funds' operational oversight. Like evergreen funds, fund managers can limit the number of redemptions they are required to make at any given time.

Liquid funds have various methods to maintain the liquidity of the fund. One such example is to balance the value of incoming subscriptions with the redemptions granted. In this case, new commitments could be used to liquidate another investor. Alternatively, the fund can rely on the income generated from its investments and the maturing of its portfolio to assist with redemption requests. However, large redemption requests could leave the portfolio unbalanced and require a gate on the fund. For both evergreen funds and liquid funds, investors should consider their risk tolerance, investment portfolio, and time horizon.

Secondary Funds

Secondaries have been a valuable tool for investors to seek liquidity in the secondary market from willing buyers of their illiquid assets. Traditionally, these transactions have been used in private equity, venture capital, real estate, and other alternative asset classes. With the explosion of private credit funds over the past decade or so, a private credit secondary market is not only needed but ultimately inevitable and a welcome solution for investors of all types.

A growing and innovating secondary market of LP interests in private credit would permit investors to facilitate adjustments to their private credit portfolios as a portfolio management tool through sales of legacy positions or types of funds, and investors could potentially allocate to newer funds that can take advantage of current economic environments. There is also the relatively common situation of material drivers of needs for liquidity, which would force investors to get liquidity in the secondary market.

Private credit secondary funds are a growing and potentially attractive initial investment opportunity for investors seeking to gain exposure into the private credit asset class. Secondary funds have various advantages, including reduction of blind pool risk; material incremental diversification by vintage year, geography, and asset; and rapidly accelerating exposure to the underlying alternative private credit market through the acquisition of interests in various other managers.

Investors looking to allocate to private credit secondary funds should ensure the manager has sufficient capabilities to evaluate the underlying credits, to source the underlying transactions, and to properly build sufficient diversification in the portfolio. Given the inclusion of various managers, funds, and vintage years of the underlying assets, these funds typically have longer fund terms, which investors must be mindful of, but ultimately can provide a more efficient access point into private credit, greater resiliency, and overall broader exposure to the asset class.

COLLATERALIZED LOAN OBLIGATIONS

David Preston, CFA

AGL Credit

Collateralized loan obligations (CLOs) offer investors exposure to an actively managed, highly diversified pool of first-lien, senior secured corporate loans issued by (mainly private) large- and mid-cap borrowers. Because the underlying loans have first claim on the issuer's assets and cash flows, broadly syndicated loans (BSLs) are traditionally well suited for leverage because the portfolio's contractual cash flow is typically greater than historical credit losses.

The CLO structure offers investment options for a wide range of investor risk and reward preferences, with potential for superior risk-adjusted returns compared to similarly rated traditional fixed-income investments.

The key drivers of CLO equity performance are loss avoidance—through credit selection and ongoing portfolio optimization—and the ability of the manager to manage the assets given the constraints of the CLO structure.

A Brief Introduction to Securitization

CLOs belong to the larger family of "securitized products," in which cash flow-generating financial assets (such as residential and commercial mortgages, auto loans, and corporate loans) are pooled together into a special purpose entity that subsequently issues marketable securities of varying levels of risk and reward. The securities are supported by the underlying assets and their associated cash flows.

Securitizations can be thought of as banks—that is, a securitization owns loans, pays interest on senior and junior debt, and benefits from a positive net interest margin—but with a more specific portfolio (typically only one type of loan) and a defined lifespan. Securitization allows loan originators to lower financing costs and opens investor access to various debt sectors by targeting marketable securities according to various liquidity risk and reward preferences, something that the underlying assets may not, on their own, offer.

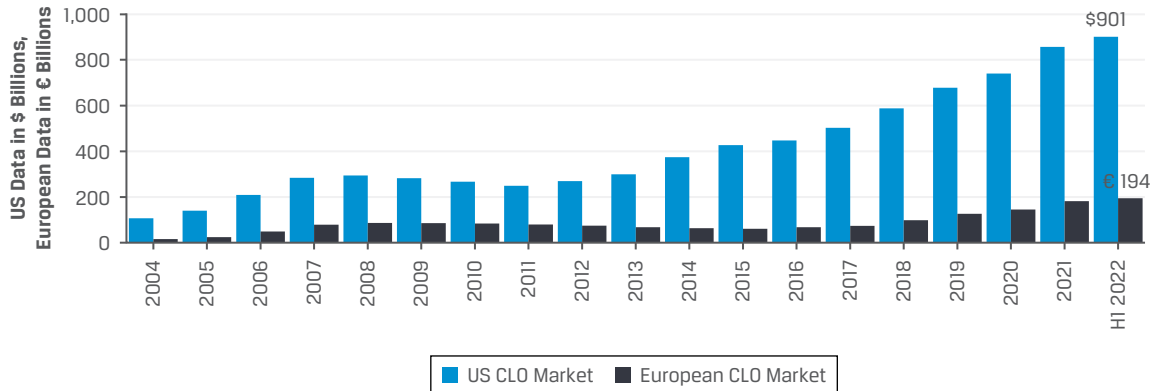
The modern history of securitization can be traced to the US government's issuance of securities backed by pools of residential mortgages in the 1970s. By the early 2000s, investors could purchase securitized loans backed by several types of assets. While market participants still debate which securitization was the first CLO, the CLO structure, as the market currently understands, really took shape in the early 2000s.

Exhibit 9 shows the size of the US and European CLO markets. In the first half (H1) of 2022, the US market was worth \$901 billion, while the European market was much smaller, at €194 billion.

The global CLO market is worth over \$1 trillion. The US CLO market grew from roughly \$100 billion in size in 2004 to over \$900 billion by the end of June 2022, while the European CLO market size was nearly €200 billion as of the end of June 2022.⁶

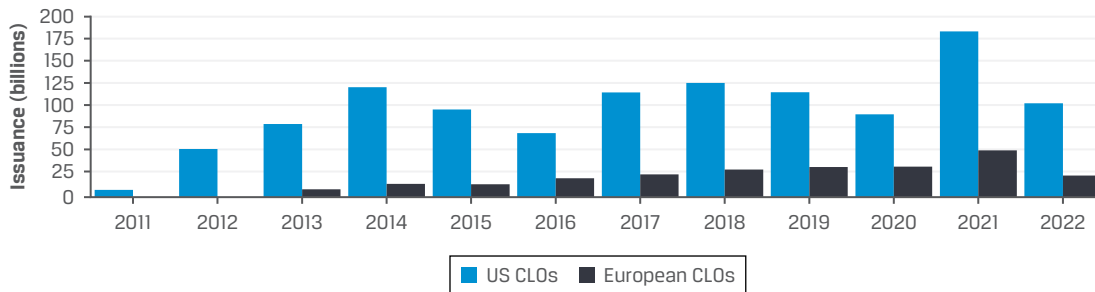
⁶Both markets increased in size in 2023. As of August 2023, the US market was worth \$1.4 trillion and the EU market was close to €300 billion. See Rebecca Mun and Daniel Hu, "U.S. and European BSL CLOs: A Comparative Overview," S&P Global Ratings (31 August 2023). www.spglobal.com/_assets/documents/ratings/research/101585703.pdf.

Exhibit 9. US and European CLO Market Size, 2004–H1 2022



Source: Bank of America Merrill Lynch CLO Research. Reprinted by permission. Copyright © 2024 Bank of America Corporation ("BAC").

Exhibit 10. US and European CLO Issuance, 2011–2022



Source: Pitchbook.

Exhibit 10 shows the size of US and European CLO issuance between 2011 and 2022.

CLOs should not be confused with collateralized debt obligations (CDOs), so prominent and infamously known for their role in the Global Financial Crisis of 2008–2009. Unlike CDOs, which had relatively high default rates, even the lowest-rated, non-investment-grade CLO liabilities have lifetime cumulative default rates below 2%.

CLOs have several advantages over the CDOs backed by subprime mortgages (and other CDO liabilities)—namely, the fact that the collateral assets of a CLO are corporate loans, which have a much longer performance history (Moody's Corporation has rated corporate debt for over 100 years). CLOs also have proven to be much less susceptible to the fraud and poor underwriting seen in the subprime mortgage market in the 2000s.

What Is a CLO?

A CLO is an actively managed fund of first-lien, senior secured loans extended to large- and mid-cap corporate borrowers. The average CLO size is \$500 million. Most CLOs' collateral portfolios contain broadly

syndicated loans, which are purchased by the CLO manager through primary bank syndications or from active secondary markets. These "BSL CLOs" make up the vast majority of the CLO market, while "MML CLOs"—those CLOs backed by middle-market loans originated by the CLO issuer—account for less than 10% of the US CLO market.

The CLO issues senior and junior liabilities (called "tranches" in securitization terminology); the interest from the assets pays the CLO's fees and interest costs, with the remaining interest proceeds (the after-fee net interest margin) flowing to the CLO's equityholders. Credit enhancement and "tranching" create different rating levels for CLO liabilities, allowing involvement of a wider investor base. The repayment of liabilities relies on the performance of the underlying collateral pool—and of the CLO manager.

CLOs differ from almost every other type of securitization in that the CLO portfolio assets are typically purchased and actively managed by a seasoned asset manager with a strong track record managing leveraged loans. Most other securitizations are issued by the originator of the underlying loans as a funding strategy and are typically static, amortizing structures.

CLOs use term leverage with no mark-to-market risk. Specifically, CLOs do not contain any forced liquidation provisions or margin calls, and CLO portfolios are not subject to mark-to-market accounting (with the exceptions of defaulted assets and excess CCC rated assets, which may be carried at the market value for certain test calculations).

CLO Capital Structure

Typically, the CLO issues liabilities (tranches) that are credit rated AAA through BB or single-B, with the highest-rated liabilities having a more senior claim on the cash flows from the underlying assets and paying a lower interest rate. The various CLO tranches are supported by the entire asset portfolio—assets are not specifically pledged to a specific tranche—with portfolio losses borne by the most junior CLO tranches first. Tranches rated single-A or below are "PIKable," meaning they may defer interest in certain situations (namely, failing a coverage test) and "pay in kind" or "PIK."⁷

CLO liabilities typically have an average life of 7–8 years (based on a typical 5-year reinvestment period), with a legal final maturity of 10–12 years, and 2-year noncall periods (some CLOs are issued with a 3-year reinvestment period and a 1-year noncall structure).

The most senior rated CLO tranche is traditionally rated AAA. In a US CLO, the AAA-rated tranche is sized to equal approximately 64% of the asset portfolio. Put another way, a AAA-rated tranche with outstanding principal equal to 64% of the asset portfolio's size benefits from credit enhancement equal to 36%, meaning the portfolio would have to suffer losses equal to at least 36% before the AAA-rated tranche would suffer a loss.⁸

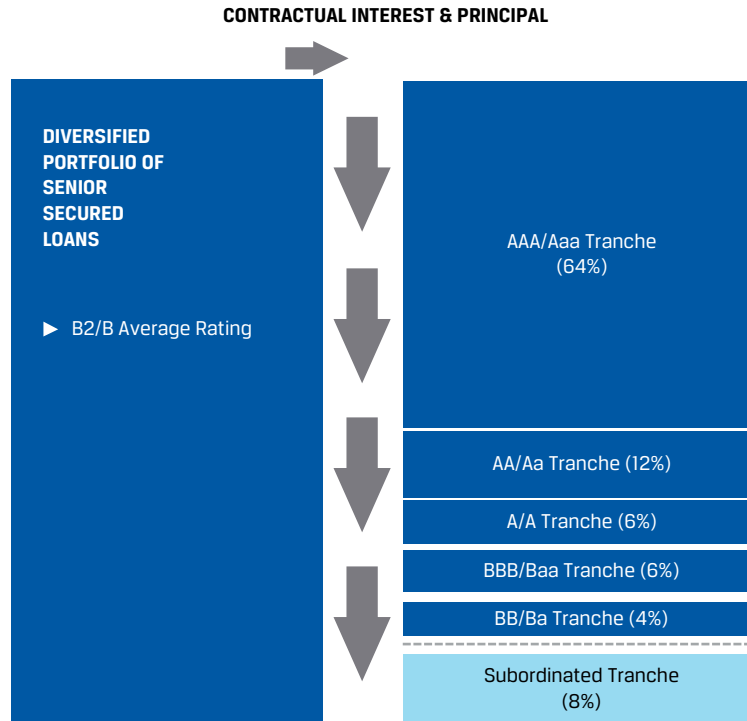
As shown in **Exhibit 11**, the various other tranches are smaller, and the equity tranche of a US CLO is typically equal to 8% of the asset portfolio,⁹ meaning that the CLO has asset-to-equity leverage equal to roughly 12.5× or debt-to-equity leverage equal to 11.5×.

⁷Payment in kind is the use of a good or service as payment instead of cash. In these cases, the interest is added to the principal balance of the loan (referred to as capitalized) instead of being paid to the lender in cash.

⁸In reality, cash trapping and other structural protections mean that the required portfolio loss rate to cause a loss on the CLO's AAA-rated tranche is significantly higher than 36%.

⁹Euro and MML CLOs are less levered due to less diversified portfolios and thus have less debt relative to the asset portfolio, along with smaller AAA-rated tranches, and a larger equity portion.

Exhibit 11. CLO Capital Structure (US BSL CLO structure)



Source: AGL Credit Management.

CLO Life Cycle

In this section, we outline various aspects of the CLO life cycle.

The CLO manager

CLO managers are investment managers that typically issue CLOs to earn asset management fees. The CLO pays senior and subordinated fees, along with an incentive fee (e.g., after the equity internal rate of return is greater than 12%, an incentive fee equal to 20% of subsequent equity cash flows).

Ramp-up

The first step in the CLO life cycle is the warehouse and ramp-up period. Typically, several months before pricing, the CLO manager opens a credit facility (the "warehouse") with a bank, allowing the manager to gradually purchase assets for the portfolio in the primary and secondary markets, a process called portfolio ramp-up.

Pricing/closing

As the ramp-up progresses, the manager and the arranger determine the key features of the deal and start negotiations with initial investors, leading to pricing. At pricing, coupon levels for the liabilities are determined. Closing typically occurs four to six weeks later, at which point interest starts to accrue.

Usually, the manager is still in the process of purchasing assets at the pricing stage (on average, the portfolio is approximately 60% ramped at pricing), and the ramp-up continues until the close date. Once the target portfolio size has been reached, the CLO passes the effective date, meaning various coverage and portfolio quality tests start to apply.

The noncall period

CLO equity investors can exercise their right to refinance the liabilities, or "call" the CLO, after a noncall period (typically two years). When calling the deal, equity investors sell the portfolio asset to pay off the liabilities at par. The refinancing (call) option protects CLO investors from the risk of compressed net interest margin that can arise from portfolio asset refinancing or lower coupons on replacement portfolio assets.

Reinvestment period

During the reinvestment period (usually five years, but sometimes less), a CLO manager can typically reinvest proceeds from asset prepayments; after the reinvestment period, asset principal payments are used to amortize the CLO liabilities in order of seniority.

Amortization/optional redemption

After the conclusion of the reinvestment period, the manager often has some latitude for limited reinvestments, specifically of unscheduled prepayments, credit risk sales (of assets that have declined in creditworthiness), and credit improved sales (of assets that have improved in quality and that the manager can sell at a good price), subject to satisfying various portfolio tests—namely, asset maturity and weighted average life tests that limit the manager's ability to extend the transaction's life or own assets that mature after the CLO liability's maturity.

As senior notes amortize, the CLO delevers and total debt costs increase, creating lower CLO equity distributions. Therefore, CLO equity investors often choose to call the deal at some point before the deal has fully repaid all liabilities.

CLO Mechanics

CLO liability interest and principal are paid according to a transaction-specific waterfall, with higher-rated tranches having a more senior claim on available funds than subordinated tranches.

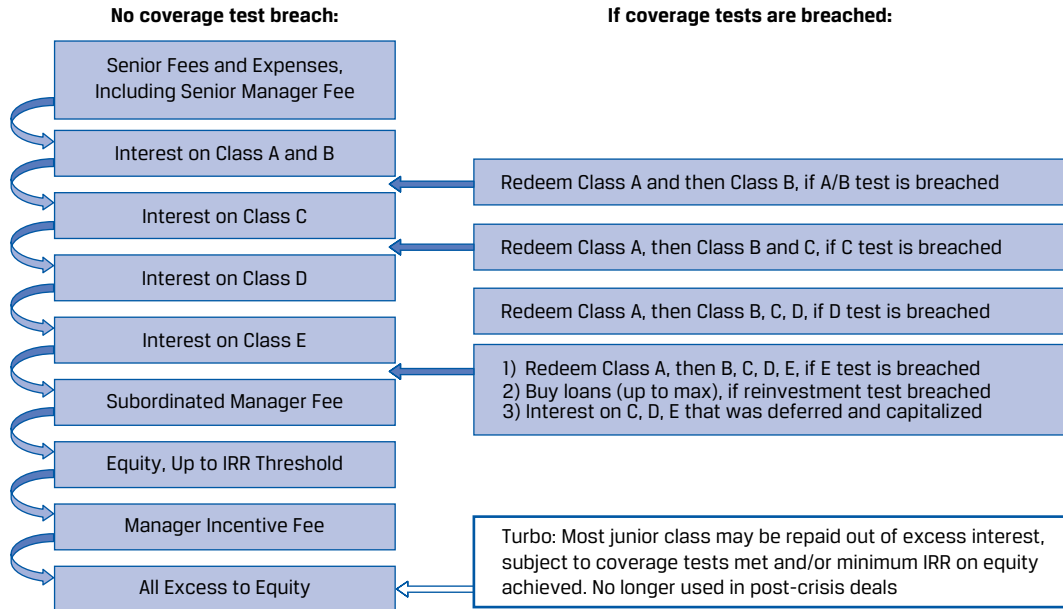
During the reinvestment period (typically five years), the CLO manager actively manages the portfolio—subject to defined portfolio limits and covenants. The interest from the asset portfolio is used to pay fees and CLO liability interest, with the residual net interest margin distributed to the CLO equity.

The CLO waterfall

CLO portfolio asset principal and interest are paid via two distinct cash flow waterfalls. As stated, CLO asset principal payments are reinvested during the reinvestment period and used to amortize CLO liabilities sequentially, after the reinvestment period.

The interest waterfall, an example of which is shown in **Exhibit 12**, dictates how asset portfolio interest payments are distributed. Asset interest payments pay senior fees first, including senior management fees (e.g., 15–20 bps of assets under management), followed by CLO liability interest. Subordinated management fees (e.g., 30–35 bps of assets under management) are paid after CLO interest but before equity distributions.

Exhibit 12. CLO Interest Waterfall



Source: AGL Credit.

CLO coverage tests

The CLO interest waterfall contains coverage tests designed to protect CLO liability investors. A CLO will have coverage tests set at most liability tranches (AAA and AA tranches often have one combined coverage test).

The two main coverage tests for the CLO liabilities are *overcollateralization* (OC) and *interest coverage* (IC). Breaches of the OC or IC tests result in asset cash flows being redirected away from equity and junior debt tranches and toward amortization of senior tranches. CLO tranches rated single-A and lower are "PIKable," meaning these tranches can "pay in kind" or defer interest.

For example, a breach of the Class C OC test (typically a single-A initial rating) would result in coupon payments to Class D and E tranches (typically initially rated BBB and BB, respectively), as well as equity distributions, being withheld and redirected to pay down Class A notes (AAA rated initially).

This reduction in the outstanding balance of Class A notes would cause the Class C OC level to rise (as the denominator decreases, as explained below). Once the Class C OC test is cured, remaining cash flows would be used to pay coupons on the remaining tranches and residual cash flows would increase equity. If cash flows were insufficient to pay coupons on all PIK tranches, then the interest shortfall would be added to the outstanding balance of the notes for which the shortfall occurred, to be paid at a later date.

The mechanism for curing a breach of the IC test would work in a similar way, with amortization of the senior notes reducing the interest burden on the liabilities and causing the IC ratio to rise.

Often, CLOs include an additional coverage test (i.e., an interest diversion test) similar to the junior-most OC test but with a slightly tighter trigger. Unlike the normal OC test, the reinvestment test is cured by diverting

cash flows away from equity toward buying more assets, rather than paying down liabilities—thus curing the OC test by increasing the numerator, as shown below.

OC test mechanics

The OC test is an asset/liability coverage test that uses an adjusted asset value, relative to all liabilities equal to or senior to the specific tranche level for the test, with almost all the assets carried at par value for OC test purposes. The OC test's trigger values are set at issuance, based on input from the CLO manager, rating agencies, and investors.

Exhibit 13 shows how to calculate OC value.

There are three primary exceptions to the par carrying value in which assets would be held at less than par for OC test purposes:

- Defaulted assets are held at the lower of market value or rating agency recovery value (recovery value typically is 45% for first-lien loans).
- Discount purchase assets, assets purchased below a prescribed level (typically \$0.80 on the dollar), are held at purchase price but may be held at par if the price is above \$0.90 on the dollar for a month.
- For excess CCC/Caa assets, if the CLO has an exposure of over 7.5% to CCC/Caa assets, the balance of CCC/Caa assets over 7.5% is held at market value (with the excess calculated starting with lowest price first).

CLO Collateral Quality Tests

A typical US BSL CLO portfolio will contain more than 200 BSLs, with the CLO manager actively managing the portfolio. For their investment decisions, collateral managers are required to satisfy certain criteria (collateral quality tests, or CQTs). Failing a CQT or concentration test does not lead to cash flow diversion; instead, the manager may not trade assets unless the test is maintained or improved. Examples of CQTs include the following:

- A weighted average rating test (which governs the credit quality of the assets using the assets' ratings, per rating agencies)
- Diversification tests (which govern the diversification of the portfolio using industry and obligor concentrations)
- A minimum weighted average spread test
- A weighted average recovery rate test
- A maximum weighted average life test



Exhibit 13. CLO OC Value Calculations

$$\text{OC Value} = \frac{\text{Asset portfolio adjusted par value}}{\text{Current principal balance of the CLO tranche being tested} + \text{all tranches senior to the tranche being tested}}$$

The collateral manager is also required to adhere to certain rules governing concentration (concentration limitations), including but not limited to the following:

- A minimum percentage of first-lien senior secured loans
- A maximum percentage of loans from a single obligor/single industry
- A maximum percentage of CCC rated loans
- A maximum percentage of covenant-lite loans

CLO Liability Distribution and Investor Base

CLOs are structured and issued through dealer bank distribution channels to institutional investors across the globe. AAA CLO liabilities are floating rate, backed by corporate loans; therefore, they are a good loan substitute for banks. As such, AAA liabilities are typically purchased by large banks (with Japanese and US banks particularly active, historically accounting for between 40% and 50% of the AAA CLO holders). Life insurance companies are also active in the AAA CLO liability market, historically accounting for between 15% and 20% of the US CLO AAA investor base, per Bank of America Merrill Lynch CLO Research. The balance of the AAA investor base is primarily made up of money managers.

CLO AA to BB tranche investor base

In the US CLO market, life insurers are the largest investors in the AA through BBB tranches, accounting for 40%–60% of each tranche's market, according to research from Bank of America in 2022. Money managers are also active in the nonsenior investment-grade (AA through BBB) tranches. These CLO tranches can be particularly attractive assets for money managers looking for floating-rate assets because CLOs are one of the only large, scalable investment-grade sectors with floating-rate coupons. As a reminder, the single-A through BB tranches are typically "PIKable."

Money managers and hedge funds are active in the BB tranches, and many BSL funds have a small (5%–10%) allocation to CLO BB tranches.

CLO equity investor base

The equity tranches are purchased by a wide range of investor types. Liquid CLO investors, who may actively trade the equity tranches, include money managers, hedge funds, and dedicated structured credit funds. These investors are primarily attracted to the high cash-on-cash returns provided by CLO equity.

Additionally, CLO equity is often purchased by alternative investors, such as pensions, sovereign wealth funds, and endowments. With average internal rates of return (IRRs) in the midteens, high cash-on-cash returns, and a relatively front-loaded return profile, CLO equity is a good complement to private equity style investments. Many larger CLO managers have established fund style structures to allow these alternative investors to partner with the CLO manager and to make large investments in CLO equity by investing in the equity of many CLOs issued by the specific manager.

CLO Tranche Returns

CLO AAA returns

CLO liabilities pay quarterly floating-rate coupons. According to Bank of America Merrill Lynch CLO Research from 2011 through Q3 2022, the average US CLO AAA discount margin (DM) was three-month LIBOR

+ 134 bps, moving as tight as three-month LIBOR + 93 bps (in Q1 2018) and as wide as three-month LIBOR + 500 bps (during the COVID-19 dislocation of March and April 2020). On average, US CLO AAA DMs have roughly 1.0x the option-adjusted spread of the Bloomberg Barclays Investment Grade Index, with the relative spread ratio reaching a low of 0.76x and a high of 1.28x.

CLO BB returns

From 2011 through Q3 2022, CLO BB tranche DMs averaged three-month LIBOR + 725 bps, with the tightest and widest levels, respectively, of three-month LIBOR + 465 bps (Q1 2018) and three-month LIBOR + 1,225 bps (Q2 2020). US CLO BB tranche DMs have averaged roughly 1.8x the option-adjusted spread of the Bloomberg Barclays High Yield Index but have reached a relative spread ratio as wide as 2.4x and as tight as 1.8x.

The evolution of BSL CLO spreads throughout the past decade are shown in **Exhibit 14**.

CLO equity returns

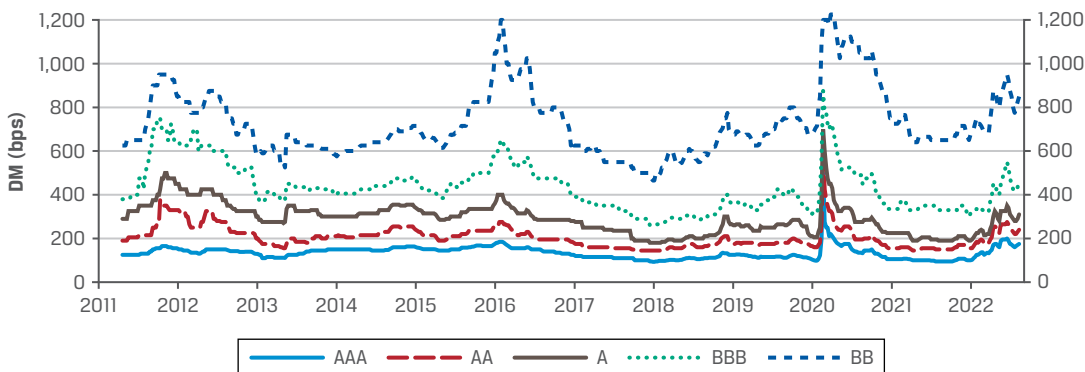
Between 2003 and 2022, the average vintage IRR for redeemed US BSL CLO equity has been 13.8%, with the top-quartile vintage IRR equal to 19.1%. For every US BSL CLO vintage from 2003 to 2020, the top-quartile IRR exceeded 10%. As shown in **Exhibit 15**, on average, US CLOs have made cash-on-cash distributions equal to 4.03% per quarter (16.1% annualized cash on cash), according to Bank of America Merrill Lynch CLO Research. Given the elevated cash-on-cash distributions, CLO equity offers a natural derisking of the investor's position, which is paid off by roughly half by the end of Year 3.

CLO equity's return is driven by the CLO's net interest margin (often called the CLO arbitrage) and by the value of the portfolio at the CLO's conclusion. For the quarterly distributions, CLO equity receives the asset portfolio's cash flows after fees and interest costs are paid. According to Bank of America Merrill Lynch CLO Research, on average, since 2011, new-issue US BSL CLOs have posted financing costs of three-month LIBOR + 200 bps, while the asset portfolio has typically yielded three-month LIBOR + 430 bps at issuance.

Looking beyond the high cash-on-cash distributions, CLO equity's ultimate return is also driven by the value of the underlying asset portfolio at the time of the CLO's ultimate conclusions (typically through an optional redemption of the CLO liabilities by the equity investors, discussed further in the "CLO Life Cycle" section).

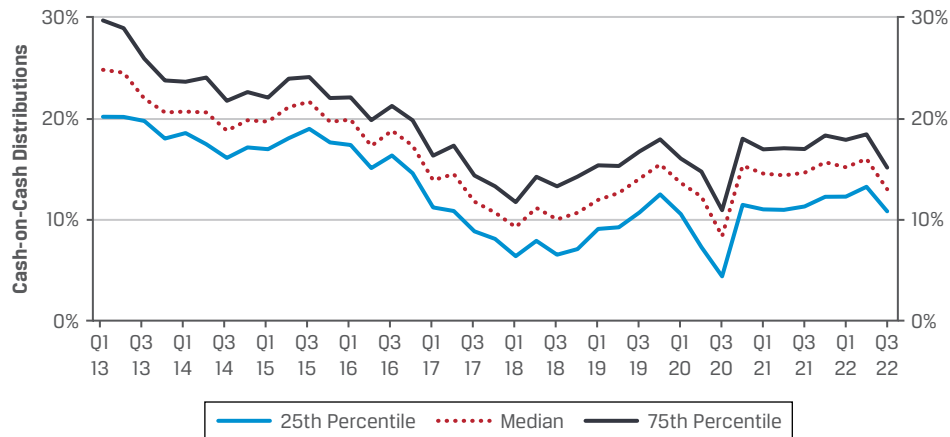


Exhibit 14. US BSL CLO Tranche Spreads, 2011-2022



Source: Bank of America Merrill Lynch CLO Research. Reprinted by permission. Copyright © 2024 Bank of America Corporation ("BAC").

Exhibit 15. US BSL CLO Equity Cash-on-Cash Distributions (annualized), 2013–2022



Source: Bank of America Merrill Lynch CLO Research. Reprinted by permission. Copyright © 2024 Bank of America Corporation ("BAC").

Any losses due to credit losses or losses because of the manager selling loans at prices below the purchase price will affect CLO equity returns. Because CLOs have an asset-to-equity leverage of 12.5× (on average), the effects of credit and portfolio management losses are magnified for CLO equity investors.

Par Building

Because the CLO structure provides for an extended reinvestment period with no forced sales, outflows, or margin calls, CLO managers can engage in "par building"—increasing the principal value of the asset portfolio through portfolio optimizations. Broadly speaking, par building is driven by two types of optimizations. The first is selling loans at or above par and investing in primary BSLs, which are typically issued with 50–75 bps of the original issue discount (issued at a price of 99.25–99.5). Second, the manager can engage in more targeted pair optimizations, in which one loan is sold at a higher price than the purchase price of a corresponding secondary purchase. In both cases, the purchased asset principal balance is greater than the amount used to make the purchase (buying \$1.00 of principal at a price of \$0.99).

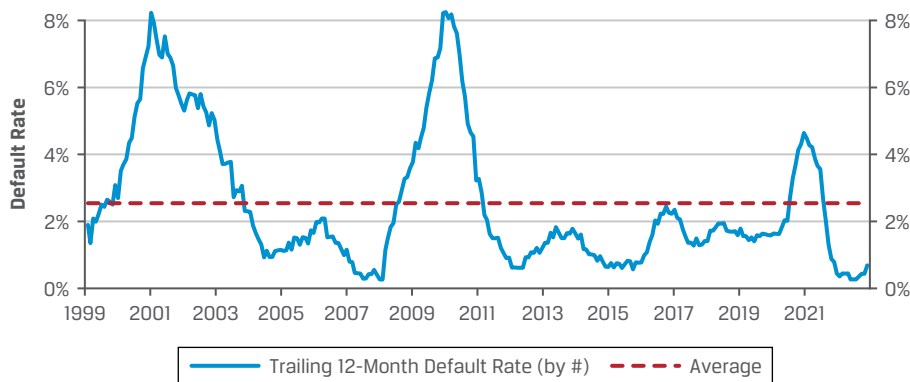
Par building serves two purposes and benefits all investors in the CLO capital structure. First, the increased asset principal balance serves as a loss reserve against potential losses. Second, the par building increases the value of the asset portfolio, thereby increasing equity returns due to a higher ultimate asset portfolio redemption value, as well as a higher balance of income-producing assets.

The key drivers of CLO equity performance are loss avoidance—through credit selection and ongoing portfolio optimization—and the ability of the manager to manage the assets given the constraints of the CLO structure.

CLO Portfolio Assets: Broadly Syndicated Loans

The portfolio assets in a CLO are first-lien, senior secured floating-rate loans to large- and mid-cap corporate borrowers. A typical CLO's collateral portfolio contains broadly syndicated loans, which are purchased

Exhibit 16. US BSL Default Rate



Source: AGL Credit.

by the CLO manager through primary bank syndications or from active secondary markets. The typical borrower is large because it usually has an EBITDA of above \$100 million, with an average loan size of roughly \$900 million, and is rated by Moody's Corporation and/or Standard & Poor's (S&P).

BSLs have the highest priority in the capital structure and contain financial covenants and yield protection (LIBOR/SOFR floors). BSLs are traded and liquid; the typical BSL has five or more daily bids from dealer banks.

According to the Morningstar LSTA Leveraged Loan Index, the outstanding balance of US BSLs is now over \$1.4 trillion. Since 2011, the long-term average credit spread for new-issue 1L BSLs is 414 bps over the reference rate (three-month LIBOR or three-month SOFR). Realized all-in spreads are even higher, as new loans are typically issued with 50–75 bps of original issue discount.

Because BSLs have first claim on the issuer's assets and cash flows, BSLs are uniquely suited for leverage, given that the contractual cash flow is well in excess of historical credit losses.

The average trailing 12-month default rate for US BSLs is 2.54%, with peaks of 8.2% (in both late 2000 and early 2010). The long-term average recovery rate (defined as ultimate recovery) on defaulted term loans is 71.8%, according to Moody's Corporation's 2021 Corporate Default Study.

Thus, as shown in **Exhibit 16**, given an average default rate of 2.5% and an average loss given default of 28%, the average annual BSL loss rate is 70 bps—well below the average credit spread of 414 bps provided by the BSLs.

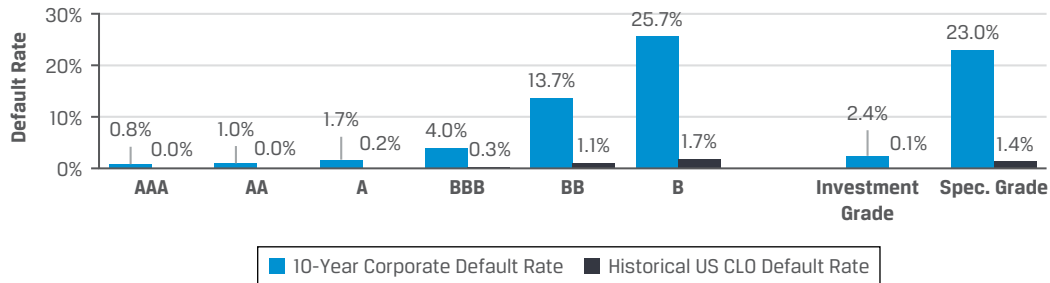
CLO Performance

CLO liability performance compares quite favorably to similarly rated corporate debt. S&P's historical US CLO liability default rate (0.28%)¹⁰ is 40% lower than S&P's 10-year cumulative AAA corporate default rate (0.69%).¹¹

¹⁰S&P Global Ratings, "US CLO Defaults as of February 15, 2022" (25 February 2022).

¹¹S&P Global Ratings, "2021 Annual US Corporate Default and Rating Transition Study" (11 May 2022).

Exhibit 17. US BSL CLO Default Rate vs. US Corporate Default Date



Source: S&P.

Note: US CLO default rate on all US CLO tranches rated by S&P from the mid-1990s to 2021; US corporate default rate = 10-year cumulative default rate from 1981–2021.

From the mid-1990s through 2021, S&P rated over 16,000 US CLO liabilities (totaling more than \$1.2 trillion in rated balance). As of Q1 2022, S&P recorded only 47 defaults—a total default rate of only 0.28%. For context, S&P's 10-year global corporate cumulative default rate from 1981 to 2021 is 0.69%.

Specifically, the "CLO 1.0" vintage—those CLOs issued from the mid-1990s through 2009—contain more than 4,300 rated tranches from roughly 800 US CLOs. Of these rated tranches, S&P recorded only 40 defaults—a default rate of 93 bps. Only 15 of the defaulted pre-2010 US CLO liabilities were originally investment grade (BBB– or higher).

As illustrated in **Exhibit 17**, as of 2021, of the over 12,000 US CLO liabilities rated by S&P between 2010 and the end of 2021, only seven have defaulted—a default rate of only 6 bps. S&P recorded no defaults on post-2009 US CLO liabilities initially rated investment grade; the defaulted tranches were rated BB or B.

Note: The use of the above in no way implies that BAC or any of its affiliates endorses the views or interpretation or the use of such information or acts as any endorsement of the use of such information. The information is provided "as is" and none of BAC or any of its affiliates warrants the accuracy or completeness of the information.

CONSUMER LOANS

Nils Hertzner and Nikita Saygakov, CFA

Fasanara Capital

Consumer lending as an asset class has grown significantly during the last decade across a variety of product lines. As implied by the name, consumer loans represent exposures to the creditworthiness of an individual person. Two core categories in the asset class are property-backed residential mortgages and non-property-backed (traditional) consumer loans, including personal loans, auto loans, student loans, credit cards, and "buy-now-pay-later" (BNPL) equivalents. Over the last decade, the asset class has evolved to produce even more creative hybrid derivative products, such as salary advance loans, where funds are lent to individuals and repayment is due from their employers. The consumer lending market has grown considerably on the back of the continued introduction of such new products. Today, it is estimated at €27 trillion.¹²

A Brief History of Consumer Lending

From Inception to Today

Consumer lending as a core activity was first heard of in 3500 BC, when it was used to finance individual farmers in Sumer and Babylon (in modern-day Iraq). Later, it was widely used by the Romans to finance agricultural land. During the days of church rule, in the early Middle Ages, charging interest was deemed ungodly and was, therefore, banned. Consumer lending returned in 1500 (during the Age of Discovery) and gained popularity in England, which was the first country to establish an official interest rate, in 1545.

From 1803, consumer lending became prominent in England, where a group of tailors came together to swap information on their unreliable customers—an early version of credit reporting databases. The first instances of credit reporting appeared in the United States in 1864, when an alphanumeric rating system for companies' creditworthiness was established in New York. This was followed by a consumer credit boom, which started around 1900, with car loans first issued to finance vehicle purchases. In 1950, consumer loans entered the "big data" era, with the strong emergence of credit cards and the availability of consumer data to assess an individual's credit risk. Individual credit scores, such as the Fair Isaac Corporation (FICO) score, were established in the United States. Currently, consumer lending is in the "Information Age," as strong data analytics tools reference both traditional and nontraditional data sources to assess credit quality.

From Peer-to-Peer to Institutional Lending and the Digitization of Consumer Lending

In its early years, consumer lending activities were primarily funded by large, traditional banks. These institutions would underwrite clients individually using largely manual processes. With the emergence of marketplace lending and peer-to-peer platforms, the landscape of funding sources has undergone a substantial change.

¹²M&G Investments, "Investing in Consumer Finance—An Untapped Opportunity" (28 October 2021). www.mandg.com/investments/institutional/en-global/insights/2021/q4/investing-in-consumer-finance-portfolios.

Traditional banks have relatively lengthy credit approval processes, and a flurry of new regulations has lowered their risk appetite. As a result, since the Global Financial Crisis (GFC), the market has been increasingly disrupted by digital marketplace lenders (MPLs). These lenders are heavily tech-driven, nonbank financial institutions, which, due to superior technology, can adjudicate consumer loans faster while maintaining reasonable levels of risk. Many MPLs started out as peer-to-peer lenders but have since institutionalized as their lending activity volumes grew. MPLs do not have depositors' funds; instead, they rely on institutional investors to finance their loans and do not book consumer loans on their balance sheets. As such, their businesses can be considered originate-to-distribute organizations. Because they do not take balance sheet exposure to their loans, MPLs must generate revenue by charging servicing and origination fees.

Besides the technological tailwind behind MPLs, another factor that has contributed to the evolution of the consumer lending market structure is tighter regulation. After the GFC, regulators began imposing stricter capital requirements on commercial banks. Banks were required to either increase capital provisions for consumer loans or sell them to alternative credit institutions. This requirement has created space for digital MPLs to enter the market and disrupt it.

As a result of changes in the funding landscape, marketplace lending has begun to play a vital role alongside traditional providers of capital. MPLs' quick speed of loan issuance, combined with more lenient adjudication standards, has fit the higher-risk appetite of institutional investors in search for higher yields in a low-interest environment.

The general trend toward digitization in consumer habits has provided MPLs with further tailwinds. The COVID-19 pandemic has affected many areas of individuals' lives, and consumer habits are no exception. According to a survey conducted by McKinsey, industries across a broad spectrum have experienced an average growth of 20% in digital users.¹³ Through the experience of the pandemic, people have become more digitally comfortable and began purchasing consumer durables online, boosting digital consumer spending and digital consumer credit associated with it. The trend gave birth to BNPL products, a variant of short-term consumer loans with three to six interest-free installment payments. As people moved online, taking out a loan digitally with a marketplace lender as opposed to a traditional bank became more natural and convenient.

Over the past 15 years, consumer loan marketplaces, such as LendingClub, Prosper, SoFi, OnDeck, and Avant, have grown from early-stage startups into giant niche alternative consumer loan originators. This growth is reflected in the overall volume of origination. The size of the US market alone grew at an average compound annual growth rate of 35% to \$327 billion in cumulative origination between the year of the segment's inception, 2007, and 2022.¹⁴

Exhibit 18 charts volumes of US digital marketplace-originated consumer loans that were pooled into public securitizations, based on data from Kroll Bond Rating Agency. Total funded volumes and deal counts are displayed, split into high-FICO and low-FICO cohorts. Since 2016, consumer loan volumes in these vehicles have grown into the billions, with the number of securitizations steadily increasing. This growth trend is especially pronounced in the low-FICO cohort, which is generally associated with higher risk and interest rates. This cohort of loans may also be exposed to a test of credit strengths as we move through the maturing credit cycle.

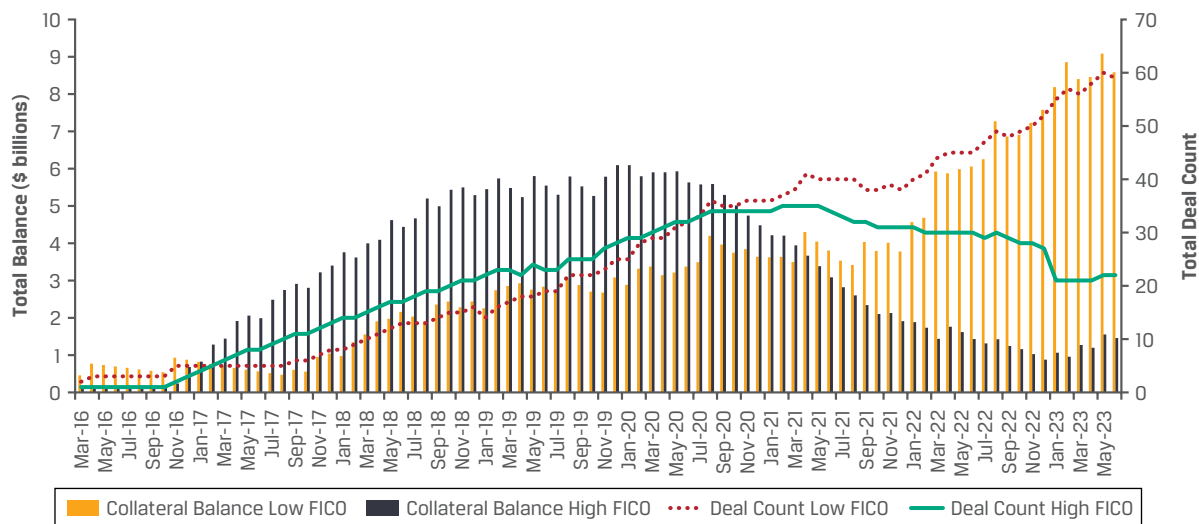
Marketplace Consumer Lending through the Credit Cycle

Given that MPL-originated consumer loans have existed for only 15 years, they represent a young and innovative asset class, which has yet to be tested through a full credit cycle. In the last decade, both monetary

¹³Neira Hajro, Klemens Hjarar, Paul Jenkins, and Benjamin Viera, "What's Next for Digital Consumers," McKinsey Digital (2021, p. 1).

¹⁴Nimayi Dixit, "US Digital Lending Market Report," S&P Global Market Intelligence (2022, pp. 5-6).

Exhibit 18. US Digital Marketplace–Originated Consumer Loan Public Securitizations, 2016–2022



Source: Kroll Bond Rating Agency, Marketplace Consumer Loan Indices Spreadsheet (US), 9 September 2022.

and fiscal expansion have played a significant role in shaping the global economy. These policies helped the global economy recover from the GFC, the 2012 European sovereign debt crisis, and, most recently, the recession caused by the COVID-19 pandemic. Stimulus measures smoothed the impact of these events and flattened the corporate and personal bankruptcy curves. A large spike in consumer loan default rates did not materialize because people used government-issued stimulus checks to pay down debt.

During the same period, continued growth in consumer lending was fueled by investors seeking additional yield when deploying excess capital into a low-yield market. The current macroeconomic environment, with both rising inflation and interest rates in developed economies, may present a first test for consumer loan sensitivity to the credit cycle. Disruptions in the global supply chains caused by post-COVID-19 demand, together with geopolitical tensions, resulted in record energy prices and added to inflationary pressures. In addition, global recessionary fears increased and central banks were forced to turn hawkish because of rising inflation. Therefore, a potential recession and higher interest rates may affect consumer borrowers both on the disposable income side and through spiking interest costs. This changing economic environment may serve as a first true test for consumer loans.

Consumer Lending Market Today

The current funding market for consumer loans is characterized by the presence of traditional financing, marketplace lenders, and institutional securitization. The first securitization on MPL consumer loans took place in 2013. Through securitization, consumer loans are bundled into a pool of assets, which can then serve various interest-bearing investment tranches (usually senior, mezzanine, and junior equity equivalent), with each tranche being priced according to the level of risk and investors' appetite. As such, credit rating agencies started to provide public ratings for tranches based on their underlying asset quality and

probability to realize losses in case of defaults. The first agency-rated tranche collateralized by unsecured loans appeared in 2015.¹⁵

The emergence of securitization attracted new fund flows from institutional investors into the space and helped funnel more capital from private debt funds and various hedge funds to the consumer loan marketplaces. The result of this trend was the development of a "hybrid funding model." Bulge bracket banks usually arrange the securitization process and invest in senior tranches of the structure (the senior-most 60%–70% of the underlying loan asset pool). The mezzanine tranche is sold to public investors (normally representing 25% of the underlying asset pool value, attaching at 70% and detaching at 95% within the priority of payments),¹⁶ with the junior tranche held by another institutional counterparty. The last decade has seen strong demand for public securitizations, which, in turn, increased liquidity in the asset class. The demand has been matched by large MPL origination volumes, as Exhibit 18 shows.

Consumer Loans: Characteristics, Risks, and Rewards

This section delves deeper into the characteristics of the asset class by focusing on the subset of unsecured loans originated through digital marketplaces in the United States, a rapidly expanding cohort of the market. Since the emergence of digital marketplaces, MPLs have become a dominant source of consumer loan originations in the United States, surpassing commercial banks.¹⁷

Consumer Loans: Defining Characteristics

MPL-originated loans exhibit some key characteristics that differentiate the asset class from other yield-bearing assets. The primary characteristic is the exposure to consumer credit risk rather than corporate credit risk.

The following paragraphs focus on average credit quality, loan duration, loan size, borrower interest rate, and repayment profile to provide a basic overview of the key features of such a portfolio.

Exhibit 19 displays summary statistics of a hypothetical consumer loan portfolio with an investment balance of \$400 million across 39,000 loans.¹⁸

The following is a summary of typical MPL loan attributes:

- **Credit quality:** MPL loans cover a broad spectrum of credit quality. Lenders use consumer credit scores as a key proxy for credit quality. In the United States, the FICO score is a main input when underwriting consumer loans.¹⁹ MPLs generally focus on consumers with near-prime or prime credit scores,²⁰ with the hypothetical portfolio showing an average "prime" FICO score of close to 700.

¹⁵Deloitte, "Marketplace Lending 2.0: Bringing on the Next Stage in Lending" (2017, pp. 3, 10).

¹⁶The attachment point indicates the minimum of pool-level losses at which a given tranche begins to suffer losses. In turn, the detachment point corresponds to the amount of pool losses that completely wipe out the tranche.

¹⁷DBRS, Inc., "US Unsecured Personal Loans—Marketplace Lenders Continue to Expand Market Share" (2019).

¹⁸Summary statistics reflect the market environment as of September 2022. Due to increased turbulence in the macroeconomy and inflationary pressures, these statistics are subject to change.

¹⁹The score is constructed by the Fair Isaac Corporation and is calculated on a range of 300 to 800+ on the basis of consumers' payment history, their total amounts owed, the length of their credit history, any new credit, and their product credit mix. The US Consumer Financial Protection Bureau maps the FICO score to deep subprime (<580), subprime (580–619), near prime (620–659), prime (660–719), and super prime (>719).

²⁰The reasons for this are manifold. The fact that digital lending may still be more prone to fraud and falsification puts an additional emphasis on internal controls and fraud prevention, giving higher priority to consumers with higher scores.

Exhibit 19. Summary of Hypothetical Consumer Loans Portfolio with \$400 Million Principal Balance

Summary	
Aggregate Original Principal Balance	\$400,000,000
Number of Loans	39,000
Average Original Principal Balance	\$10,200
Weighted Average Original Term (Months)	52
Weighted Average FICO	675
Weighted Average Borrower Rate	18.9%
Borrower Interest Rate (minimum)	4.8%
Borrower Interest Rate (maximum)	34.8%
Repayment Profile	Amortizing Repayment

- Loan term and repayment profile:** Generally, multiyear loan terms between 24 and 84 months are offered, and the average term of the hypothetical portfolio—just above four years—lies in the middle.²¹ MPL consumer loans are typically amortizing. Compared to bullet loans, the principal at risk decreases over the life of the loan; hence, the effective duration is shorter than the original loan term.
- Ticket size:** Original loan sizes are typically between \$1,000 and \$50,000.
- Borrower interest rate:** Naturally, the borrower's interest rate varies with the consumer's perceived risk. Loans may be financed at rates between 5% and 36% for near-prime and prime clients. A weighted average borrower rate of close to 20% for a well-diversified loan book reflects current market conditions.

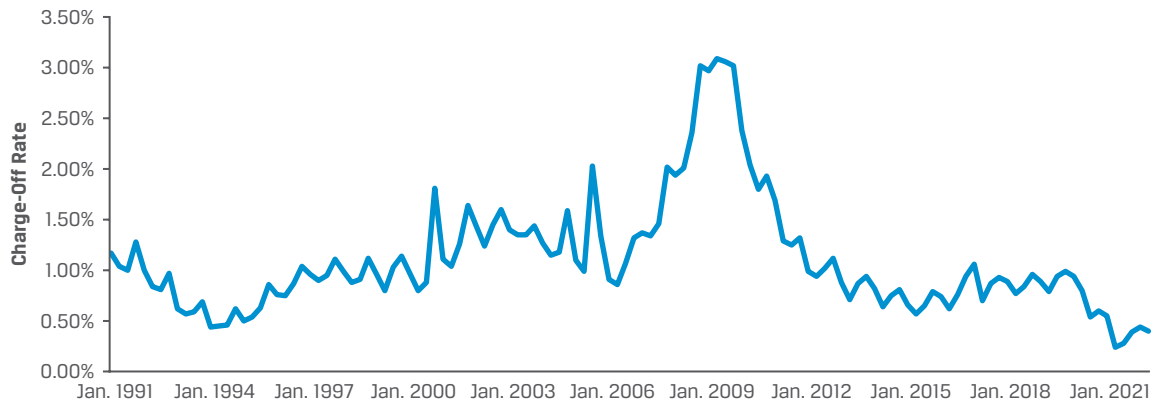
As shown in Exhibit 19, institutional investors' consumer loan portfolios are structured with tens of thousands of individual loans with a prime or near-prime rating, which guarantees a large degree of diversification across individual assets. Further, the amortizing payment structure results in a relatively short portfolio duration as principal at risk for any individual loan decreases over time. An average borrower rate of close to 19% is modeled to provide sufficient excess spread to cover defaults.

Historical Default Rates and Realized Returns

Historically, consumer loans have exhibited relatively low default rates. Through the credit cycle, they have remained resilient. **Exhibit 20** depicts seasonally adjusted charge-off rates across a large subset of commercial bank-originated consumer loans between 1990 and 2022. Contrary to the previous focus on MPL-originated unsecured loans, this dataset includes a broad range of secured and unsecured assets. As shown in Exhibit 20, charge-off rates average approximately 1% per annum, reaching a maximum of 3% during the GFC. Due to their recent emergence, MPLs have not yet gone through a full credit cycle, and data

²¹This stands in stark contrast to other short-term consumer financing products, with duration of less than a year.

Exhibit 20. Charge-Off Rates on Commercial Bank–Originated Consumer Loans



Source: Board of Governors of the Federal Reserve System, 22 September 2022.

on defaults during the GFC are not available. Even though MPL loan characteristics differ from commercial banks' consumer loans, these charge-off rates still serve as a proxy for performance in the market for consumer loans.

Data on losses for MPL consumer loans from 2016 onward are shown in **Exhibit 21**. Net losses for public securitizations of MPL-originated consumer loans for prime consumers in the high-FICO (710–760) and low-FICO (660–709) cohorts are charted using data from Kroll Bond Rating Agency. The series indicates default rates above those observed on commercial bank–originated consumer loans. Low-FICO cohort net losses peaked at 14% in 2017, while high-FICO loss rates were much lower. Not surprisingly, while loss rates for low-FICO clients decreased in 2020—likely because of government payments—they have been on the rise since late 2021. This situation may be an indication of the coming test as the credit cycle turns.

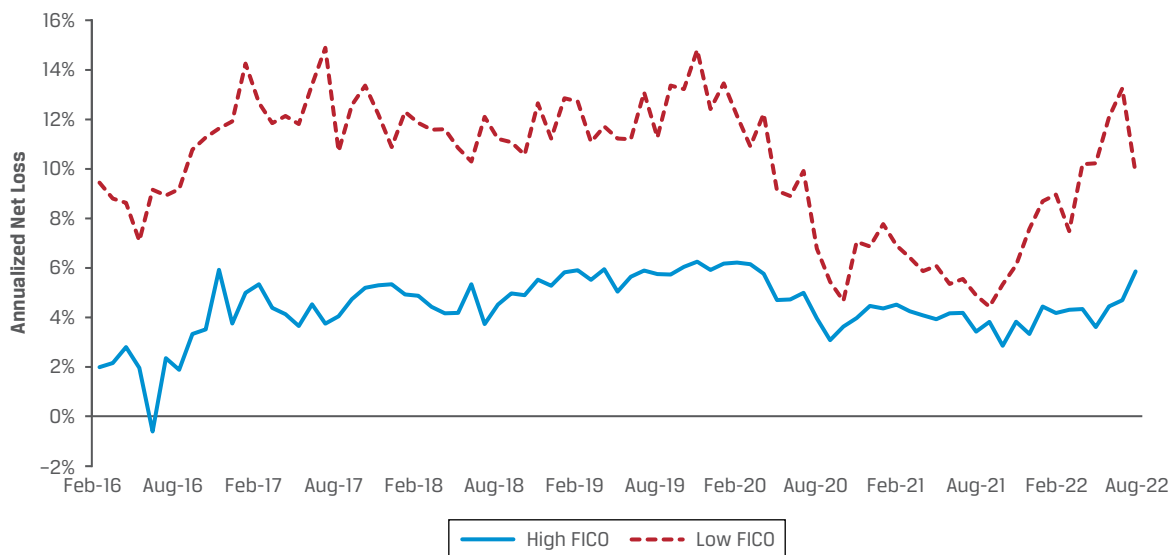
A portfolio generally consists of loans in both the relatively lower and higher categories of FICO scores (but still within a group of borrowers with good credit scores).²² Weighted average net losses are overall in the single digits. In addition, a high weighted average borrower rate allows for sufficient excess spread to cover extreme default rates. Therefore, in the context of portfolio excess spread, historical loss rates have been muted.

Diversification Benefits

Adding a pool of consumer loans to an institutional investor's asset mix is a compelling opportunity, mostly resulting from the clear diversification benefit and low asset return volatility over time. Consumer loans are not traded in public markets. Returns depend on underlying portfolio returns based on the macro environment and economic trends instead of moves in equity or fixed-income markets, which decrease return volatility and correlation with other asset classes. Consumer loans currently represent a small portion of total asset allocation by the institutional investor base, the result of the asset class having largely

²²The FICO score rank orders consumers by how likely they are to pay their credit obligations as agreed. The higher the likelihood of a consumer meeting their obligations, the higher the score. See the "FICO Score" webpage at www.fico.com/en/products/fico-score.

Exhibit 21. Annualized Net Losses Low- and High-FICO Securitizations, 2016–2022



Source: Fasanara.

been inaccessible to investors for decades. With the recent trend toward increased access via MPLs and securitizations, this situation has changed.

Targeted Risk Exposure via Securitizations

A sign of the maturity of the market is the increased availability of public securitizations in the sector. In financial markets, securitizations have historically been an efficient way to cater to the needs and preferences of different investors through the various tranches. At the same time, securitization turns an illiquid asset into a more liquid one.

Securitization funding vehicles issue tranches with specific subordination (or seniority) and coupons. Investors receive credit enhancement resulting from the overcollateralization of the loan book, cash reserves, and the excess spread of the portfolio's borrower rates (asset coupon) on the vehicle's tranche coupons (liability coupon). The difference in credit enhancement across tranches is reflected in the rating of the tranche and its coupon.²³ Coupon and rating are inversely related.

Exhibit 22 displays various tranches of an MPL-originated consumer loan public securitization published in 2017.²⁴ The \$330 million vehicle offers three tranches rated A- to BB, with an average portfolio coupon of 3.62%. In the post-COVID-19 economic environment, which has been characterized by an increase in average inflation, coupons have further increased. Investors can choose to invest in a specific tranche according to their risk aversion and return expectations.

²³Rating agencies, such as Moody's, Kroll, and S&P, provide ratings accordingly.

²⁴Consumer Loan Underlying Bond (CLUB) Credit Trust 2017-P1 was issued in 2017 from loans originated by LendingClub.

Exhibit 22. LendingClub Securitization Structure

Class	Size	Rating by Kroll	Coupon
A	\$239,400,000.00	A–	2.61%
B	\$34,600,000.00	BBB	3.56%
C	\$56,000,000.00	BB	4.91%
Total	\$330,000,000.00		3.62%

Source: www.lendingclub.com/investing/institutional/securitization.

In general, consumer loan securitizations offer targeted exposure to the asset class by allowing investors to purchase specific securitization tranches according to specific risk returns. As such, securitization can be seen as an efficient way to allocate capital.

How Institutional Investors Can Access the Subasset Class

For institutional investors, there are various ways of accessing the subasset class.

First, exposure can be gained through investments in fund structures with a focus on consumer lending. The investor can take advantage of an asset manager's expertise in allocating such capital. Alternative consumer lending funds can provide exposure to a diversified, large pool of loans. Funds are usually diversified across loans but also in terms of marketplace lenders and jurisdictions. Depending on the manager, the use of a cost-efficient funding structure allows for leveraging the performance of the underlying loan pool. This investment approach enables investors to gain a more indirect and passive exposure to the asset class.

Second, investors can become active and purchase loans directly from the different MPLs. This approach requires additional expertise in terms, modeling, and portfolio construction. Investors can invest in a pool of assets according to prespecified input criteria and concentration limits. Alternatively, investors can fund loans on an individual loan-by-loan basis after performing their own underwriting exercise.

Third, the public securitization market offers direct investment in specific risk segments within the consumer loan market. Depending on return and rating targets, specific investment tranches can be chosen. The investor also benefits from additional due diligence by the rating agencies, which provide an assessment of each securitization tranche.

TRADE FINANCE

Qing Fan and Dave Skirzenski

Raistone

Trade finance defines the financing of goods or services that serve as the supply chain between the buyer and the supplier. Financing may be provided to the buyer or to the supplier, and the underlying assets may be all counterparty assets or may be limited to inventory or accounts receivable.

Trade Finance: A Brief History

Trade finance may well be the world's oldest asset class, dating back thousands of years. As early as 3000 BC, trade finance instruments were found on Babylonian clay tablets. Later on, the Romans expanded trade finance's use for the import and export of goods with neighboring countries. The word "factor" is derived from the Latin verb *facere* (from which "facilitate" and "function" are also derived).

Companies use trade finance for a variety of reasons, including but not limited to the following:

- Obtaining nondebt working capital
- Improving financial cash conversion cycle metrics, such as DSO,²⁵ DPO,²⁶ and DIO²⁷
- Mitigating counterparty risk
- Being able to sell more product to a given customer when up against credit lines
- Being able to accept longer payment terms
- Reducing or eliminating the need to raise additional debt or equity to finance growth
- Becoming more flexible and responsive to seasonal and rapidly growing businesses compared to debt

This section focuses on nondebt trade finance and thus only briefly touches on purchase order financing, inventory financing, and trade loans, which are typically debt products. In nondebt trade finance, the financier purchases the underlying asset (such as an account receivable) at a discount to its face value and is repaid with the underlying asset's face value, akin to acquiring a zero-coupon bond at a discount to its face value and redeeming the bond at par.

Financing can be structured at various stages of the relationship between the buyer (account debtor) and supplier (seller) and involves one or more documents, such as purchase orders, invoices, proof of goods receipts, bills of lading, bills of exchange, insurance certificates, letters of credit, and inspection certificates.

As shown in **Exhibit 23**, the risk varies as the goods or services move through their commercial life cycle, with a transition from supplier risk to buyer risk once the certainty of the buyer paying in full is established.

²⁵Days sales outstanding, which is a measure of how quickly a company collects revenue.

²⁶Days payable outstanding, which is a measure of how slowly a company pays its suppliers.

²⁷Days inventory outstanding, which is a measure of how quickly a company churns inventory.

Exhibit 23. Risk Transfer from Supplier to Buyer

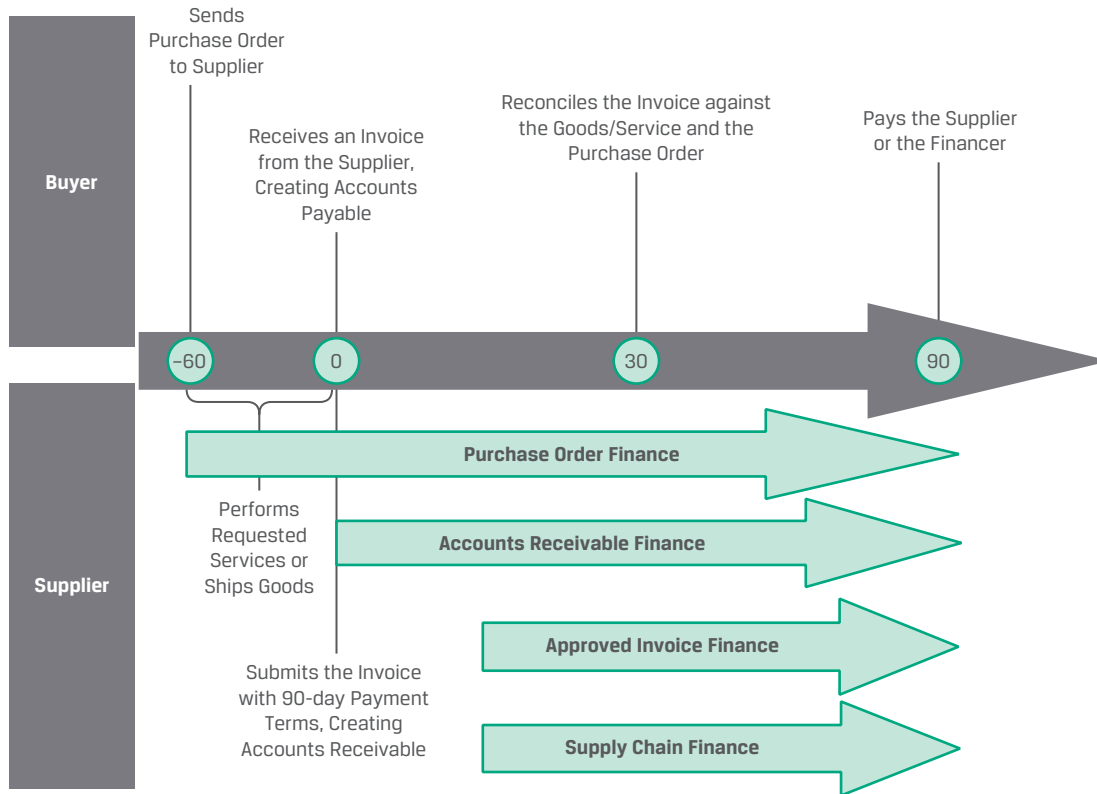


Exhibit 24 compares the various trade product types and their associated primary and secondary risks. Secondary risks could in some cases be mitigated through transaction structure.

The types of commercial agreements between a buyer and a supplier widely vary. For example, a buyer may issue a purchase order to request goods, or the supplier may invoice the buyer in response to reaching milestones in a contract between the parties. A buyer may pay a supplier on the basis of the receipt of goods from the supplier (evaluated receipt settlement) or may wait for the invoice to arrive before scheduling the payment.

Financiers usually obtain information related to the underlying commercial documents. For example, in accounts receivable financing, the financier would obtain from the supplier details regarding the receivables underlying the transaction and may obtain from the buyer proof that the buyer has accepted the goods and they were received in "good order."

In supply chain finance, the financier receives these details from the buyer, which reduces the risk in the transaction because supplier fraud risk and performance risk are accepted and borne by the buyer.

Exhibit 24. Types of Trade Finance Products

Product	Description	Contractual Counterparty	Underlying Asset	Debt Treatment (Yes/No)	Primary Risks	Secondary Risks
Purchase order finance (AKA production finance or pre-export finance)	Effectively loans to suppliers to facilitate their purchase of underlying components or services	Supplier	Assets of the supplier, including work in progress	Yes	Supplier credit risk and performance risk of not successfully producing goods or services	Buyer insolvency risk as the buyer may fail to pay for goods/services, placing the supplier in financial strain
Accounts receivable finance (AKA factoring or invoice discounting)	A purchase of accounts receivable from the supplier, reflecting amounts due to the supplier from the buyer	Supplier	Accounts receivable	No	Buyer insolvency	Supplier performance risk, partially mitigated since financing is typically offered once the goods ship or the services are performed and an invoice has been submitted to the buyer; supplier servicer and collection risk in the event the supplier continues to service and acts as the collection agent
Approved invoice finance	A form of accounts receivable finance where proof is obtained that the buyer has reviewed the goods/services and has approved them for payment	Supplier	Accounts receivable	No	Buyer insolvency	Supplier performance risk further reduced by the fact that the buyer has reviewed and approved the invoice; supplier servicer and collection risk
Commodity finance	A form of accounts receivable finance specific to financing commodities	Supplier	Accounts receivable plus a security interest in the underlying commodity	No	Buyer insolvency	Supplier performance risk; commodity price fluctuation

(continued)

Exhibit 24. Types of Trade Finance Products (continued)

Product	Description	Contractual Counterparty	Underlying Asset	Debt Treatment (Yes/No)	Primary Risks	Secondary Risks
Supply chain finance (AKA reverse factoring or approved payables financing)	A form of accounts receivable finance where the buyer drives the implementation of the facility and provides confirmation that the goods/services have been reviewed and are approved for payment at maturity without offset	Buyer and often the supplier	An IPU ^a from the buyer and optionally accounts receivable from the supplier	No	Buyer insolvency	Risk of fraud
Inventory finance	Typically a loan against the value of inventory, which could be structured as a special purpose vehicle purchasing underlying inventory and selling on a repurchase agreement, just-in-time, or simultaneous basis	Buyer or supplier (party seeking to reduce on balance sheet inventory)	Inventory plus associated rights of off-take/warranty	Depends on structure and GAAP vs. IFRS	Inventory liquidation value, off-taker insolvency risk, supplier performance risk, stale inventory, velocity of purchase by off-taker, obsolescence risk	Risk of fraud, theft, loss mitigated by insurance policies, periodic audits/field exams
Trade loans	A loan to the buyer under which the financier will pay for goods and services acquired by the buyer	Buyer	Assets of the buyer	Yes	Buyer insolvency	

Note: ^aIrrevocable payment undertaking, under which the buyer agrees to pay in full on a given future date.

Opportunity Size and Yields

The gross domestic product (GDP) of the United States, representing the value of finished goods, is \$23 trillion.²⁸ GDP does not double count the cost of the intermediate goods and services; therefore, total annual procurement spending is a significant multiple of GDP. Global GDP is approximately 4× the US GDP.

Fortune 500 (F500) companies' 2021 total cost of revenue was approximately \$8.9 trillion, as shown in **Exhibit 25**. After further filtering for companies rated by S&P Global B (or equivalent) or better, approximately \$8.8 trillion of annual procurement spending remains available for financing.

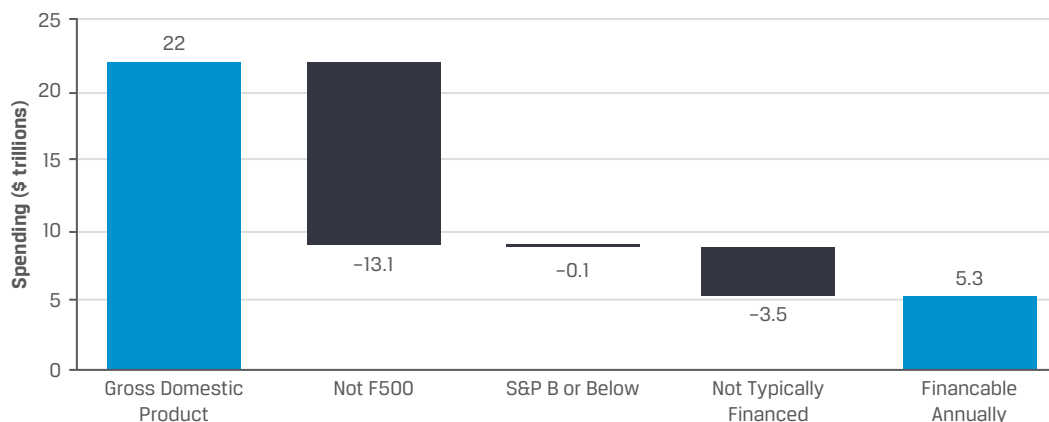
In a typical corporate supply chain, roughly 60% of the annual procurement spending is targeted for financing. The remaining spending represents expenses related to banking fees, utilities, taxes, advertising, and other categories of spending that are either paid net-0 (immediately) or otherwise not applicable to financing.

Therefore, it is estimated that approximately \$5.3 trillion of US annual procurement spending is available for financing. Assuming a 60-day average payment term, this amount equates to approximately \$0.9 trillion of outstanding accounts receivable available to be financed on any given day.

A significant portion of the cost of revenue of non-F500 companies is also financeable. **Exhibit 26** illustrates a typical corporate supply chain. The largest suppliers are often invited to a supply chain finance program that is funded by a bank or a nonbank participant. The next tier of suppliers is large enough to obtain sophisticated accounts receivable finance solutions from banks and enterprise-class fintechs. The smallest suppliers rely on factors, dynamic discounting or commercial card programs, or high-cost lenders.

The buyer's credit risk remains the same for all these transactions with the suppliers, and the yield achievable by the financiers is thus driven by opportunity (small suppliers do not have as many options) and

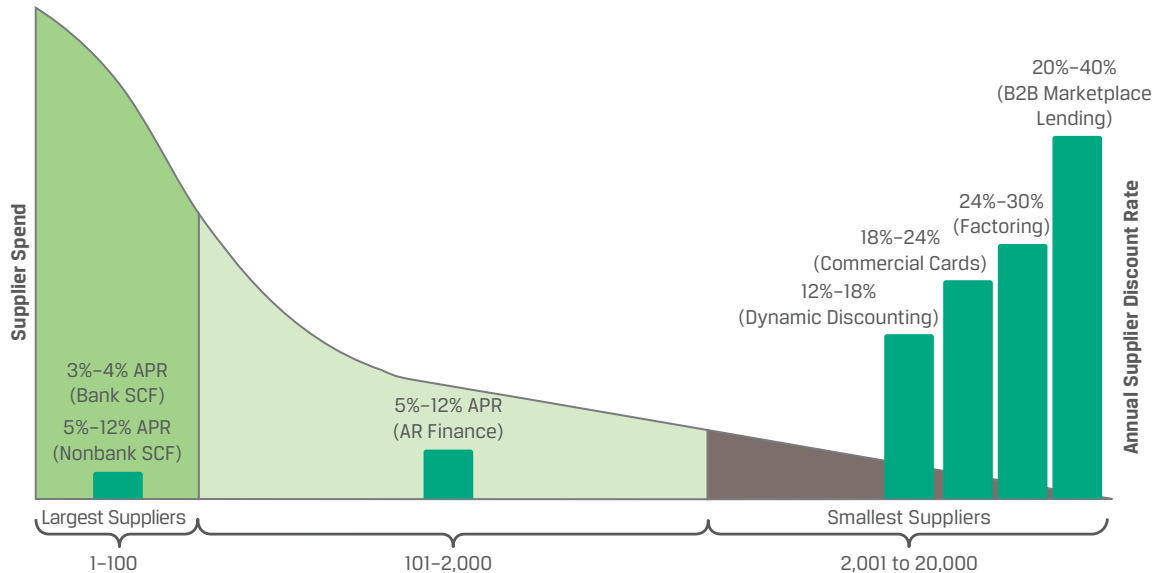
Exhibit 25. Fortune 500 Companies Spending on Financable Activities



Source: Raistone.

²⁸US GDP data are available at the Bureau of Economic Analysis's Gross Domestic Product webpage: <https://www.bea.gov/data/gdp/gross-domestic-product>.

Exhibit 26. Typical Corporate Supply Chain



Note: SCF = supply chain finance.

Source: Raistone.

by the performance risk of the supplier in the event the buyer does not provide an irrevocable payment undertaking (IPU).

Trade Finance Participants

Prior to Basel III,²⁹ trade financing was the domain of large, global banks, which enjoyed a lower cost of capital for trade products relative to other bank products and could price for higher-risk clients by charging a higher discount rate. Basel III imposed unattractive capital treatment for banks' trade products by requiring increased Tier 1 capital, especially for riskier customers. Therefore, banks currently focus on financing trade transactions with relationship clients where the risk is S&P BB+ (or equivalent) or better.

Since the implementation of Basel III, nonbank capital has stepped in to fill the gap and directly compete with banks for well-rated assets. Raistone has found that pension funds and insurance companies acquire well-rated assets at annual discount rates of less than 5%, although this finding is not absolute. Family offices typically participate at rates between 5% and 9% per annum. Hedge funds focus on assets with rates of 9% per annum or wider discount rates.

Allocators, asset managers, trade finance funds, and crowdsourcing aggregators (e.g., via accredited or retail investors) acquire assets according to their underlying mandates. Raistone estimates there are over 50 nonbank buy-side investors actively investing in trade finance assets.

²⁹For more on Basel III, go to www.bis.org/bcbs/basel3.htm.

According to the investment consultant bfinance,³⁰ investor demand for trade finance strategies has soared, with the number of investor searches in 2020 being greater than the previous five years combined.

Buy-side investors participate for the following reasons:

- **Strong performance:** Trade finance assets continue to perform well through multiple stress cycles. According to the International Chamber of Commerce's 2021 Trade Register Report,³¹ trade finance assets have a faster time to recovery, lower loss given default, and lower expected loss than other forms of corporate credit. Trade finance assets perform well in buyer bankruptcies because it is important for supply chains to be paid so they continue to provide goods and services to the insolvent buyer. Trade finance assets perform well in supplier insolvencies since the facilities are normally structured to remove the accounts receivable being financed from the supplier's bankruptcy estate or the financier will collect funds directly from the buyer.
- **Rise of fintech companies:** Fintech companies tend to focus on clients the banks are not servicing and, therefore, need capital to service clients outside the banks' credit box (i.e., well-rated large corporates), jurisdiction box, and size box. Additionally, fintechs create operational efficiencies for a traditionally data-heavy business, allowing many more institutional investors to participate in the space.
- **Small and medium-sized enterprise expansion:** Banks focus on relationship clients and often require minimum financing lines of \$25 million per client. Fintechs have a wider source of financing and can thus offer trade solutions to smaller clients without requiring ancillary sources of revenue from the client relationships. Investors can access a wider range of investment opportunities.
- **Favorable characteristics:** Trade finance assets are revolving, self-liquidating, uncommitted, low volatility, and rarely marked to market. They are typically uncorrelated with traditional debt and equity markets.

Trade Finance Structures

Banks have historically syndicated trade finance assets via 100% funded risk participations under the BAFT Master Participation Agreement structure.³² Under this structure, the buy-side investor acquires a 100% participation in the asset, which remains on the balance sheet of the seller of the asset. Most agreements allow the buy-side investor to elevate and be assigned the asset outright upon notice.

While many fintechs have adopted the BAFT Master Participation Agreement structure, some use a whole asset sale structure or a notes structure. While notes were popular at one time, they have proven to be costly, inefficient if a clearing agent is required (e.g., Euroclear), often cumbersome with inflexible maturity dates, and even, in some cases, unable to support fractional amounts.

Trade finance assets can be purchased from the supplier via a true sale acquisition of the receivable, under which the asset is removed from the bankruptcy estate of the supplier. Such an acquisition is often accompanied by a Uniform Commercial Code (or local equivalent) financing statement (lien filing) to confirm the priority of ownership of the asset. If a first-priority perfected interest in the asset is desired but other secured parties currently own the asset, the financier will collaborate with those other parties to carve out the purchased receivable from the secured party's collateral pool.

³⁰bfinance, "Sector in Brief: Trade Finance," bfinance Insights (March 2021).

³¹International Chamber of Commerce, "ICC Trade Register Report: Summary Version—Global Risks in Trade Finance" (September 2021). https://library.iccwbo.org/content/tfb/pdf/ICC_2021_Trade_Register_Report_Summary_vF_HighRes.pdf.

³²For more on the structure, go to www.baft.org/member-tools/templates-standard-documents/master-participation-agreements/.

For smaller assets (e.g., less than \$0.5 million) or assets backed by an IPU from a buyer with high credit quality, a financier may choose to extinguish or subrogate the receivable on the supplier's balance sheet rather than purchase it.

Buy-side investors may acquire assets directly or via a special purpose vehicle (SPV) or special purpose entity (SPE),³³ which is financed by debt or equity or is insured. Often, a buy-side investor does not wish to acquire the asset directly from the supplier but prefers to acquire it in a secondary market transaction (seasoned or not).

Trade finance assets may be used as collateral for loans or for securitizations, if they meet the necessary diversification requirements. These two structures readily allow for leverage to be applied. Because of Dodd-Frank risk retention regulations, SPVs and SPEs do not often issue any form of security to finance these assets.

Trade Finance Success Factors

The following is a summary of factors for success in trade finance.

- **Qualified servicer:** Identifying a reputable trade finance servicer is paramount to successfully participate in the trade finance asset class. The servicer should have a robust servicing policy, a backup servicer construct, a secure transaction platform, and sufficient insurance to cover errors, omissions, and cybercrime events. In no case should the assets flow through the bankruptcy estate of the servicer; assets should flow directly from the supplier to the financier or via an appropriately structured SPV or SPE with reputable nonconsolidation opinions or bankruptcy-remote attributes.
- **Operations:** Trade finance may involve the purchase of hundreds, thousands, or even tens of thousands of individual assets. Subsequent to the purchase of the asset is the collection of amounts due upon maturity, the reconciliation of this cash, and chasing late/short payments. Each buy-side investor should consider whether they wish to do this in-house or use a trade finance servicer.
- **Qualified originator:** Originators identify prospective clients and may also provide document collection, legal frameworks, structuring, technology, and servicing. Each buy-side investor should vet the originator to ensure they have the appropriate experience and licenses to operate in each underlying jurisdiction. Buy-side investors should understand the originator's allocation approach to ensure there is no adverse selection.
- **Know your box:** Buy-side investors must clearly communicate to the originator their credit box in terms of risk and return yields, minimum and maximum asset size, currencies, industry sectors, insurance requirements, tenors, and counterparty jurisdictions. Doing so will optimize the time of both parties.
- **Fraud mitigation:** Fraud is poised to remain a sizable source of risk in trade finance. To mitigate risk, a reputable servicer or originator can verify the counterparties, as well as the transaction data, to ensure that the underlying commercial documents and transaction data reflect the goods and services being acquired by the buyer from the supplier.
- **Cash drag:** Trade finance credit lines may vary seasonally or even month to month. Certain products, such as supply chain finance, efficiently use credit lines due to constant utilization, but others, such as accounts receivable finance, may be used periodically or even only at the end of each quarter.

³³An SPV or SPE set up for a single purpose (to acquire trade finance assets).

Conclusion

The trade finance asset class appears to be heading toward continued growth and may potentially require increasing participation by nonbank investors. Investors may potentially enjoy sizable alpha, outsized returns, and expanded access to corporate credit.

As a sign of a likely higher supply of assets going forward, commercial payment terms have increased 2.5 times over the last decade, with 90, 120, and even 180 days currently not uncommon. If this trend continues, it will further drive the need for trade finance. The generally uncommitted nature of trade finance opportunities coupled with the short tenors of underlying receivables provide attractive investment opportunities in the current rising interest rate environment.

REAL ESTATE LOANS

Adil Hasan

Yieldstreet

Commercial real estate (CRE) debt has been an integral part of institutional investment portfolios for decades. However, as the market evolves with greater transparency and access to information, interest in real estate debt has grown across a spectrum of different investors looking for diversification or exposure to alternative investments.

The US CRE debt market is a large, mature market that offers investment products across the risk spectrum for investors seeking competitive risk-adjusted returns and the potential for downside protection that comes with having real assets as the underlying collateral. This section of the brief provides an overview of the real estate debt market, with a particular focus on the United States, and a guide for assessing the opportunities and risk associated with real estate debt investments.

As of the first quarter of 2022, the US commercial real estate debt market consisted of \$4.4 trillion of outstanding mortgage debt. Government sponsored-entities (e.g., Fannie Mae and Freddie Mac), life insurance companies, and the public securitized market account for significant shares (totaling approximately 51%), while commercial banks hold the largest share—\$1.6 trillion, or approximately 38%³⁴. The current US real estate debt market has been shaped by two major banking crises that resulted in severe corrections in the real estate market and spurred government intervention to revamp industry regulations. The first was the savings and loan (S&L) crisis, which surfaced in the early 1980s, the aftermath of which lasted through the mid-1990s, and the second was the Global Financial Crisis (GFC), which lasted from 2008 to 2013.

The S&L crisis resulted in the failure of nearly a third of the 3,234 US savings and loan associations, comparable to today's regional banks. It was triggered when the Depository Institutions Deregulation and Monetary Control Act of 1980 and the Garn-St. Germain Depository Institutions Act of 1982 were approved to allow S&Ls to expand their financial product offerings by equipping them with the same capabilities as commercial banks but without the same degree of restrictions, such as loan-to-value ratios and interest rate caps.

As such, S&L associations offered high savings rates in order to attract consumer deposits and used federally insured deposits to engage in high-risk financial activities. As US inflation increased to record levels in the early 1980s, S&L institutions were not able to attract enough borrowers to account for the losses endured as a result of a growing number of failed investments. In 1983, around 35% of US S&L associations were not operating profitably, and 9% were bankrupt. They continued to provide loans, and their losses continued to increase.³⁵

As the S&L associations continued to falter in the 1980s, the government assembled the now-defunct, temporary federal agency called the Resolution Trust Corporation (RTC). From 1989 to 1995, the RTC became a huge property-management company tasked with cleaning the largest financial collapse, at the time, since the 1929 Wall Street Crash. The RTC closed failed financial institutions by selling or merging

³⁴<https://www.mba.org/news-and-research/newsroom/news/2022/09/20/commercial-multifamily-mortgage-debt-outstanding-increased-by-99.5-billion-in-second-quarter-2022>.

³⁵Alane Moysich, "The Savings and Loan Crisis and Its Relationship to Banking," chapter 4 in *History of the Eighties: Lessons for the Future*, Vol. 1, *An Examination of the Banking Crises of the 1980s and Early 1990s* (Washington, DC: FDIC, 1997). www.fdic.gov/bank/historical/history/167_188.pdf.

troubled S&L associations and folding their assets back into the Federal Deposit Insurance Corporation. The RTC also sold pools of assets at heavy discounts to private investors, which led to the advent of the commercial mortgage-backed security (CMBS) industry in the early 1990s, when the Resolution Trust Corporation issued CMBSs to enhance its proceeds from the bulk sales of commercial mortgage pools. The RTC shuttered a total of 747 failed S&L associations, with total assets estimated at \$394 billion. Today, S&L associations operate under the same regulations as banks.

In contrast, the GFC was primarily driven by cheap credit and lax underwriting standards that fueled a housing bubble. As the housing bubble burst, financial institutions were left with worthless investments in subprime mortgages and risky derivative products.

Prior to the GFC, commercial banks and CMBS issuance drove origination volume and banks remained highly levered, holding risky loans. After the 2008 collapse, bank and CMBS lending received extra scrutiny in post-GFC regulatory reforms (e.g., the Basel III Accord and the Dodd-Frank Act) that helped to redraw the CRE debt landscape. For CMBSs, risk-retention requirements mandated the originator to hold the riskiest piece of an investment. For banks, new risk-weighted capital requirements shifted the focus of lending away from riskier loans and toward lower-duration assets with higher credit quality.

While total real estate debt outstanding has continued to grow, other capital sources—most notably, government sponsored-entities, insurance companies, and private debt funds—have stepped in to fill gaps in both CRE lending volume and risk appetite. Loans with characteristics that fall outside of banks' underwriting criteria may offer higher yields, providing credit funds with opportunities to earn attractive yields. Because holistic or high-leverage financing solutions are favored by borrowers to enhance returns, debt funds have been able to successfully raise and deploy ever-larger pooled investment vehicles. According to PitchBook data, private debt funds raised over \$190 billion in 2021, which represents an increase of approximately 5× compared to the \$33 billion raised in 2009. Direct lending had the biggest share of last year's fundraising, with about 45% of the total. Distressed funds were the next largest, taking in more than 16% of the funds.³⁶

While the causes of both the S&L crisis and GFC were extremely different, the regulatory reforms that ensued transformed the investment industry and created today's landscape. After the S&L crisis, the RTC used CMBSs for the first time, allowing investors to choose from varying risk/reward options and opening up a larger potential pool of allocators and investors. The GFC helped stimulate the rise of private debt funds, which serve a critical need in the industry: to provide capital to riskier pools of borrowers. As a result, the current US real estate debt market landscape is a byproduct of changes and lessons from the aforementioned banking crises.

Property Classifications

Real estate properties are typically bucketed into four loosely defined categories, which allows market participants to compare the expected returns with market benchmarks. The four categories, in order of least to most risk, are core, core plus, value-add, and opportunistic.

Core: Stabilized Asset Loans

Core properties are stabilized assets located in major urban centers, tend to have high-quality tenants on long-term leases, and require little or no capital improvements. The holding period for core properties is typically 10+ years, and the majority of the returns is generated from current cash flow. These factors

³⁶Larry Rothman, "Private Debt's Fundraising Haul," *Pensions & Investments* (24 February 2022). www.pionline.com/interactive/private-debts-fundraising-haul.

typically result in a stable and predictable cash flow. Given the relatively safe nature of core properties, the loans on such assets typically have the lowest yield and are best suited for investors who are seeking low-risk investments.

Core Plus: Transitional Loans

Similar to core properties, core plus properties tend to be of high quality and are often well occupied by long-term tenants. However, core plus properties typically generate additional income through light property improvements and management efficiencies or by increasing the quality of the tenants. Core plus properties are considered low to moderate risk and command a higher yield compared to core properties.

Value-Add: Bridge Debt

Value-add properties are typically older properties, often with occupancy issues, management problems, deferred maintenance, or a combination of all three. Initially, such properties generate little or no cash flow, but they have the potential to generate outsized returns once the right business plan has been implemented. Value-add properties are riskier than core plus properties but can also provide higher yields.

Opportunistic: Hard Money Loans

Opportunistic properties are the riskiest of all real estate strategies. Examples include ground-up developments, acquiring an empty building, land development, and repositioning a building from one use to another. Opportunistic properties have an extremely complicated business plan and have low predictability of outcomes, but their yields are typically higher.

There are two main types of real estate loan products: mortgage loans and mezzanine loans. The capitalization of a real estate property typically consists of the first mortgage loan in the senior-most position, typically ranging from 60% to 75% of the value. Mezzanine loans sit below the first mortgage loan in terms of priority of repayment and are secured by the borrower's equity interest in the property, unlike the first mortgage, which is typically secured by the real estate collateral. Hence, the mezzanine lender does not have a lien on the mortgaged property, and upon mezzanine foreclosure, the mezzanine lender will become the owner of the property and retain the first mortgage debt obligations. Mezzanine loans typically range from 75% to 90% of the value. The agreement between the mortgage lender and mezzanine lenders are memorialized in an intercreditor agreement, which governs the rights and obligations of each party.

It is important for investors to understand the interplay between creditors exercising different rights under various financial structures. Lenders use several methods to slice, dice, and offload investments in order to generate higher returns, including the following:

- **Repurchase agreements (repos):** Repos are financing facilities offered by banks and financial institutions that provide liquidity to the commercial real estate market. Commercial mortgage loan originators make loans to borrowers and then sell these loans to banks and financial institutions with the agreement to repurchase them at a later date. Repos are structured to benefit from several bankruptcy code safe harbor protections, which allow purchasers to liquidate, terminate, and accelerate the loans without having to go through the bankruptcy process. The main benefit of repos to lenders is that they provide leverage on the investment, which enhances the returns on the investment. However, margin mechanics are the primary risk for lenders securing a repo line. Repos dictate the maximum leverage, and in the event of decline in value of the loan (typically dictated by an appraisal test), there may be a margin call requiring the lender to pay down the purchase price of the loan to restore the advance rate with respect to the loan's revised market value. Typically, margin calls become prevalent in times of

market downturns, and it can be especially difficult for lenders to obtain additional capital in times of distress. Repo lines are common with balance sheet lenders and debt funds.

- **A/B structures:** The mortgage loan may be divided into a senior portion (A-note) and a junior portion (B-note). All payments generated by the investment are first distributed to the A-note before the B-note is issued any payments. The rights of the senior and junior lenders, with respect to administration of the loan, foreclosure, standstill, or cure rights, is governed by a co-lender agreement or a participation agreement. The primary risks associated with A/B structure are that (1) the senior lender is typically the one controlling the major decisions, with the only mechanism for a junior lender to exercise its rights being to purchase the senior lender's position, and (2) the junior lender will lose any consent or consultation rights in the event the B-note is no longer "in the money" (the value of the collateral is lower than the B-note exposure).
- **Securitization:** Securitization is the process whereby real estate loans are pooled, packaged into financial instruments, and sold to investors on the secondary market. CMBS and CRE collateralized loan obligations (CLOs) are examples of securitized products. The primary benefit of securitization is that it allows lenders to remove risk from their balance sheets and thus allows them to make more loans, which increases liquidity in the market. Additionally, breaking up the pooled loans into tranches based on different risk profiles allows a wider variety of investors to make allocations to investments that suit their bespoke risk and return criteria. For a majority of lenders, repos act as a bridge to securitization. The primary drawbacks for borrowers are high prepayment penalties and a lack of relationship with the lender since the loans are typically sold to third-party investors and serviced by a third-party servicer.

The Real Estate Debt Lenders Landscape: Balance Sheet Lenders vs. Originate-to-Sell Model

Also referred to as portfolio lending, balance sheet lending involves a loan in which the original lender retains control of the debt throughout the life cycle of the loan. Commercial banks and life insurance companies are examples of typical balance sheet lenders.

In contrast, in the originate-to-sell model, lenders originate loans and then sell them to third-party investors. The originating lender may or may not retain the servicing rights of the loan to maintain a relationship with the borrower and extract any fees associated with servicing the loan. CMBS lenders are a good example of originate-to-sell model investors.

In search for higher returns, many lenders now incorporate elements of both balance sheet lending and the originate-to-sell model. For instance, many private debt funds sell a portion of their loan balance sheet and retain the remainder.

The different participants in the real estate debt market universe and the segment in which they operate can be summarized as follows:

- **Commercial banks:** Commercial and regional banks typically retain the loans on their balance sheet, but it is not uncommon for banks to sell loan positions (or a piece of a position) to manage risk. Commercial banks typically invest in first mortgage loans (or originate both mortgage and mezzanine/syndicated mezzanine to third-party investors) with tight underwriting guidelines and specific asset classes.
- **Life insurance companies:** Life insurance companies typically use liability-driven investing, allocating to long-term, income-generating assets that match the duration and/or distribution schedule of future liabilities. These liabilities tend to be long-term and illiquid in nature, allowing insurance companies to invest in assets with longer duration profiles. Additionally, risk-based capital regulations determine how

much capital is to be held against each asset that an insurer invests in. The riskier the investment, the more capital is required to be held by the insurance company to offset any potential losses. Hence, insurance companies typically focus on long-term investments of higher credit quality, holding them to maturity.

- **Agencies:** Fannie Mae and Freddie Mac are government-sponsored enterprises that buy mortgages from lenders and either hold these mortgages in their portfolio or package the loans into mortgage-backed securities. These agencies do not provide loans to the borrowers themselves but, rather, act as a source of liquidity in the secondary market by buying the loan, allowing lenders to create more loans. Fannie Mae and Freddie Mac invest only in housing assets, such as multifamily properties, and target safer, low-leverage loans.
- **CMBS and CRE CLOs:** CMBS and CRE CLOs are fixed-income securities backed by mortgages on commercial properties and are commonly issued by large investment banks, which bundle a pool of real estate loans and sell them as a series of bonds. The bundles are divided into various tranches based on risk and credit quality from rating agencies. By selling the bonds, the investment banks hold little or no risk on their balance sheets, which allows them to continue originating more loans. CMBS lenders typically target high-quality assets that do not have an extensive business plan. In contrast, CRE CLO lenders typically target high-quality assets that are in transition and require a more intensive business plan. Therefore, yields on CMBS loans are typically lower than those on CRE CLOs.
- **Debt funds:** Post-GFC government regulations resulted in more stringent lending parameters and regulation, leading to an increase in private debt funds. Debt funds are private equity-backed capital that lend money to real estate borrowers, typically providing a high-leverage senior loan or mezzanine loans. Debt funds play in the riskiest segment of the real estate debt market, but the lack of rigid lending criteria may allow debt funds to take advantage of risk-return dislocations.

Factors Affecting Pricing/Risk on Real Estate Loans

With an understanding of general property classifications and the players involved in the CRE market, we now focus on the different metrics, both qualitative and quantitative, that are used to assess investment risk.

- **Property type:** Primary real estate asset classes include multifamily, industrial, retail, office, and hotel. Each asset class presents a unique set of characteristics that dictate the pricing of the asset. The industrial subasset class continues to garner interest due to the rise of e-commerce. In contrast, the office market has suffered since the onset of the COVID-19 pandemic and the shift toward a work-from-home or hybrid work culture. Investments in asset classes with strong economic tailwinds, intuitively, tend to command a lower yield.
- **Asset profile:** The real estate industry typically evaluates assets on the basis of asset quality, tenant profile, and the scope of the business plan. In order of least to most risky, the main categories are core, core plus, value-add, and opportunistic real estate. As the risk profile gets worse, investors can expect to see higher yields associated with their investment.
- **Location:** Property location plays a critical role in determining the risk profile of an investment. Major markets, such as New York City and London, are inherently more liquid due to a stable demand base and the presence of a deep pool of potential investors. Liquidity is extremely important when assessing the risk profile because it provides an indication of potential exit opportunities via sale or refinance.
- **Loan-to-value ratio (LTV):** LTV is an indicator of leverage and is calculated by dividing the loan amount by the value of the property, expressed as a percentage. Barring no other difference, a higher-LTV loan will have a higher yield associated with it resulting from a smaller buffer in value degradation that can affect the loan.

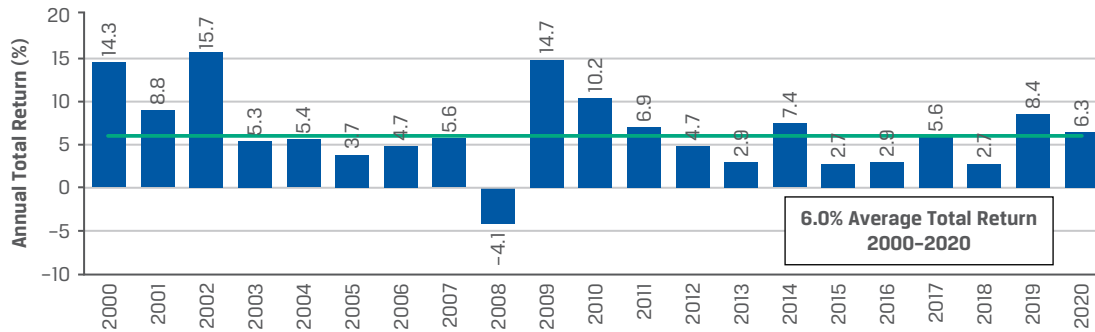
- **Debt yield:** Debt yield is calculated by dividing the net operating income of a property by its loan amount. The metric represents the return that a lender would receive if the borrower defaulted on the loan and the lender had to foreclose on the property. A higher debt yield indicates lower risk. It is also used to ensure the loan amount is not inflated, because market cap rates, interest rates, and amortization periods can skew other analysis metrics.
- **Debt service coverage ratio (DSCR):** DSCR is an indicator of a property's ability to produce enough cash flow to pay its debt obligations. If the DSCR is below 1, the property would not be able to cover its debt obligations. For value-add or opportunistic deals, it is common for the DSCR to be below 1, given that the property is in a transitory state. Hence, investors can expect to see higher yields on investments with lower DSCRs.
- **Sponsorship:** The quality of the sponsor plays an important role in the successful implementation of a business plan. The team's experience, infrastructure, property management and asset management capability, market knowledge, and industry relationships play an important role in the success of a project, especially ones that require more oversight. For instance, the ability of a large institution to secure financing from a bank is greater than that of a newly launched firm, even when the underlying assets are similar; loans secured by top-quality sponsors command a lower yield. Another important factor assessed by investors is the sponsor's "skin in the game": A larger capital investment by the sponsor (versus equity from limited equity partners) provides additional comfort that the incentives are aligned for all parties involved in a CRE transaction.

What Makes CRE Loans a Good Alternative Investment?

The case for commercial real estate debt in a mixed-asset portfolio rests on five main pillars:

- **Capital preservation potential:** Investor appetite for real estate debt stems from a desire for consistent and stable cash flow, coupled with downside risk mitigation. Being in the debt position of a capital stack is less risky than being an equity investor, which acts as a first loss buffer. For instance, a 75% LTV loan can afford to have the underlying property's value decline by 25% and still return 100% of the invested capital.
- **The large size and diversity of the opportunity set:** Real estate debt is a \$4.3 trillion market, offering a wide variety of investment products tailored to suit different risk profiles. The presence of various types of lenders and different strategies provides ample liquidity to the market.
- **Historically stable income returns:** The stability of interest payments further enhances the case for real estate debt. As the loans are secured by real collateral, which is generally generating cash flow, virtually all returns in a real estate debt transaction constitute current income rather than capital appreciation. Furthermore, according to data from the Giliberto-Levy Commercial Mortgage Performance Index as of November 2021, presented in **Exhibit 27**, private real estate debt in the United States has historically delivered average total returns of 6.0% per annum over the 2000–2020 period, having recorded negative annual returns just once during that period—in 2008, during the GFC.
- **Inflation hedge:** For real estate debt investors, floating-rate loans adjust as interest rates move higher (which is typical in an inflationary cycle), maintaining a spread to the base rate and backstop-ping yields. As such, floating-rate real estate debt may be even more attractive to investors trying to mitigate inflationary pressures and/or the downside of a rising-rate environment.
- **Diversification:** Private real estate debt also compresses portfolio volatility through its low correlation with other, traditional asset classes. As shown in **Exhibit 28**, a private real estate debt portfolio (represented by the Giliberto-Levy Commercial Mortgage Performance Index) has typically produced low or negative correlations with US and global equities and private equity real estate and modest correlations with public equity real estate and US and global bonds. The diversification benefits from private

Exhibit 27. Gilberto-Levy Commercial Mortgage Performance Index, 2000–2020



Source: Bloomberg.

Exhibit 28. Correlation of CRE Debt vs. Other Asset Classes

Correlation Coefficients								
	CRE Private Debt	CRE Private Equity	REITs	Non-Agency CMBS	US Bonds	Global Bonds	US Equities	Global Equities
CRE Private Debt	1.00	-0.03	0.42	0.83	0.67	0.53	-0.02	0.01
CRE Private Equity		1.00	0.29	-0.03	-0.24	-0.12	0.21	0.21
REITs			1.00	0.69	0.01	0.12	0.66	0.71
Non-Agency CMBS				1.00	0.46	0.40	0.35	0.36
US Bonds					1.00	0.65	-0.39	-0.38
Global Bonds						1.00	-0.09	0.02
US Equities							1.00	0.93
Global Equities								1.00

Notes: Trailing 20-years of data as of 2Q 2021. Past performance is not indicative of future results.

Sources: Invesco Real Estate using data from the Gilberto-Levy Commercial Performance Mortgage Index (CRE Private Debt); NCREIF Property Index (CRE Private Equity); FTSE NAREIT US All Equity REITs Index (REITs); Bloomberg Barclays Non-Agency CMBS Index (Non-Agency CMBS); Bloomberg Barclays US Aggregate Bond Index (US Bonds); Bloomberg Barclays Global Aggregate Index (Global Equities); S&P 500 (US Equities); MSCI World Equity Index, Mid & Large Cap (Global Equities) as of November 2021.

real estate debt are best realized from allocation to a broad, diversified portfolio of multiple assets that further reduces any single-asset risk.

Key Risks in Real Estate Loans

As with any investment, real estate debt carries certain risks that must be taken into account:

- **Nonhomogeneous investment:** Although market participants have tried to make the products homogeneous, commercial real estate assets—especially assets with a risky business plan—can have unique features. Additionally, even though evolving for the better, real estate remains not fully transparent as an industry, with numerous off-market trades and undisclosed transactions. Unlike the stock market, with its strict insider-trading restrictions, the flow of data and information in real estate is not symmetrical. To an extent, the industry highly values the ability to source information that is not widely known. Hence, an investor who is not very well versed with the intricacies of real estate can fail to understand the risk and the range of outcomes.
- **Structural considerations:** Real estate debt investments are inherently more passive relative to real estate equity investments. Hence, lenders have limited oversight on the daily functioning of the property, such as property management, leasing, construction, and cash management. As the industry goes through cycles, lenders often compete to win business and might offer "covenant-lite" loan agreements with little oversight to borrowers. Additionally, different loans may have different rights and remedies in the event of default. Hence, investors should understand the structure of the underlying debt investment.
- **Interest rate risk:** Fixed-rate loans can lose value in a rising-rate environment because the yield on the loan will be lower than what can be achieved on a new loan. Hence, it is important to understand the macro trends to choose between a fixed- or floating-rate real estate loan.
- **Liquidity:** Aside from securitized products, such as CMBSs and CRE CLOs, real estate private debt is inherently less liquid. When investors invest in an individual real estate loan or fund, it is very likely they will be locked in for the entire duration of the investment. However, commercial real estate loans most commonly have different durations—from 1 year to 10 years—allowing investors to choose their desired investment horizon.
- **Capped upside:** Although real estate debt investments benefit from the equity cushion, real estate debt may underperform equities in periods of high inflation or when asset prices are growing.
- **Returns may rely on leverage:** As discussed earlier, real estate lenders may slice, dice, and leverage the loans to generate the desired returns. The lenders' strategies may be levered or unlevered, but increasingly alternative investment managers use leverage to achieve returns in the high-single-digit to low-double-digit range. A careful analysis of the underlying leverage used for a real estate credit strategy should be considered when reviewing investment opportunities. Factors to consider include the amount of leverage used, the risk profile of loans to which leverage is applied, and the structure of such leverage (duration, margin call rights, etc.).

INFRASTRUCTURE DEBT

Nick Cleary

Vantage Infrastructure

Infrastructure is defined by the Oxford English Dictionary as "the basic systems and services that are necessary for a country or an organization to run smoothly—for example, buildings, transport, and water and power supplies."

Infrastructure debt finances these capital-intensive tangible assets and services provided by a private sector fund or company. A typical financing structure is based on established project financing principles. The fundamental financing principles—such as debt sizing based on a detailed analysis of expected cash flows and their changes under a range of sensitivities, combined with extensive covenants—have remained similar over many decades, given the specialized nature of the financing and limited competition from new lenders entering the market.

According to 2022 data from Vantage Infrastructure, this approach to private infrastructure financing results in senior debt funding 50%–80% of a typical borrower. The balance is usually funded by equity, often from a private equity fund, direct long-term investors, or a company that values the asset class's stable return profile—a mix of cash yield and capital appreciation. Other debt financing structures include uni-tranche, subordinated, and mezzanine, which represent a significantly smaller part of the market compared to other private debt asset classes.

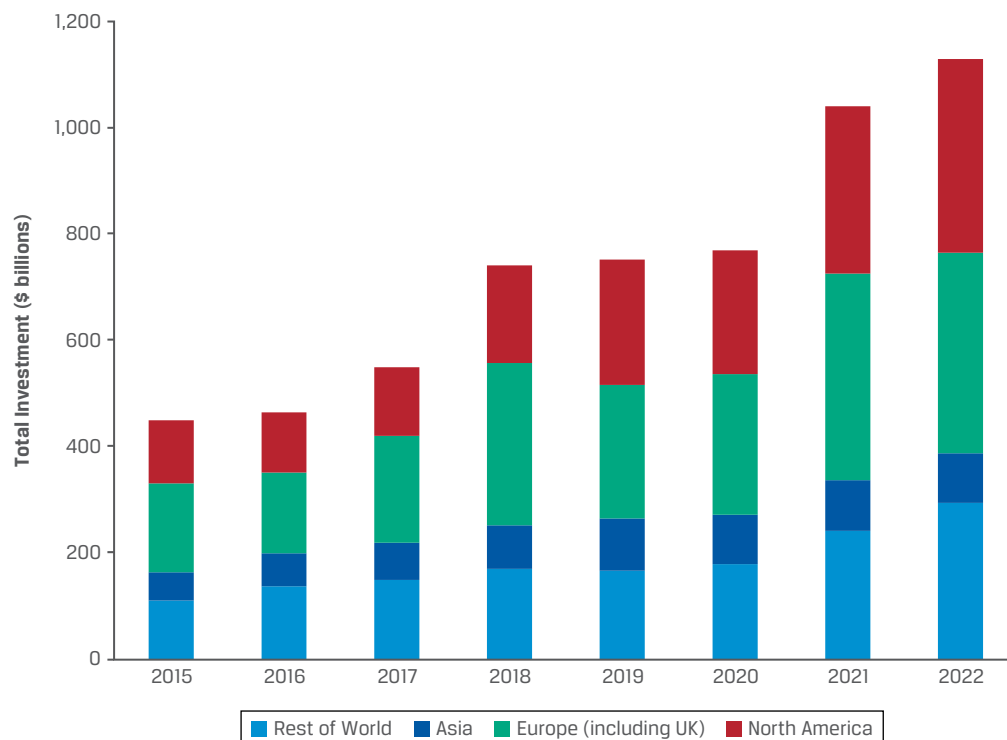
Infrastructure debt has emerged as an investment for institutional investors over the past 20 years. It currently offers a range of risk and return profiles that suit investor allocations across fixed-income, private debt, and real assets. In addition to attractive absolute return premiums and risk-adjusted returns, the asset class offers two unique characteristics. The first is an ability to access long-duration, high-quality debt that is particularly attractive for long-term asset/liability matching for capital-regulated investors, such as insurance companies. Second, the high credit quality, which derisks to investment grade as the asset matures, is unique and valuable relative to comparable public and private sub-investment-grade corporate debt.

The global private infrastructure investment market has doubled in the past seven years to over \$1 trillion annually. This growth supports a private debt opportunity that is accessible to nonbank lenders via managers and, in some market segments, direct investments. As illustrated in **Exhibit 29**, which shows the evolution of infrastructure financing between 2015 and 2022, the market is dominated by Europe and North America, with approximately 60%–65% of global activity. These estimates, from Inframation in September 2022, exclude government-owned or government-financed assets, such as municipal tax-exempt bonds in the US market.

Private infrastructure assets or companies usually operate in a single subsector, such as transportation, telecommunications and data, energy utilities, waste, water, power generation, renewables, midstream, and social infrastructure. While infrastructure assets may vary, they share a unique combination of characteristics that differentiate them from other assets, such as an ability to provide an essential good or service, low competition due to high barriers to entry or government regulations, and high cash flow certainty from a mix of contracted cash flows, regulation, or inelastic demand.

For example, transport assets have traditionally included public transport, roads, ports, airports, and rail, and more recently, opportunities such as electric vehicle charging are emerging. These assets are typically regional or local monopolies with few if any practical alternatives and a low-cost base that results in EBITDA

Exhibit 29. Global Private Infrastructure Investment Activity, 2015–2022



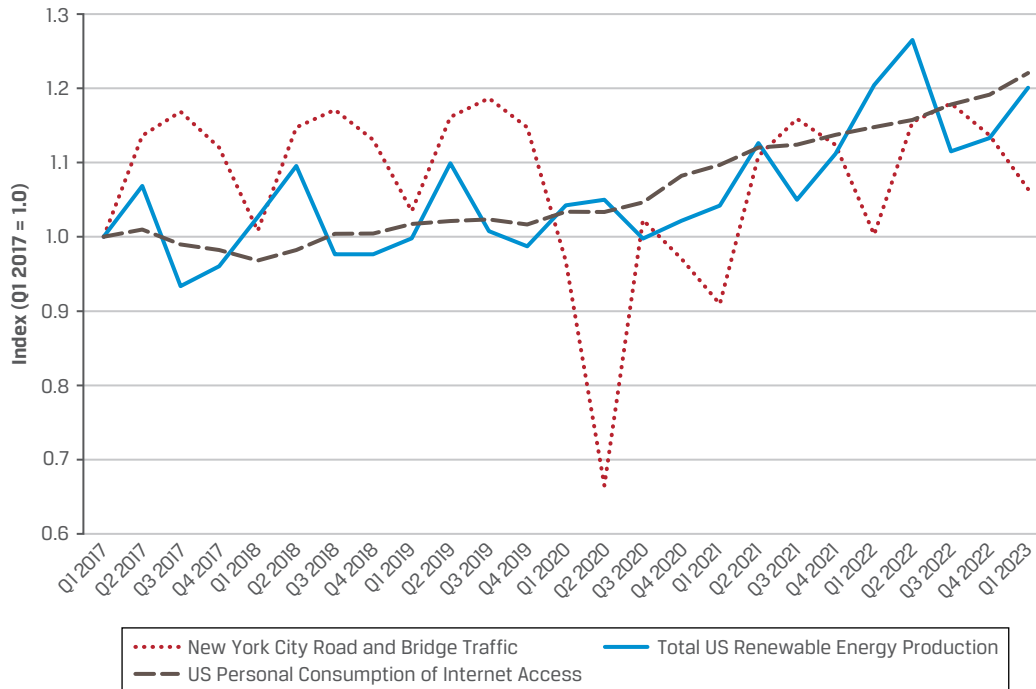
Source: Data from Inframation as of September 2022.

margins ranging from 40% to 80%, according to 2022 data from Vantage Infrastructure. The high EBITDA margin means the businesses are resilient to increasing costs and inflation. Revenue is typically driven by usage fees that are linked to general economic activity and are commonly indexed to inflation. Transport infrastructure is often referred to as economic infrastructure because its revenue profile is linked to economic activity. On occasion, these assets can also be funded under a public–private partnership model, which can result in a government offering a fixed "availability-based" revenue stream to the asset owner while the government retains the demand and price risks. Under this revenue model, the asset is more akin to a government bond.

Renewable assets often include long-term, 20-year, fixed-price and inflation-indexed revenue contracts with a utility or, increasingly, highly rated corporate customers. This revenue profile, combined with the maturity of the technology and equipment costs and simple operating nature of these assets, results in renewable assets performing like long-term bonds. This means they are more sensitive to interest rates than to the economic risks seen in most transport assets.

A telecommunication asset such as a fiber network sits somewhere between the bookends of economy-sensitive and interest rate-sensitive assets, such as transport and renewables assets, respectively. A typical fiber asset may have many customers ranging from businesses and mobile phone operators to consumers with a range of contract tenors from 1 to over 10 years at fixed rates for using the network's capacity or services. As customers recontract or add capacity and services to their contracts, these businesses are exposed to market risks, such as demand for data, the value of the ancillary services, and competing networks. This exposure can result in a more complex mix of value drivers beyond economic activity or interest rates, such as technology and network configuration, consumer preferences, artificial intelligence, digitization, and big data.

Exhibit 30. US Infrastructure Fundamental Drivers, 2017–2023



Sources: Data from Port Authority of New York and New Jersey (New York City traffic), the US Energy Information Administration (renewable energy), and the US Bureau of Labor Statistics (personal consumption).

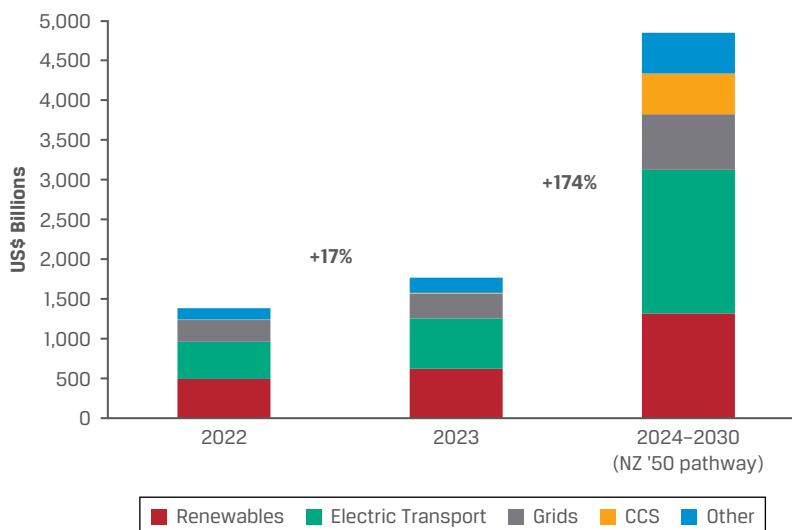
Exhibit 30 provides a simple representation of the fundamental drivers of certain transport, renewable, and telecommunication assets in the US market. It highlights the fundamental drivers that need to be considered when structuring debt investments.

Energy infrastructure can have an altogether different profile, with the additional overlay of the opportunities and risks that arise from energy transition. Midstream infrastructure assets, such as an oil pipeline or a liquefied natural gas export terminal, are useful examples to consider. The profiles of these assets are usually highly contracted, under 10- or 20-year contracts with fixed fees that are indexed to inflation to use the assets' capacity, regardless of actual volumes demanded—a classic infrastructure profile. However, care needs to be taken when volume and price risks are introduced. While some of these risks can be consistent with an infrastructure profile, in some situations, this can introduce upstream commodity exploration and development risks—a materially different profile that for many is not consistent with their definitions of infrastructure.

Midstream assets are also at the forefront of the energy transition because infrastructure plays a critical role in efficiently and securely transporting energy and reducing emissions. An additional layer of complexity arises from the global economy's attempt to accelerate decarbonization by improving efficiency, removing emissions, and the displacement of fossil fuels, which currently supply over 80% of the world's energy.³⁷ As traditional sources of energy mature and start to decline with decarbonization, the

³⁷BP, "BP Statistical Review of World Energy 2022," 71st edition (June 2022).

Exhibit 31. Global Energy Transition Investment



Source: BloombergNEF, *Energy Transition Investment Trends 2024*.

opportunities in newer energy transition investments are growing significantly, as shown in **Exhibit 31**. In 2022, global energy transition investments passed \$1 trillion and were \$1.8 trillion in 2023, where electrification of transport saw more investment than renewables for the first time. This complexity offers a range of opportunities and a number of new risks that can be useful to first experience from the relative safety provided by an infrastructure debt investment.

The diversity of infrastructure's fundamental drivers highlights two features of infrastructure debt investments. First, financing is tailored to each investment to accommodate a variety of market, technical, operational, and economic characteristics. This lack of standardization limits lender competition and has so far preserved fundamental borrower controls, such as covenants and detailed reporting. Second, the combination of a resilient credit structure and underlying drivers of cash flow results in infrastructure debt's relatively low correlation with other asset classes, including private debt, fixed income, and real assets.

Infrastructure Debt Track Record

Infrastructure debt emerged in the 1980s as governments sought to include the expertise and capital of the private sector in public infrastructure projects. This type of private sector participation included the use of project-financed bank lending. Banks have been the primary source of debt finance since then and still control large parts of the market because of their incumbent position and willingness to lend due to a more attractive risk and return profile relative to other lending opportunities.

Private infrastructure debt as an investment opportunity for institutional investors emerged in the late 1990s in the form of subordinated debt, which was an attractive cash-yielding alternative to core infrastructure equity for real asset and infrastructure allocations as these newer alternative investment allocations grew. It was not until the Global Financial Crisis that fundamental changes in bank regulation and bank lending strategies sowed the seeds of a wider role for institutional investors. This change was driven

by new constraints and regulations, such as Basel III, that limited banks' ability to lend in the medium to long term while encouraging lending to higher-quality investment-grade assets.

In addition to bank lending constraints, economic growth and an inability of governments to fund or efficiently manage both new infrastructure and the renewal of existing infrastructure have created an even larger financing gap that is being filled by institutional investors. This has backed today's infrastructure debt opportunity for institutional investors across a range of risk return profiles that suit allocations from fixed income, private debt, and real assets.

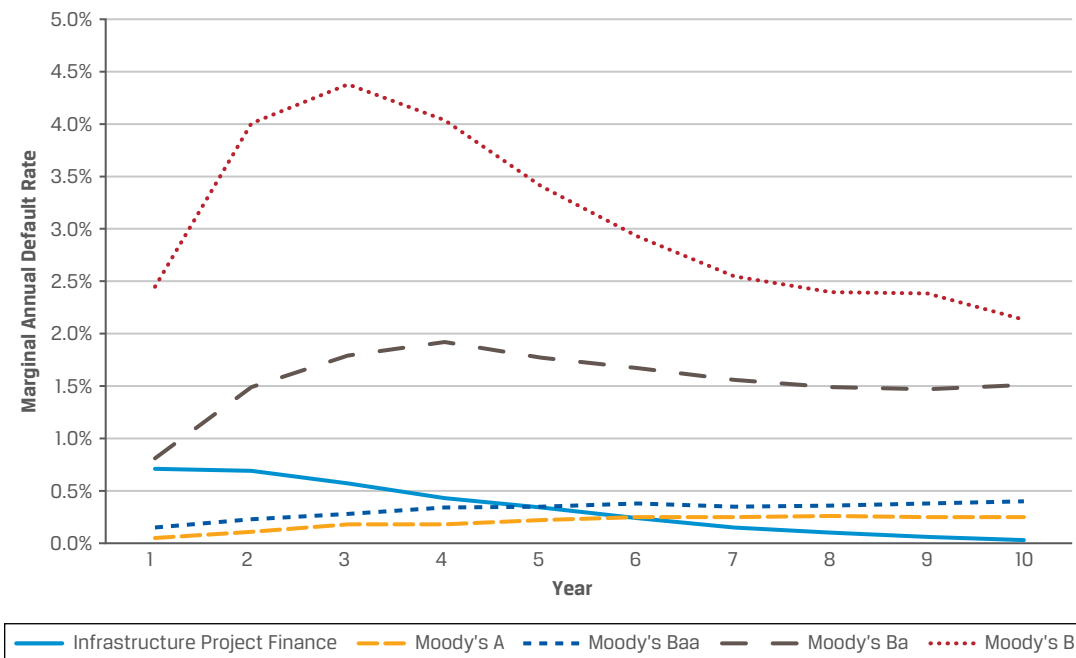
Although infrastructure is a less familiar asset class to institutional investors, a long and established track record over almost 40 years highlights the consistency of lending standards and resiliency of the asset class over a variety of market cycles. Moody's Investors Service provides a useful summary in its annual infrastructure and project finance defaults and recoveries studies, highlighting the unique characteristics of the asset class, such as the following:

- The fact that this asset class derisks over time and mature assets have a credit quality comparable to BBB/A rated corporate debt
- The fact that when defaults do occur, recoveries are high—normally 80%—and in over 60% of the cases, lenders achieve 100% recovery

Exhibit 32 illustrates the relatively high credit quality and unique derisking credit profile of senior infrastructure project finance relative to a range of corporate credit marginal default rates.



Exhibit 32. Infrastructure Project Finance Marginal Default Rates, 1983–2020



Source: Moody's Investors Service's annual default study and default and recovery rates for project finance bank loans, 1983–2020, 2022.

Key Characteristics of Infrastructure Debt

The underlying fundamental drivers of infrastructure—essentially, high barriers to entry and high likelihood of cash flow—when combined with proven project financing result in a unique set of characteristics that offer attractive diversity and low correlation with many other alternative and public asset classes.

Based on Vantage Infrastructure's involvement over the past 20 years, we see infrastructure debt strategies falling into one of three broad categories that align with investor allocations spanning fixed income, private debt, and real assets. **Exhibit 33** summarizes these key characteristics.

For fixed-income allocations, the key benefit of investment-grade opportunities is the ability to match an investor's liabilities with a high-grade credit asset that offers a higher-yielding alternative to sovereign and high-grade corporate credit. The investment-grade market can be accessed directly via bank-controlled distribution channels or asset managers and is relatively mature and competitive.

This strategy was particularly attractive during the recent cycle of low and declining risk-free rates, when the yields and premium on offer were valuable to sustain 3%–5% returns while risk-free rates were below 1%. As risk-free rates increase and returns from sovereign and high-grade corporates are again over 3%–5% per annum, this strategy may see softer demand outside of core investors, such as capital-regulated insurance investors.

Private debt allocations have mostly targeted infrastructure debt, primarily in the sub-investment-grade opportunity set. The sub-investment-grade subsector has seen the greatest constraints on bank lending, along with the highest growth across traditional and, more recently, energy transition and sustainability opportunities. These can be smaller or more complex financings with limited bank and institutional lending competition that offer a compelling mix of a high-yield cash return and a differentiated and resilient credit risk profile, comparable to sub-investment-grade corporate credit.

For real asset allocations, we have generally seen a reduction of interest in infrastructure debt because its credit profile does not match investor-sought characteristics. In addition, allocators to real assets have narrowed their focus to the increasing range of equity strategies offerings, as this market has also grown significantly. However, we still see some real asset allocations focused on subordinated and, occasionally,

Exhibit 33. Infrastructure Debt Strategy Categories and Characteristics

	Investment Grade (IG)	Sub-IG Senior	Sub-IG Subordinated
Typical format	Fixed-rate bond	Floating-rate loan	Fixed/floating loan
Tenor range	10–20+ years	3–10 years	2–5 years
Typical credit risk	BBB– to A+	BB+ to B+	BB to CCC
Gross credit margins ^a	+100–250 bps	+250–500 bps	+500–800 bps
Suitable allocation	Fixed Income	Private debt	Private debt and real assets

Note: ^aGross credit margins are exclusive of any upfront or arranging fees and do not include any investment-related fees, such as fund operational and asset management costs.

Source: Vantage Infrastructure, 2022.

senior debt as an alternative to super-core and core equity because they can leverage their infrastructure market expertise and relationships.

In response to growing alternative investment allocations and the value on offer across the spectrum of infrastructure debt, we are seeing significant growth from both new and established investors in the asset class. While tailored account solutions suit certain investors, the majority of investors prefer to access the asset class through commingled funds, from multiasset generalists through to dedicated specialist managers. These dedicated specialist managers are successfully developing and delivering an increasing range of products to match the growing demand and preferences across sectors, regions, and risk/return profiles. These fund products are also providing a range of co-investment programs similar to the evolution seen in the infrastructure equity market over the past decade.

VENTURE DEBT

Zack Ellison, CFA

Applied Real Intelligence (A.R.I.)

Venture debt is quickly emerging as a highly attractive alternative credit product, having historically provided investors with 15%–20% annual returns with low volatility, limited drawdown risk, strong portfolio diversification benefits, and an effective hedge to rising interest rates.³⁸

Venture debt has been in existence for over 20 years, and it has historically occupied a small niche of the direct lending market. Just a decade ago, less than \$5 billion of venture debt transactions were underwritten in the United States each year.³⁹

However, the boom in the innovation economy and the evolution of the venture financing ecosystem have greatly increased the demand for venture debt from borrowers and investors alike. Furthermore, the paradigm shift to a higher-interest rate environment has led investors to seek lower-correlation, floating-rate debt products as a replacement for, or complement to, their traditional core fixed-income portfolios.

Investment in innovation is growing exponentially. In 2021, venture capital (VC) deal activity in the United States reached a record \$348 billion, more than two times the previous record of \$172 billion set in 2020 and more than four times greater than the \$84 billion of VC investments made just five years previously, in 2016.⁴⁰

These tailwinds have led to significant growth in venture debt and the realization that it is now an institutionally investable product, with a market size that has quickly scaled to more than \$30 billion annually. As more investors focus on innovation and more startups seek financing, venture debt will continue to grow.

Venture debt includes loan products provided to companies that have already received institutional funding, typically more than \$15 million over multiple equity financing rounds from venture capital firms.

Venture debt typically comes in the form of short-term, senior secured term loans, either with a first or second lien, and typically carries a cash interest rate in the low to mid-teens. These loans usually have an original term of less than four years and are accompanied by equity warrants equal to 5%–20% of the loan's notional value. This combination offers lenders multiple advantages: capital protection through the secured nature of the debt, a steady stream of current income via the interest payments, and the opportunity to partake in the borrower's potential growth through the equity warrants.

Venture debt complements (and is rarely a substitute for) funding provided by equity investors. Loans are customarily made three to nine months following a Series B, Series C, or later-stage equity financing round. The main benefit to both the underlying borrower and the borrower's existing equity investors, including the VC firms that have previously funded the borrower, is a cheaper, minimally dilutive alternative to equity financing.

Venture debt is commonly utilized during a company's growth or expansion phase when it has established revenue streams and internally generated cash flow sufficient to cover debt-related expenses, including fees, interest, and principal repayments. By the time a company is eligible for a venture loan, it has

³⁸Portions of this paper have been reprinted with permission: Zack Ellison, "Venture Debt: 10 Things to Know," Applied Real Intelligence LLC (22 January 2021).

³⁹Applied Real Intelligence LLC (A.R.I.) analysis and estimates.

⁴⁰PitchBook and National Venture Capital Association, "PitchBook-NVCA Venture Monitor: Q2 2023" (July 2023).

Exhibit 34. Venture Debt Benefits for Borrowers and Equity Investors

Venture Debt Benefits to Startups (borrowers)	Venture Debt Benefits to Venture Capital Firms (equity investors)
Minimizes ownership dilution	Supportive and complementary to venture equity
Accelerates growth and expansion	Preserves ownership position
Extends runway	Conserves capital for other opportunities
Decreases cost of capital	Increases oversight and monitoring
Faster to obtain than equity financing	Reduces risk concentrations

Source: Zack Ellison, "Venture Debt: 10 Things to Know," Applied Real Intelligence LLC (22 January 2021).

already raised three to six rounds of equity funding in prior financing rounds (e.g., pre-seed, seed, Series A, Series B, Series C). At this juncture, the company is considered significantly derisked, often having been in operation for five to eight years, demonstrating a proven track record of growth and financial stability. Moreover, the borrower has undergone multiple due diligence reviews performed by experienced venture capital firms. **Exhibit 34** shows the parallel benefits of venture debt for borrowers and equity investors alike.

Venture debt is used for

- growth associated with product development or new product offerings and expansion into new geographies or market segments;
- optimizing the timing and valuation of the next equity financing round by extending the resources and time frame of the borrower, thus enabling key valuation milestones to be met ("runway extension" or "bridging");
- equipment leasing; and
- working capital.

Venture debt is provided predominantly to technology-enabled companies that use technology hardware, software, tools, platforms, libraries, and frameworks to make products or provide services that increase efficiency and effectiveness. Technology-enabled businesses are valued significantly higher than those that are not, as the economy shifts toward an increasingly digital, on-demand ecosystem. Businesses that are technology enabled present significantly less risk than those that are not.

Venture Debt History and Current Market Opportunity

Venture debt was originally born out of necessity in the early 1980s as early-stage companies, backed by well-known venture capital firms, required capital to purchase computers and other physical technology assets to grow their businesses. However, these early startups lacked the cash flow necessary to secure or service conventional bank loans. Early venture lending pioneers, including Silicon Valley Bank, created a new type of financing to meet this growing demand.

The loans were structured to complement equity investments provided by venture capital firms and secured by the enterprise value of the borrower. To this day, venture debt continues to grow and evolve but remains true to its roots of enterprise value-based and revenue-based lending.

The venture debt market remains inefficient; it currently fails to incorporate all available information into an asset's fair price. Market inefficiencies in venture debt are remarkably similar to those found in the early days of the high-yield bond market, known as the junk bond market in the 1980s, which were caused by several factors, including

- a general lack of awareness and understanding of the product,
- market fragmentation,
- information asymmetries,
- high transaction costs, and
- negative market sentiment (i.e., risk aversion due to human emotions).

Venture debt exhibits these same core inefficiencies along with growth drivers that are like those found in the early high-yield bond market, such as

- a fundamental need for the product (i.e., more companies seeking financing of this type),
- capital inflows from investors (i.e., attractive forward-looking risk-adjusted returns), and
- substantial market growth potential, with only a small number of incumbent providers.

Venture debt has fared well through market cycles, including the Global Financial Crisis, which began in 2007, and seven market corrections (defined technically as a major index falling by more than 10% from its recent high) from 2010 through 2022.

The venture debt strategy is "all weather" and is suited to any type of market environment. However, current market dynamics provide strong positive catalysts for the strategy.

While equity fundraising is the most well known and popular means of securing startup capital, recent dislocations in the financial markets have led to a more challenging fundraising environment for startups. A pullback in equity financing occurred in 2022 and 2023 amid a backdrop of falling valuations and a stalled IPO market, the result of high inflation and rising interest rates.

Until recently, startups were able to raise money at all-time-high valuations. These VC-backed companies now entering a growth stage face a new reality of either raising equity at a lower valuation in a "down round" or finding other ways to extend their financial runways.

In this context, VC-backed companies are increasingly turning to venture debt as the solution to continue growing while attempting to "bridge" to more favorable economic conditions. Importantly, venture debt financing complements equity capital as a funding source and allows companies to accelerate growth while also being minimally (or not at all) dilutive. Raising debt can take a matter of weeks, with more certainty of closing because it generally occurs after an equity raise.

The inefficiencies of the venture debt market combined with strong fundamental demand provide tailwinds for the venture debt strategy to continue offering superior risk-adjusted returns and alpha generation for investors.

Venture Debt Market Constituents

Historically, Silicon Valley Bank was the largest venture lender in the United States, accounting for more than half of all venture loans each year.⁴¹ However, on 10 March 2023, Silicon Valley Bank failed, resulting

⁴¹A.R.I. analysis and estimates.

in its takeover by federal regulators. The bank had previously invested significant amounts in US Treasuries and government-backed mortgage bonds during the COVID-19 pandemic starting in 2020. Unfortunately, the bank made a critical mistake by not adequately hedging its portfolio against potential interest rate increases. Consequently, when the Federal Open Market Committee aggressively raised benchmark interest rates in 2022 and the first quarter of 2023, the value of these fixed-interest securities plummeted, leading to massive losses in the bank's portfolio.

These losses eroded investor confidence, and the bank faced a surge of deposit withdrawal requests that far exceeded its capacity to cover. Despite its efforts, the bank was unable to raise the necessary capital to meet deposit outflows, resulting in its placement under regulatory control. Following the bank's demise, North Carolina-based First Citizens Bank acquired the majority of Silicon Valley Bank on 27 March 2023. For the avoidance of doubt, Silicon Valley Bank's failure was due to its government bond-related losses and insolvency after a run on its deposits and was not related to its venture debt portfolio.

The collapse of Silicon Valley Bank has created a significant funding gap in the venture ecosystem, presenting an opportunity for nonbank lenders to step in and meet the soaring demand for venture debt. Just as private direct lenders benefited from the pullback in credit offered by banks following the Global Financial Crisis, so too do many investors expect venture debt to outperform if regional banks provide less credit going forward.

Over 75% of the venture debt market is controlled by 10 banks, business development companies (BDCs), and private funds: First Citizens Bank/Silicon Valley Bank, Bridge Bank (a unit of Western Alliance Bancorp), Comerica, Hercules Capital, TriplePoint Venture Growth BDC, Horizon Technology Finance Corp, Runway Growth Finance, Trinity Capital, ORIX Growth Capital, and Western Technology Investment. The remainder of the market consists predominantly of regional banks and closed-end private funds managing less than \$500 million in total assets,⁴² as well as new entrants.

The bank and nonbank markets are bifurcated and offer products that most often complement each other. Typically, banks provide small revolving credit facilities at lower interest rates (e.g., prime rate plus a credit spread of 1%–3%) along with ancillary banking services. Nonbank lenders provide larger, longer-maturity term loans at higher interest rates (e.g., prime rate plus a credit spread of 4%–8%). Often, banks and nonbank lenders partner on deals, with the bank providing the revolving credit facility and the nonbank lender providing the term loan. Unlike the more developed segments of the credit markets, there is a distinct bias toward collaboration rather than competition, likely due to demand for the product consistently outpacing the supply of available funds.

Venture Debt Market Size and Growth

In 2021, the venture equity funding market reached its all-time peak, at \$348 billion, marking an almost eightfold increase over the previous decade.⁴³ The size of the venture debt market is not precisely known since loans are made to private companies and in many cases are not required to be publicly reported. However, multiple specialized data providers estimate that venture debt represents approximately 10%–15% of total US venture equity financing each year.

Approximately \$30 billion to \$35 billion of venture debt was underwritten in 2022, based on an analysis of publicly available loan data from banks, BDCs, and private funds. This amount represents considerable

⁴²A.R.I. analysis and estimates.

⁴³PitchBook and National Venture Capital Association, "PitchBook-NVCA Venture Monitor: Q2 2023" (July 2023).

growth over the past decade, even though the market shrank significantly in 2023 as a result of the aforementioned Silicon Valley Bank crisis.⁴⁴

The investment opportunity in venture debt expanded significantly following the GFC, when increased capital requirements and tightened regulations made holding corporate middle-market loans more expensive and restrictive for bank lenders. This change led to a greater opportunity set for nonbank lenders, which stepped in to fill the demand for capital from borrowers. This structural shift, combined with the explosive proliferation of innovative, high-growth, early-stage companies seeking financing, has proven to be fertile ground for the continued expansion of the venture debt market.

The venture debt market is expected to grow significantly from its current size as a result of several fundamental factors, including the following:

- More early-stage companies are likely to be successfully launched and require financing, thereby increasing the demand for capital from venture lenders. The proliferation of early-stage companies is underpinned by minimal (and decreasing) barriers to entry, including low costs to launch and run a business, and a continued inflow of human capital, including a growing number of talented graduates from the world's leading universities.
- The market is evolving, driven by an enhanced comprehension and sophistication among borrowers and their equity investors about the strategic use of debt in a company's financing plan and overall capital structure. Currently, debt constitutes a small fraction of the capital base for early-stage companies compared to the significantly higher proportion seen in established firms listed in the S&P 500 Index. A modest increase in the debt percentage for early-stage companies could imply substantial market growth.
- Many early-stage companies are opting to stay private for longer, thereby increasing the need for all types of funding sources, particularly debt that balances growth with equity preservation.
- Technological advancements and digital transformation across industries are creating new opportunities for venture debt financing. As companies innovate in such sectors as artificial intelligence, biotechnology, and clean energy, the need for specialized, less dilutive financing options becomes more pronounced. This technological evolution not only broadens the scope of businesses eligible for venture debt but also encourages lenders to develop more tailored and flexible financing solutions to support the next wave of breakthroughs.

These factors will likely lead to the continued growth of the total venture funding market, and a larger percentage of funding is likely to be in the form of debt.

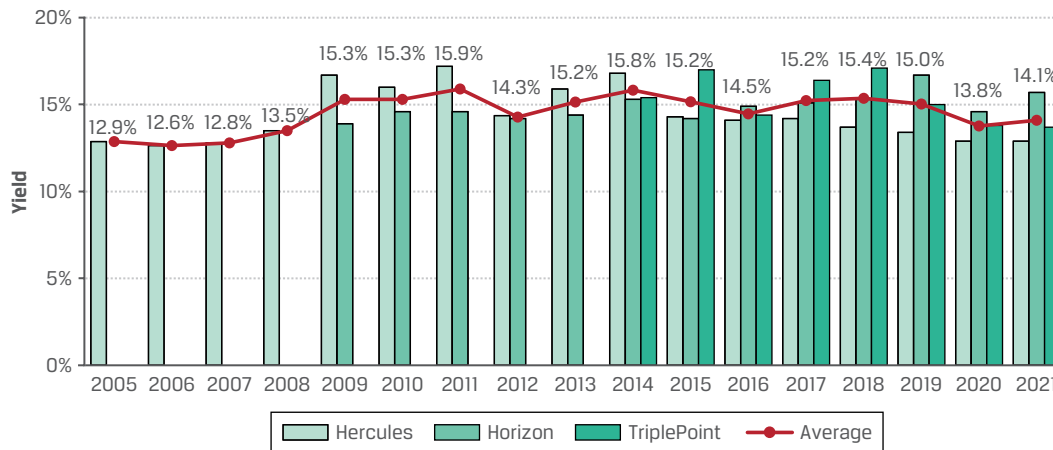
Venture Debt Returns

Over the past 15 years, gross returns have typically ranged from 15% to 25% annually for private closed-end venture debt funds and publicly traded BDCs, as shown in **Exhibit 35**. These returns are achieved through a combination of interest, fees, and equity exposure (via warrants). Interest is typically a floating rate (e.g., prime rate plus a credit spread) that is paid in cash on a monthly basis but may also include some form of payment-in-kind interest. Fees typically include those received by the lender at the time of initial loan underwriting (origination or upfront fees) and at the time of loan repayment (back-end or success fees). Equity warrants are likely to be monetized at the end of the fund or when a portfolio company has a positive liquidity event, such as being acquired or going public via an initial public offering (IPO).

⁴⁴According to a Deloitte study (undated), "After four straight years of \$30+ billion in US venture debt activity, followed by a plunge in 2023 to an estimated US\$12 billion, a partial bounce-back may be next... In 2024, US tech venture debt could rise to US\$14-16 billion, up 25% from 2023 levels." See B. Matheson, S. Prakash, D. Stewart, and K. Ramachandran, "Life after Debt: Venture Debt Funding Could Grow Again in 2024," Deloitte Center for Technology, Media & Telecommunications. www2.deloitte.com/us/en/insights/industry/technology/technology-media-and-telecom-predictions/2024/technology-venture-debt-prediction.html.

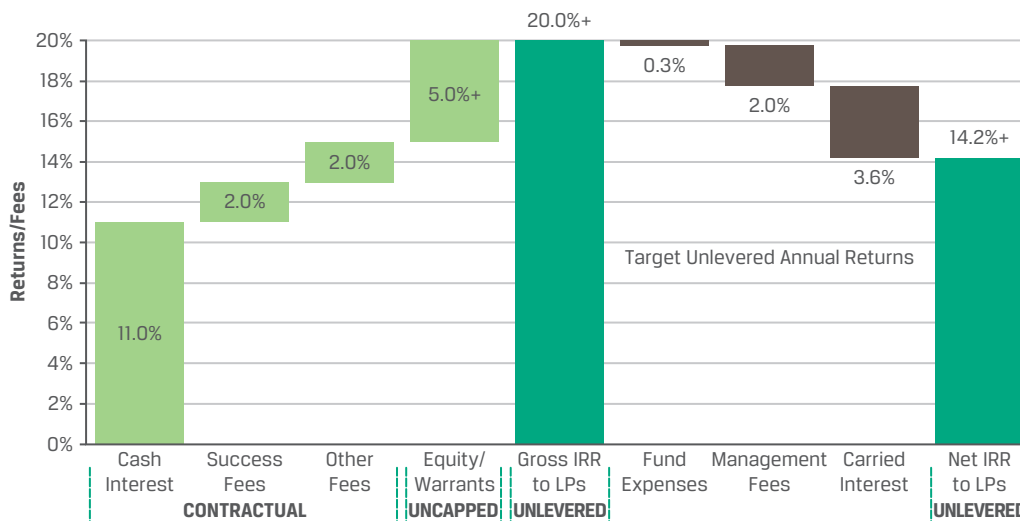
A hypothetical example of targeted returns and the associated fees, based on an analysis of historical transaction data, is shown in **Exhibit 36**. In this example, 75% of the total return is expected to be generated through contractual return on the debt instrument—interest and fees—that the borrower is legally obligated to pay.

Exhibit 35. Annual Debt Portfolio Yield of Three Prominent Publicly Traded Venture Lenders (excluding equity and warrants)



Source: SEC filings of publicly traded BDCs of Hercules Capital, Horizon Technology Finance, and TriplePoint Capital.

Exhibit 36. Illustrative Example of Target Annual Unlevered Return and Associated Fees Based on Historical Data



Note: This exhibit shows indicative returns and fees for limited partners (LPs) invested in private venture debt funds.

Source: Based on A.R.I. estimates and analysis.

Benefits for Investors

Venture debt has played a crucial role in the financing of startups and early-stage enterprises since the 1980s, yet many institutional investors have not allocated resources to this asset class. Identifying the key benefits of incorporating venture debt into an institutional investor's portfolio can help highlight its value.

Potential for superior risk-adjusted returns

- 15%–25% historical gross annual return
- 14%–16% historical gross annual income
- Low-volatility contractual income via debt payments
- Unlimited upside via equity participation (warrants)

Security of capital

- Senior secured (first-lien) debt
- Low loan-to-value ratio
- Collateralized by all assets (including intellectual property)
- Protective covenants

Strong portfolio diversifier

- Low equity beta correlation
- Nonreplicable investments
- Exposure to both income and growth

Additional investor benefits

- Low interest rate risk (floating-rate loans)
- No "J-curve" effect
- Co-investment opportunities

Venture Debt Risks

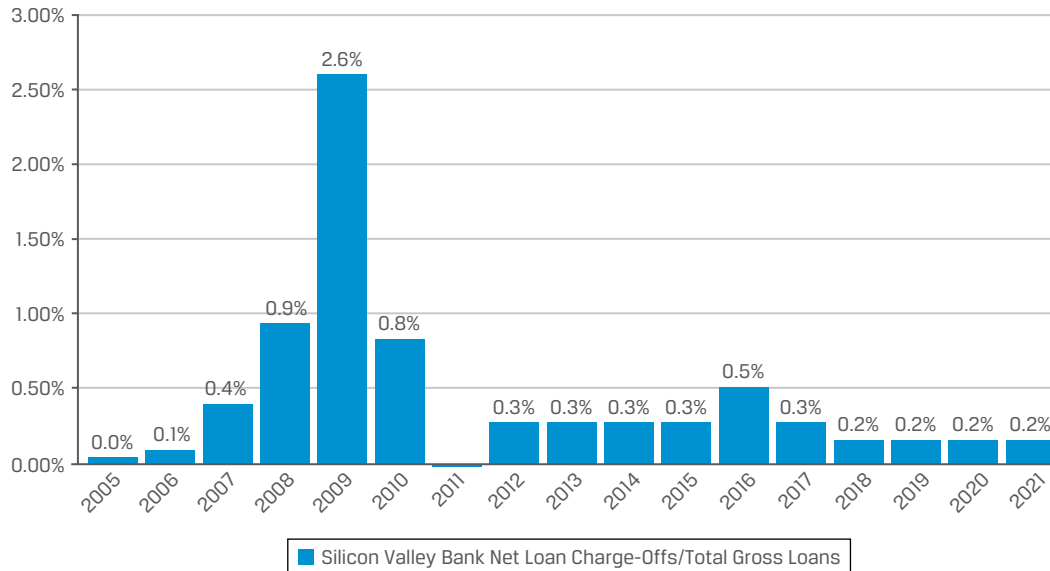
Venture debt has low historical loss rates. From 2005 through 2022, charge-offs in venture debt have averaged less than 0.50% annually, in a timeframe that includes the Global Financial Crisis.

Silicon Valley Bank, historically the largest publicly traded bank focused on venture debt, with a larger than 50% market share for most of its existence, had loan losses averaging 0.25% annually from 2012 to 2022, as shown in **Exhibit 37**. Hercules Capital, the largest publicly traded BDC focused on venture debt, had effective annualized losses of less than 0.10% on approximately \$15.7 billion of capital committed during the same period. Many other venture lenders had loss rates comparable to the two largest lenders, indicating that it is the strategy more than the specific manager that protects against losses.⁴⁵

Managing a venture debt strategy requires a specialized skill set to source, underwrite, and manage venture loans successfully. Nearly all venture debt borrowers have negative EBITDA, a limited operating

⁴⁵A.R.I. analysis of SEC filings and private fund data.

Exhibit 37. Silicon Valley Bank Net Loan Charge-Offs



Source: Applied Real Intelligence LLC analysis of SEC filings.

history, and a cash burn "runway" of less than three years. Venture debt borrowers often operate in high-technology segments, where products and business models are unproven. Most of the companies financed in venture debt are first movers or early movers in their domain. Innovation inherently is risky, but if the risks are responsibly managed, they can be mitigated by professional investors.

Derisking Venture Debt

Numerous distinctive attributes of venture debt play a crucial role in mitigating risk and minimizing potential losses. On average, these loans are paid down in two and a half years, requiring a relatively short forecasting period for lenders. Additionally, they are structured with floating-rate coupons, a strategic approach aimed at neutralizing interest rate risk.

These attractive traits are bolstered by a triumvirate of downside protections arising from strong underlying operating companies, deal structures, and sponsor groups, as detailed below:

1. Solid underlying company fundamentals

- The annual recurring revenue (ARR) is typically greater than \$10 million (but often much larger), with a convincing business plan and a clear path to sustainable free cash flow. On a standalone basis, the company will be able to support timely payments related to debt, including interest, fees, and principal repayment.
- Companies are technology focused or technology enabled, at the growth or expansion stage (typically having previously completed Series B or Series C financing), with strong product-market fit and a supportive customer base.

- The management team is talented and has prior experience building and successfully monetizing early-stage companies.
- There is a relevant competitive advantage in a high-growth, recession-resistant sector that leverages innovation and technology.
- There are attractive "margins of safety" via organic growth, a viable capital structure, a path to free cash flow, strong collateral, and ample asset coverage.

2. Strong deal structure

- To reduce the risk of default, the amount of debt must be appropriately sized for the borrower to have relatively low financial leverage (i.e., debt relative to revenue, cash flow, or enterprise value). Typically, the venture loan is the only debt in the borrower's capital structure. To size the loan, lenders often use three metrics: a loan-to-enterprise value of less than 30%, a loan-to-latest equity raise of less than 50%, and a loan-to-ARR of less than 75%. The ratios and threshold levels can vary significantly depending on the lender's underwriting standards and risk tolerance, as well as the specific attributes of the borrower and industry sector.
- Underwriting secured debt with a first lien on the borrower's assets ensures that the lender will be paid first if the borrower defaults. In a bankruptcy proceeding, secured creditors hold a series of significant rights that unsecured creditors do not possess. As a result, secured creditors have significantly higher recovery rates in bankruptcy and other reorganizations relative to unsecured creditors. Given the private nature of venture loans, exact historical recovery rates are not available, but estimates derived from discussions with many industry participants suggest that recovery rates are typically greater than 90%.
- Protective covenants—promises undertaken by the borrower to take or not take certain actions—are used to protect the lender. In venture lending, these covenants typically involve minimum liquidity (e.g., cash on hand), maximum leverage (e.g., debt-to-ARR), actual performance versus plan (e.g., revenue greater than 80% of projections), and covenants that limit cash leakage and (potential) value destruction (e.g., limits on asset purchases and sales, dividend distributions). Furthermore, milestone-based financing can be used, and reporting requirements are strict and ongoing.

3. Supportive sponsor group

- The sponsor group consists of the institutional equity investors (such as venture capital firms) that have funded the borrower. In practice, strong sponsor support has led to extremely low losses even in the event of default by the borrower. The low level of losses is a result of the fact that the equity investors are subordinate to the secured lender, which incentivizes the sponsor group to work constructively with the lender, often paying out the lender in full in times of stress.

Venture loans are not comparable to traditional small business loans, including Small Business Administration (SBA) loans. Given the VC sponsorship, high-growth, and technology-focused nature of venture debt borrowers, they have a significantly lower risk profile. It is noteworthy that (1) venture debt borrowers have already received funding from venture capital firms, while SBA and other traditional small business borrowers have not; (2) prior to receiving venture debt financing, the borrower has already been materially derisked by its equity investors, who have performed multiple rigorous due diligence rounds; and (3) venture debt is provided predominantly to technology or technology-enabled companies, while SBA loans are made to all types of borrowers, such as restaurants, dentists, freight truckers, fitness centers, landscaping services, beauty salons, and specialty contractors.

Venture Debt in a Portfolio Setting

Most institutional investors classify venture debt as an absolute return, income, opportunistic, or illiquid strategy that lies within their income-generating or credit portfolios.

However, accessing venture debt's benefits, such as high risk-adjusted returns, capital protection, and portfolio diversification, poses challenges due to the limited availability of suitable investment vehicles. Banks that specialize in venture debt do not offer "pure" access to the asset class, do not allow for direct co-investment opportunities, and typically have more mark-to-market volatility than closed-end funds. While public BDCs provide direct venture debt access, they too are subject to market volatility and lack the co-investment advantages offered by private funds.

Private closed-end funds remain the primary option for investors aiming for direct venture debt exposure, co-investment opportunities, and minimized short-term volatility. However, most private venture debt funds are already at full capacity given their relatively small size, closed-end structure (accepting additional capital typically only when raising a new fund), and the high resubscription rates of their limited partners to follow-on funds.

Venture debt's moderate size as an investable asset class, its relatively brief history, and the aforementioned factors can make it difficult for asset allocators to find the right manager that can also accept capital.

Against this backdrop, the emergence of new managers can help bring innovative perspectives on emerging technologies, deep sectoral knowledge, and oftentimes a commitment to inclusivity, including support for diverse founders that has been historically lacking.

4. THE FUTURE OF ALTERNATIVE CREDIT IS BRIGHT

Mike Dowdall, CFA
Alternative Fund Advisors

We believe the alternative credit market as an asset class is poised to continue its rapid growth. Strong secular tailwinds are likely, in our view, to drive the industry over the coming decade—namely, technological progress, continued regulatory pressure on banks, an aging population searching for steady yields, and an industry well suited to meet the preferences of modern investors. The growth of the alternative credit market is also likely to involve significant diversification as new segments, currently in their infancy, blossom.

On the demand side, we are observing an increase in allocations to alternative credit from investors that were historically unable or unwilling to access the market, including individuals and fiduciaries alongside smaller institutions that were previously lacking the necessary knowledge or capital. We also see an industry ready to tailor solutions and structures to meet these new investors' needs and expectations through increased transparency and improved access vehicles. We believe there will be a broader integration of environmental, social, and governance (ESG) factors at the asset manager level and that technology and greater disclosure will give investors and rating agencies greater ESG insight into portfolios. But this rosy industry outlook is not without risk; the growth trajectory of alternative credit is highly dependent on its delivery of outperformance during the next extended credit downturn.

Secular Drivers

This section focuses on four key secular growth drivers for the alternative credit market: technology, regulation, demographics, and investor preferences. The list is undoubtedly nonexhaustive, but we believe these factors will determine whether alternative credit matures and attracts more capital.

Technology

Technology is a powerful democratizing force in financial markets because it potentially allows smaller entrants to minimize the scale advantage of large incumbents.

Lending is a tough business. It involves finding potential borrowers, screening prospects, underwriting the loans, and then monitoring and servicing the loans to manage risk and minimize loss for a substantial period. Well-staffed banks have a clear advantage; their massive teams comb the world looking for new loans, which are then passed through their underwriting funnel and further on to specialized monitoring and servicing teams. However, new technology has greatly diminished this scale advantage across the process, facilitating prospecting, monitoring, and servicing the loan.

Digital lending platforms represent the most noticeable technological innovation that has driven—and will likely continue to drive—the growth of private and alternative credit supply. These platforms, which directly connect borrowers and lenders, disintermediate banks and other large lenders. The technology itself is not particularly complex (these platforms are like job boards), but they require significant network effects to successfully execute their business plan. The platforms must have both high-quality borrowers and deep-pocketed and consistent investors committed to providing capital throughout the economic cycle.

Other technologies have aided underwriting. Consider a real estate bridge lender focused on predevelopment loans for commercial projects. They may have specialized knowledge of the real estate development industry but lack on-the-ground originators to screen projects for suitability. With the widespread availability of publicly available satellite and street level data (think Google Street View), credit managers can now explore the development site and surrounding areas to evaluate the loan. They can also purchase more advanced data, such as foot traffic reports, helping them better understand the viability of the location. Before this technology existed, the manager would need to travel to the site for the sole purpose of gaining a high-level understanding of the area before moving forward with the loan. This physical bottleneck meant that only a small number of loans could pass through the manager's pipeline unless staff was added.

Technology is also relevant for an asset-based lender who buys a borrower's accounts receivable (i.e., factoring). That lender can leverage software providing real-time data on the accounts receivable balances, collections, and historical default rates in order to quickly mitigate risks should credit quality deteriorate. In the early days of factoring, gaining this level of data transparency would have been extremely time intensive. The borrower would have needed to draft regular borrowing base reports, which a bank credit department would then pore over to glean trends or changes in risk characteristics. Now, this process can be highly automated.

Regulation

In the ensuing years following the Global Financial Crisis (GFC), regulators attempted to create new rules to eliminate the incentives that led to the collapse. In the United States, the culmination of this effort resulted in the Dodd-Frank Act, which constrained banks' ability to engage in risky lending, to ensure customer deposits were properly segregated from high-risk trading. Globally, the result was the Basel III reforms, which effectively had the same effect. In 2013, the Federal Reserve went even further, establishing specific guidelines for leveraged lending that constricted regulated banks' ability to participate in high-yield credit markets.⁴⁶ The disintermediation of banks is not a new process; rather, it has been occurring for years with the growth of the corporate bond markets in favor of traditional bank lending. Particularly in Europe, however, this transition remains ongoing.

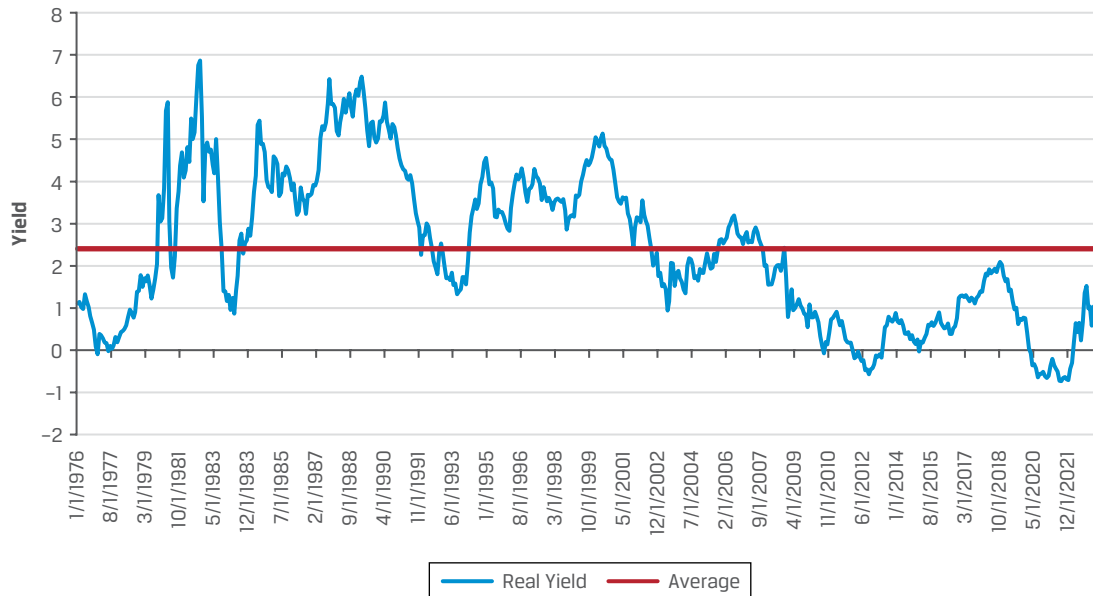
From a regulator's perspective, this dynamic shifts risk away from systemically crucial institutions such as banks and onto the balance sheets of private lenders and their ultimate investors. While private lenders have grown in size, they do not pose nearly the same systemic risk as large banks since loans are not mixed with customer deposits. In the meantime, the demand for credit remains, which provides a compelling opportunity for alternative lenders to continue to increase their market share at the expense of banks. As the alternative credit space grows and develops, the difference in rates between banks and these lenders will also likely contract.

In addition to bank regulation, we would closely watch how regulation unfolds in the corporate bond market and in the feeder vehicles into it, particularly during the next wave of defaults. Exchange-traded funds (ETFs) have made investing in bonds convenient and accessible to individual investors, which will likely bring the entire asset class under further scrutiny when and if losses mount. Further regulation of this market could constrain borrower flexibility and shift preferences more toward the alternative lending space, which provides more creative structures. Just as it happened with the standardization of US mortgages by the Consumer Financial Protection Bureau⁴⁷ and the aforementioned 2013 Federal Reserve leveraged

⁴⁶Board of Governors of the Federal Reserve System, Federal Deposit Insurance Corporation, and Office of the Comptroller of the Currency, "Interagency Guidance on Leveraged Lending" (21 March 2013). www.federalreserve.gov/supervisionreg/srletters/sr1303a1.pdf.

⁴⁷Consumer Financial Protection Bureau, "Qualified Mortgage Definition under the Truth in Lending Act (Regulation Z): General QM Loan Definition; Delay of Mandatory Compliance Date," *Federal Register* (30 April 2021). www.federalregister.gov/documents/2021/

Exhibit 38. Bloomberg Aggregate Bond Index Real Yields



Note: Real yield is calculated as the yield on the Bloomberg Aggregate Bond Index minus the five-year trailing average year-over-year Consumer Price Index for All Urban Consumers.

Sources: Bloomberg; US Bureau of Labor Statistics.

lending guidelines, we can envision new regulations standardizing the corporate lending market, especially for bonds eligible in ETFs and similar structures.

Demographics

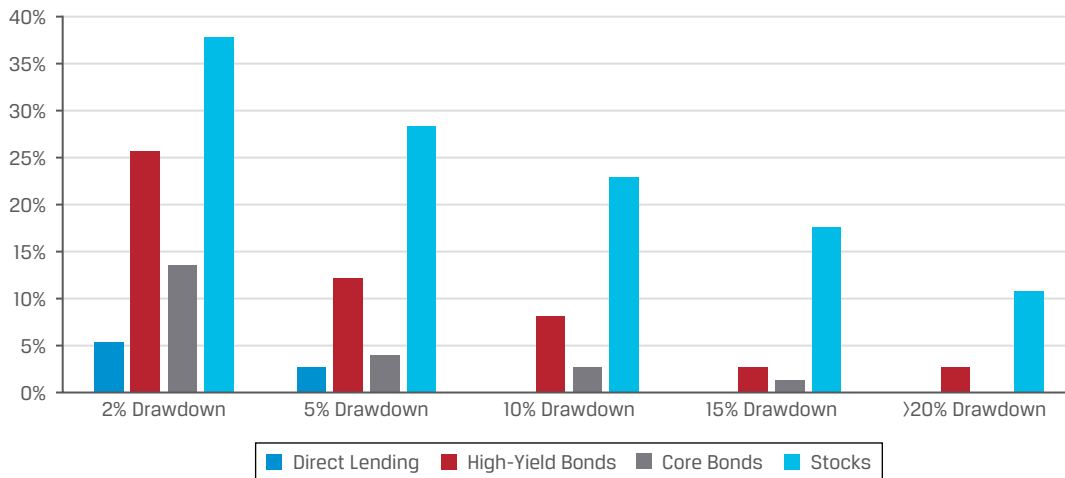
As French sociologist Auguste Comte famously quipped two centuries ago, "Demography is destiny." And demographics—namely, an aging developed world population—stand to drive demand for alternative credit over the coming decades. In countries with older populations, which also happen to hold a larger share of global wealth, the cohort of the population aged greater than 65 years is expected to rise to 25% of total population in 2040, up from 15% as recently as 2010.⁴⁸ An aging population will lead to an aggregate increase in demand for yield-oriented investments as the retirees and their pension trustees shift portfolios away from growth-oriented strategies and into income-oriented strategies. This de-risking strategy manifests itself in target-date fund glide paths, pension fund glide paths, and the behavior of mainstream financial advisers.

In the immediate post-GFC era of financial repression, as shown in **Exhibit 38**, core bond yields have only narrowly exceeded average trailing inflation. The low yields on core bonds greatly increased pressure on retirees and institutions that rely on bonds for steady cash flows and as a store of value. Demanding higher returns, investors turned to equities, high-yield bonds, and real estate, which carry higher volatility. More recently, higher rates and higher inflation have returned, once again changing the playing field.

[04/30/2021-09028/qualified-mortgage-definition-under-the-truth-in-lending-act-regulation-z-general-qm-loan-definition](https://www.fdic.gov/news/press-releases/2021/04/30/2021-09028/qualified-mortgage-definition-under-the-truth-in-lending-act-regulation-z-general-qm-loan-definition).

⁴⁸National Intelligence Council, "Global Trends 2040: A More Contested World" (March 2021). www.dni.gov/index.php/gt2040-home/gt2040-structural-forces/demographics-and-human-development.

Exhibit 39. Alternative Credit Asset Classes' Percentage of Time in Drawdown Period



Notes: Direct lending is proxied by the Cliffwater Direct Lending Index. High-yield bonds are proxied by the Bloomberg US Corporate High Yield Bond Index. Stocks are proxied by the S&P 500. Bonds are proxied by the Bloomberg US Aggregate Bond Index. The analysis start date is 1 October 2004, and the data are quarterly to match the reporting frequency of all data.

Source: Bloomberg.

Regardless of the macro backdrop, alternative credit provides the necessary yield for many institutional fixed-income investors while reducing drawdown risk, which is especially dangerous for pensioners and pension funds. As shown in **Exhibit 39** (and as financial advisers may tell you), sequencing risk—or the risk that drawdowns occur early in the decumulation phase of a portfolio—is one of the greatest tasks for a retiree or pension fund. Finding asset classes that minimize drawdown risk in a portfolio is very important, which makes many alternative credit assets potentially preferable to public high-yield debt.

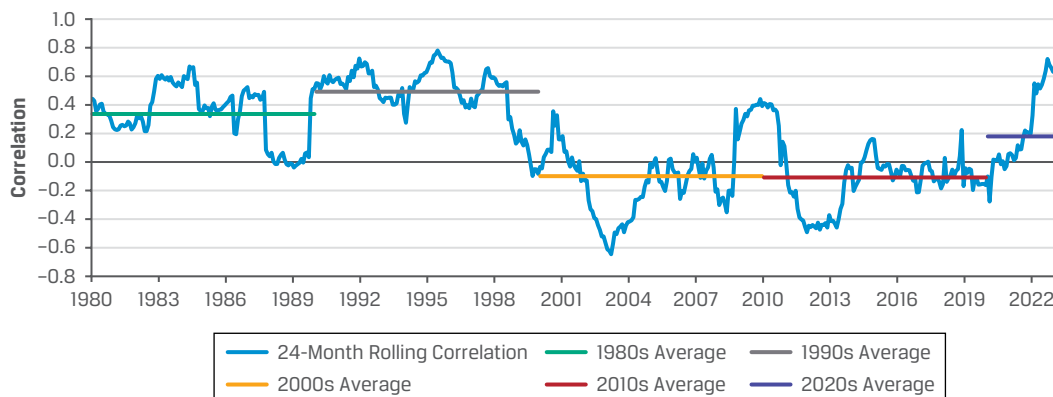
Investor Preferences

Investor preferences can be stubbornly entrenched, which is understandable given the fads that move in and out of markets, often with disappointing or even disastrous results. But the move into alternative credit is, in our view, durable because of the strong underpinnings of the market. According to a 2022 survey of investors, 48% of not-for-profit foundations expected to increase private debt allocations. And it is clear why this is occurring: 75% allocate to private markets for better yields and enhanced returns, while 48% invest to reduce portfolio risk or for downside mitigation.⁴⁹ Alternative credit thus far has satisfied both demands.

We also believe investor demand for duration within multiasset portfolios will likely wane as inflation bites. Long-dated bonds have been a successful addition to virtually any portfolio, providing strong returns and negative correlations with equity holdings over the last two decades. But in today's environment, the investment case for these assets has diminished. As demonstrated earlier, the real yield on core bonds is barely above 0%. And arguably more important, the correlation between core bonds and stocks has moved

⁴⁹Mercer, "Today's Insights, Tomorrow's Strategy: Findings from the 2022 Global Not-for-Profit Investment Survey" (2022). www.mercer.com/content/dam/mercer/attachments/private/gl-2022-not-for-profit-survey-report.pdf.

Exhibit 40. Stock and Bond 24-Month Rolling Correlation



Note: Stocks are proxied by the S&P 500, and bonds are proxied by the Bloomberg US Aggregate Bond Index.

Source: Bloomberg.

back into positive territory, as shown in **Exhibit 40**. As a result, we believe investor preferences will shift toward fixed-income options that are higher yielding and shorter duration—two of the defining characteristics of alternative credit.

A Diversifying Market

The growth of alternative credit has largely stemmed from the success of the private equity ecosystem. Middle market direct lending and collateralized loan obligations (CLOs), both heavily reliant on private equity sponsored companies as the ultimate borrower, have been two of the fastest growing segments of the market. While we believe these markets will continue to grow, the alternative credit market is set for diversification. Emerging segments—we believe—should rapidly grow as the ecosystems develop and new segments are introduced. In many of these instances, alternative credit will likely act as a substitute for equity capital, which was often inefficiently deployed due to the historical lack of credit options.

Litigation finance is an example of a growing segment of the credit market that we expect to continue to mature over the coming years. Prior to the rapid growth of litigation finance, law firms would utilize their own balance sheet (composed overwhelmingly of partner equity) to fund ongoing cases. This equity would be tied up in cases already settled but awaiting payment, often for a frustratingly long period of time as the cases wind through the legal system. Litigation finance has served as the working capital or bridge capital for law firms, which frees their expensive partner capital to either pay out or direct toward more productive uses. Despite this growth, litigation finance had \$2.6 billion in new loan commitments in 2021,⁵⁰ equivalent to 0.2% of US leveraged loan issuance during the same period.⁵¹ Litigation finance is unlikely to ever approach the size of leveraged loans, but it clearly has significant room to grow as institutional adoption from the top law firms continues to accelerate.

⁵⁰Westfleet Advisors, "The Westfleet Insider: 2021 Litigation Finance Market Report" (2021). www.westfleetadvisors.com/wp-content/uploads/2022/03/WestfleetInsider-2021-Litigation-Finance-Market-Report.pdf.

⁵¹Eric Leicht, Eliza McDougall, Jonathan Michels, and Daniel Nam, "Loan Activity Drives US Leveraged Finance to New Heights While High Yield Bond Issuance Maintains Lofty Pace," Debt Explorer, White & Case (11 February 2022). <https://debtexplorer.whitecase.com/leveraged-finance-commentary/loan-activity-drives-us-leveraged-finance-to-new-heights-while-high-yield-bond-issuances-maintain-lofty-pace>.

We expect burgeoning segments of the market, such as venture lending, to explode in popularity as investors recognize the value proposition relative to liquid markets and larger segments of the alternative credit market. However, this growth will be heavily dependent on further education as many investors may lack expertise in these areas.

We have observed that, historically, innovative family offices and unconstrained investors tend to lead the market into these sectors, with subsequent follow-through from larger institutions and consultants once viability is proven. These family offices tend to have fewer structural constraints, such as large investment committees or hard rules around track record and manager tenure. They also operate in a more confidential manner, meaning that they do not have the same headline risk should an asset class or idea not bear fruit. Therefore, they are the ones to watch as the innovators in alternative credit. We would be watching this space closely, as 47% of global family offices report elevated interest in private debt⁵² as they continue to expand their alternatives exposure.

Changes to Structure

We expect two major trends in the structure of alternative credit vehicles—namely, a focus on dampening volatility and on providing evergreen exposure.

Structural Overview

Choosing an investment structure typically requires a trade-off between investment convenience and liquidity, volatility, and return potential, as shown in **Exhibit 41**.

- *Convenience and liquidity:* Investors prefer to have control over the flow of capital. They place value on the ability to invest or withdraw capital with the shortest possible lag.
- *Volatility:* Investors prefer lower volatility, all else equal. Volatility may arise from the underlying alternative credit assets or from dislocations in the structure from net asset value, as can occur in traded



Exhibit 41. Alternative Credit Vehicles Examples

	Open-End Funds (Daily Liquidity)	Open-End Funds (Less Frequent Liquidity)	Open-End Funds (Hybrid Evergreen)	Closed-End Traded Funds	Closed-End Private Funds
Examples	Mutual Fund, ETF, UCIT	Hedge Fund, UCIT, Interval Fund	Hybrid Evergreen	CLO, Listed Closed-End Fund	Drawdown Fund
Convenience and liquidity	High	Medium	Medium	High	Low
Volatility	Medium	Medium	Medium	High	Medium
Return potential	Low	Medium	High	Medium	High

Source: Author's analysis.

⁵²Campden Wealth, "The North America Family Office Report 2021" (2021). https://www.rbcwealthmanagement.com/_assets/documents/cmp/the-north-america-family-office-report-2021-final-ua.pdf.

closed-end structures. For example, a closed-end fund could own \$100 in net assets, but it could trade on the public market at \$80, \$120, or \$100. That discount or premium to net assets typically creates more volatility than simply owning the assets themselves.

- *Return potential:* Investors often expect higher returns from their alternative credit allocation, given the increased complexity and often worse liquidity. Structures with more limited liquidity have a greater ability to buy longer-dated assets and typically have a higher return potential for the same level of risk.

Volatility Dampening

With the growth and eventual maturation of the alternative credit market, we expect additional innovation in the structures offered to investors. Alternative credit started on bank balance sheets but eventually transitioned to business development companies (BDCs) and other publicly traded vehicles. These vehicles provided convenient access to most investors but also led to significant volatility because the traded price of the holdings could become significantly dislocated from the price of the underlying credit. In the institutional investor space, investors had the option to invest in private funds, which greatly dampened volatility but introduced new complexities, such as capital calls, tax complexities, low transparency, and significant illiquidity. We expect the coming period to mark a large leap forward in democratizing alternative credit, decreasing the trade-off between volatility and complexity.

The additional volatility introduced by the traded closed-end structure can best be seen by BDC returns in relation to liquid market benchmarks. Public BDCs have outperformed the Bloomberg High Yield Index net of fees since January 2005. However, they have also exhibited higher volatility than the S&P 500 equity index and have remained in a drawdown of greater than 5% longer than either index, as illustrated in **Exhibit 42**. Therefore, investors who wish to access alternative credit in a highly liquid form must endure elevated volatility. To mitigate this problem, investors have trended toward structures that eliminate the gap between the price and asset value of the structure. Some of these structures in North America include private BDCs, interval funds, and traditional private closed-end funds, whereas in the European market they include RAIFs (reserved alternative investment funds) and traditional private closed-end funds.

Evergreen Exposure

To expand its user base and realize the growth we expect, alternative credit must offer structures that allow for evergreen exposure. In the private credit sector, the most prevalent fund structure has been a private equity style closed-end fund with a multiyear investment period and a typically even longer harvest period. Many investors, especially those managing multiple pools of capital, are not well positioned to



Exhibit 42. Performance Statistics of Three Asset Classes, 1 January 2005 through 30 June 2022

	S&P BDC Index	S&P 500	Bloomberg High Yield Index
Return	6.2%	8.9%	5.9%
Volatility	29.1%	19.3%	5.2%
Percentage time in drawdown >5%	53%	37%	13%

Source: Bloomberg.

invest in these private equity style funds. These funds require investors to maintain liquidity to fund capital calls and the ability to commit for multiple years without any knowledge of when the fund will return capital.

Much of the new growth will likely come from investors who are new entrants into the alternative credit space and who do not have experience investing in private equity style funds. These investors will naturally seek structures that better mimic their current fund investments, which are overwhelmingly evergreen in nature. Alternative credit managers will need to further develop evergreen structures to help reduce the cash flow complexities of the traditional private equity style vehicle and educate new investors.

Hybrid evergreen funds allow subscriptions either periodically or via a quick drawdown period (typically a few quarters). The manager then reinvests all cash flows as a traditional evergreen fund manager would. Upon redemption notice, however, a redeeming investor receives a liquidating reference portfolio of assets that represents a slice of the portfolio at the time of redemption. As those assets run off, the investor is paid back. This structure is a great example of how innovative structuring helps bridge the gap between the competing limitations of investing in alternative credit. We believe innovation in that sense will continue.

Data and Transparency

Transparency will be key in any future structures. Investors, especially those transitioning from public fixed income to more opaque alternative credit, are likely to increasingly require the ability to view portfolio holdings and understand the key drivers of risk and return.

Increased Data Frequency

The alternative credit industry is notoriously opaque, which is usually spun as one of its key advantages. But in an increasingly transparent world, the industry will need to show a willingness to provide additional data outside of its typical quarterly reporting. Historically, many fund managers would simply write a quarterly commentary with some high-level fund statistics and a few anecdotes about holdings. But as public markets become more transparent, there will be an increasing push for alternative credit managers to follow suit. Through real-time data feeds, deal rooms, and other collaborative tools, we believe that technology can drastically decrease the cost and difficulty of sharing timely data with investors.

While investors likely do not need that frequency and depth of data, given the typical low turnover of alternative credit strategies, it would bridge the divide between the two parties and build trust in the relationship. The ability to verify ownership of assets and monitor performance in real time is an aspect currently missing for private market investors who rely on lagged periodic updates from fund managers for most of their information.

Data Uniformity

Investors will likely demand that managers provide more data to feed into their risk tools but also that the data arrive in standard formats, which would minimize the need for manual intervention. The push toward data uniformity will likely come from two fronts: the investors themselves and risk software providers. Investors have the ultimate sway because they control the capital, but risk software providers will need to determine what data are necessary to feed into their systems. Consolidation and growth in the risk software industry will likely lead to a standard data format as fewer players have greater sway.

Improved Risk Systems

Legacy fixed-income risk systems have evolved to model many forms of alternative credit, especially the more popular direct lending and collateralized loan obligation asset classes. We expect these systems and new entrants to continue to pour resources into the alternative credit segment of the industry as portfolios evolve. The nonnormality of returns, unreliable price history, complex structures, esoteric nature of the assets, and bespoke covenants all make modeling more difficult than with public fixed-income securities. The lack of reliable modeling was less of an issue when alternative credit was a minuscule percentage of a given portfolio, but asset owners will likely demand better insights as it becomes a core holding in portfolios.

These risk systems will require underlying data because historical fund returns in alternative credit are notoriously unreliable since they are nonnormally distributed. As part of the uniform data packages, risk software companies will likely demand cash flow forecasts and other detailed information not required in public markets, where historical returns are the key input.

ESG Strategies

ESG strategies have grown significantly in importance in liquid markets, where many of the data points are relatively easy to compile from public company filings. A robust ecosystem of third-party firms acts as an enforcement mechanism to research ESG issues and verify that managers are in line with expectations. However, in the alternative credit space, many of the underlying borrowers are private and have few filings on record. Therefore, independent third parties may struggle to efficiently capture the ESG characteristics of underlying loans. We do expect ESG considerations to become more central at the manager level and ultimately align with public market peers as a result of investment implications and investor demands. However, third-party consultants and rating agencies focused on private credit ESG strategies may be slower to adapt.

ESG Integration

Many firms in the alternative credit space have already started to integrate ESG considerations into their investment process. Given the flexibility of alternative credit, where lenders can choose the specific borrowers and the terms of the loans, ESG integration can be an even more powerful force than in public markets. For example, a lender could negotiate bespoke loan terms where the interest rate fluctuates according to the borrower's achievement of certain ESG goals. In that sense, lenders may directly express their ESG priorities through tangible and measurable outcomes.

For example, a lender may focus on financial inclusion for indigenous people. This issue may be less important to other ESG investors, so it is likely hard to source enough investments in public markets to work toward tackling the issue. The lender could work toward this goal most directly by lending money to businesses specifically focused on solving this issue. A second strategy could be to lend money to businesses in various industries but lower the interest rate based on metrics confirming the businesses have reached the specific goals important to the lender in increasing financial inclusion for indigenous people. These goals could revolve around hiring practices, customer service, or any other aspect deemed important to the lender.

ESG Verification and Ratings

The first segment of alternative credit that we expect the rating agencies and consultants to target is the leveraged loan and collateralized loan obligation markets, where transparency is significantly higher since loans are typically broadly syndicated. Borrowers usually provide a package of information to lenders at the time of underwriting that the rating agencies could use. Fitch Ratings has begun to rate leveraged loans on the basis of their ESG characteristics,⁵³ and other rating agencies are not far behind. Standard & Poor's tracks leveraged loan issuance and flags any loans that have an ESG component, such as green loans or sustainability-linked notes.⁵⁴ However, on bilateral transactions from direct lenders, which are not broadly offered, the asset manager and/or borrower will need to work closely with these agencies to provide the necessary information for third-party rating. This process is often time consuming and expensive. But with the growth in big data, we expect that process to become more automated and easier to perform over the coming years.

Risks

The positive expected trajectory in the alternative credit market we have outlined is not without risk. The first issue to note is the small amount of data on the alternative credit market throughout many economic cycles due to its rapid growth in the post-GFC environment. While investors can use centuries of data in the public bond market and the equity market, they face a lack of relevant data in the alternative credit market. There is much conjecture about how the industry should evolve and perform during a significant default wave, and the actual experience is sparse within current datasets. The next large downturn may be the positive data point the industry is expecting, or it could cripple growth if the market underperforms its liquid benchmarks.

Another key risk is that liquidity may prove to be more limited than what the industry expects. Much of the alternative credit asset class would be categorized as nontradable; therefore, liquidity is only as good as the exit strategy of the underlying loan. The bulk of the alternative credit industry growth has occurred during periods of moderately tight credit spreads, which have allowed many borrowers to roll over debt and refinance existing debt. However, if credit spreads increase materially, we would expect loan extensions and significantly less liquidity than we have seen in the past, when prepayments were the norm. Given the variety of structures in the alternative credit space, that could lead to a mismatch between assets and liabilities or disappointment from investors who had expected shorter durations for their investments.

One last unknown is how the current wave of money flowing into the alternative credit space will ultimately affect the underwriting and relative attractiveness of the asset class. Prequin, a leading provider of industry data, expects private debt returns to decrease by about 1% over the coming six years.⁵⁵ Much of that decrease in yield will likely be due to increased competition, as further entrances into the industry materialize, while incumbents continue to provide cash. This may be the case particularly in more efficient segments of the alternative credit market, such as corporate direct lending, but overall, we believe that many of the nascent subsectors of the industry should continue to offer attractive yields relative to public markets.

⁵³Sustainable Fitch, "Sustainable Fitch Launches Leveraged Finance ESG Scores" (7 September 2022). www.sustainablefitch.com/corporate-finance/sustainable-fitch-launches-leveraged-finance-esg-scores-07-09-2022.

⁵⁴LCD News, "Introducing LCD's ESG Leveraged Finance Tracker," S&P Global Market Intelligence (24 May 2021). www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/introducing-lcd-s-esg-leveraged-finance-tracker-64469022.

⁵⁵Prequin, "Prequin Special Report: The Future of Alternatives in 2027" (2022). www.prequin.com/insights/research/reports/future-of-alts-2027-private-debt.

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