

Global Leveraged Finance Handbook, 2024

S&P Global
Ratings



Foreword



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Dear reader,

Economic growth has exceeded our expectations in 2024, despite ongoing geopolitical risks. This, combined with a continued gradual reduction in inflation--to the extent that the Federal Reserve recently began to cut rates and has signaled to the market that more cuts are likely--has resulted in an extremely active year for leveraged finance in the U.S. and abroad.

Credit quality has remained relatively stable, as the downgrade to upgrade ratio is hovering only slightly above 1x. Credit spreads have been tight, allowing even low speculative-grade companies to access the debt markets and address upcoming maturities. S&P Global Ratings' base-case scenario accounts for a decline in the U.S. default rate to 3.75% by June 2025, from 4.6% this past June. Still, risks remain weighted to the downside, and we are maintaining our projection for the U.S. default rate to increase to 6.25% by June 2025 in our pessimistic scenario.

While credit spreads are tight and central banks are gradually easing short-term rates, cash flow deficits remain the most significant concern for our lower rated credits. Interest rates remain meaningfully higher than they were prior to 2022, which is when many existing capital structures were put into place.

As debt maturities, whether a portion of the capital structure or the entire debt stack, approach, we typically move our ratings down to 'B-' or into the 'CCC' category to reflect increasing refinancing risk. Consumer goods, retail, media, and real estate are sectors increasingly at risk for negative rating actions, given some of the cyclical, and in some cases secular, challenges those industries are also facing.

While 2023 saw a substantial inflow of private credit that allowed companies facing near term maturities to extend them outside of the public markets, 2024 has seen many of these issuers return to the broadly syndicated debt markets. This dynamic, combined with tighter spreads and the anticipation for continued central bank easing, has led to a substantial increase in rated speculative-grade debt issuance in 2024.

However, private credit maintains a meaningful presence in the market. We are seeing spreads converge between the broadly syndicate and private credit markets, as well as borrower friendly activities--such as repricings and dividend recapitalization--occur more frequently across both broadly syndicated and private credit markets. With more than \$350 billion of speculative-grade nonfinancial debt maturing through 2026, we expect substantial activity across both the broadly syndicated and private credit markets to persist.

New issuance in the collateralized loan obligation (CLO) segment has so far recorded the second highest yearly issuance. Through late October, U.S. issuance is at about \$158 billion from 335 transactions (based on Leveraged Commentary and Data [LCD] from PitchBook, a Morningstar company). This is about \$30 billion shy of the record \$187 billion in issuance in 2021. CLOs remain the largest buyers of leveraged loans. Middle market CLOs are collateralized by loans from unrated companies for which S&P Global Ratings provides credit estimates. Our view on the private credit market stems predominantly from our credit estimate analysis.

In this edition of S&P Global Ratings' Leveraged Finance handbook, our analysts provide insights on the topical credit issues facing the leveraged finance market. We hope that you find this issue interesting and enlightening.

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Testing Private Debt's Resilience Through The Credit Estimate Lens

November 2, 2023

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Key Takeaways

- In an effort to provide insights on the broader private debt market, we generated a scenario analysis on more than 2,000 credit estimated (CE) issuers with more than \$400 billion of aggregate outstanding debt to help assess middle-market issuer durability in the face of rising interest rates and margin erosion.
- Most borrowers for which we have credit estimates are highly leveraged, and median credit metrics could approach precarious levels under moderate or severe stress scenarios.
- Some CEs scored predominantly at 'b-' could present characteristics often associated with the 'ccc' category and may be at risk of downgrades under these scenarios, potentially increasing the proportion of 'ccc' assets in middle-market collateralized loan obligations (CLOs).
- Even though we expect less than half of the issuers would generate positive free operating cash flow (FOCF) in a mild stress scenario, overall liquidity appears supportive for the near term.
- Like broadly syndicated loans, debt maturities for CEs appear manageable for the next 12-18 months, but a sustained higher interest rate environment would cripple many issuers ahead of a heavier maturity schedule that begins in 2025.
- Although default rates have remained low, recent downgrade trends point to vulnerabilities in the middle market.

Credit Estimates Provide Insight On Private Debt

The private debt market has more than doubled in growth over the last five years. Based on data from PitchBook, the global private debt market was estimated to be at \$1.75 trillion by the end of the first half of 2023 (including private credit funds, business development companies, interval funds, and middle-market CLOs) and comparable to the U.S. Broadly Syndicated Loan (BSL) and the High Yield (HY) markets. While direct lending is the most common strategy among private lenders, other purposes for which funds are raised include special or credit opportunity funds, distressed debt lending, infrastructure, and real estate funds. These funds are managed by asset managers (general partners) while investors in this asset class are mostly pension funds, insurance companies, and sovereign wealth funds (all limited partners). Many of the loans in direct lending funds and other strategies are also allocated to middle-market CLOs.

S&P Global Ratings provides credit estimates (a point-in-time confidential indication of the likely long-term credit rating) to the CLO managers for the entities whose loans are held in the middle-market CLOs. Therefore, this scenario analysis on our CEs, which we believe to represent a sizeable portion of capital deployed in private credit, helps provide transparency in this increasingly important asset class.

Table 1

Overview of stress scenarios

Scenario	Adjusted EBITDA at last review	Base rates	CE portfolio credit impact summary
Base case	Unchanged	SOFR at about 5%	<ul style="list-style-type: none"> Median leverage (Debt/EBITDA) at 7.1x Median interest coverage (EBITDA/Interest) at 1.5x Issuers with interest coverage below 1x at 20% of CEs Issuers generating positive FOCF at 55% of CEs Median liquidity ratio at 2.4x Median covenant headroom at 48%
Mild stress	EBITDA decreases 10%	SOFR increases by 0.5%	<ul style="list-style-type: none"> Median leverage (Debt/EBITDA) increases to 7.9x Median interest coverage (EBITDA/Interest) falls to 1.4x Issuers with interest coverage below 1x grow to 26% of CEs Issuers generating positive FOCF falls to 43% of CEs Median liquidity ratio falls to 2.1x Median covenant headroom falls to 34% 'b' category issuers with 'ccc' characteristics comprise 21% of CEs
Moderate stress	EBITDA decreases 20%	SOFR increases by 1.0%	<ul style="list-style-type: none"> Median leverage (Debt/EBITDA) increases to 8.9x Median interest coverage (EBITDA/Interest) falls to 1.2x Issuers with interest coverage below 1x grow to 34% of CEs Issuers generating positive FOCF falls to 33% of CEs Median liquidity ratio falls to 1.8x Median covenant headroom falls to 19% 'b' category issuers with 'ccc' characteristics comprise 28% of CEs
Severe stress	EBITDA decreases 30%	SOFR increases by 1.5%	<ul style="list-style-type: none"> Median leverage (Debt/EBITDA) increases to 10.1x Median interest coverage (EBITDA/Interest) falls to 1.1x Issuers with interest coverage below 1x grow to 44% of CEs Issuers generating positive FOCF falls to 23% of CEs Median liquidity ratio falls to 1.5x Median covenant headroom falls to 5% 'b' category issuers with 'ccc' characteristics comprise 33% of CEs

Note: Figures adjusted by S&P Global Ratings. CE--Credit estimated. Source: S&P Global Ratings. Copyright © 2023 by Standard & Poor's Financial Services LLC. All rights reserved.

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In conducting the scenario analysis, we reviewed credit estimates completed between August 2022 and August 2023, noting that prior to any application of stress, 78% of the CEs had a 'b-' score, along with 13% in the 'ccc' category. Our three scenarios assume a mild, moderate, and severe stress case with S&P Global Ratings-adjusted EBITDA (at the time the CE was last reviewed) declining 10%-30% combined with SOFR increases of 0.5%-1.5% from our base case--which recasts the issuer's last 12 months (LTM) interest expense to reflect our current base-rate expectations of around 5% in 2023.

We believe that a dual combination of rising interest rates and a widespread decline in earnings is an unlikely phenomenon, with the Federal Reserve likely to hold rates steady (or cut them) if there are pervasive economic issues and a sustained deterioration of earnings across U.S. corporates. However, we still sought to assess how credit estimated issuers in the middle market universe would be affected by the stresses, and the extent to which they are positioned to withstand a combination of higher funding costs coupled with deep pressure on their margins.

On the earnings front, we have already seen cost inflation, supply issues, and labor constraints that have led to margin compression. Although inflation has moderated since the beginning of this year, the latest Consumer Price Index (CPI) reading of 3.7% remains above the Federal Reserve's 2% target, signifying uncertainty around whether the Fed will continue to push beyond its current overnight rate target of 5.25%-5.50%. Thus, increasing rates remain a critical consideration for middle-market issuers whose capital structures are typically composed entirely of floating rate debt. Furthermore, we are seeing an increasing number of cases in recent transactions where investors command a higher premium with credit spreads above SOFR pushing beyond 7%, compared to around 6% or less on earlier deals.

Specifically, we sought to measure the impact of our hypothetical stresses on key credit metrics including leverage (debt to EBITDA) and interest coverage (EBITDA to interest) ratios, cash flow, liquidity, and covenant headroom. Based on that information, we also inferred that a portion of CEs with predominantly 'b-' scores would be highly vulnerable and reflect risk profiles more consistent with those of 'ccc' category credits.

Leverage

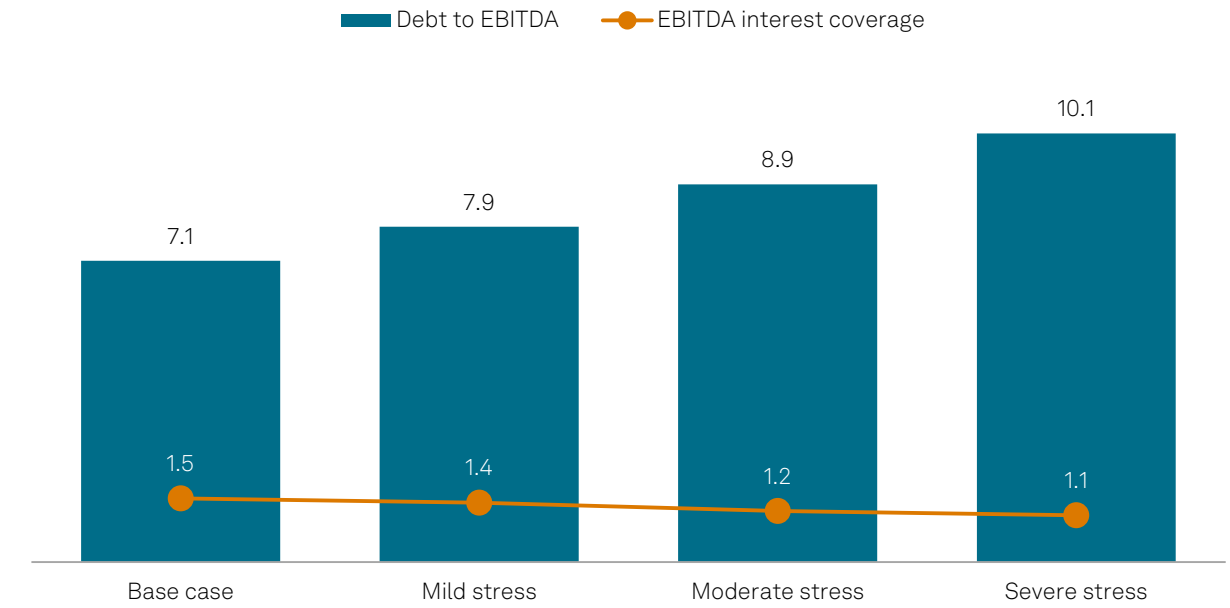
Median leverage ratios could rise to double digits in a severe stress scenario, and would remain elevated in all stress scenarios. Based on our three stress scenarios, median debt to EBITDA (S&P adjusted) ratios ranged from 7.9x-10.1x, suggesting leverage that already stands at 7.1x in our base case will remain elevated under all of the stress scenarios and would reach double digits in our most punitive scenario.

Interest coverage

Concurrently, in all stress scenarios, the median interest coverage ratio falls below 1.5x, with a range of 1.1x-1.4x, implying that many issuers would experience challenges servicing debts solely from the cash flows they generate. Under our base case, about 20% of our sample (approximately 425 issuers) have interest coverage ratios below 1.0x, which would increase to 26%-44% of the portfolio (approximately 550-920 issuers), depending on the level of stress.

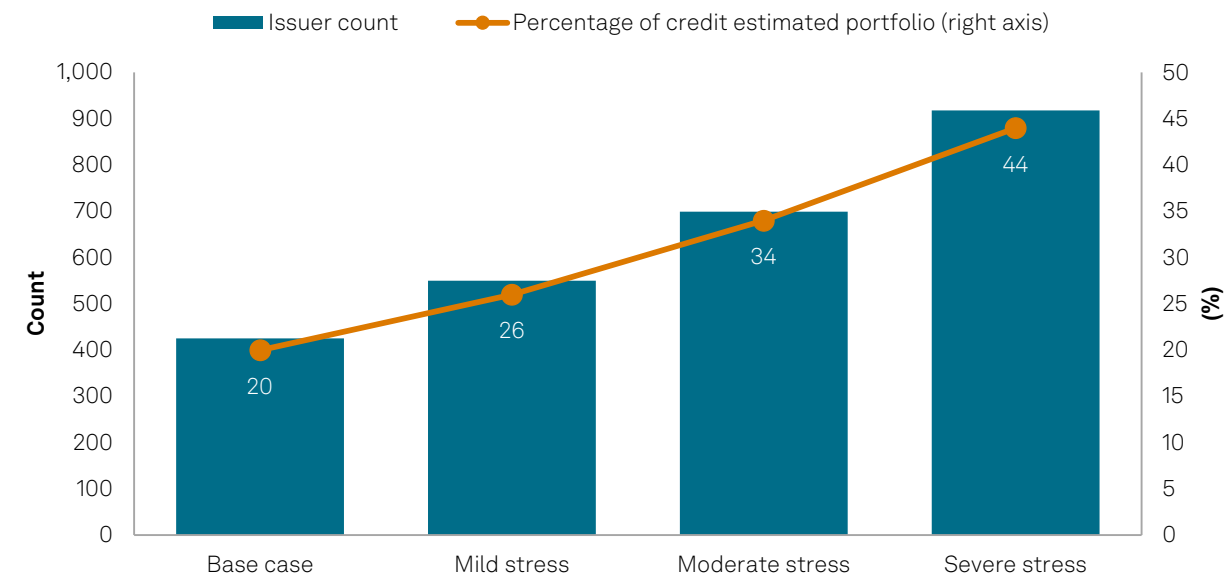
A combination of elevated leverage and weaker interest coverage ratios would have adverse implications for issuers already feeling pressure from higher interest costs that have yet to be fully realized in their financial statements, but which have already been factored into our base case. Hence, more borrowers could face higher borrowing costs, difficulty remaining compliant with covenants, and could require liquidity drawn from supplemental sources of cash like revolvers and delayed draw facilities.

Chart 1 | Median leverage ratios (x)



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Chart 2 | Issuers with interest coverage below 1x



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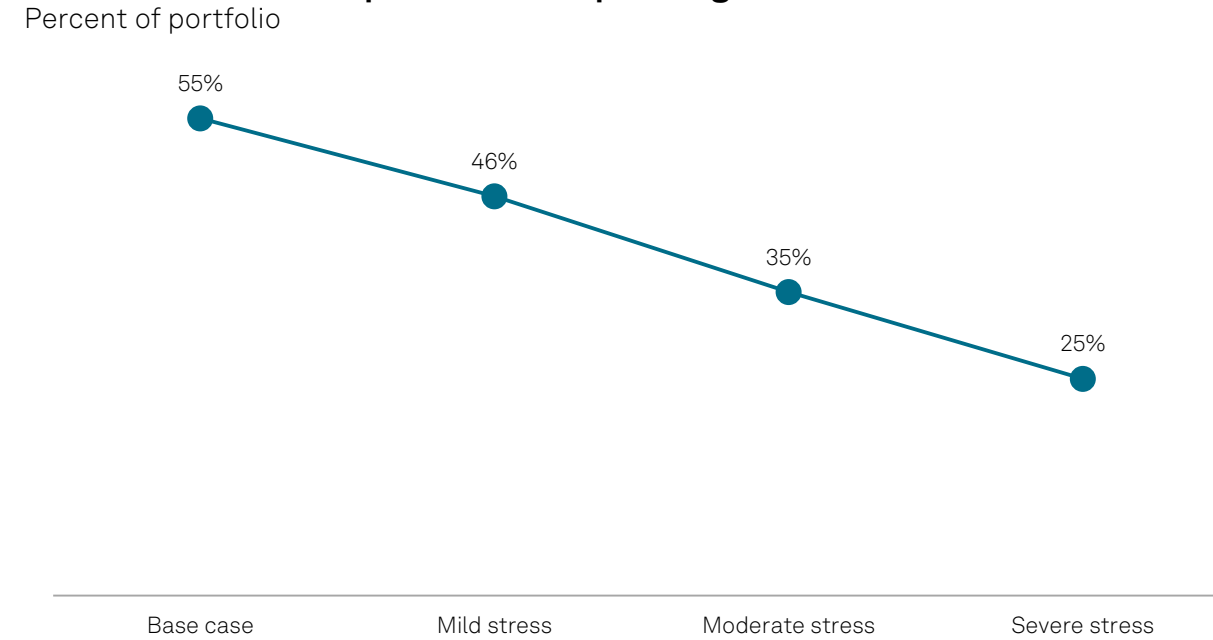
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Cash flows

Less than half of the issuers could generate positive free cash flows even under our least punitive stress scenario. While 55% of issuers have positive free cash flow under our base case, that percentage drops to 46% in a mild stress scenario, 35% in moderate stress, and 25% in severe stress. We recognize most companies would likely cut growth capital expenditures, address working capital issues, and introduce other cost rationalization measures to help offset cash flow weakness. However, delaying growth investments could hurt revenues in the medium to long run.

Chart 3 | Issuers with positive free operating cash flow



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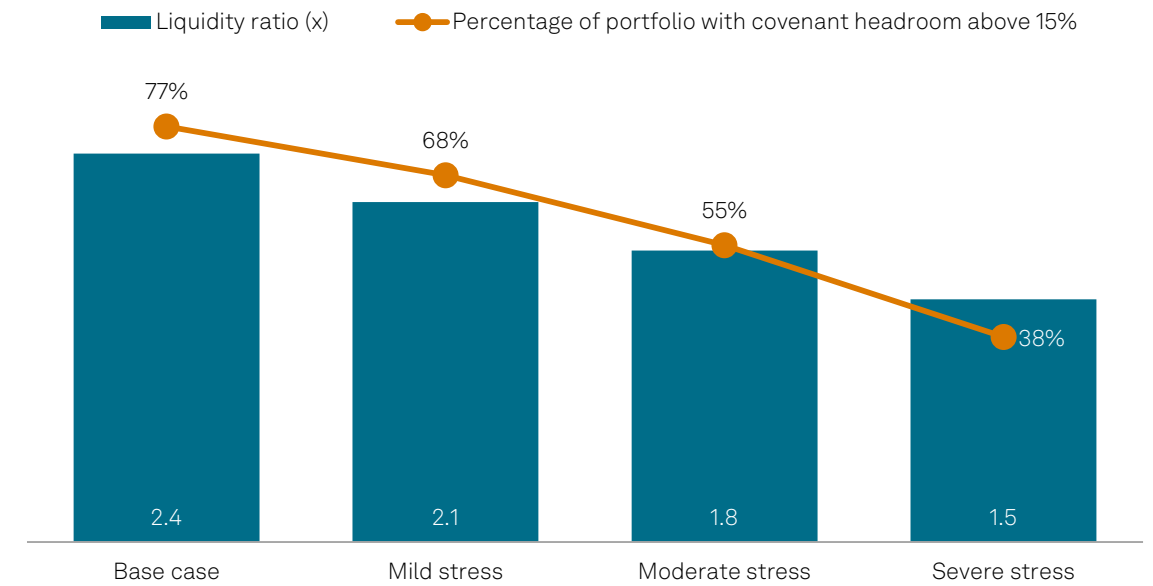
Liquidity

Liquidity appears sufficient in the near-term, but covenant relief may be required as headroom tightens. Base case liquidity ratios (sources to uses over a prospective 12-month horizon) appear strong with a median of 2.4x. This metric remains at or above 1.5x even in a severe stress scenario, suggesting that most borrowers have enough in the way of cash on hand, revolver or delayed draw term loan capacity, and other sources to navigate a rough patch over the next year or so. However, their ability to meet financial obligations beyond that timeframe if rates remain high remains uncertain.

Unlike loans in the BSL market, the vast majority of issuers for whom we provide credit estimates have loans with financial maintenance covenants. Based on a subset of portfolio issuers who are currently subject to specific financial covenants--including a maximum total leverage test or a minimum fixed charge coverage ratio (which constitute about two-thirds of the CE portfolio)--we estimate that roughly 70% of them would be able to maintain headroom above 15% in a mild stress scenario, decreasing to below 40% of the subset in a severe case. We believe issuers who fall below the 15% headroom threshold are much more sensitive to unforeseen risks. Therefore, if stressed, an increasing number of borrowers would need to seek covenant relief from lenders; though lenders have generally been amendable, they often grant such relief in return for higher margins, fees, or general tightening of documentation.

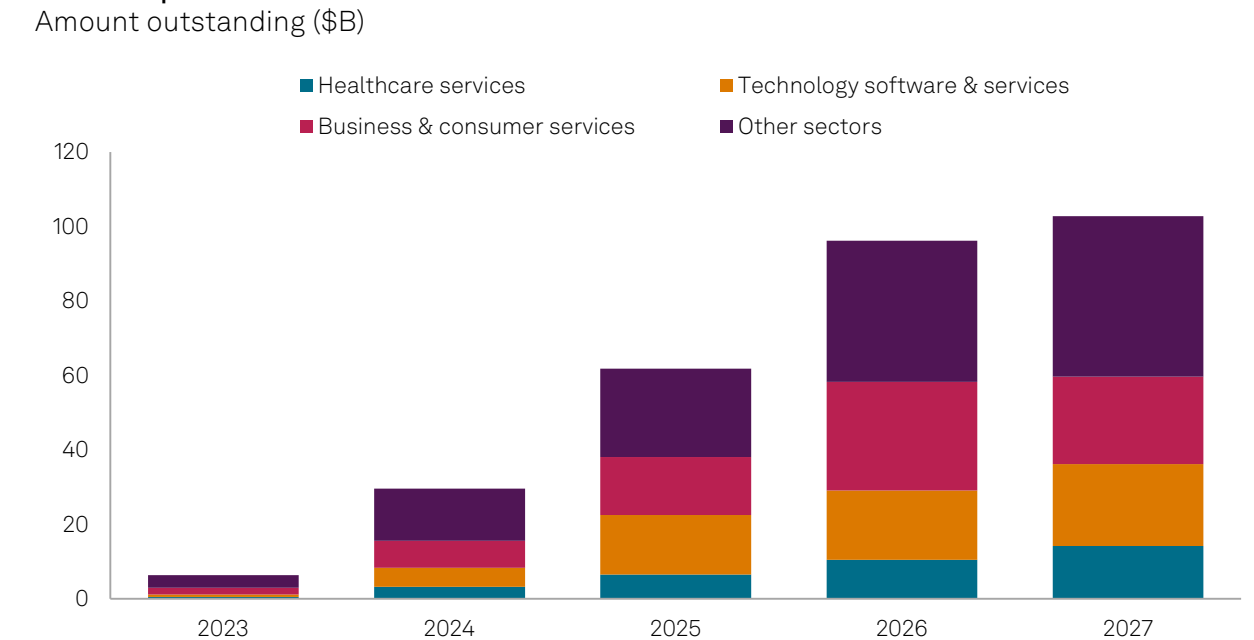
For calculating covenant headroom, we used reported EBITDA from recent covenant compliance certificates, which we believe is more representative for the exercise. We acknowledge this calculation does not account for nuances across different credit agreements, but we believe it is a reasonable approach for estimating the impact of our stress scenarios on covenant headroom across the issuer subset.

Chart 4 | Liquidity and covenant headroom



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Chart 5 | Debt maturities



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Staggered Maturity Schedule Provides Only Temporary Reprieve For Borrowers

The debt maturity schedule for credit-estimated issuers is mostly staggered, with the bulk of loan principal maturing over the next several years coming due in 2026 and 2027. However, with debt maturities ramping up in less than two years, a potential higher-for-longer interest rate environment could be problematic for borrowers contending with cash flow deficits for an extended period. We also note that among the three most represented sectors in the CE subset, Business Services companies have significantly more debt principal maturing in the near term than both Healthcare Services and Technology Software and Services companies.

Technology Software And Services Credit Estimates Show Fissures In Our Stress Scenarios

Roughly 55% of the CE issuers are categorized into one of three sectors--Business and Consumer Services, Technology Software and Services, and Healthcare Services. These three sectors are popular with investors in the private markets given their growth prospects. Furthermore, they are widely viewed to be relatively resilient in tougher economic conditions due to various characteristics including their noncyclical nature, recurring cash flow streams, high customer switch costs, low capital intensity, and recent demographic and technological trends.

Out of these three sectors, the Technology Software and Services space appears to be the most vulnerable in our stress scenarios. Although its leverage metrics are comparable to those of Healthcare, CEs in the Technology sector had a materially weaker median interest coverage ratio and covenant headroom. In a moderate stress scenario, we expect median leverage for tech issuers would exceed 10x, along with interest coverage below 1x and covenant headroom of less than 10%.

Conversely, the Business Services sector seems to be on firmer footing with a turn less of leverage and significantly more covenant headroom than the other two sectors. Notwithstanding the discussion of the three sectors, we also note that the Telecom and Cable sector, which has much less representation in our CE dataset, also exhibited very weak credit measures and interest coverage ratios at or below 1x in any stress scenario.

Table 2

Impact of scenarios by sector												
Sector	Healthcare services				Technology software and services				Business and consumer services			
	Base case	Mild stress	Moderate stress	Severe stress	Base case	Mild stress	Moderate stress	Severe stress	Base case	Mild stress	Moderate stress	Severe stress
Median debt to EBITDA	7.7x	8.5x	9.6x	11.0x	8.3x	9.2x	10.4x	11.9x	7.3x	8.1x	9.2x	10.5x
Median EBITDA to interest coverage	1.5x	1.3x	1.2x	1.0x	1.1x	1.0x	0.9x	0.7x	1.6x	1.4x	1.2x	1.1x
Percent of issuers generating positive FOCF	53%	44%	33%	25%	48%	34%	26%	19%	57%	49%	36%	26%

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With Limited Capacity To Absorb Stress, More 'b-' Issuers Are Falling Into The 'ccc' Category

We continue to see an increasing trend of downgrades into 'ccc' territory, with 87 issuers falling into the category from the beginning of 2023 through the end of August. Over the last year and a half, reference rates for loan issuers have jumped by more than 400 basis points and driven up debt servicing costs significantly. The downgraded companies often had capital structures that we viewed as unsustainable absent favorable economic and financial conditions, or upcoming loan maturities without a definite plan to extend, refinance, or redeem the debt. We expect this downward trend to accelerate when applying our stress scenarios. This could increase middle-market CLO 'ccc' baskets, which currently average about 12.3% versus the typical threshold of 17.5%; beyond which, CLOs would have to take a haircut on excess 'ccc' assets when calculating their overcollateralization (OC) ratios.

In attempting to assess the impact of stress on credit quality, we identified credits in the single 'b' category that might reflect certain credit attributes often associated with CE scores in the 'ccc' category: a significant portion of debt maturing within 12-18 months, leverage exceeding 14x, or interest coverage below 1x with less-than-adequate liquidity.

As seen in the table below, 5% (90 companies) of these issuers have a substantial debt maturity before mid-2024, which indicates a significant level of refinancing risk. If we take the analysis a step further to include companies without a substantial near-term maturity, but who would have a debt-to-EBITDA ratio exceeding 14x or an EBITDA-to-interest ratio below 1.0x with less-than-adequate liquidity in a stress scenario, the potential downgrade exposure to 'ccc' category scores could grow to a range of 21%-33% (291-508 companies). We note that leverage ratios approaching the mid-teens are generally viewed as excessive for most issuers, and interest coverage below 1x with less-than-adequate liquidity is often indicative of a future payment default barring any sponsor or lender intervention.

Table 3 | Potential CE score transitions: 'b' category to 'ccc' category

Condition	CE count	Cumulative percentage of current 'b' category (%)
Company has a significant debt maturity prior to mid-2024	90	5
Mild stress: Leverage > 14x or interest coverage < 1x with less than adequate liquidity	291	21
Moderate stress: Leverage > 14x or interest coverage < 1x with less than adequate liquidity	408	28
Severe stress: Leverage > 14x or interest coverage < 1x with less than adequate liquidity	508	33

CE = credit estimated.

Source: S&P Global Ratings.

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Issuers With Specific Features In Their Credit Agreements Are More Exposed To Stress

Specifically, we view some credits, including those with annualized recurring revenue (ARR) covenants and options to pay-in-kind (PIK) interest as more susceptible to stress.

Issuers with ARR covenants, which are initially based on recurring revenues rather than the more traditional EBITDA metric, are primarily present in the technology space and comprise 78 names (less than 4% of the portfolio). More than 70% of those entities are already estimated at the 'ccc' category since these are typically early-growth stage companies with very low EBITDA and cash flow, in addition to high leverage. Accordingly, they are more dependent on revenue growth and retention, as well as relatively higher sponsor equity contributions. Many of these issuers also take advantage of accommodative terms such as nonamortizing principal balances and the ability to PIK interest. For more information on ARR loans, readers can reference our recent article "Rocky Road Ahead For Recurring-Revenue Loans," on Ratings Direct.

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There are three types of PIK instruments in the companies we review. The first category includes instruments paying mostly cash interest along with a smaller PIK component that serves as additional appeal for lenders. The second category of PIK instruments are structured to toggle by allowing the issuer to choose whether to PIK or pay cash, a form more commonly seen in recurring revenue deals and early-stage tech companies where growth is predicated on upfront investments in infrastructure or customer acquisition and retention. The third category poses the greatest risk--these are loans where the issuer has executed an amendment to defer interest payments because of the company's inability to disburse cash interest payments mostly due to performance issues. We have seen around two dozen instances of such amendments this year and will likely see more as the full impact of higher rates flows through issuers' financial statements.

A small portion of the CE portfolio has covenant-lite term loans with covenants that are not tested until revolver utilization exceeds a predetermined threshold. Such loans are an exception rather than the norm for middle-market deals; however, the absence of a financial maintenance covenant limits the lender's ability to implement countermeasures as credit performance deteriorates. Given that virtually all these credits are currently scored at 'b-' or higher, any material deterioration in financial performance can quickly translate to a downgrade given the limited avenues for lender intervention.

CE Defaults Remain Muted, But Accelerating Transitions To 'ccc' Reveal Vulnerabilities In The Wider Market

Credit estimated companies that we track exhibited a default rate just below 3% in the second quarter of 2023 (including selective defaults [SD]) and around 0.3% excluding SDs, confirming that sponsors and lenders prefer out-of-court resolutions rather than allowing a full payment default that may lead to bankruptcy.

We note that out of all the CEs we reviewed from August 2022 to August 2023, 79 companies (approximately 4%) were determined to have experienced a recent selective default. In addition to deferral of interest, another major driver of selective default is the extension of debt maturities (without adequate compensation) to buy time for a full-scale refinancing or sale of the business at desirable terms.

As the full weight of higher interest charges flows through borrower financials during the latter part of 2023 and early 2024, an increasing number of middle-market companies could become distressed due to deteriorating cash flows, lower coverage ratios, and tighter liquidity. Thus, sponsors' willingness to inject additional equity into underperforming portfolio companies may be tested along with lenders' flexibility on covenants and debt maturities.

In the next 6-12 months, we believe there will be an increase in specified amendments, and the lenders' playbook for navigating the current higher-rate environment could resemble actions taken during 2020--including conversion to PIK interest, pushing out loan maturities, covenant waivers or suspensions, and rolling amortization payments into bullet maturities. However, the viability of such solutions hasn't been tested in prolonged stress, and we would expect to see a material pickup in defaults if interest rates remain high for a longer period.

Methodology And Assumptions

- For this analysis, we incorporated all unique credit estimates assigned between August 2022 and August 2023.
- Credit estimates are a confidential indication of the long-term credit rating on an unrated entity. This point-in-time analysis may not reflect significant developments since the issuer was last reviewed. Nevertheless, we find that our estimates are often less than six months old given ongoing manager requests and annual assessments across multiple CLOs.
- Debt and EBITDA figures referenced in this study are generally based on S&P Ratings-adjusted numbers. For more details, please see our Ratios and Adjustments criteria.
- The analysis does not account for tax shields or interest rate hedges. We note that middle-market issuers typically maintain little or no interest rate hedges and are usually structured as LLCs that tax the company at the shareholder level.
- In selecting our range of base rate increases for the various stress scenarios, we considered current macroeconomic conditions and recent public comments from Federal Reserve officials.

This report does not constitute a rating action.

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Are Prospects For Global Debt Recoveries Bleak?

March 14, 2024

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Key Takeaways

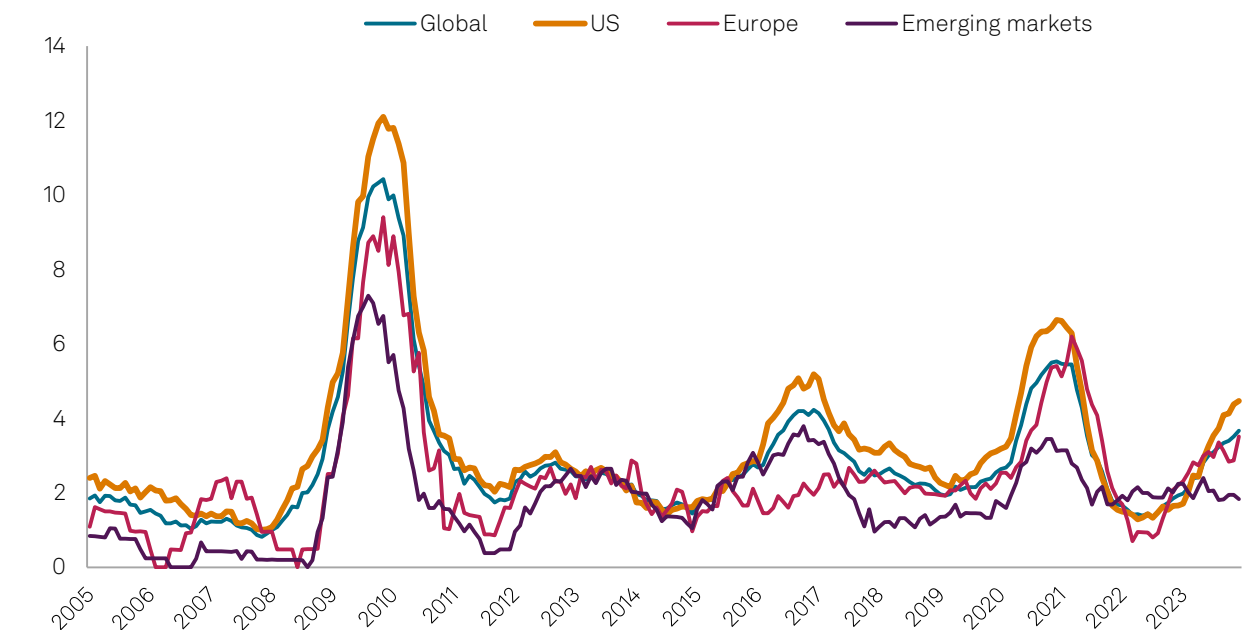
- Debt investors are concerned about recovery rates after the sharp rise in defaults in 2023, ongoing macroeconomic uncertainty, and intense and unpredictable geopolitical clashes.
- S&P Global Ratings expects recovery rates on rated first-lien debt to be lower than historical averages.
- Empirical estimates of actual first-lien debt recoveries in the U.S., Canada, and Europe show a notable degradation in recent periods. This may persist or worsen given the rise in top-heavy debt structures and dominance of covenant-light term loans.
- Historical and future recoveries in Brazil and Mexico appear better (despite our concerns about their insolvency regimes), given the persistence of simple debt structures with high unsecured debt and limited higher-priority claims.
- Recovery prospects in Australia, New Zealand, and Singapore also appear somewhat better than in the U.S. and Europe due to a regional skew toward higher-rated entities and less top-heavy debt structures.
- Aggressive out-of-court restructurings (primarily in the U.S.) are also a concern because they can materially impair the recovery prospects of certain investors and create winners and losers from the same group of creditors.
- While out-of-court restructurings are not predictable or quantifiable (and thus not factored into our recovery ratings prospectively), they will reduce recovery outcomes and increase volatility for some creditors than our current estimates.
- The complexity and idiosyncratic nature of out-of-court restructurings means aggregate recovery statistics may not capture the impact.

Debt investors are naturally paying more attention to recovery rates after default rates rose briskly across the globe in 2023 from historical lows reached in early 2022 (chart 1).

The U.S. speculative-grade default rate of 4.5% as of Dec. 31, 2023, was notably above the 10-year average of about 3.1%. For Europe, the speculative-grade default rate at year-end 2023 was 3.5%, also notably higher than the 10-year average of about 2.4%.

Meanwhile for emerging markets, the rate at year-end was 1.8%, somewhat lower than the 10-year average of about 2.1%. Preliminary default rates through February for the U.S. and Europe are already higher at about 4.7% and 4.1%, respectively, although we expect these levels to stabilize or decline by December.

Chart 1 | Speculative-grade trailing-12-months default rates by region through Dec. 31, 2023 (%)



Source: S&P Global Ratings.

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While economic and interest rate expectations for 2024 have improved recently, investors still have concerns about how various factors may adversely affect recovery rates; including the impact of elevated interest rates on valuations; expectations for slowing and uneven economic growth; the rise in aggressive out-of-court restructurings, euphemistically referred to as liability management transactions (LMT); and ongoing geopolitical conflicts (Russia/Ukraine, Israel/Gaza/Middle East, trade).

Ultimately, we believe there are reasons to be concerned about future debt recovery rates (especially in the U.S., Canada, and Europe), but recovery prospects are not as bleak as some fear.

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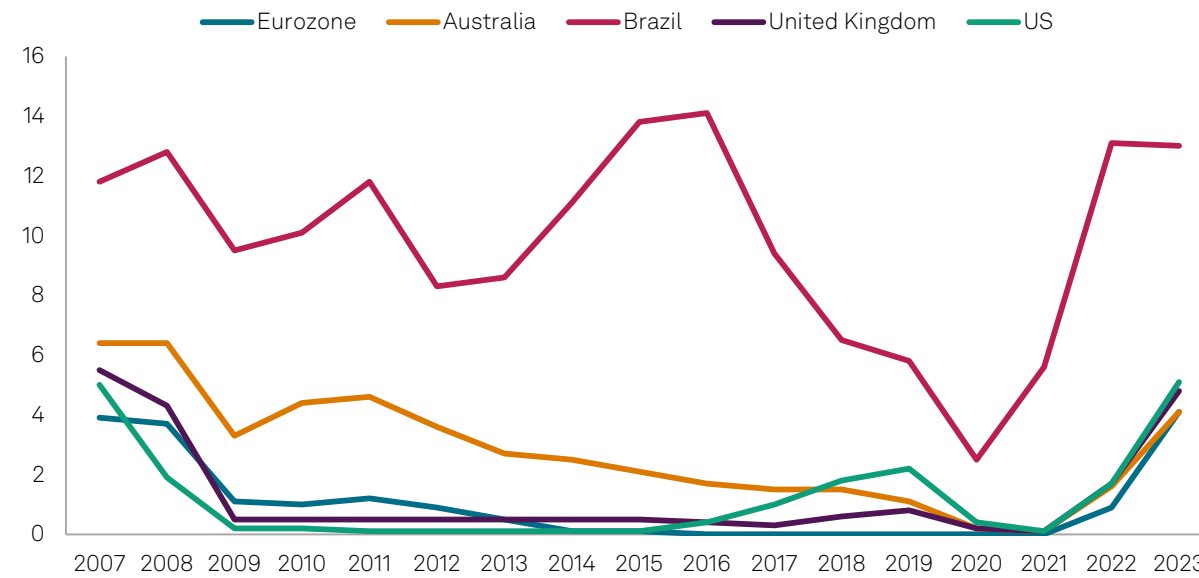
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Recovery Pressure

High interest rates and capital costs may weigh on valuations and recovery

While we expect central bank rates to begin to decline in 2024, drops may be measured and rates may remain elevated for some time after rising sharply over the past two years (chart 2). High interest rates can threaten recovery rates because increased capital costs depress valuations (assuming the present value of future cash flow determines enterprise valuation). High capital costs may also hurt growth by reducing viable growth opportunities, which may get squeezed by lower internally generated cash flow (due to higher debt service costs), limited and expensive financing options, and higher investment hurdles.

Chart 2 | Central bank interest rates, annual averages (%)



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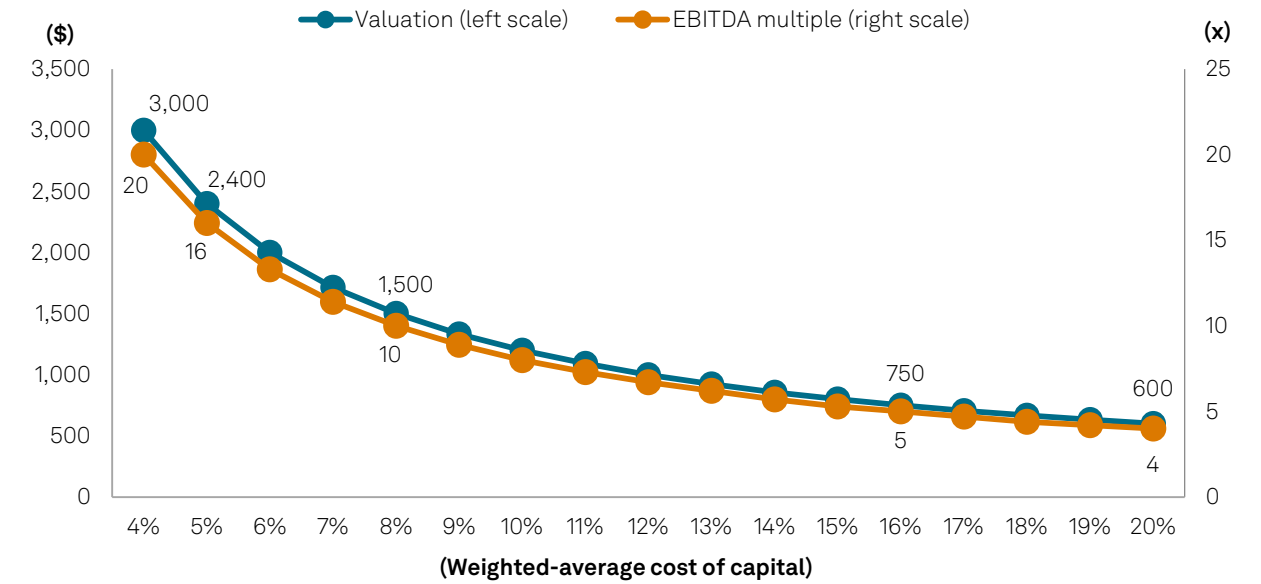
Simplified Example Of How Higher Capital Costs Affect Valuation

To illustrate how higher capital costs impact valuation, we provide a simplified example using the constant growth valuation model (cash flow available to capital/{weighted-average cost of capital – real growth rate}). If we assume a firm generates \$1,000 in revenue and has an EBITDA margin of 15% (a rough average across corporates) and annual capital spending needs (fixed and working capital) of \$30, then it would have roughly \$120 available to capital. Assuming a weighted-average cost of capital of 8% and zero real growth rate, produces a valuation of \$1,500 ($\$120 / \{8\% - 0\%$). This implies an EBITDA multiple of 10x (enterprise value of \$1,500 divided by EBITDA of \$150).

Next, assuming capital costs double to 16%, the firm's valuation would be cut in half ($\$120 / 16\% = \750), all else equal. Similarly, the EBITDA multiple would be cut in half to 5x ($\$750 / \150). See chart 3 for the inverse relationship of capital costs and valuation (and EBITDA multiples).

Chart 3 | Simple example to illustrate the impact of interest rates and capital costs

Valuation and EBITDA multiples are inversely correlated with capital costs



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We illustrate the inverse relationship between interest rates (capital costs) and valuation (chart 3), using the constant growth valuation model and assumptions outlined in our simplified example. A doubling of capital costs to 16% from 8% reduces the valuation 50% to \$750 from \$1,500 and the EBITDA multiple to 5x from 10x.

Slowing economic conditions may weigh on valuations and recovery rates

Another variable turbocharging valuations before, and immediately after, the onset of the COVID-19 pandemic was robust growth expectations. Near-zero benchmark rates and welcoming capital markets made it easy to borrow and leverage up to fund growth, internally and through acquisitions. This explains why purchase price EBITDA multiples were often well into the double-digit percents. The constant growth valuation model can help illustrate the impact. Using the same initial assumptions above, adding an assumed annual real growth rate of 4%, the valuation doubles to \$3,000 ($\$120 / \{8\% - 4\%$) and the EBITDA multiple doubles to 20x ($\$3,000 / \150), all else equal.

Of course, the opposite is also true. If stiffening economic headwinds impair growth, profits, and cash generation, this will depress valuations. At the risk of belaboring the obvious, pressure on valuations from higher capital costs and economic weakness and uncertainty can damage creditor recovery prospects for companies that default and emerge in this environment.

Aggressive out-of-court restructurings or LMTs also threaten recovery rates

If high rates and slowing growth aren't concerning enough, investors are also troubled by increased aggressive out-of-court restructurings from distressed firms in recent years. These can substantially impair the recovery prospects (and credit quality) for creditors that do not participate.

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Not long ago, the risk of aggressive out-of-court restructurings was primarily a concern for high yield investors with unsecured notes (or bonds) in distressed firms. These investors could face coercive tender offers to exchange their unsecured notes for new notes, typically at a notable discount to par. Failure to accept generally strips protective covenants for nonconsenting noteholders. Further, failure to get a sufficient noteholder consent might force the company to default, which could leave unsecured creditors with meager recoveries. Conversely, accepting the proposal often includes a junior lien position (which may help future recovery rates) and the possibility that a reduced debt burden may help the company avoid an otherwise inevitable default.

In recent years, however, investors in broadly syndicated first-lien loans have become exposed to aggressive restructurings that impair their credit quality and recovery prospects. This reflects more companies (often financial sponsor owned) that have exploited the weak loan documentation requirements that has proliferated in the institutional loan market the past half dozen years or so. In recent years, the two most common loan restructuring tactics have been collateral transfers (also known as drop-downs) and priming loan exchanges (also known as up-tiering). The impact of these restructurings on non-participating lenders is often severe (table 1).

Table 1 | Select loan restructurings: Expected recovery impairment for nonparticipating lenders

	Date	Recovery % before	Recovery % after	Change first-lien % par
Collateral transfers				
J. Crew Group*	17-Jul	40	15	-25
PetSmart	Jun-18	60	45	-15
Neiman Marcus*	Sep-19	55	55	0
Cirque du Soleil*	Mar-20	75	75	0
Revlon*	May-20	40	15	-25
Party City*	Jul-20	75	45	-30
Travelport (plus priming loan) **	Sep-20	75	0	-75
Envision Healthcare #1*	Apr-22	50	30	-20
Shutterfly/Photo Holdings**	Jun-23	60	35	-25
U.S. Renal Care #1 (transfer) **	Jun-23	50	30	-20
Priming loan exchanges				
Murray Energy*	Jun-18	65	0	-65
NPC International*	Feb-20	55	40	-15
Serta Simmons*	Jun-20	55	5	-50
Renfro #1	Jul-20	35	20	-15
Boardriders	Aug-20	55	5	-50
TriMark/TMK Hawk #1**	Sep-20	55	0	-55
GTT*	Dec-20	50	40	-10
Renfro #2	Feb-21	20	10	-10
TriMark/TMK Hawk #2**	Jul-22	60	30	-30
Medical Depot**	Jul-22	15	10	-5
Envision Healthcare #2*	Aug-22	30	Varied	Up to -30%
Mitel Networks International**	Nov-22	50	5	-45
BW Homecare/Elara Caring**	Dec-22	50	20	-30
Rodan & Fields**	Apr-23	55	40	-15
Robert Shaw/Range Parent (multiple)*	May-23	50	0	-50
Wheel Pros**	Sep-23	50	30	-20
API Holdings III**	Nov-23	55	35	-20

* Company subsequently filed for bankruptcy.

**Company either subsequently redefaulted and/or is rated 'CCC+' or lower. Excludes cases where all or essentially all lenders participated in the restructuring and realized the same impact. Source: S&P Global Ratings and company reports. "A Closer Look At How Uptier Priming Loan Exchanges Leave Excluded Lenders Behind" published June 15, 2021, plus data on subsequent restructurings for rated entities and the transactions are public.

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Nonetheless, these out-of-court restructurings have generally not solved the capital structure problems that forced these companies to restructure in the first place (table 1). Of the 27 loan restructurings by 24 companies since mid-2017 (with some undergoing multiple transactions), 11 subsequently filed for bankruptcy. Further, of the 13 firms that managed to avoid bankruptcy, only two avoided a subsequent default or are rated higher than 'CCC+'. Issuer ratings of 'CCC+' or lower connote our expectation that an eventual default is more likely than not. The two exceptions are PetSmart LLC, which we rate 'B+', and Renfro Corp., which managed to repay its loans in full when the company was subsequently acquired after completing two priming loan exchanges.

While aggressive out-of-court restructurings have been less common in Europe, two of the cases we noted are European-based multinationals. In addition, a few cases indicate European owners may be increasingly willing to take advantage of borrower-friendly loan documentation. In the recent restructuring of Keter Group B.V., the initial owner proposal reported to effectively leave nonconsenting lenders with a potentially unsecured loan at a lower margin than consenting lenders'. This would have been an example of a priming loan exchange had it been accepted.

Similarly, these types of transactions are not yet an issue in Latin American countries where we do recovery analysis (primarily Brazil and Mexico) or Asia (Australia, New Zealand, Singapore, and Hong Kong), but this bears watching.

Because these transactions often produce winners and losers from the same group of creditors, they are often referred to as "lender-on-lender violence." Fortunately, they remain relatively infrequent, although they are increasing and likely to persist since the weak protections that allowed them to proliferate remain widespread.

Impact On Recovery Ratings

How does the movement in interest rates, slowing economic growth, and LMTs affect recovery ratings under S&P Global Ratings' recovery methodology?

While elevated interest rates may constrain current valuations, the impact on valuation at default (and recovery ratings) is more complex. Historically, there has not been a clear indication that actual recovery rates fall during periods of rising interest rates (chart 4). This is likely due in part to macroeconomic factors. Interest rates typically rise during strong economic growth, which can boost recovery prospects.

For an individual company, higher fixed costs (as a result of higher interest rates) should lead to an earlier default at higher EBITDA as debt service costs rise. In theory, this would boost a company's valuation and creditor recovery rates. In reality, the theoretical bump in valuation at default is likely to be substantially offset by higher capital costs, mitigating the impact on recovery outcomes.

To address this dynamic in our recovery methodology, we derive fixed charges using long-term averages in benchmark interest rates that are paired with long-term stressed EBITDA multiples by sector to help estimate enterprise value given default. This approach helps mitigate the impact of inevitable fluctuations in interest rates on our recovery analysis and keeps recovery outcomes stable (absent the use of analytical judgement through the recovery adjustments aspect of our criteria). As such, our recovery ratings remained largely stable even amid the sharp decline in benchmark interest rates during the global financial downturn of 2007-2009 as well as the recent spike in interest rates.

Similarly, our recovery analysis starts by simulating a default scenario with enough operational stress to trigger a payment default, so swings in economic conditions (in the macroeconomy or for a particular sector) do not necessarily influence our recovery assumptions or outcomes. We acknowledge that recovery outcomes can be countercyclical with economic conditions when a company emerges from default, and have shown as much in some of our studies on actual recovery rates. We generally don't try to adjust our recovery outcomes for this since valuations and economic forecasts can be subjective and volatile. Rather, our recovery outcomes are intended to be reasonable (if imperfect) estimates of recovery rates given default in light of a company's asset quality, debt burden, and the relative creditor priorities that result from its debt and organizational structure.

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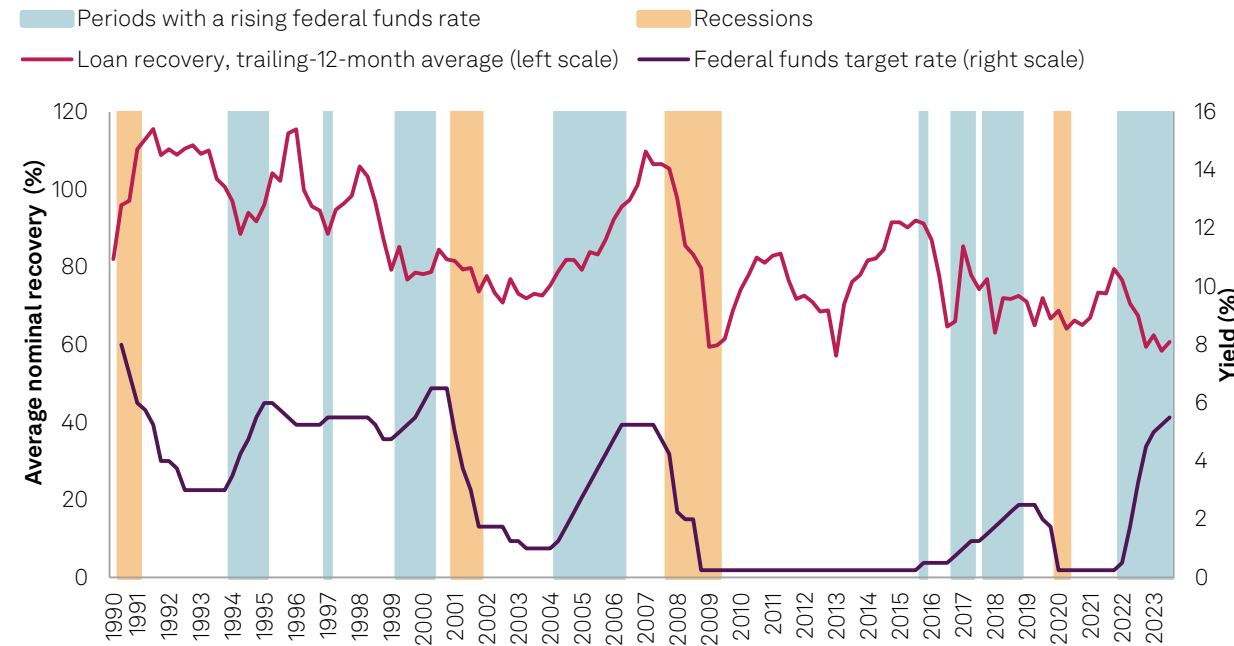
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Chart 4 | Mixed recovery trends during prior periods of rising rates



Data through September 2023. Recovery values are based on the trailing-12-months average nominal recovery. Tallied for the year of emergence. Only includes instruments that emerged following default from U.S. issuers. Note: Loan recovery includes term loans and revolving credit facilities; bond recovery includes bonds and notes. Sources: S&P Global Market Intelligence’s CreditPro, S&P Capital IQ, and S&P Global Ratings Credit Research & Insights. Copyright © 2024 by Standard & Poor’s Financial Services LLC. All rights reserved.

While the recovery risk posed by out-of-court restructurings appears to be rising (at least in the U.S.), these restructurings are not predictable nor quantifiable at the issuer or debt instrument level (see the wide array of outcomes in table 1). Priming loan exchanges help illustrate the challenge of factoring this risk into our recovery analysis on a prospective basis since participating lenders may improve their recovery prospects while nonparticipating (and formerly equal) lenders have their recovery prospects impaired. Consequently, we only factor these transactions into our recovery ratings in our ratings surveillance after the transactions are complete.

Even so, investors are rightly concerned about these restructurings because some first-lien investors’ recoveries may be diluted and possibly wiped out. This also means that recovery rates for select first-lien investments are likely to be lower and more volatile than our current estimates (as embedded in our recovery ratings).

Looking Back

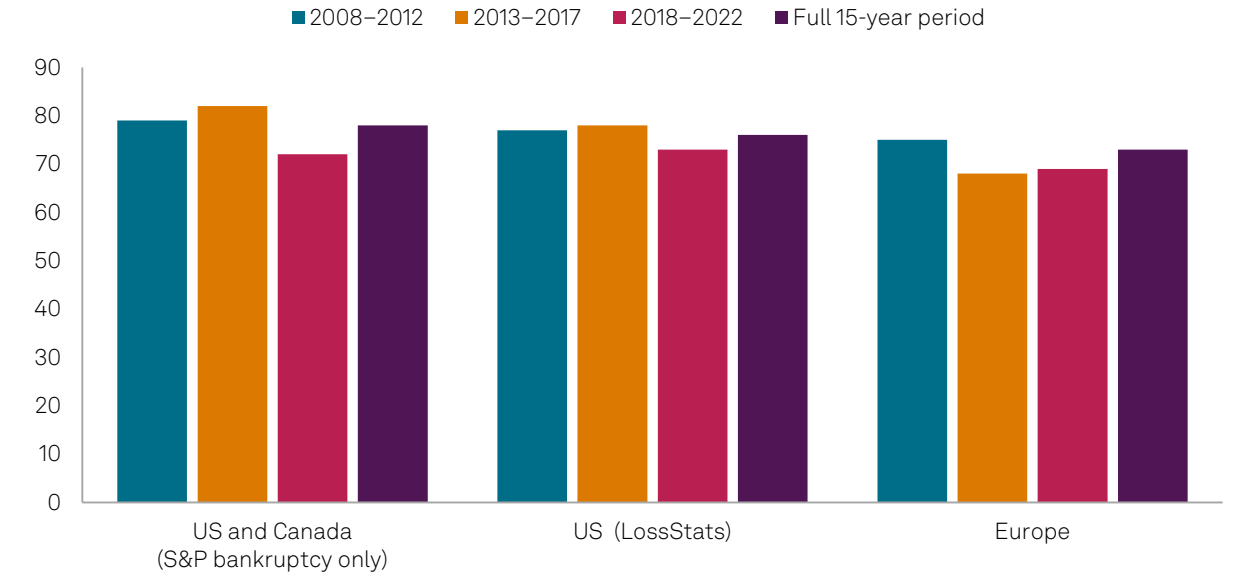
Empirical data on estimated actual recovery rates by region and debt type

S&P Global Ratings collects data on defaults and recoveries globally and has published many reports analyzing post-default recovery rates over the years. Between 2008 and 2022, these studies cover more than 500 defaulted companies in the U.S. (including some Canadian companies) and 265 for Europe.

For recovery outcomes for first-lien debt from three of these studies (chart 5), they are divided into three five-year periods. We present the estimated recovery data from each study on an ultimate (at the end of the restructuring) and nominal (versus discounted) basis. Each uses slightly different methodologies for estimating actual recovery rates and covers a different mix of companies as described in the Appendix.

One trend is that average first-lien recoveries in the U.S. are notably lower in the most recent five-year period under both U.S. studies, and in Europe over the last 10 years. These statistics suggest caution in relying on longer-term average recovery rates, although we recognize they can vary substantially depending on the defaulted companies and sectors in any given period as well as the economic conditions at the point of resolution.

Chart 5 | Empirical first-lien recovery rates (%)



Recovery statistics presented on an ultimate and nominal basis using the underlying data from three S&P Global Ratings recovery studies, “North American Debt Recoveries May Trend Down For Longer,” Dec. 11, 2023; “U.S. Recovery Study: Loan Recoveries Persist Below Their Trend,” Dec. 15, 2023; and “European Corporate Recoveries 2003-2022,” July 5, 2023. Source: S&P Global Ratings. Copyright © 2024 by Standard & Poor’s Financial Services LLC. All rights reserved.

Focusing on the U.S. studies, the first-lien recovery trends are remarkably similar, even though they cover different groups of companies and use different methods to estimate actual recovery rates. One underlying reason evident in each study is shrinking debt cushions over time. In the LossStats data, the percentage of U.S. companies with a first-lien debt cushion of less than 25% increased from 35% for 2008-2012 to 60% for 2018-2022. Similarly, in S&P Global Ratings’ bankruptcy dataset for U.S. and Canadian companies, the share of companies with a debt cushion of less than 25% was roughly 23% in the first two five-year periods, but 38% in the most recent. The reduced debt cushions materially affected recovery rates. For 2018-2022, first-lien recovery rates for companies with debt cushions of less than 25% were 66% in the LossStats data and 58% in S&P Global Ratings’ bankruptcy dataset. In contrast, recoveries for firms with larger debt cushions were much higher at 83% in the LossStats data and 81% in ours.

Also, U.S. and Europe first-lien recovery rates in the most recent five-year period are affected by the increasing dominance of covenant-lite term loan structures since 2018. As we’ve highlighted in other research, covenant-lite first-lien term loans have generally had meaningfully lower recovery rates than standard first-lien term loans since the global financial recession (“Settling For Less: Covenant-Lite Loans Have Lower Recoveries, Higher Event And Pricing Risks”, published Oct. 13, 2020; and chart 4 in “U.S. Recovery Study: Loan Recoveries Persist Below Their Trend”, published Dec. 15, 2023). Covenant-lite structures can impair first-lien recovery rates because companies generally need to deteriorate further before a default is triggered. Further, these structures provide companies with more flexibility to add incremental debt and engage in LMTs that may impair first-lien recoveries. Even so, it’s important to note that the impact of aggressive loan restructurings may not be clear in aggregate recovery statistics due to the complexity and idiosyncratic nature of these transactions (see “Recovery Statistics May Not Reflect Whole Story”).

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Recovery Statistics May Not Reflect Whole Story

The creativity and complexity of liability management transactions and other aggressive out-of-court restructuring tactics complicates tracking the impact in aggregate recovery statistics, even though the impact is often sharply negative for non-participating creditors. For example, with collateral transfers, the recovery rate on existing first-lien debt gets impaired, but the new class of first-lien debt created in these transactions (with liens on the transferred assets) generally have very strong recovery prospects, which muddies the impact on first-lien recovery statistics.

Also, for priming loan exchanges the new super-priority first-lien debt generally has very strong recovery prospects, while the subordinated legacy first-lien debt has very poor recovery prospects. The empirical data for these transactions may no longer classify the legacy debt as first-lien after the restructuring. As a result, priming loan exchanges may perversely boost recovery statistics for first-lien debt notwithstanding the damage these restructuring tactics can have on (formerly first-lien) recovery rates.

For Europe, from 2008-2012, there were 695 first-lien instrument defaults with an average recovery of 75%. This dropped to 68% for 2013-2017, but was accompanied by a fall in defaulted instruments to just 181. Hence the drop-off in first-lien recovery rates for 2013-2022 is notable, but substantially lower default volumes over this time make it difficult to draw firm conclusions. For 2018-2022, the average first-lien recovery for Europe was steady at 69%, but this was again off the back of just 148 first-lien data points. Even so, overall first-lien recoveries in Europe have been consistently lower than in the U.S.

Senior unsecured debt recovery rates in the U.S. and Europe are generally meaningfully lower than those for senior secured debt and much more variable and idiosyncratic. A key reason is that senior unsecured recovery outcomes are substantially influenced by the relative magnitude of higher and lower priority claims in the debt structures of the defaulted companies in any given period. They also can be quite sensitive to economic conditions at the point of emergence. Debt structures in both geographies tend to be secured heavy, but this can vary meaningfully on a company and sector basis. Senior unsecured debt recovery rates can also be highly sensitive to the type of default.

In our U.S. LossStats dataset, average senior unsecured recovery rates between 2008 and 2022 were 48%, with a median of 40%. These figures are boosted by the inclusion of distressed exchanges. For senior unsecured debt that emerged following a distressed exchange, recoveries averaged 54%, 11 percentage points higher than the average recovery of senior unsecured debt following a bankruptcy. For our U.S. bankruptcy dataset, average recoveries were meaningfully lower at 29%, with a median of 15% and a high variance in outcomes.

For Europe, senior unsecured recovery rates for 2003-2022 were roughly 50% on an average and a median basis, but also had a standard deviation of about 37% (as a percent of par), indicating a wide dispersion of results. This primarily reflects out-of-court exchanges that dominate restructurings in the region.

Our last studies on empirical recovery rates in Brazil (for the 1998-2017 period) and Mexico (1999-2015) are somewhat dated, but they showed that first-lien debt instruments in Latin America had robust average nominal recovery rates at close to 95%. Senior unsecured debt was the primary debt class in the region's corporate sector, representing close to 60% of the total defaulted debt instruments. In addition, our analysis confirmed that senior unsecured debt instruments posted high average nominal recovery rates of close to 59% in Brazil and 69% in Mexico. Our analysis concluded that the strong first-lien and senior unsecured recovery rates in Brazil and Mexico largely reflect the limited priority and first-lien debt claims in corporate balance sheets.

More recently, Latin America rated issuers recorded a dozen defaults in 2023, 10 in Brazil where high interest rates and weak business conditions in the first half squeezed profits and cash flow. In most of these cases, nominal recovery rates of senior unsecured debts were close to 100%, given the predominance of distressed exchanges in the sample. In all those cases, the companies emerged fairly rapidly by exchanging unsecured notes for new bonds with longer maturities--and for the most

part similar coupons. Strong recovery rates for distressed exchanges (relative to bankruptcy and nonbankruptcy restructurings) are consistent with the findings from our Brazilian recovery study. We also note that the estimated median recoveries of this sample, based on our recovery ratings at the time of default, suggested recoveries of about 45%, much closer to those in typical judicial recoveries in the past. We also acknowledge that several difficult debt restructurings occurred since the pandemic broke out, as it was the case for rated airlines in Latin America Avianca Group International, Latam Airlines Group S.A., and Grupo Aeromexico S.A.B. de C.V. They filed for bankruptcy under Chapter 11 in 2020, and emerged in 2022 with debt haircuts of 20%-55%.

We have not published a recovery study for Asia-Pacific given that defaults by rated entities have been limited and the availability of underlying recovery data is even more limited. This reflects in part the historical skew of the rated portfolio to investment-grade entities and the fact that we only conduct recovery analysis in Australia, New Zealand, Singapore, and Hong Kong. In Australia, for example, there were just 12 defaults from 2008-2022, encompassing a mix of bankruptcy, missed payments, and distressed exchanges.

Looking Forward

What S&P Global Ratings' recovery ratings say about recovery expectations by region and debt type

Our recovery ratings provide an overview of our expectations for ultimate recovery rates on a nominal basis by debt type. To facilitate apples-to-apples comparisons by region, we provide the data on an issue count basis for rated debt issued by speculative-grade corporate entities and excludes recovery data for the project finance, infrastructure, nonbank financial institutions, and oil and gas sectors (where debt structures and recovery expectations can be starkly different than for the broader corporate universe and to limit the impact of regional differences in sector mix).

Recovery expectations: first-lien debt

The relative side-by-side comparison of first-lien recovery expectations (chart 6) and the regional recovery statistics (table 2) show that regional recovery expectations are similar, although average recovery expectations in the U.S. and Canada are somewhat higher than in Europe, but lower than in Latin America and Asia-Pacific. While these differences are directionally consistent with the empirical recovery data outlined above (again acknowledging the absence of empirical data for Asia-Pacific), there are a few elements worth drilling into for more perspective.

A review of a sample of the underlying recovery data provides insight into the regional differences in first-lien recovery ratings (table 3). The sample covers many relevant rated issuers, with regional coverage at year-end 2023 of roughly 80% in the U.S., Canada, and Europe; 45% in Latin America; and 70% in Asia-Pacific.

A key issue that the sample data highlights is that debt structures are meaningfully more top heavy in the U.S., Canada, and Europe than in Latin America, and moderately more top heavy than in Asia-Pacific. As you might expect (and consistent with the empirical recovery data covered earlier), first-lien recovery expectations are meaningfully higher (in all regions) when there is a junior debt cushion of at least 25%. These disparities in recovery expectations based on debt mix is persistent over the past six years in all four regions.

The sample data also shows that debt structures in the U.S. and Canada and in Europe are now comparable and have become steadily more top heavy over the past six years. The shift in debt mix has been more significant in the U.S. and Canada with the percent of debt structures with a junior debt cushion of less than 25% increasing by roughly 16% versus about 6% for Europe.

For Latin America, while average and median first-lien recovery expectations are higher, these statistics are materially constrained by our classification of the Brazilian and Mexican insolvency regimes as Group B jurisdictions under our jurisdictional ranking assessment criteria. This reflects our view that the insolvency regimes in these countries are less creditor friendly and that recovery

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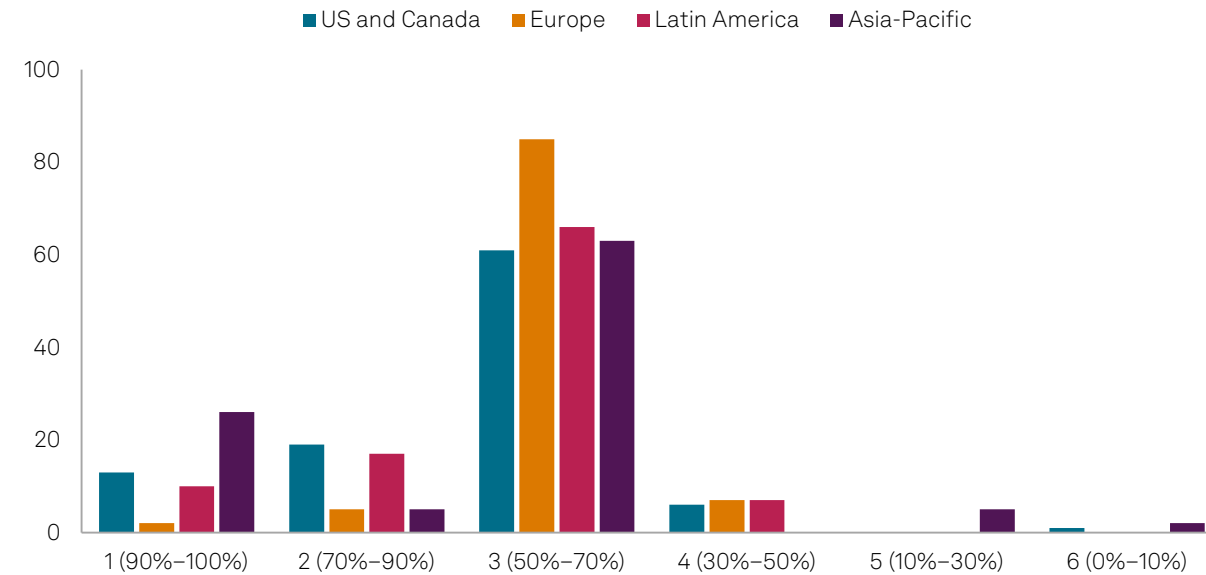
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Chart 6 | First-lien senior secured debt recovery distribution (%)



Data uses the recovery ratings on an issue-count basis as of Dec. 31, 2023. To facilitate apples-to-apples comparisons by region, the data is provided on an issue-count basis for rated debt issued by speculative-grade corporate entities and excludes recovery data for the project finance, infrastructure, non-bank financial institutions, and oil and gas sectors.

Source: S&P Global Ratings.

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Table 2 | Key recovery statistics for first-lien debt by region

	US and Canada	Europe	Latin America	Asia-Pacific
Companies	1,217	504	18	19
Issues	2,996	1,105	29	43
Average recovery rate (on an issue-count basis)	63%	59%	68%	65%
Median recovery rate (on an issue-count basis)	60%	60%	65%	65%

As of Dec. 31, 2023.

Recovery statistics derived using the rounded estimates that are part of our recovery ratings.

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outcomes may be lower and less predictable. The Group B classification caps our recovery ratings on first-lien debt of companies expected to restructure in these countries at '2' (indicating recovery expectations of 70%-90%), and we only assign a '2' recovery rating in limited cases of strong collateral coverage indicating implied recovery would exceed 90%. This cap limits the rounded recovery percentage to 85%, while debt issues with '3' recovery ratings (50%-70%) for Group B countries have a maximum rounded recovery percentage of 65% even when the implied recovery is greater than 70% but less than 90%. As a result, the recovery data for Latin America in chart 5 and tables 2 and 3 are meaningfully restricted.

About 10% of our first-lien recovery ratings in Latin America are '1' (chart 6). This only reflects three issue ratings, which highlights the relatively few recovery ratings on first-lien debt in Latin America (29 in total or just 11% of our regional recovery ratings). All three debt issues relate to LatAm Airlines, which has previously restructured under Chapter 11 of the U.S. Bankruptcy Code. We would expect the same outcome in a subsequent default, so the Group B assessment does not apply.

For Asia-Pacific, roughly 44% of our issue ratings in the region are on entities rated 'BB-' or higher, more than double the roughly 20% mix for the other regions is an important factor supporting higher average and median first-lien recovery expectations. Higher-rated entities tend to be less leveraged and more likely to have a meaningful cushion of junior debt, both of which are correlated with higher recovery outcomes. There are just 43 rated first-lien debt instruments in Asia-Pacific, although this represents 67% of our recovery ratings in the region.

Table 3 | First-lien recovery expectations much higher with debt cushion of 25% or more

Sample data

Debt structure	US and Canada	Europe	Latin America	Asia-Pacific
First-lien debt and priority debt >75% of total	64%	66%	10%	56%
Average first-lien recovery rating % if first-lien plus priority debt is over 75%*	57.4%	57.0%	62.0%	67.5%
Average first-lien recovery rating % if first-lien plus priority debt is less than 75%*	82.1%	83.5%	81.3%	83.1%

* Recovery rate percentages are based on the rounded estimates that are part of our recovery ratings for the credits in the underlying recovery sample. The sample covers large portion of the relevant rated issuers with the regional coverage at yearend 2023 of roughly 80% for the US, Canada, and Europe; 45% for Latin America, and 70% for Asia-Pacific. For companies expected to restructure in jurisdictions we classify as Group B (primarily in Latin America), our recovery ratings on first-lien debt are capped at '2' (indicating recovery of 70%-90%, with a maximum rounded recovery percentage of 85%), but only when the implied collateral coverage exceeds 90%. Also, first-lien debt at '3' (indicating recovery of 50%-70%) have a maximum rounded recovery percentage of 65% even when the implied recovery is greater than 70% but less than 90%.

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Our average recovery expectations for first-lien debt are notably lower than indicated by the empirical recovery data shown in the prior section, even compared to the lower recovery outcomes we cited in the more recent periods.

For the U.S. and Canada and for Europe this gap is roughly 10 percentage points. We believe the ongoing shift in debt structures becoming more top heavy in these geographies is a contributing factor that is not yet fully reflected in empirical recovery outcomes (especially compared with our U.S. and Canadian bankruptcy dataset). Another contributing factor may be that our recovery ratings are based on a simulated payment default whereas some of the empirical recovery results (our U.S. LossStats and European datasets) are boosted by higher recovery outcomes for distressed exchanges completed before operating results deteriorated enough to trigger a payment default.

For Latin America, the gap is significantly more pronounced at nearly 30 percentage points, although the data underlying our empirical comparisons is limited and dated, as noted. The dominant reason is our Group B jurisdiction assessment, which caps our recovery outcomes on first-lien debt. Including distressed exchanges is another contributing factor because recoveries are notably higher for this default type than for bankruptcy defaults. Further, preemptive distressed exchange restructurings often do not include such stress normally factored into our recovery ratings analysis.

For Asia-Pacific, the absence of available empirical data available and a modest number of ratings precludes us from drawing useful comparisons. However, the higher average and median first-lien recovery expectations for the region appears consistent with the high concentration of loans to issuers rated 'BB-' or higher and a somewhat lower concentration of debt structures without a junior debt cushion of at least 25%.

Recovery expectations: senior unsecured debt

The side-by-side comparisons (chart 7) and average and median statistics (table 4) show that recovery expectations are higher in Latin America than elsewhere. This is consistent with the empirical data, in which we attribute high average senior unsecured debt recovery rates of 59% in Brazil and 69% in Mexico to the simple debt structures in the region, predominantly senior unsecured debt and with a thin layer higher priority debt.

A review of our sample of underlying recovery data (table 5) shows that simple, unsecured-heavy debt structures continue to prevail in Latin America, with unsecured debt representing at least 50% of total debt in 88% of our sample, compared with the mid-teen percents for other regions. Higher recovery expectations for unsecured debt in Latin America are also consistent with the predominance of ratings in the 'BB' category (BB+/BB-BB-), 79% of the dataset compared with the mid-60% area for the U.S., Canada, and Europe.

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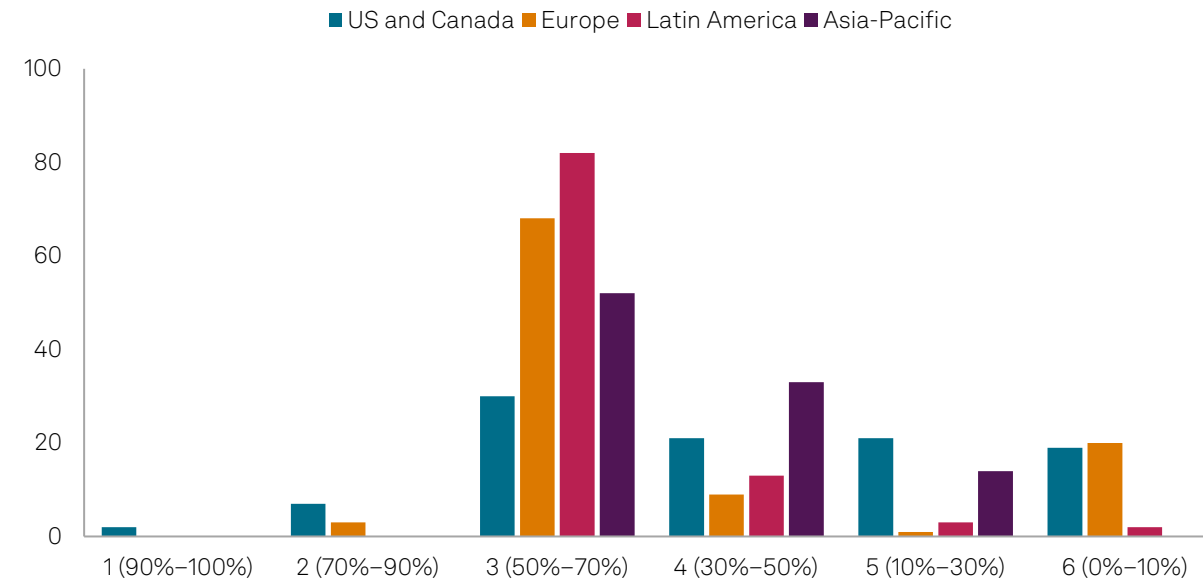
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Chart 7 | Senior unsecured debt recovery distribution (%)



Data uses the recovery ratings on an issue-count basis as of Dec. 31, 2023. To facilitate apples-to-apples comparisons by region, the data is provided on an issue-count basis for rated debt issued by speculative-grade corporate entities and excludes recovery data for the project finance, infrastructure, nonbank financial institutions, and oil and gas sectors.

Source: S&P Global Ratings.

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Table 4 | Key recovery statistics for unsecured debt by region

	US and Canada	Europe	Latin America	Asia-Pacific
Companies	504	98	92	7
Issues	1,261	280	230	21
Average recovery rate (on an issue-count basis)	37%	47%	58%	49%
Median recovery rate (on an issue-count basis)	40%	60%	65%	55%

As of Dec. 31, 2023.

Recovery statistics derived using the rounded estimates that are part of our recovery ratings.

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Asia-Pacific has an even higher skew toward 'BB' category companies at 95% of our unsecured recovery ratings (all but one issue rating). Still, more top-heavy debt structures (table 3) and the limited number of unsecured-heavy debt structures (table 5) in the region moderate the average and median recovery expectations.

For Europe, our average recovery expectations of 47% for unsecured debt is about equal with the 50% empirical average cited above, while the median of 60% is about 10 percentage points higher.

For the U.S. and Canada, the average expectation of 37% and median of 40% are closer to the empirical results cited from our LossStats recovery study (48% and 40%, respectively) than our bankruptcy dataset results (29% and 15%, respectively).

One factor constraining our recovery expectations (and ratings) on senior unsecured debt in all regions is that company debt structures can change, especially on the path to default. While these changes are variable and unpredictable, there is a high chance they will impair unsecured debt recovery prospects. As such, we cap recovery ratings on unsecured debt issued by companies rated in the 'BB' category at '3'. The cap is intended to limit the down-notching of unsecured recovery and issue ratings if and when such changes happen. Ultimately, the cap appears to be helpful as it brings

Table 5 | Unsecured recovery expectations much higher when higher-priority debt is limited

Sample data

	US and Canada	Europe	Latin America	Asia-Pacific
Unsecured debt (plus junior debt) less than 50% of total*	0.14	0.14	0.88	0.17
Average unsecured recovery rating % if unsecured plus junior debt more than 50%*	46.9	51.38	58.9	33.3
Average unsecured recovery rating % if unsecured plus junior debt less than 50%*	5.9	1.9	10.8	8.67

* Recovery rate percentages are based on the rounded estimates that are part of our recovery ratings for the credits in the underlying recovery sample. These calculations also include nondebt claims as unsecured claims. The sample covers large portion of the relevant rated issuers with the regional coverage at yearend 2023 of roughly 80% for the U.S., Canada, and Europe; 43% for Latin America, and 69% for Asia-Pacific. Our recovery ratings on unsecured debt for companies rated in the 'BB' category are capped at '3' (indicating recovery of 50%-70%), with a maximum rounded recovery percentage of 65%.

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our recovery expectations closer to empirically observed recovery outcomes for senior unsecured debt. We have a less-restrictive cap of '2' for companies we rate 'B+' or lower given that they are somewhat closer to default, although this rarely limits recovery outcomes.

As noted, unsecured recovery outcomes tend to be highly variable and dependent on the underlying debt structures of individual companies. In particular, the amount of higher priority debt (secured debt and structurally senior debt) and lower priority debt (either structurally junior or contractually subordinated debt) significantly affects outcomes. Across all regions, unsecured debt with recovery ratings of '5' and '6' tend to be structurally subordinated notes since contractually subordinated debt is more rare and often not rated. Actual unsecured recoveries are also quite sensitive to economic conditions at the point of resolution. As a result, absent a consistent pattern in debt structures (as is the case in Latin America with a heavy tilt toward unsecured debt) or low leverage (as is the case with significant skews to companies in the 'BB' category and lower leverage in Latin America and Asia-Pacific), it is difficult to make more definitive conclusions on unsecured recovery prospects.

Recovery expectations: second-lien debt

There are also relatively few rated second-lien debt instruments, predominantly in the U.S. and Canada where 266 issues represent almost 9% of the rated secured debt for the region. Elsewhere, rated second-lien debt counts are scant at 18 in Europe and one in Asia-Pacific. They represent only about 2% of all secured ratings in these regions. Recovery expectations for most of these debt instruments are abysmal (chart 8), reflecting that they generally represent a thin layer of the junior-most debt in the capital structures of highly leveraged companies we rate 'B' or lower.

Table 6 | Key recovery statistics for second-lien debt by region

	US and Canada	Europe	Latin America	Asia-Pacific
Companies	226	15	0	1
Issues	266	18	0	1
Average recovery rate (on an issue-count basis)	6%	7%	N/A	0%
Median recovery rate (on an issue-count basis)	0%	0%	N/A	0%

As of Dec. 31, 2023.

N/A = Not applicable.

Recovery statistics derived using the rounded estimates that are part of our recovery ratings.

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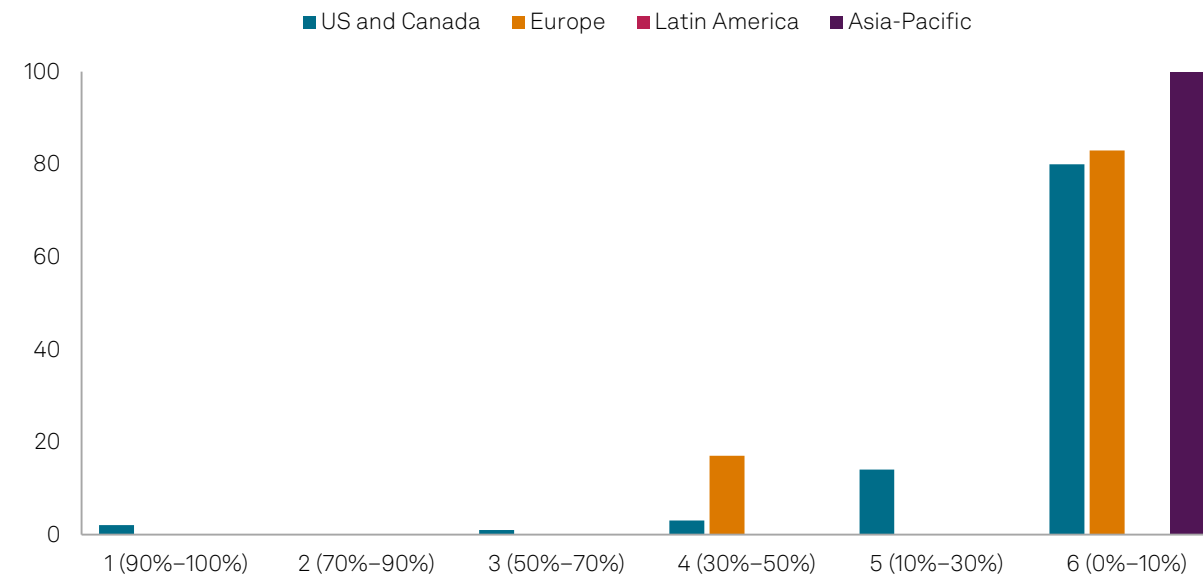
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Chart 8 | Second-lien senior secured debt recovery distribution (%)



Data uses the recovery ratings on an issue-count basis as of Dec. 31, 2023. To facilitate apples-to-apples comparisons by region, the data is provided on an issue-count basis for rated debt issued by speculative-grade corporate entities and excludes recovery data for the project finance, infrastructure, nonbank financial institutions, and oil and gas sectors.

Source: S&P Global Ratings.

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The Final Verdict

Is the global forecast for debt recoveries in 2024 bleak?

Ultimately, no, it is not bleak. That said, there are reasons to be concerned that future recovery rates will be lower, especially in the U.S. and Europe.

For one, we tie the deterioration in estimated actual first-lien recoveries in recent periods in the U.S., Canada, and Europe to a meaningful rise in first-lien heavy debt structures. This trend reflects a notable increase in leverage and lower-rated corporations after the recession amid near-zero interest rates, heavy merger and acquisition activity, and a rise in rated firms that are private equity owned. It appears these changes are not yet fully reflected in historical recovery rates, so lower first-lien recoveries are likely to persist, and may worsen.

Further, event risk is rising with in selective defaults comprising most defaults in recent years. Weak debt documents and the dominance of covenant-lite term loan structures in the U.S., Canada, Europe, and Australia means that the risk of aggressive out-of-court restructurings remains. These threaten recovery prospects for first-lien and unsecured debtholders, but we do not prospectively capture them in our recovery ratings because these events are not predictable or quantifiable. Whether such restructurings (including easing liquidity pressure by adding options to payment-in-kind interest) allow companies to avoid defaults is debatable, indicated by high redefault rates. The companies that redefault are likely to have lower recovery outcomes.

Whether some of the more aggressive restructuring tactics spread from the U.S. to other geographies is something to watch. To date, these issues are not as prevalent in Europe and do not seem to have migrated to Latin America or Asia-Pacific.

Appendix

Appendix: Empirical Recovery Methodologies

- U.S. and Canada empirical (S&P Global Ratings bankruptcy data): Our latest study “North American Debt Recoveries May Trend Down For Longer”, published Dec. 11, 2023, consists of 370 companies we rate that entered and exited bankruptcy in North American (mostly U.S.) over the past 15 years and represents about \$700 billion in total prepetition debt. We exclude distressed exchanges and out-of-court restructurings from our dataset in this grouping. Actual recoveries are on a nominal basis and based on figures as provided for in the bankruptcy documentation (in particular the disclosure statements). We present recovery statistics by debt class an issuer count basis.
- U.S. empirical (LossStats): S&P Global Ratings Credit Research & Insights latest annual recovery study: “U.S. Recovery Study: Loan Recoveries Persist Below Their Trend”, published Dec. 15, 2023. This analysis is based on data from S&P Global’s LossStats, which is available through S&P Global Market Intelligence’s CreditPro. Recoveries in LossStats are based on the ultimate recovery rate following emergence from default, including bankruptcy filings, distressed exchanges, and nonbankruptcy restructurings. Recovery valuations in LossStats are based on the market price at emergence of the pre-petition, or new, debt instruments, and/or the value of cash and securities received following a liquidity shortfall. For the figures in this report, the data covers 403 companies with recoveries based on nominal recovery value, including distressed exchanges and nonbankruptcy restructurings (unless otherwise noted). We present recovery statistics on an issue count basis.
- Europe empirical: The detailed empirical study can be found here: “European Corporate Recoveries 2003-2022”, published July 5, 2023. The primary difference from the U.S. empirical studies is that the secondary debt market in Europe lacks adequate liquidity for secondary trading prices to be reliable, thus the European data is largely based on observable transactions or nominal debt exchanges. We present recovery statistics by debt class on an issue count basis.
- Latin America empirical: The detailed studies can be found here: “Update On Mexican Corporate Empirical And Recovery Rating Performance”, published July 12, 2016, and “20 Years Of Brazilian Corporate Defaults Show A Worsening Recovery Trend”, published May 11, 2018. We present recovery statistics on a nominal basis and rely on nominal exchange amounts or trading prices where available. Recovery statistics by debt class are on an issue count basis.

Related Research

- U.S. Recovery Study: Loan Recoveries Persist Below Their Trend, Dec. 15, 2023
- North American Debt Recoveries May Trend Down For Longer, Dec. 11, 2023
- European Corporate Recoveries 2003-2022, July 5, 2023
- Settling For Less: Covenant-Lite Loans Have Lower Recoveries, Higher Event And Pricing Risks, Oct. 13, 2020
- 20 Years Of Brazilian Corporate Defaults Show A Worsening Recovery Trend, May 11, 2018
- Update On Mexican Corporate Empirical And Recovery Rating Performance”, July 12, 2016

This report does not constitute a rating action.

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Adding Up: EBITDA Addback Study Shows Moderate Improvement In Earnings Projection Accuracy

March 27, 2024

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Key Takeaways

- Our latest EBITDA addback analysis continues to show a correlation between the magnitude of addbacks at deal inception and the severity of management projection misses.
- Data for the latest cohort of companies shows a slight improvement in earnings projection. Time will tell if this is an anomaly or an early sign of a fundamental shift toward more realizable projections at deal inception.
- Companies continue to overestimate debt repayment. The 2020 sample missed significantly on a relative basis, resulting in leverage misses on par with the six-year average despite improvement in projections.
- Actual leverage continues to be far in excess of management projections. The 2020 deals, on average, included median leverage 2.1 turns higher forecast for 2021 and three for 2022.
- In general, EBITDA addbacks remain elevated. Those for deals originated in 2022 represent over 29% of management projected EBITDA and almost 55% of last-12-months reported EBITDA in our latest sample of large mergers, acquisitions, and leveraged buyout transactions.
- Escalated addbacks create higher event risk and potential credit degradation as company-adjusted EBITDA often defines the size and flexibility companies have under debt agreements.

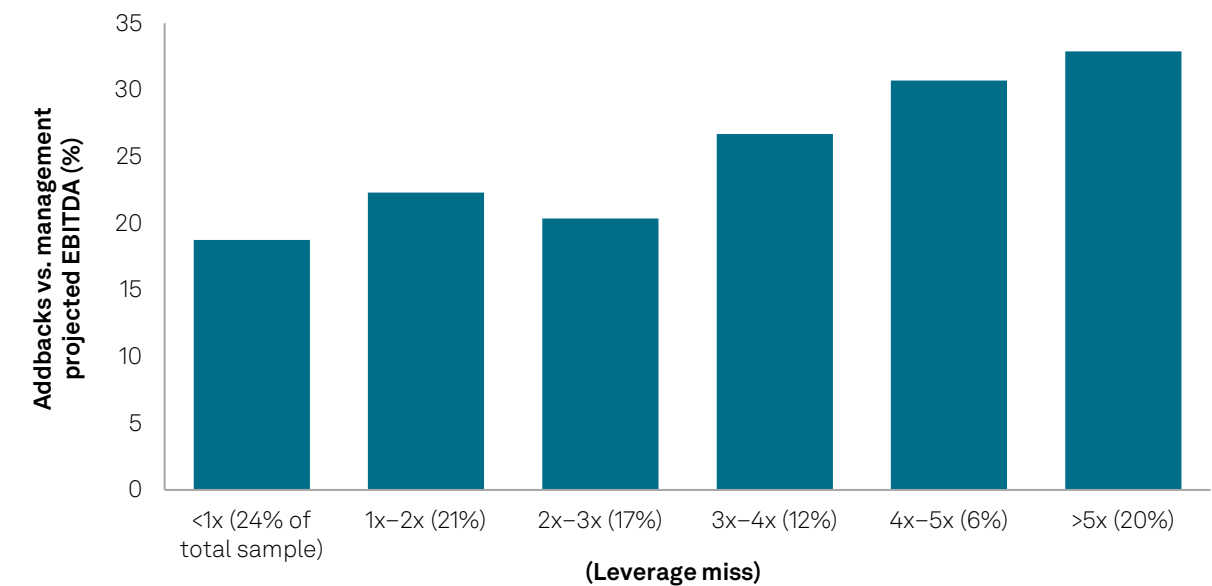
S&P Global Ratings' sixth annual analysis of EBITDA addbacks continues to show that:

- Addbacks represent a significant percentage of management-adjusted EBITDA at deal inception (30% on a median basis over the life of the study); and
- Management projections are aggressive, further substantiating that generally U.S. speculative-grade corporate issuers present earnings, debt, and leverage projections in their marketing materials at deal inception that they cannot realize, indicated by our study showing median leverage misses of 2.3 turns in year one following deal inception and 2.7 turns in year two.

As one would expect, these two factors are not mutually exclusive. Our data shows that, in general, aggressive addbacks correlate to increasingly unreliable projections. Our latest study reinforces our view that EBITDA adjustments do not generally provide a realistic view of future earnings.

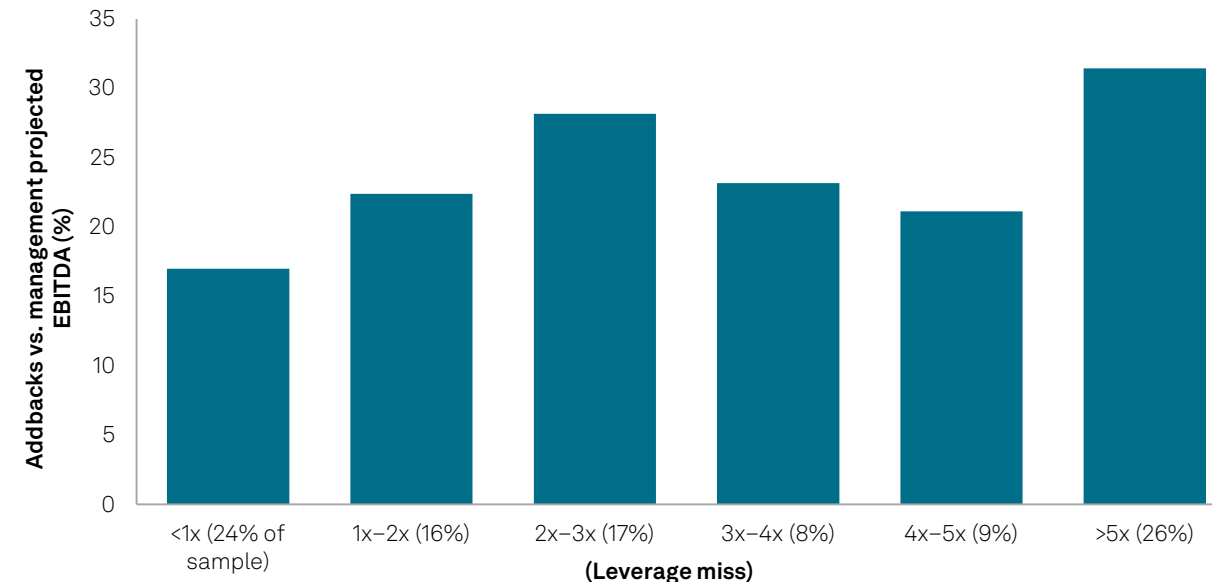
We illustrate the relationship between the magnitude of addbacks--adjusted expenses to income and cash flow, such nonrecurring, unusual or discretionary costs--and projection performance as measured in terms of projected leverage misses in the two years following deal inception (Charts 1 and 2) for six years of performance data for transactions originated from 2015-2020. Focusing on the two extremes in both years of performance data (leverage misses of less than one turn and greater than five turns), which compose a significant portion of the sample, addbacks as a percentage of management-adjusted EBITDA (which we refer to as "marketing EBITDA") were approximately double for the worst performing transactions.

Chart 1 | Projected leverage misses following deal inception, year one



Source: S&P Global Ratings.
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Chart 2 | Projected leverage misses following deal inception, year two



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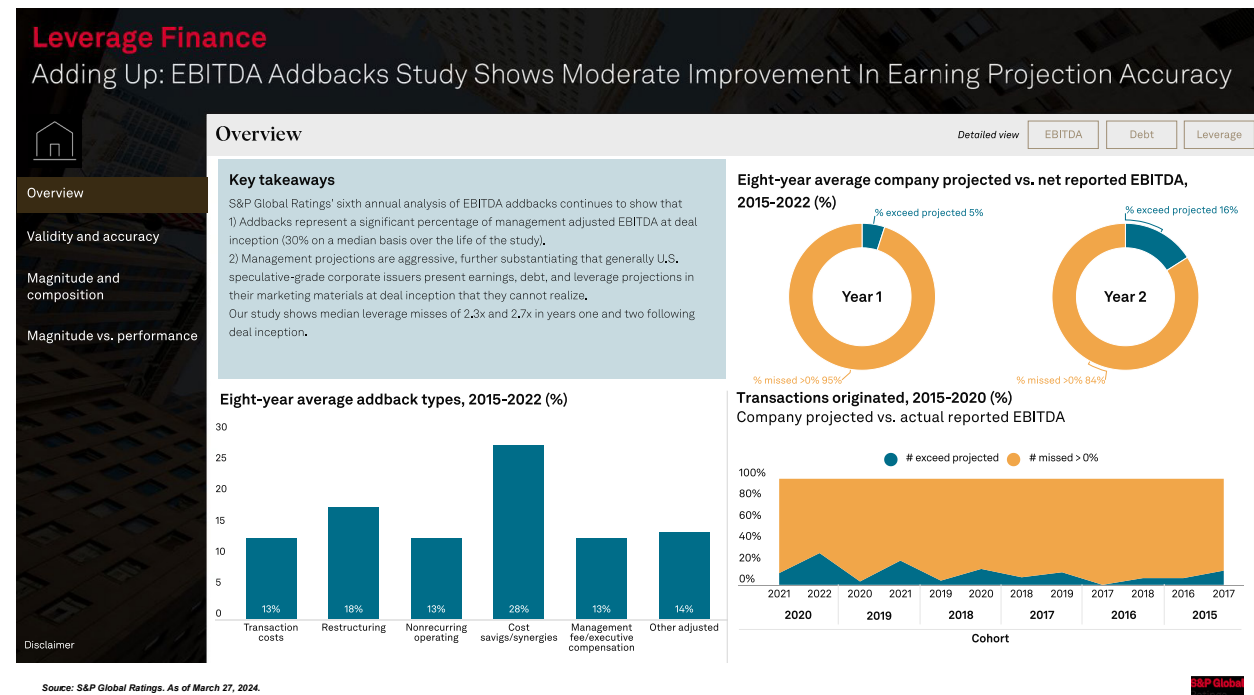
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We are also introducing an interactive dashboard that enables readers to explore the data more immersively. It offers a deep analysis of the data from our six-year study [here](#).



Our analysis consists of two main components:

- In the projection performance section of this report, we compare issuers’ projected EBITDA at deal inception with actual reported EBITDA for the two fiscal years following the year of origination, accounting for the lag in measuring performance data in our study. Specifically, it provides time for one-time items to fall away and for management to realize most projected synergies. Given the difficulty and limited visibility in earnings breakouts, we are not in a position to parse out the specific components of addbacks to determine individual line-item realizations. As in our earlier addback studies, other factors besides overstatements may contribute to the difference between management-projected and reported EBITDA, such as unmaterialized growth or unforeseen operational issues.
- Part two of the study focuses on the magnitude and distribution of addbacks. We track and quantify the evolution of addbacks over time. Of the six categories of addbacks we track, synergies are the largest component by a wide margin. Often esoteric, synergies are also the most difficult to predict and model.

S&P Global Ratings’ projections are independent

We derive ratings and financial risk analysis metrics from our own projections and judgments. While our findings clearly warn of the potential perils of buying into management forecasts, we base our ratings on S&P Global Ratings’ independent projections of a company’s expected earnings, a tempered view of its capacity and appetite for debt repayment, our analysis and assessment of business and financial factors such as management and board governance, and our view of potential synergies or operating efficiencies.

Specifically, marketing leverage and deal-specific language around addbacks--as defined in debt agreements--do not determine our view of credit risk (other than in assessing covenant headroom when reviewing debt instruments containing financial maintenance covenants). See an overview of our approach to EBITDA in our analysis in the About Our Analysis section below.

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Part 1: The Validity And Accuracy Of EBITDA Addbacks

Addbacks can muddy the picture for future profitability and risk, and whether companies typically hit their forecasts

Deal arrangers, sponsors, and management teams remain aspirational in including various adjustments that they classify as EBITDA addbacks. This has increased the number, types, and ultimately magnitude of adjustments common in marketing materials and debt agreements. For example, while we have yet to see a literal addback for the “kitchen sink”, the COVID-19 pandemic and related mitigation measures created a whole new category of adjustments related to cost and revenue impacts. In general, S&P Global Ratings views the ever-expanding definition of management-adjusted EBITDA as an inflation of profitability and an artificial deflation of leverage. This understates valuation multiples and improves the optics and marketability of a transaction. The absence of a standardized definition of EBITDA is critically important and can make it challenging for investors to directly compare transactions.

In practice, it is and has always been a negotiated definition, varying from agreement to agreement. The lack of lender negotiating leverage in the syndicated loan market has helped addbacks proliferate. While we understand anecdotally that lender pushback on certain adjustments and terms can sometimes be effective at the margin, this largely ebbs and flows with supply and demand. Terms are now generally more permissive.

While investors should make their own call about how best to gauge EBITDA and deal leverage, it is still critical that they understand the magnitude and persistence of the shortfall in projected versus actual EBITDA, which our study underscores. Further, investors should be sensitive to an expansive definition of EBITDA providing for myriad addbacks in debt agreements. This may well present significant incremental event risk because it often provides additional headroom under negative covenants and restricted payments (including dividends, debt, investments, and lien allowances). The expansive definition of EBITDA has contributed to the rise in aggressive out-of-court restructurings in recent years.

Summary of findings

Management teams almost universally claim there is ample upside to their projections at deal inception and that the base case they market is conservative. However, our six-year performance study suggests this is far from reality. According to our data, 95% of the companies failed to meet their first-year projections and over 50% missed earnings projections by more than 33% in the two years following inception.

Table 1 | Transactions originated during 2015–2020

Company projected vs. net reported

	EBITDA*		Debt		Leverage^			
	Year 1	Year 2	Year 1	Year 2	Year 1	Year 2		
% exceed projection	5%	16%	% exceed projection	40%	27%	% exceed projection	13%	14%
% missed >0%	95%	84%	% missed > 0%	60%	73%	% missed >0x	87%	86%
% missed >=10%	85%	75%	% missed >=10%	33%	59%	% missed >=1x	76%	76%
% missed >=25%	64%	60%	% missed >=25%	15%	34%	% missed >=2x	55%	60%
% missed >=33.3%	51%	55%	% missed >=33.3%	11%	31%	% missed >=3x	38%	43%
% missed >=50%	22%	30%	% missed >=50%	10%	25%	% missed >=5x	20%	26%
Average miss	33%	32%	Average miss	6%	25%	Average miss	3.6x	3.8x
Median miss	34%	35%	Median miss	2%	13%	Median miss	2.3x	2.7x

* Company projections are adjusted EBITDA.

^ Leverage calculation based on average of debt to EBITDA of each company in the sample.

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Over-promised debt repayment also contributed to the overall leverage misses, but to a lesser degree. The median miss in projected debt in the six-year study is 2% in year one and 13% in year two following deal inception. For the more than 200 transactions, management missed leverage projections on a median basis by 2.3x in year one and 2.7x in year two. We delve into greater detail in this report.

Our Review Methodology

To assess the realization of addbacks and measure management projection performance, we compared projected marketing EBITDA presented at deal inception with actual reported EBITDA for the two fiscal years following deal inception. We compared at the aggregate level, given the difficulty in evaluating the various individual components of addbacks. For example, companies rarely disclose the actual achievement of a particular type of cost savings in their financials. Further, with mostly covenant-light loan structures, investors do not benefit from company compliance certificates that can provide line-item details on addback realization.

We include two years of actual performance data, allowing time to measure whether the companies in the sample have effectively realized projected synergies, and permit certain cost addbacks (such as transaction fees and expenses and restructuring costs) to roll off. It's relatively standard in company projection models to include 12-24 months for realizing anticipated synergies.

Further, as in our earlier reviews, we eliminate companies that underwent a transformative merger, acquisition, or leveraged buyout within two years of deal inception. This enables us to remove distortion following subsequent transformative events (new debt issuance, earnings affected by subsequent acquisitions, etc.), which render initial projections irrelevant. It also allows us to cleanly compare reported EBITDA, debt, and leverage with what was projected by the companies included in our sample at deal inception.

Lastly, we cannot disclose company names because management projections presented to S&P Global Ratings at deal inception are confidential.

Table 2 | Transactions originated during 2020

Company projected vs. net reported

	EBITDA*		Debt		Leverage^			
	2021	2022	2021	2022	2021	2022		
% exceed projection	11%	30%	% exceed proj.	19%	4%	% exceed proj.	4%	15%
% missed >0%	89%	70%	% missed > 0%	81%	96%	% missed >0x	96%	85%
% missed >=10%	78%	59%	% missed >=10%	56%	93%	% missed >=1x	74%	78%
% missed >=25%	52%	56%	% missed >=25%	19%	67%	% missed >=2x	63%	63%
% missed >=33.3%	37%	41%	% missed >=33.3%	15%	52%	% missed >=3x	44%	48%
% missed >=50%	19%	22%	% missed >=50%	4%	48%	% missed >=5x	22%	33%
Average miss	26%	19%	Average miss	12%	36%	Average miss	3.7x	5.1x
Median miss	28%	28%	Median miss	12%	34%	Median miss	2.1x	3.0x

* Company projections are adjusted EBITDA.

^ Leverage calculation based on average of debt to EBITDA of each company in the sample.

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EBITDA misses are the primary driver behind large leverage misses

If management projections proved realistic, we would see a convergence between management-projected and actual reported results as companies realize anticipated earnings, one-time items fall away, and synergies are achieved. In actuality, our study continues to show a rather dramatic divergence. In addition to management-inflated EBITDA, we could attribute the deviation in part to several additional factors, including unmaterialized growth projections, operating challenges, unrealized synergies, or unattained cost savings.

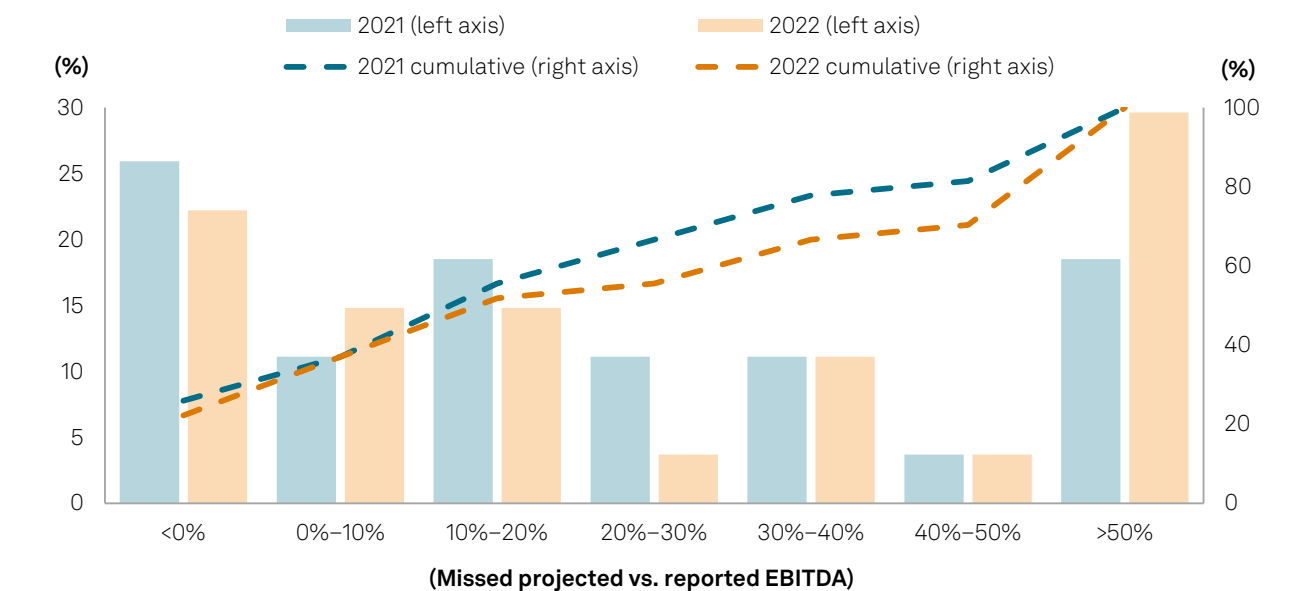
Table 3 | Company projected vs. actual reported EBITDA

	2015-2020 cohort		2020 cohort		2019 cohort		2018 cohort		2017 cohort		2016 cohort		2015 cohort	
	Year 1	Year 2	2021	2022	2020	2021	2019	2020	2018	2019	2017	2018	2016	2017
Average miss	33%	32%	26%	19%	39%	30%	36%	39%	27%	30%	35%	35%	29%	34%
Median miss	34%	35%	28%	28%	41%	35%	38%	39%	32%	30%	30%	35%	33%	39%
Highest miss	97%	220%	70%	79%	83%	90%	97%	81%	83%	79%	70%	77%	83%	74%
Total count	209	209	27	27	30	30	48	48	41	41	31	31	32	32
# exceed proj.	11	33	3	8	1	7	2	7	3	5	0	2	2	4
% exceed proj.	5%	16%	11%	30%	3%	23%	4%	15%	7%	12%	0%	6%	6%	13%
# missed > 0%	198	176	24	19	29	23	46	41	38	36	31	29	30	28
% missed > 0%	95%	84%	89%	70%	97%	77%	96%	85%	93%	88%	100%	94%	94%	87%
# missed >=10%	178	156	21	16	28	21	42	37	34	32	28	26	25	24
% missed >=10%	85%	75%	78%	59%	93%	70%	88%	77%	83%	78%	90%	84%	78%	75%
# missed >=25%	134	126	14	15	24	18	35	32	23	22	20	17	18	22
% missed >=25%	64%	60%	52%	56%	80%	60%	73%	67%	56%	54%	65%	55%	56%	69%
# missed >=33.3%	106	114	10	11	19	18	26	29	20	20	15	16	16	20
% missed >=33.3%	51%	55%	37%	41%	63%	60%	54%	60%	49%	49%	48%	52%	50%	63%
# missed >=50%	47	63	5	6	8	10	14	17	6	10	10	10	4	10
% missed >=50%	22%	30%	19%	22%	27%	33%	29%	35%	15%	24%	32%	32%	13%	31%

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Chart 3 | EBITDA divergence, 2020 cohort

Company projected vs. actual reported



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Our six-year study shows that just 5% of companies met or exceeded projections in the first year following deal inception and 16% in year two. The median miss in year one was 34%, rising to 35% in year two (Table 3).

The 2020 cohort improved performance, with 11% of companies meeting or exceeding projections in 2021 and 30% in 2022. The median miss improved by 6% to 28% in 2021 versus the six-year median of 34% and improved by 7% in 2022 to 28% versus the six-year median miss of 35% in year two. The average miss improved 7% in year one and 13% in year two.

Still, while results for 2020 are encouraging, one year does not necessarily represent a fundamental shift toward more reasonable management forecasts.

Debt reduction is lower than projected

Failure to meet projected debt also contributed to the significant miss of management-projected leverage, but to a much lesser extent than EBITDA misses. Virtually all issuers present a deleveraging story to the market at deal inception, stating intentions to sweep surplus cash to aggressively reduce debt. Relative to the six-year sample, the latest 2020 study cohort decreased projection accuracy with respect to anticipated debt. The median miss for the 2020 cohort was 12% in 2021 versus the six-year median miss of 2% in year one. That rose to 34% in 2022 versus the six-year median miss in year two of 13%. This actually almost fully offset the improvement in earnings projections, resulting in leverage misses that were almost on top of our six-year average.

In short, companies appear to have infrequently executed stated intentions to apply surplus cash to pay down debt. Indeed, they rarely, if ever, meet those indications. Across the six vintages, 60% of companies kept debt in check (by keeping below or within 10% of their targets) in the first year following origination. That share quickly deteriorated to less than 27% by the end of the second year across all cohorts. We net reported cash balances against reported debt to compute debt and leverage divergence for comparability.

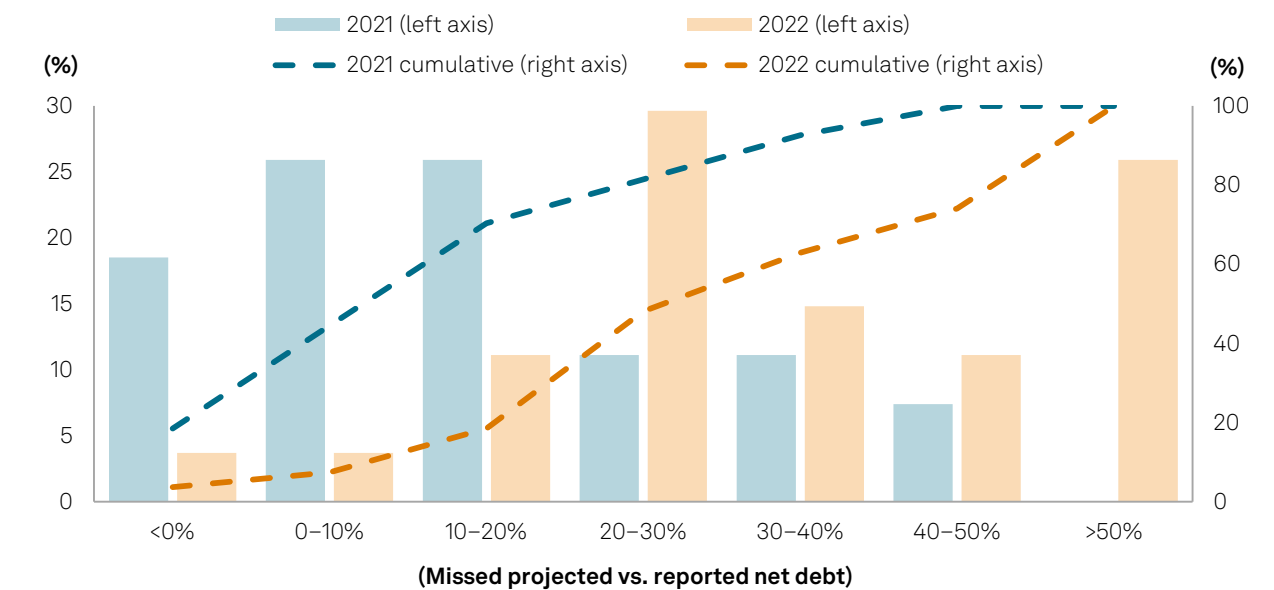
The six-year median (across the 209 transactions from all six cohorts) debt repayment miss was 2% in year one and 13% in year two. The 2020 cohort performed significantly worse than the six-year median, missing by 12% in year one and 34% in year two due to several outliers.

Table 4 | Company projected vs. actual reported net debt

	2015–2020 cohort		2020 cohort		2019 cohort		2018 cohort		2017 cohort		2016 cohort		2015 cohort	
	Year 1	Year 2	2021	2022	2020	2021	2019	2020	2018	2019	2017	2018	2016	2017
Average miss	6%	25%	12%	36%	1%	11%	4%	22%	3%	12%	6%	40%	7%	19%
Median miss	2%	13%	12%	34%	1%	11%	2%	11%	11%	25%	3%	11%	1%	12%
Highest miss	206%	614%	44%	99%	60%	108%	93%	614%	181%	195%	149%	339%	101%	119%
Total count	209	209	27	27	30	30	48	48	41	41	31	31	32	32
# exceed proj.	83	56	5	1	17	11	22	18	15	10	10	8	14	8
% exceed proj.	40%	27%	19%	4%	57%	37%	46%	38%	37%	24%	32%	26%	44%	25%
# missed > 0%	126	153	22	26	13	19	26	30	26	31	21	23	18	24
% missed > 0%	60%	73%	81%	96%	43%	63%	54%	63%	63%	76%	68%	74%	56%	75%
# missed >=10%	68	124	15	25	7	15	15	25	13	24	10	16	8	19
% missed >=10%	33%	59%	56%	93%	23%	50%	31%	52%	32%	59%	32%	52%	25%	59%
# missed >=25%	32	72	5	18	3	8	8	12	7	12	4	12	5	10
% missed >=25%	15%	34%	19%	67%	10%	27%	17%	25%	17%	29%	13%	39%	16%	31%
# missed >=33.3%	22	65	4	14	2	8	6	11	5	10	1	12	4	10
% missed >=33.3%	11%	31%	15%	52%	7%	27%	13%	23%	12%	24%	3%	39%	13%	31%
# missed >=50%	14	34	0	7	1	2	5	7	5	8	1	5	2	5
% missed >=50%	7%	16%	0%	26%	3%	7%	10%	15%	12%	20%	3%	16%	6%	16%

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Chart 4 | Net debt divergence, 2020 cohort
Projected vs. net reported



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The resulting leverage profile is much higher than projected

The combination of significant misses in earnings and debt projections, particularly earnings, creates a material discrepancy between projected and reported leverage across the six-year sample. Aspirational management-projected EBITDA creates a significant leverage cushion inconsistent with credit realities. By averaging the median gap across the six vintages, companies under-projected leverage by an average of 2.3 turns in the first year, increasing to 2.7 turns by the end of year two (Table 5).

Table 5 | Company projected vs. actual reported net leverage

	2015–2020 cohort		2020 cohort		2019 cohort		2018 cohort		2017 cohort		2016 cohort		2015 cohort	
	Year 1	Year 2	2021	2022	2020	2021	2019	2020	2018	2019	2017	2018	2016	2017
Average miss	3.6x	3.8x	3.7x	5.1x	4.1x	4.5x	4.6x	3.5x	2.6x	2.7x	3.1x	3.3x	2.9x	3.6x
Median miss	2.3x	2.7x	2.1x	3.0x	1.8x	2.7x	2.5x	2.3x	2.8x	3.3x	1.9x	2.5x	2.1x	3.5x
Highest miss	30.3x	37.6x	15.5x	20.3x	22.4x	37.6x	30.3x	21.5x	17.0x	10.9x	15.2x	19.4x	20.9x	10.0x
Total count	209	209	27	27	30	30	48	48	41	41	31	31	32	32
# exceed proj.	28	30	1	4	3	8	9	9	4	2	6	3	5	4
% exceed proj.	13%	14%	4%	15%	10%	27%	19%	19%	10%	5%	19%	10%	16%	13%
# missed >1x	159	159	20	21	25	20	36	37	33	35	22	22	23	24
% missed >1x	76%	76%	74%	78%	83%	67%	75%	77%	80%	85%	71%	71%	72%	75%
# missed >=2x	114	125	17	17	14	16	29	26	25	26	13	20	16	20
% missed >=2x	55%	60%	63%	63%	47%	53%	60%	54%	61%	63%	42%	65%	50%	63%
# missed >=3x	79	90	12	13	9	13	21	18	16	16	9	13	12	17
% missed >=3x	38%	43%	44%	48%	30%	43%	44%	38%	39%	39%	29%	42%	38%	53%
# missed >=5x	41	54	6	9	7	7	13	11	4	10	5	7	6	10
% missed >=5x	20%	26%	22%	33%	23%	23%	27%	23%	10%	24%	16%	23%	19%	31%
Projected leverage (average)	4.2x	3.4x	4.6x	3.7x	4.3x	3.5x	4.3x	3.5x	4.2x	3.5x	3.8x	3.0x	4.2x	3.3x
Actual leverage (average)	7.8x	7.2x	8.3x	8.8x	8.4x	8.0x	8.8x	7.0x	7.1x	6.7x	6.8x	6.3x	7.1x	7.0x
Projected leverage (median)	4.4x	3.6x	4.8x	3.9x	4.3x	3.5x	4.6x	3.8x	4.3x	3.6x	3.9x	3.1x	4.2x	3.4x
Actual leverage (median)	6.7x	6.4x	7.1x	6.7x	6.7x	6.1x	7.6x	6.4x	7.0x	6.4x	5.7x	5.9x	6.1x	6.5x

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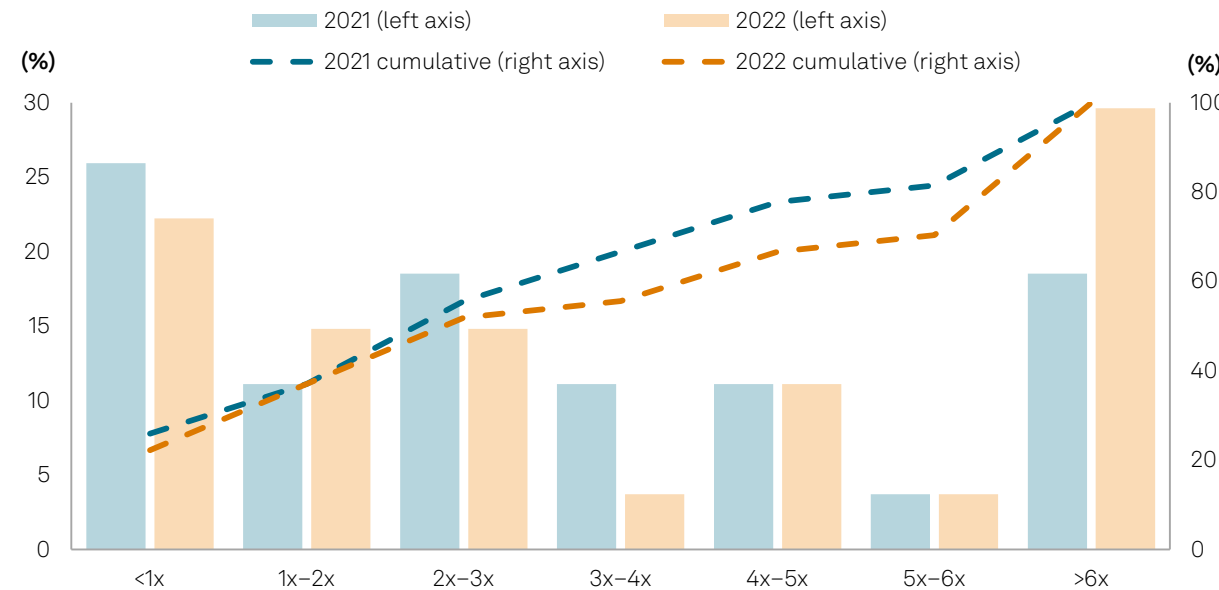
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For the 2020 cohort, the median leverage miss outperformed the six-year median in year one at 2.1 turns versus 2.3 turns. Conversely, in year two, the median miss was three turns, compared to the six-year median of 2.7. We primarily attribute this to the uncharacteristically large debt miss in 2022 for the 2020 cohort.

Chart 5 | Leverage divergence, 2020 cohort

Net reported leverage less projected leverage



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Part 2: The Magnitude And Composition Of EBITDA Addbacks

Data set

The sample size for our EBITDA addback magnitude and composition analysis encompasses over 600 broadly syndicated mergers and acquisitions (M&A) and leveraged buyout (LBO) transactions that we rated, originating from 2015-2022. This includes only those transactions for which management provided us with a detailed bridge from reported EBITDA to marketing EBITDA (as is typically the case for large LBOs and M&A). This data set is substantially larger than the set for Part 1 because it includes:

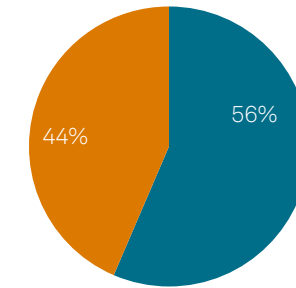
- Transactions for 2021 and 2022 for which we don’t yet have the two years of operating results to gauge projection performance.
- Transactions from prior years that we did not use for Part 1 due to a subsequent transformative transaction.

Of the total sample, 56% were M&A and 44% LBOs. We rated 87% in the ‘B’ category at inception, with the remaining 13% in the ‘BB’ category. With the expansion of the data set to include transactions from 2022, the proportionate share of ‘B’ category ratings continues to increase, reflecting the erosion of credit quality in the broader leveraged finance market. Finally, more than three-quarters of the transactions in the sample were sponsored and the remainder non-sponsored.

We compared the magnitude of addbacks to both last-12-months reported EBITDA excluding addbacks and management-adjusted EBITDA including addbacks at deal inception. On average, in the eight years of EBITDA magnitude data in our study, addbacks made up over 29% of marketing EBITDA

Chart 6A | Breakdown of data by transaction type

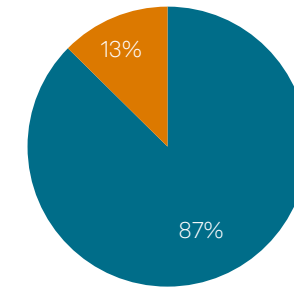
■ Mergers and acquisitions
■ Leveraged buyouts



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Chart 6B | Breakdown of data by initial issuer credit rating

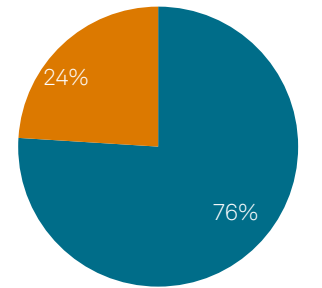
■ ‘B’ category
■ ‘BB’ category



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Chart 6C | Breakdown of data by sponsorship status

■ Sponsored
■ Not sponsored



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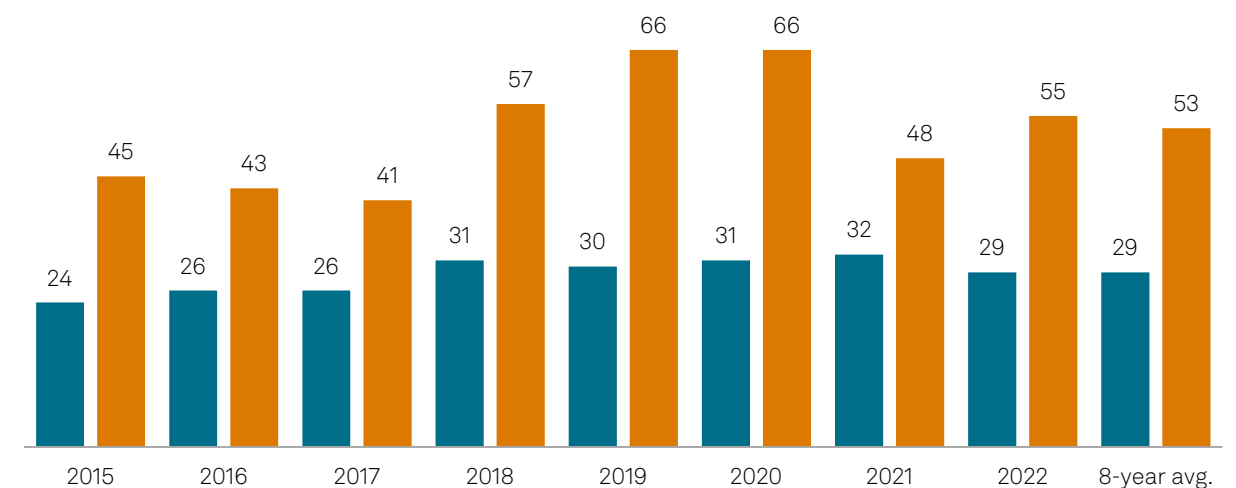
and about 53% of last-12-months reported EBITDA (Chart 7). The most recent 2022 cohort was right on top of the eight-year average of 29%. This forward-looking measure has marginally expanded each year, exceeding 30% in 2018 and beyond from 24% in 2015.

Our data across the eight-year sample shows the ratings distribution has shifted toward ‘B’ rated issuers. We found that regardless of transaction type, ‘B’ category credits lead ‘BB’ rated issuers in average adjustment. The line of demarcation is the 2018 cohort of transactions. In the 2015-2017 cohorts, ‘BB’ category (‘BB-’, ‘BB’, and ‘BB+’) transactions accounted for an average of 20% of the data set. From 2018-2022, ‘BB’ category credits averaged about 10% of the sample. The 2022 cohort contained only one ‘BB’ category issuance.

Correspondingly, average addbacks as a percentage of management adjusted EBITDA rose to over 30% from about 25% in 2015-2017.

Chart 7 | EBITDA addback trends, 2015–2022 (%)

■ Average of total addbacks/company pro forma adjusted EBITDA at inception
■ Average of total addbacks/reported last 12 months EBITDA at inception



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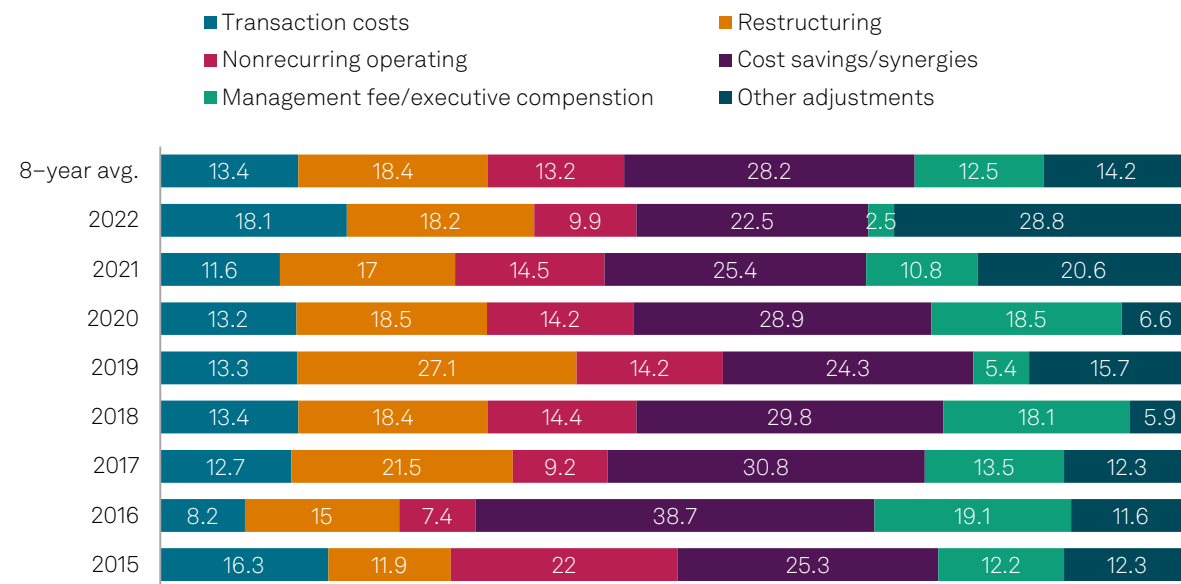
Synergies and cost savings make up about a third of total addbacks

Expected synergies and cost savings are the largest components of addbacks. We sort the general addback adjustments into six broad categories (Chart 8). In every cohort but the latest, synergies and cost savings lead over other adjustment types. It peaked in 2016 at nearly 39%, with an eight-year average of 28%. Synergies are often the most difficult of the common addbacks to forecast accurately. As mentioned, we rarely factor all of management-anticipated synergies into our projections. Our assessment includes detailed discussions with management teams and their advisers regarding expected synergies and timelines for realization. Our adjustments often depend on the source of synergies and, when relevant, whether a company or sponsor has a track record of realizing similar synergies or cost savings.

While some are easier to execute--such as eliminating overlapping corporate overhead to achieve labor savings--others fall outside management’s control. Pro forma saving on procurement offers one example, as it requires contract negotiations with various third-party vendors. Lastly, some synergies are costly to implement, requiring an upfront expense such as severance pay for which we also must account.

Restructuring costs are another area of disparity in treatment. We generally treat these ongoing charges as operating costs because most companies need to restructure their operations to adapt to changing environments and remain competitive. Similarly, as stated in our approach to EBITDA, management fees constitute a cash operating cost, and we treat them as such in our analysis. Therefore, we do not add back restructuring costs or management fees to our calculation of adjusted EBITDA. In addition, this body of data demonstrates how far off companies’ original assumptions tend to be about the realization of addbacks. We include all negotiated addbacks in our study.

Chart 8 | Breakdown by addback type, 2015–2022 (%)



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Technology, health care, and media, entertainment and leisure stand out with high addbacks as a percentage of marketing EBITDA

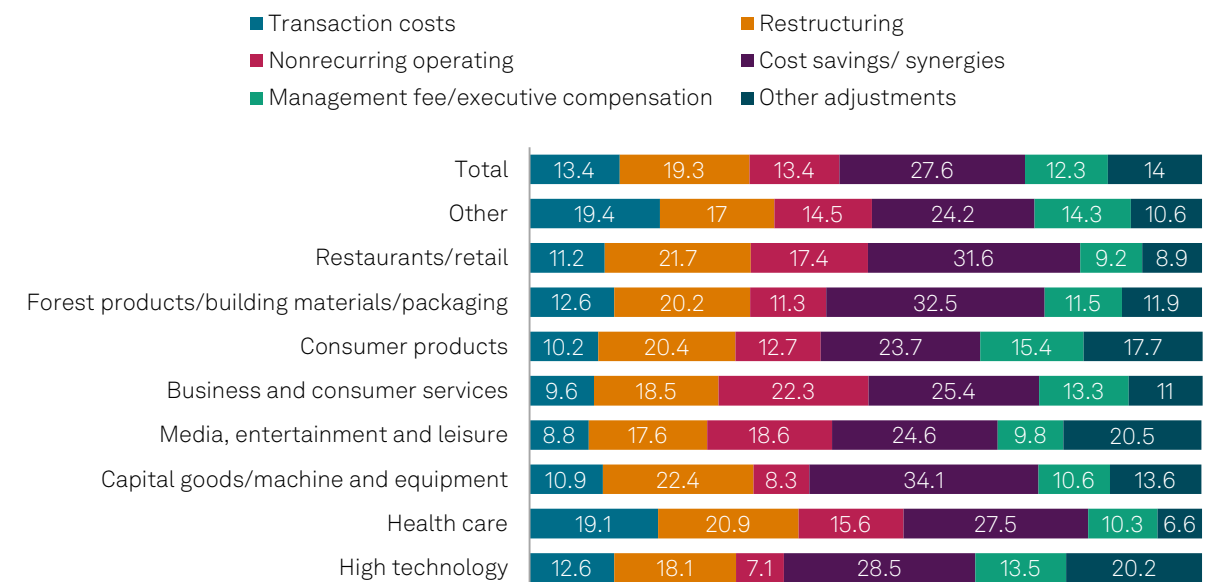
These sectors consistently have high addback-inflated EBITDA, with an eight-year average of about 35% of total addbacks divided by company-adjusted pro forma EBITDA at inception. Addbacks for these sectors buoy the entire sample given the disproportionate representation of about 44% of the deal count.

Table 6 | Average addbacks by sector

Sector	Companies	Average of total addbacks/reported last-12-months EBITDA at inception (%)	Average of total addbacks/company pro forma adjusted EBITDA at inception (%)
High technology	124	66.1	35.9
Telecommunications	6	62.6	34.6
Health care	83	62.5	34.6
Media, entertainment and leisure	62	46.7	34.3
Chemicals	15	66.8	33.8
Insurance services	10	67.3	31.8
Finance	3	48.8	29.7
Transportation	18	46.4	27.8
Capital goods/machine and equipment	71	68.6	27.0
Autos/trucks	15	39.1	26.3
Consumer products	49	67.3	25.5
Restaurants/retail	27	43.1	23.4
Business and consumer services	62	34.8	22.2
Aerospace/defense	15	40.8	21.9
Oil	3	25.3	20.1
Mining and minerals	6	22.4	17.7
Forest products/building materials/packaging	35	23.2	17.6
Total	604	54.6	29.4

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Chart 9 | Addback types by sector (%)



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Table 7 | Average addbacks by transaction type

	Companies	Transaction costs (%)	Restructuring (%)	Nonrecurring operating (%)	Cost savings/synergies (%)
B+/B/B- rating	528	14.4	19.5	14.5	26.6
BB+/BB/BB- rating	76	6.4	17.6	5.7	34.5
Leveraged buyout	263	11.5	19.6	16.8	25.3
Mergers and acquisitions	341	14.8	19.0	10.8	29.5
Not sponsored	145	9.4	20.4	9.0	31.4
Sponsored	459	14.6	18.9	14.8	26.4
Total	604	13.4	19.3	13.4	27.6

	Management fees/executive compensation (%)	Other adjustments (%)	Marketing EBITDA (%)	Reported (%)
B+/B/B- rating	10.9	14.0	30.4	56.2
BB+/BB/BB- rating	21.6	14.2	22.4	43.7
Leveraged buyout	11.8	15.0	27.6	49.0
Mergers and acquisitions	12.6	13.3	30.8	59.0
Not sponsored	18.0	11.7	27.2	48.7
Sponsored	10.5	14.7	30.1	56.5
Total	12.3	14.0	29.4	54.6

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Companies rated ‘B’ typically include more addbacks than those rated ‘BB’

In our data set, we rated 87% companies in the ‘B’ category. Our study shows that these companies have consistently underperformed ‘BB’ category credits in projecting earnings. The need for aggressive adjustments to make a deal marketable is likely limited for ‘BB’ rated companies since their pro forma leverage is typically lower. In addition, an intuitive view could be that lower-rated credits tend to be smaller and have higher earnings volatility, making projections more difficult. Also, financial sponsor ownership is more common among lower-rated entities than those in the ‘BB’ category. Sponsor-owned companies tend to be more aggressive when projecting earnings.

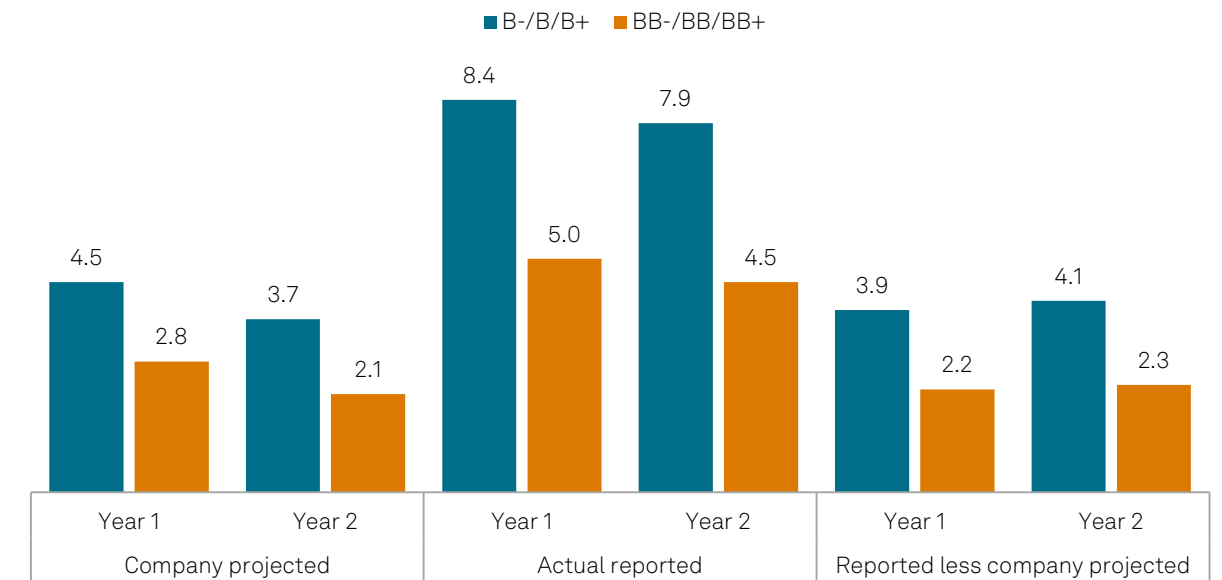
Across the six-year sample, the median leverage miss in the ‘B’ category was 2.6 turns higher than projected in year one following deal inception, with the gap widening to 2.9 turns in year two. Credits in the ‘BB’ category performed significantly better, missing by 2.2 turns in year one and 2.3 turns in year two, further reinforcing the significant credit disparity between ‘B’ and ‘BB’ credits. The comparison for the latest 2020 cohort is not meaningful because the sample contains only one ‘BB’ category issuance.

Table 8 | Average addbacks by issuer credit rating

	Marketing EBITDA (%)	Reported (%)
B+/B/B-	30	56
BB+/BB/BB-	22	44
Average	29	55

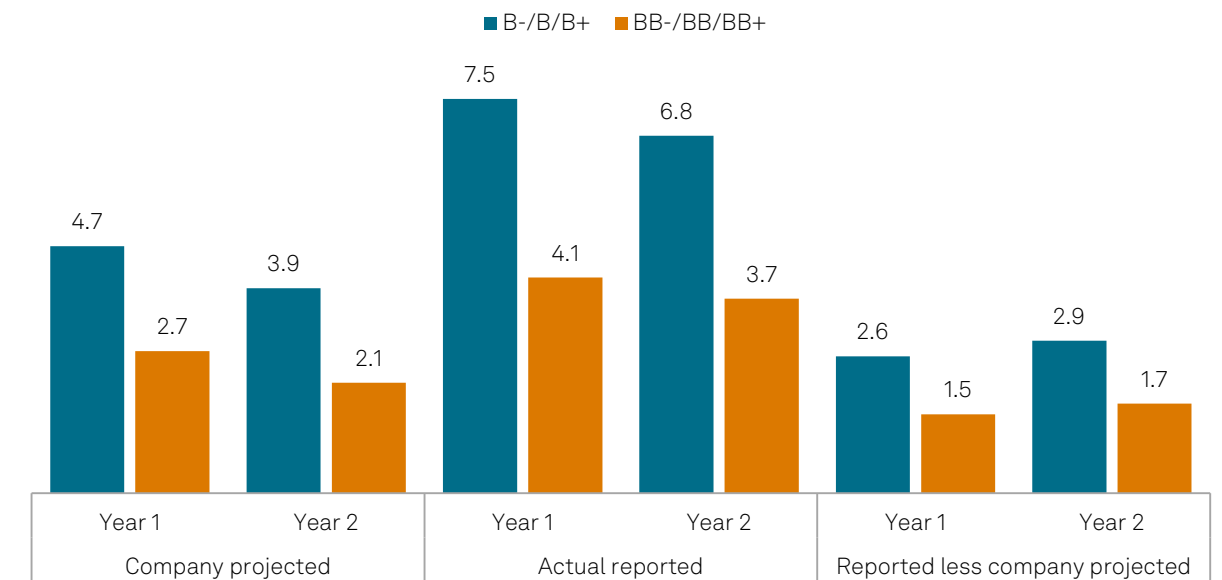
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Chart 10 | Average leverage divergence: ‘B’ vs. ‘BB’ rating, 2015–2020 (x)



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Chart 11 | Median leverage divergence: ‘B’ vs. ‘BB’ rating, 2015–2020 (x)



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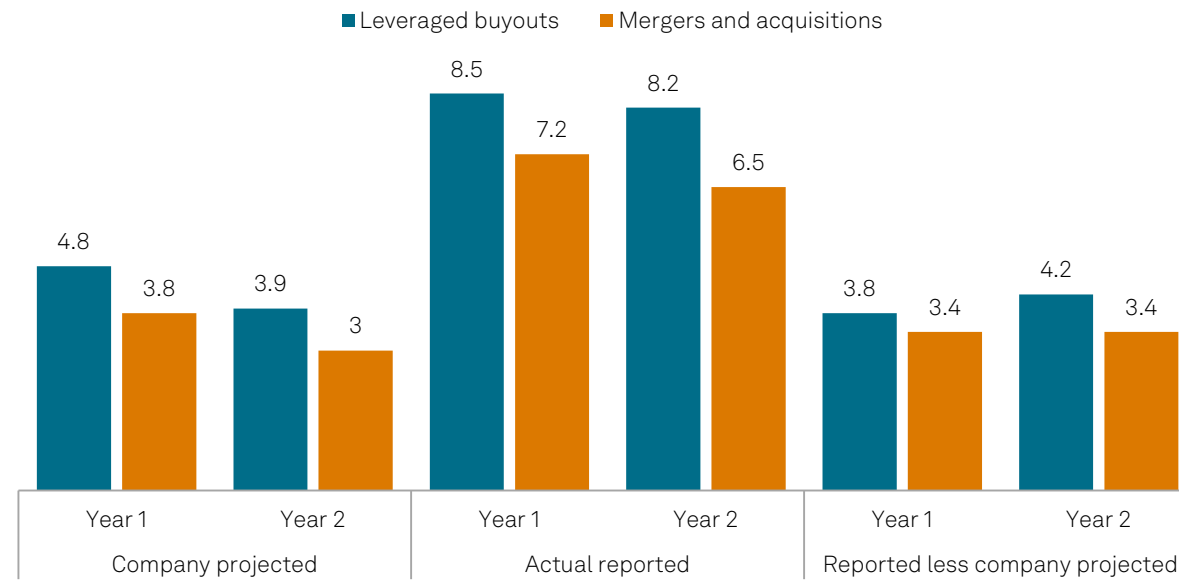
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LBO leverage projection misses are larger than for M&A transactions

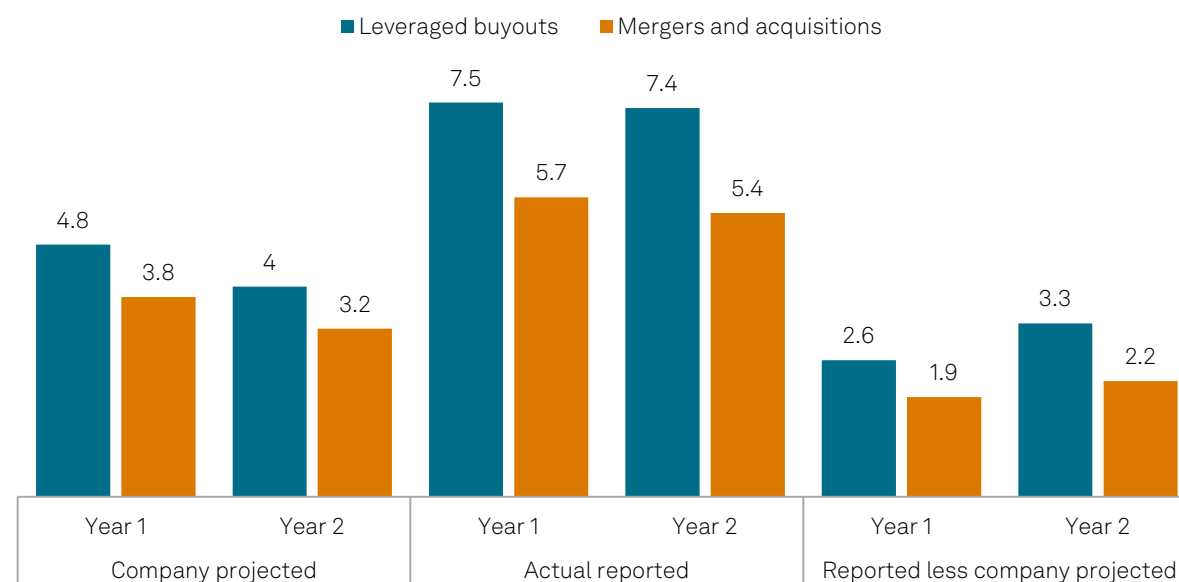
Consistent with our prior studies, they are comparable in addbacks as a percentage of marketing EBITDA--28% for LBOs and 31% for M&A. However, the distribution of addbacks differs. M&A transactions show above-average addbacks for synergies and cost savings, since these are often a selling point of the transaction.

Chart 12 | Average leverage divergence: transaction type, 2015–2020



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Chart 13 | Median leverage divergence: transaction type, 2015–2020 (x)



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Table 9 | Average addbacks by transaction type

	Marketing EBITDA (%)	Reported (%)
Leveraged buyouts	28	49
Mergers and acquisitions	31	59
Average	29	55

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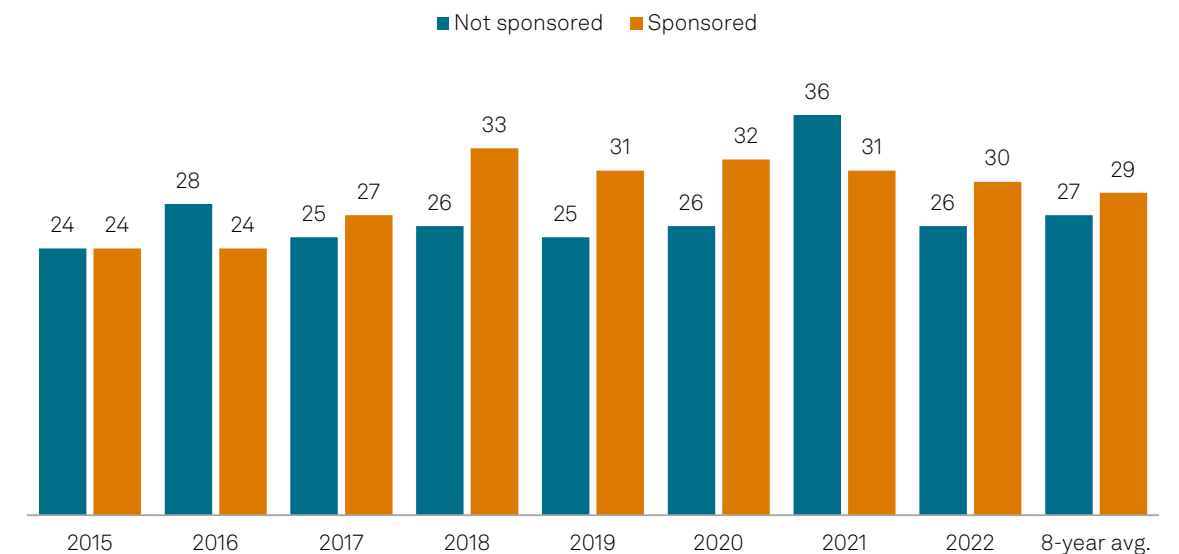
Regarding projection performance, LBOs have consistently underperformed M&A deals in projecting leverage for every cohort in our study. On a median basis, M&A transactions missed by 1.9 turns in year one and 2.2 turns in year two following deal inception; LBOs missed by 2.6 turns in year one and 3.3 turns in year two. The gap increased in the latest cohort with LBOs missing more than M&A transactions by 0.9 turns in 2021 and 1.3 turns in 2022. For comparison, within our financial risk categories, the difference between the midpoints of two categories (significant and aggressive, for example) is one turn of leverage.

Sponsored transactions generally underperform non-sponsored transactions

They tend to be more aggressive, according to our data, but not by a significant margin. Projection performance is a different story, however (Chart 14). The eight-year average for sponsored deals was 29% versus 27% for non-sponsored deals. The latter were generally about 25% each year with little fluctuation, except for deals that originated in 2021 when non-sponsored transactions averaged 36% versus 31% for sponsored. We attribute this to one extreme outlier in the non-sponsored sample. Removing that transaction results in an average of 29%, which is more consistent with other cohorts. Of the 604 transactions in our data set, 459 were sponsored, 145 were not.

We also noted a significant disparity by individual sponsors regarding their aggressiveness in the use of addbacks. We looked at the 39 sponsors that had done at least four transactions. Of those, the 10 most aggressive firms (accounting for 75 transactions) had addbacks averaging 44% of marketing EBITDA. Conversely, the 10 least aggressive sponsors (accounting for 58 transactions) averaged 16%.

Chart 14 | Average of total addbacks/company pro forma adjusted EBITDA at inception (%)



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Table 10 | Company projected vs. actual reported net leverage (sponsor-owned firms)

	2015–2020 cohort		2020 cohort		2019 cohort		2018 cohort		2017 cohort		2016 cohort		2015 cohort	
	Year 1	Year 2	2021	2022	2020	2021	2019	2020	2018	2019	2017	2018	2016	2017
Average miss	4.1x	4.3x	4.0x	5.7x	5.1x	4.6x	4.9x	3.9x	3.2x	4.2x	3.6x	3.5x	3.5x	4.3x
Median miss	2.7x	3.0x	2.9x	4.0x	2.6x	2.7x	3.0x	2.3x	2.8x	3.2x	2.0x	3.6x	2.7x	4.2x
Highest miss	30.3x	37.6x	15.5x	20.3x	22.4x	37.6x	30.3x	21.5x	17.0x	10.9x	14.8x	6.5x	21.1x	10.4x
Total count	142	142	23	23	20	20	33	33	28	28	18	18	30	30
# exceed proj.	13	16	1	3	1	5	6	7	1	0	2	0	1	2
% exceed proj.	9%	11%	4%	13%	5%	25%	18%	21%	4%	0%	11%	0%	3%	7%
# missed >0x	129	126	22	20	19	15	27	26	27	28	16	18	29	28
% missed >0x	91%	89%	96%	87%	95%	75%	82%	79%	96%	100%	89%	100%	97%	93%
# missed >1x	115	115	18	18	17	15	25	25	25	25	15	15	23	23
% missed >1x	81%	81%	78%	78%	85%	75%	76%	76%	89%	89%	83%	83%	77%	87%
# missed >=2x	89	95	16	16	11	11	22	18	20	22	8	14	17	22
% missed >=2x	63%	67%	70%	70%	55%	55%	67%	55%	71%	79%	44%	78%	57%	73%
# missed >=3x	63	71	11	13	8	9	16	13	12	15	6	9	14	17
% missed >=3x	44%	50%	48%	57%	40%	45%	48%	39%	43%	54%	33%	50%	47%	57%
# missed >=5x	34	43	6	9	6	4	10	9	3	10	4	5	6	11
% missed >=5x	0.2x	0.3x	0.3x	0.4x	0.3x	0.2x	30%	27%	11%	36%	22%	28%	20%	37%
Projected leverage (average)	4.6x	3.8x	4.8x	3.9x	4.8x	4.1x	4.6x	3.9x	4.5x	3.8x	4.4x	3.6x	4.3x	3.4x
Actual leverage (average)	8.8x	8.1x	8.8x	9.6x	9.9x	8.6x	9.5x	7.7x	7.7x	7.9x	8.0x	7.1x	7.8x	7.7x
Projected leverage (median)	4.8x	3.9x	4.8x	3.9x	5.0x	4.3x	4.8x	4.0x	4.8x	3.9x	4.6x	3.7x	4.4x	3.7x
Actual leverage (median)	7.6x	6.9x	7.8x	7.8x	7.8x	6.3x	3.1x	2.4x	7.3x	7.1x	6.7x	6.9x	7.2x	7.3x

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Table 11 | Company projected vs. actual reported net leverage (no sponsor)

	2015–2020 cohort		2020 cohort		2019 cohort		2018 cohort		2017 cohort		2016 cohort		2015 cohort	
	Year 1	Year 2	2021	2022	2020	2021	2019	2020	2018	2019	2017	2018	2016	2017
Average miss	2.4x	2.7x	1.8x	1.4x	2.3x	4.3x	4.3x	2.5x	0.0x	0.0x	2.3x	3.1x	1.0x	1.3x
Median miss	1.6x	1.7x	1.1x	1.4x	1.7x	1.8x	1.8x	1.7x	0.0x	0.0x	1.4x	1.2x	1.0x	1.3x
Highest miss	29.3x	19.4x	4.5x	3.0x	10.2x	12.8x	29.3x	11.2x	0.0x	0.0x	15.2x	19.4x	1.8x	2.4x
Total count	67	67	4	4	10	10	13	13	0	0	13	13	2	2
# exceed proj.	15	14	0	1	2	3	2	2	0	0	4	3	0	0
% exceed proj.	22%	21%	0%	25%	20%	30%	15%	15%	0%	0%	31%	23%	0%	0%
# missed >0x	52	53	4	3	8	7	11	11	0	0	9	10	2	2
% missed >0x	78%	79%	100%	75%	80%	70%	85%	85%	77%	85%	69%	77%	100%	100%
# missed >1x	44	44	2	3	8	5	10	10	0	0	7	7	1	1
% missed >1x	66%	66%	50%	75%	80%	50%	77%	77%	0%	0%	54%	54%	3%	3%
# missed >=2x	25	30	1	1	3	5	6	6	0	0	5	6	0	1
% missed >=2x	37%	45%	25%	25%	30%	50%	46%	46%	0%	0%	39%	46%	0%	3%
# missed >=3x	16	19	1	0	1	4	4	4	0	0	3	4	0	0
% missed >=3x	24%	28%	25%	0%	10%	40%	31%	31%	0%	0%	23%	31%	0%	0%
# missed >=5x	7	11	0	0	1	3	3	2	0	0	1	2	0	0
% missed >=5x	10%	16%	0%	0%	10%	30%	23%	15%	0%	0%	8%	15%	0%	0%
Projected leverage (average)	3.3x	2.6x	3.4x	2.7x	3.2x	2.5x	3.3x	2.6x	3.6x	2.9x	4.4x	3.6x	3.0x	2.6x
Actual leverage (average)	5.7x	5.3x	5.3x	4.0x	5.4x	6.8x	7.2x	5.2x	5.6x	4.2x	8.0x	7.1x	4.0x	3.8x
Projected leverage (median)	3.3x	2.5x	3.4x	2.5x	3.0x	2.3x	3.2x	2.6x	3.5x	3.0x	4.6x	3.7x	3.0x	2.6x
Actual leverage (median)	5.0x	4.6x	4.8x	4.4x	4.6x	4.4x	5.6x	5.0x	5.4x	3.7x	6.7x	6.9x	4.0x	3.8x

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Sponsored transactions significantly underperformed non-sponsored transactions in the accuracy of their projections at deal inception (Tables 10 and 11). Our six cohorts of data show that the median miss for sponsored transactions was 2.7 turns in the year following deal inception, increasing to three turns in year two. This compares to a median miss for non-sponsored deals of 1.6 turns in year one and 1.7 turns in year two. For the 2020 cohort, the disparity was much wider than the historical median differential. Although the year one miss for sponsored transactions was slightly inside the longer-term median, the year two miss was 1.6 turns worse. Conversely, non-sponsored deals in the 2020 cohort outperformed the six-cohort median by a half turn in year one and 0.3 of a turn in year two.

Conclusion: Inflated Addbacks Illustrate Overall Weak Creditor Protections

Weakened protections and loose loan documentation are front and center in almost all outreach discussions we have with investors. Expansive EBITDA definitions resulting in egregious addbacks are a significant contributing factor. Such addbacks can certainly create higher future event risk because company-adjusted EBITDA often defines the size and flexibility companies have to take actions under debt agreements. This may weaken credit quality through various free and clear baskets and incurrence tests that define a company's ability to add debt, pay dividends, transfer assets, etc., as well as the springing financial maintenance tests on revolving credit facilities. A company with negative reported EBITDA could incur significant incremental debt due to the definitional construct of EBITDA.

Our six-year study continues to underscore that addbacks and company-adjusted EBITDA are a poor predictor of profitability. Our substantial dataset makes it clear that management teams and equity sponsors regularly miss their projections by a large margin, and that the magnitude of the misses is positively correlated with addbacks and firms that we rate lower. This suggests that inflated addbacks may help companies with higher financial risk get deals done.

About Our Analysis

Our Approach To EBITDA

S&P Global Ratings defines EBITDA as revenue minus operating expenses plus depreciation and amortization (including noncurrent asset impairment and impairment reversals). This definition generally adheres to what EBITDA stands for: earnings before interest, taxes, depreciation, and amortization.

However, it excludes other income-statement activities that we view as nonoperating. We exclude adjustments for items such as management fees and restructuring costs. We include cash dividends from investments accounted for under the equity method and exclude the company's share of these investees' profits. We often give some credit to addbacks or synergies that we view as achievable, especially when a company--or a particular sponsor--has demonstrated such ability in past comparable transactions. Even then, we allocate this credit only during periods when we expect it to achieve the benefits (net of associated costs) rather than baking these factors into pro forma metrics as is the convention with marketing EBITDA.

Our projections reflect that we are almost always considerably less optimistic than management regarding some aspects of growth, such as realizable revenue and cost synergies. Our analysis goes much deeper than EBITDA and examines issuers' true cash flow characteristics.

This report does not constitute a rating action.

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U.S. Leveraged Finance Q3 2024 Update: Sponsor-Backed Companies Experiencing Highlights And Lowlights

October 30, 2024

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Key Takeaways

- Our dataset consists of roughly 910 public and private speculative-grade companies in the U.S. and Canada, with about 35% backed by one or more private equity sponsors. A quick comparison of the two groups confirms our expectation that sponsor-backed companies are smaller in size and have lower credit ratings.
- Sponsor-backed companies have outperformed non-sponsored ones in profit growth since 2023, helping to narrow the leverage gap. However, not all strong earnings momentum translated into higher free operating cash flow (FOCF), with twice as many sponsor-owned companies reporting negative FOCF than non-sponsored ones in the 12 months ended June 30, 2024.
- In the past 12 months, downgrades have outnumbered upgrades for PE-owned companies but not by a large margin. In contrast, rating trends have turned generally positive for companies not backed by sponsors for the same period.
- In the 12 months ended Aug. 31, 2024, PE-owned companies had a disproportionately large share of defaults led by distressed debt exchanges, including liability management transactions, outnumbering those by non-sponsored companies by 1.5 to 1--an observation that we believe is consistent with the credit ratings.

The third quarter kicked off a steady stream of sponsor (and non-sponsor) activity, led by dividend recapitalizations and leveraged buyouts. While new supply of loans has picked up, overall deal flow, including mergers and acquisitions (M&A), remains below the levels the market once enjoyed. The onset of interest rate reductions (even if the timing and magnitude of cuts remain uncertain) should help private equity buyers and sellers close the valuation gap, leading to some normalization in M&A deal-making conditions.

In this quarterly update, we analyze companies owned by private equity firms, which have generally experienced positive earnings trends. In the 12 months through the second quarter of 2024, 61% of sponsor-backed companies expanded their reported EBITDA compared with 50% of non-PE-owned companies. PE-owned companies have taken initiatives to improve margins and reduce capital expenditures, ahead of their counterparties and on a larger scale, contributing to their outperformance. With the rate cut for the entire market last month and the promise of more to come, we can expect to see it flow through financial results. This could potentially benefit sponsor-owned companies more due to their capital structure being heavily weighted toward floating rates.

Sponsor-owned firms continue to face uncertainty, particularly in sectors like health care providers and services, in which they have a significant presence, along with constrained free operating cash flow (FOCF)--factors that have contributed to numerous downgrades. Furthermore, over the past 12 months, sponsor-backed companies had a disproportionately large share of defaults, once again driven by health care providers, a trend we believe aligns with our credit ratings.

Click [here](#) to access many of the charts and tables in an interactive format.



PE vs. Non-PE: Comparing Credit Profile And Performance Trends

Our dataset consists of roughly 910 public and private companies in the U.S. and Canada, with about 35% backed by one or more private equity sponsors (see charts 1 and 2). A quick comparison of the two groups confirms our expectation that sponsor-backed companies are smaller in size and have lower credit ratings.

Specifically, the sponsor-backed group has a median profile characterized by a 'B-' rating and EBITDA of \$167 million, indicating higher vulnerabilities than the higher EBITDA (\$395 million) and stronger credit rating (BB-) of a typical non-sponsor-backed company.

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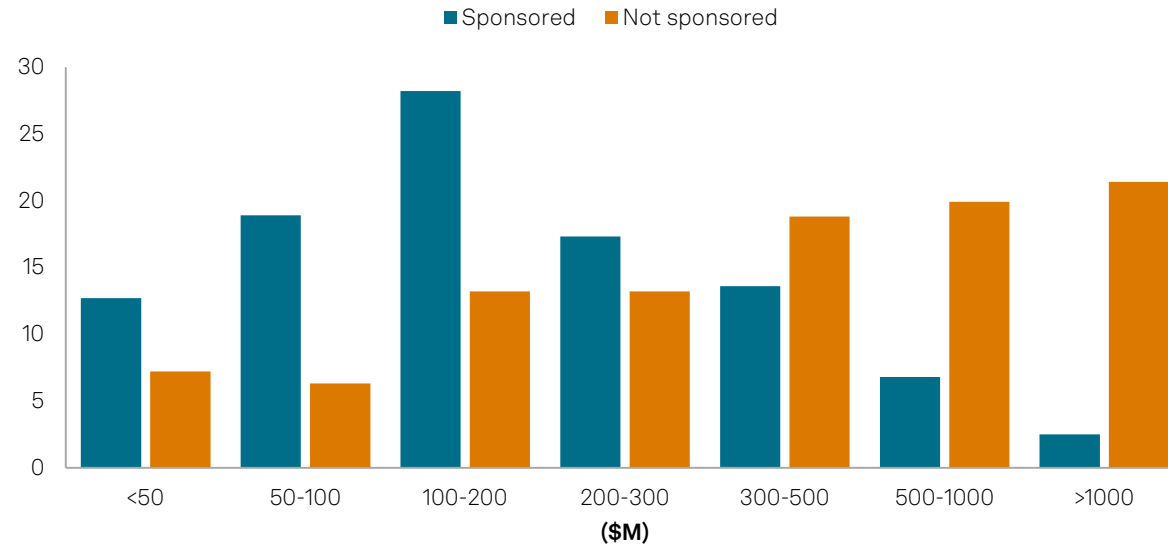
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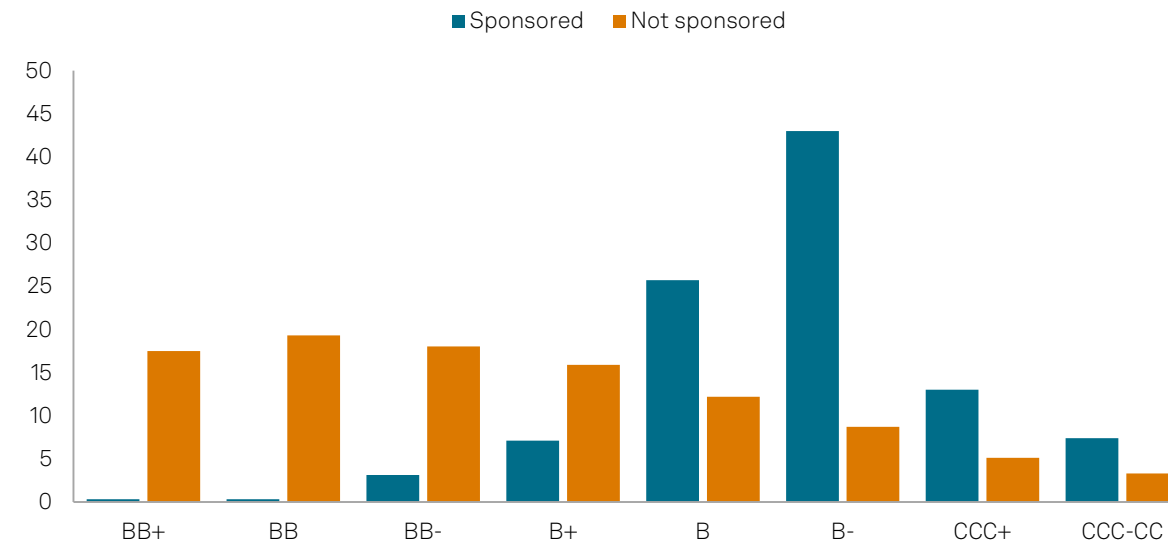
Chart 1 | Size comparison: Private equity-owned vs. non-sponsored companies (%)

Entity size (measured by EBITDA)



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Chart 2 | Entity credit rating comparison: Private equity-owned vs. non-sponsored companies (%)



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Sponsored companies dominate the segment of companies with EBITDA of \$100 million or below, representing 56% of that cohort, but have a limited presence among those exceeding \$300 million. The significant disparity in credit ratings is also evident, with non-sponsored companies showing a greater prevalence of 'BB' category ratings (BB+/BB/BB-), accounting for more than half of the group, compared with less than 5% among sponsored companies.

Sponsor-backed companies outperformed in profit expansion

The latest credit trends continue to support a soft landing narrative as companies collectively deliver sustained profit growth.

Sponsor-backed companies have outperformed non-sponsored ones in EBITDA expansion. In the 12 months leading up to the second quarter of 2024, 61% of sponsor-backed companies increased their last-12-month (LTM) EBITDA (see chart 3), marking three consecutive years of expansion. Moderating input costs and supply chain disruptions have, among other things, supported earnings growth.

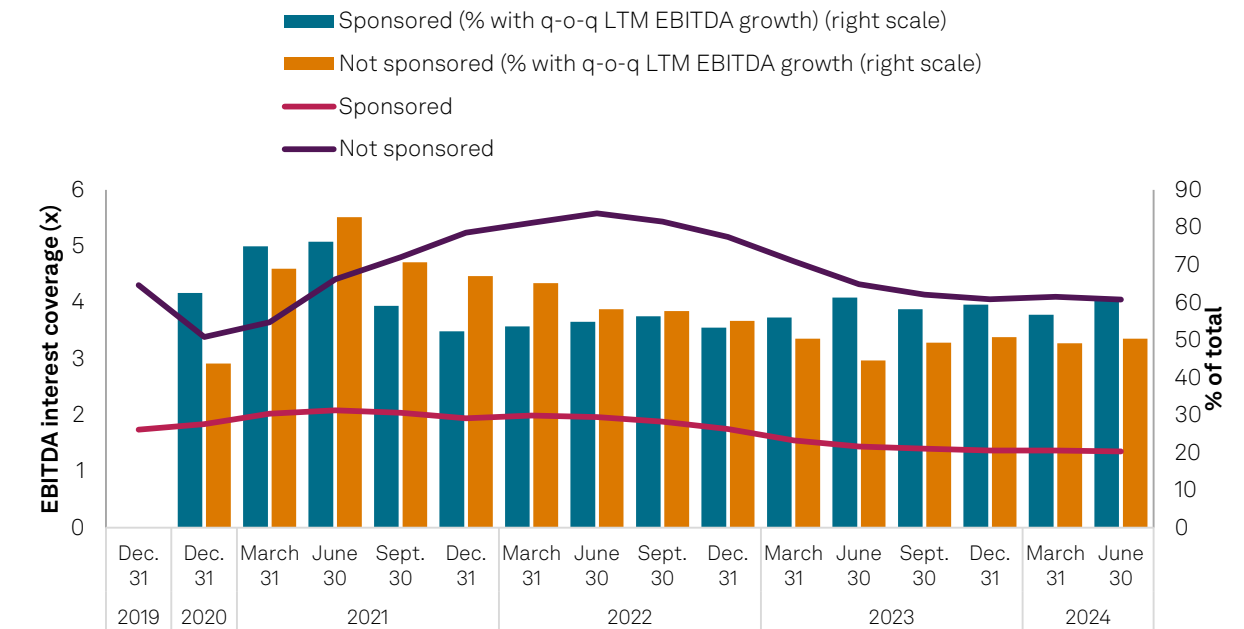
At the same time, profit growth among non-sponsored companies was lackluster in comparison, with an almost even split between expansion and contraction during the same period. This is below the long-term average of 58% since 2020, which peaked in June 2021 when 83% of non-sponsored companies reported positive quarter-over-quarter LTM growth as they bounced back from the COVID-19 pandemic disruptions.

Despite steady earnings growth, much of this benefit was offset by elevated interest expenses, given the high portion of loan issuers in the sponsor-owned companies. As a result, EBITDA interest coverage remained largely unchanged in both sponsored and non-sponsored groups, bottoming out from earlier deterioration. The ongoing rate cuts, as they gradually take effect, will help to halt the deterioration. In addition, recent stabilization was also aided by meaningful credit spread tightening from the refinancing and repricing boom in 2024, which benefited the heavily 'BB' rated- non-sponsored segment more than the lower-rated sponsor-backed companies.

A persistent risk remains that interest coverage is still a major issue for 'B-' rated PE-owned companies, with coverage at just 1.2x in the second quarter of 2024. Even as interest rates have begun to decline, slowing economic growth in 2025 remains a challenge.

Chart 3 | Median reported EBITDA interest coverage

Last-12-months periods for private equity--owned vs. non-sponsored companies



q-o-q--Quarter over quarter. LTM--Last 12 months. Source: S&P Global Ratings. Copyright © 2024 by Standard & Poor's Financial Services LLC. All rights reserved.

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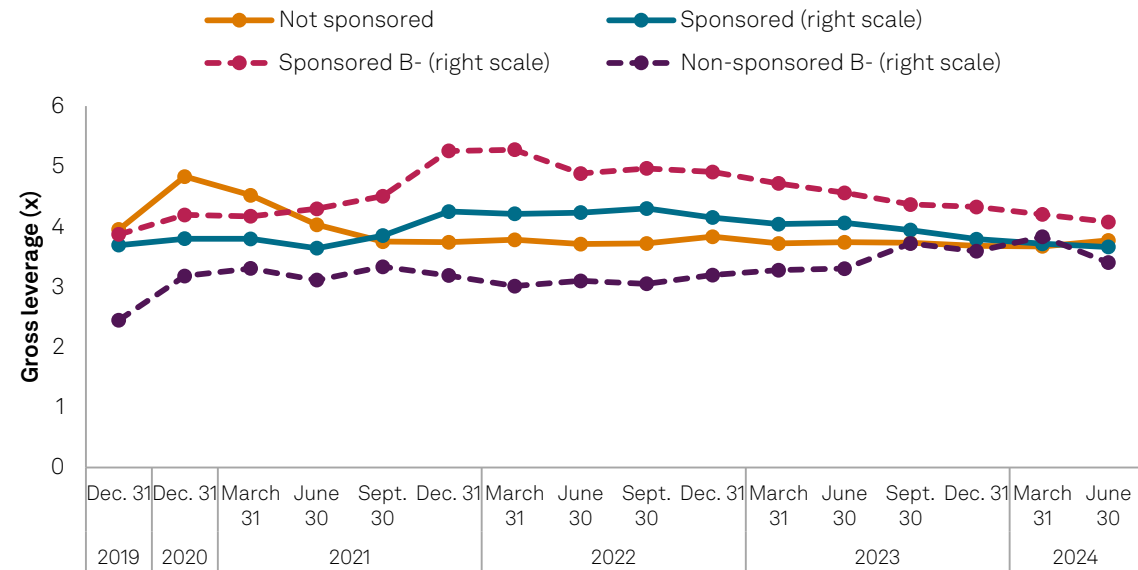
Stronger growth has helped to close the leverage gap

Despite the resurgence of opportunistic dealmaking, aggregate leverage levels have remained stable for both groups (see chart 4).

For 'B-' rated companies, the positive growth momentum and the efforts to contain costs, led by PE-owned companies, have helped close the leverage gap. Since the end of 2022, the cluster of 'B-' rated PE-owned companies has reduced leverage by nearly two turns.

Chart 4 | Median gross leverage

Last-12-month periods for private equity-owned vs. non-sponsored companies



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Twice as many sponsor-backed companies reported negative FOCF

The positive earnings momentum for sponsor-backed companies did not translate into improved FOCF. The entities still face high cash burn despite cost-containment measures. In fact, 47% of the segment reported negative FOCF for the 12 months through the second quarter after rising by 7% in the first half of 2024, suggesting that free cash flows continue to be a pressure point (see chart 5). The deterioration in some instances was attributable to volatile working capital swings and restructuring transaction-related expenses, as well as the discretionary nature of companies' service and product offerings that have pressured top-line sales.

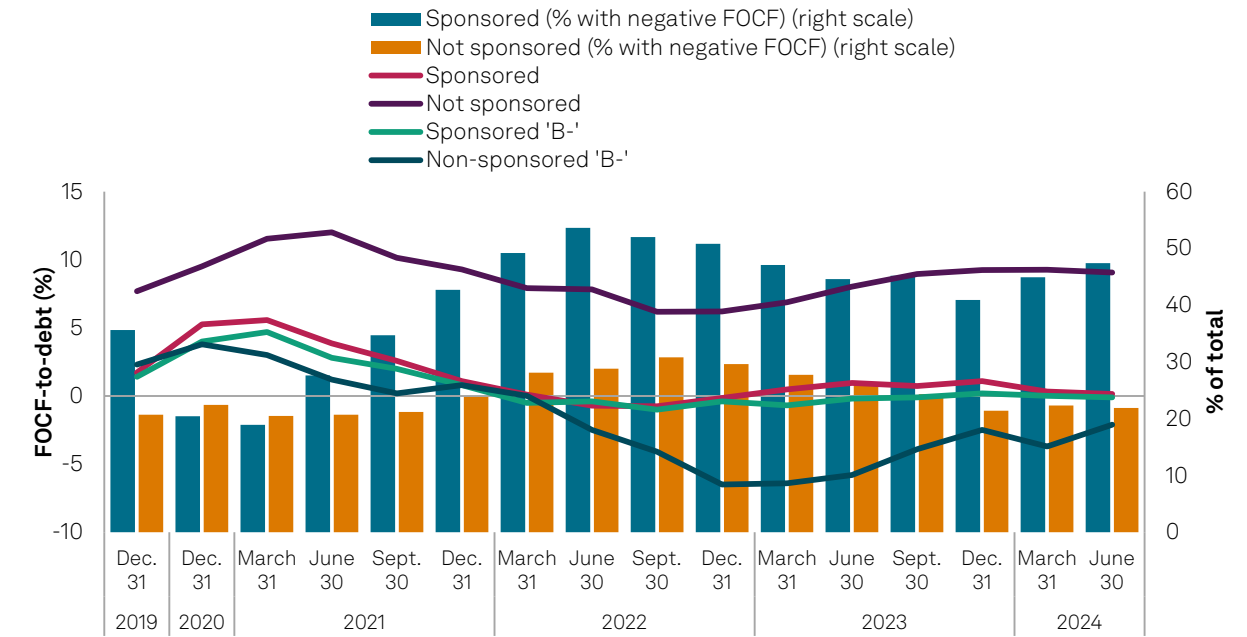
PE-owned companies have not been able to exit and have looked at other ways to return capital to their limited partners, such as issuing dividends funded by debt. Still, companies remain cautious about large-scale investments, likely due to the lingering economic growth uncertainty. However, with the rate cuts and promise of more to come, the M&A market may pick up with improving business confidence, and postponed business sales and investments will likely be restarted.

For companies not backed by private equity, the portion reporting negative FOCF has fallen to 22% during the same period, thanks partly to their lower debt capitalization, decreasing inflationary pressures, and good inventory management.

This leads to a substantial gap in the FOCF-to-debt ratios between the two groups. Over the past three years, sponsored companies have had a median FOCF-to-debt ratio averaging 1.1%, only a fraction of the much healthier 8.8% seen in companies not controlled by private equity.

Chart 5 | Median free operating cash flow to debt

Last-12-month periods for private equity-owned vs. non-sponsored companies



FOCF--Free operating cash flow. Source: S&P Global Ratings. Copyright © 2024 by Standard & Poor's Financial Services LLC. All rights reserved.

Industry Trends We Are Seeing

Consumer products. This group has seen slowing median EBITDA growth due to the depletion of pandemic-era excess savings and lower discretionary spending for lower-income consumers. Despite this, the median FOCF-to-debt ratio has improved over the past several quarters, supported by deleveraging efforts, reduced capital intensity, and leaner inventory levels as supply chains normalize.

Technology. Median FOCF to debt deteriorated over time for lower-rated technology firms, especially those owned by a sponsor. While the higher interest rate environment was a key factor driving this decline as EBITDA interest coverage deteriorated, higher working capital outflows driven by a pay down of payables and accrued liabilities along with reductions in deferred revenue balances (indicating a slowdown in new bookings) drove cash flows lower.

Real estate. The dip in median FOCF to debt for real estate is largely driven by homebuilders spending on land and development, thus building inventory levels to meet resilient demand for homes amid an undersupply in the resale market.

Health care. The speculative-grade universe within the health care industry is dominated by health care service providers. This sub-sector, especially the labor-intensive, lower-margin, and predominantly sponsor-owned service providers at the lower end of the ratings scale, continues to be vulnerable to negative rating actions. As a result, this segment has seen multiple downgrades and defaults over the past several quarters. While the lower margins are partly driven by labor inflation, the higher leverage profile has crushed free cash flow generation due to the higher interest rate environment; free cash flow deficits were further exacerbated by the disruptions from the No Surprise Act (especially, the delays in payments from insurance companies to service providers due to the arbitration process established to protect patients from surprise billing) and Medicaid redeterminations.

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Diverging Rating Trends

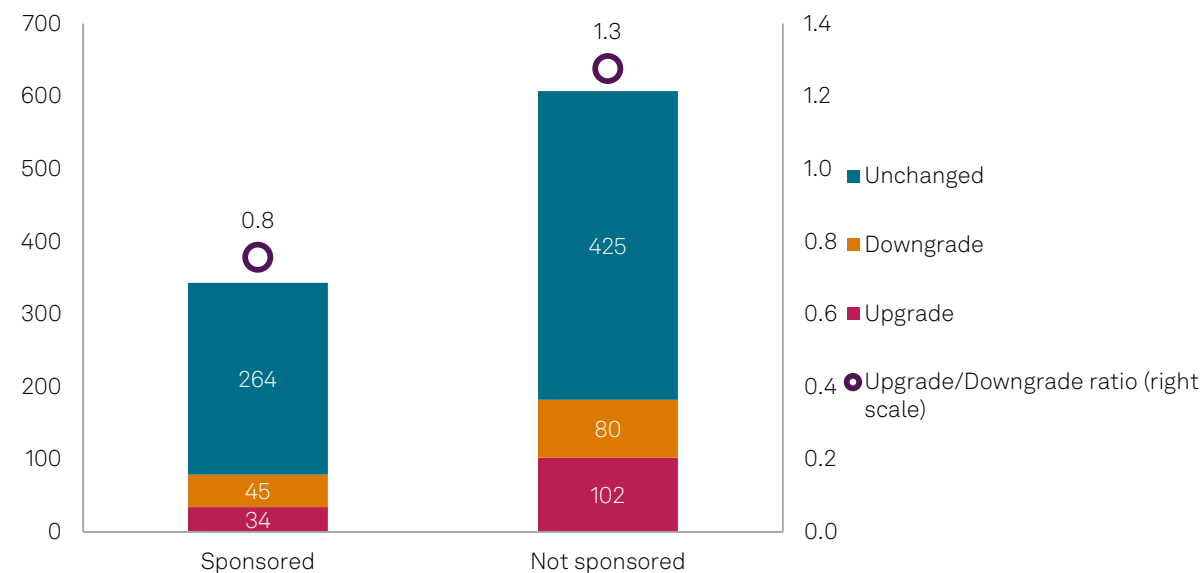
In the past 12 months, downgrades have outnumbered upgrades for PE-owned companies but not by a large margin. In contrast, rating trends have turned generally positive for companies not backed by sponsors (see chart 6).

PE-owned companies accounted for 13 of the 18 downgrades to 'CCC+' from 'B-', with cash flow deficits being a key factor in most cases. This is not surprising given that PE-owned companies constitute the bulk of the 'B-' level. One typical example is laundry service provider Spin HoldCo Inc., which struggled to generate free cash flow due to its predominantly floating-rate debt and substantial ongoing capital investments in machinery and equipment. We lowered the rating, anticipating an increasing likelihood of a distressed transaction because we expect its liquidity position to deteriorate over the upcoming quarters. Similarly, Guitar Center Inc.'s declining revenue and shrinking margins led to consistently negative free operating cash flow. We downgraded the company to 'CCC+' because we expected its performance to remain challenged in the near term.

Health care stands out as the largest contributor to downgrades, accounting for 27% of downgrades among sponsored companies--double the 13% seen in the next largest sector, restaurant/retailing. Downgrades in health care span staffing companies, outpatient rehabilitation, dental, and eye care service providers. We expect such rating deterioration in health care to slow in 2025 as demand normalizes and inflationary pressures moderate.

Conversely, rating trends among non-PE-owned companies have been generally positive, supported by a broader range of factors, including debt reduction post-asset sale, resolution of operation disruptions, and reduced advertising and overhead spending. Upgrades were led by moves to 'BB-' from 'B+' and to 'BB' from 'BB-'. In the first cluster, aerospace components manufacturer TransDigm Inc., the second-most widely held obligor among U.S. broadly syndicated collateralized loan obligations (BSL CLOs), benefited from strong aftermarket demand, increasing aircraft build rates, and robust defense spending. In the latter cluster, we upgraded concrete and cement mixes manufacturer Quikrete Holdings Inc., the 43rd most widely held, following its successful integration of water and drainage pipe manufacturer Forterra Inc.

Chart 6 | Ratings actions in the past 12 months



Source: S&P Global Ratings.
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Defaults by sponsored companies outnumbered those by non-sponsored companies by 1.5 to 1

PE-owned companies had a disproportionately large share of defaults in the 12 months ended Aug. 31, 2024 (see table 1), an observation that we believe is consistent with the credit ratings.

When facing financial difficulties, these companies have increasingly resorted to distressed debt exchanges to bridge liquidity gaps and buy time to turn around their operations. In fact, nearly 70% of default events among sponsor-backed companies involved distressed exchanges. The share is lower among non-PE-owned companies (58%) but still far exceeds the number of bankruptcy filings. Eight companies undertook several such transactions. For example, Teleset Canada repurchased debt below par twice in 2023; both instances were viewed as distressed exchanges. Another high-profile example is AMC Entertainment Holdings Inc., which executed a series of debt-for-equity swaps this year.

Some of these transactions employed so-called liability management transaction (LMT) tactics, such as collateral transfer and double dip. Existing lenders were often offered the opportunity to participate with new capital and exchange their holdings under different terms, resulting in a wide disparity in returns and recoveries. Although the specific mechanics vary from transaction to transaction, these tactics inevitably harm lenders by diminishing recovery prospects and especially for those who choose not to exchange in a future default. This risk is significant given that the post-exchange ratings in 86% of cases remain 'CCC+' or lower, indicating we expect a subsequent default--whether through a distressed debt exchange or a more comprehensive restructuring like Chapter 11--is more likely than not. We recently launched a new research series focusing on LMTs. In the first two installments, we featured Magenta Buyer LLC (formerly known as McAfee) and Del Monte Foods Inc, providing an overview of the exchange and its impact on liquidity and recovery prospects. (See Related Research at the end of the report for links to the Debt Restructuring Snapshot series.)

Table 1 | Default events between September 2023 and August 2024

	Sponsored	Percent sponsored (%)	Not sponsored	Percent non-sponsored (%)
Bankruptcy	8	17	11	33
Distressed exchange	33	69	19	58
Missed interest payments	2	4	2	6
Missed payments	5	10	1	3
Total	48		33	

Source: S&P Global Ratings.
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With less drag from LMTs, recovery prospects of first-lien new issues modestly rebounded from the bottom

The average recovery estimate for new issues saw a modest improvement to 64% in the third quarter of 2024, driven by a significant decrease in bottom-tier issuances (recovery ratings of '5' and '6', which indicate less than 30% recovery in the event of a payment default). Starting in the third quarter, we excluded first-lien new issuance resulted from restructuring debt exchanges to avoid bias since we may only rate a certain section of the exchanged first lien, preventing us from providing a holistic view of the overall first-lien recovery. This approach led to fewer bottom-tier recovery estimates, which are often associated with second-out or third-out loans, placing them in a junior collateral position.

New issues with '3' recovery ratings (which implies 50%-70% recovery in the event of a payment default) were 66% compared with 58% during the last quarter. This increase corresponded to a commensurate decrease in lower recovery assessments of '4' (30%-50%), '5' (10%-30%), and '6' (less than 10%), which combined accounted for a 3% share compared with 12% in the previous quarter (see charts 7 and 8).

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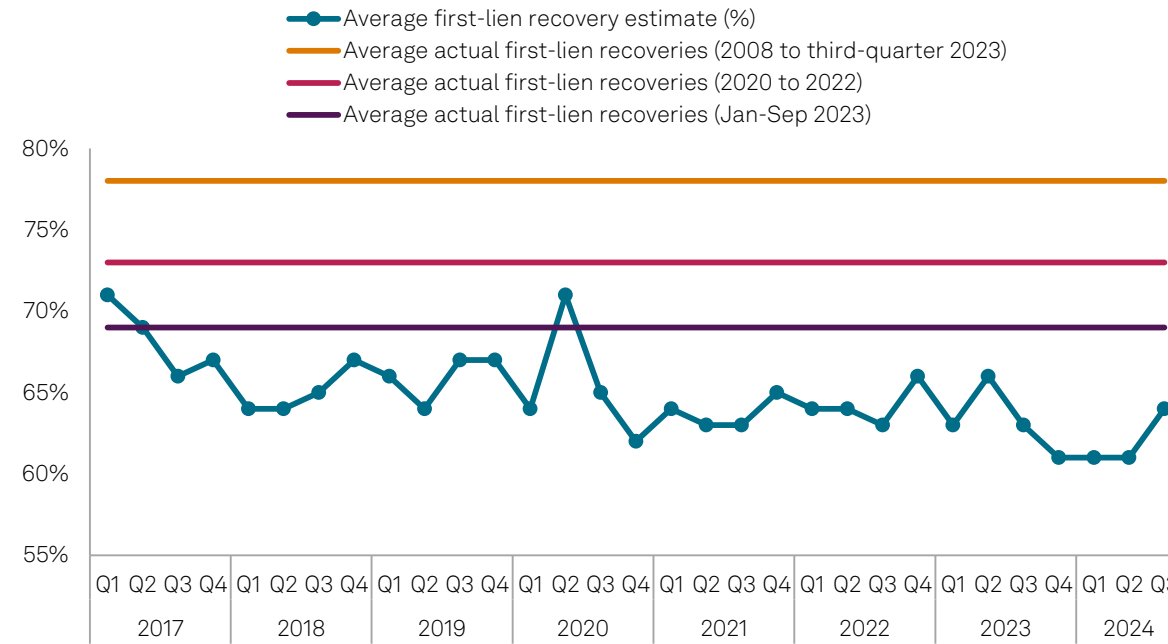
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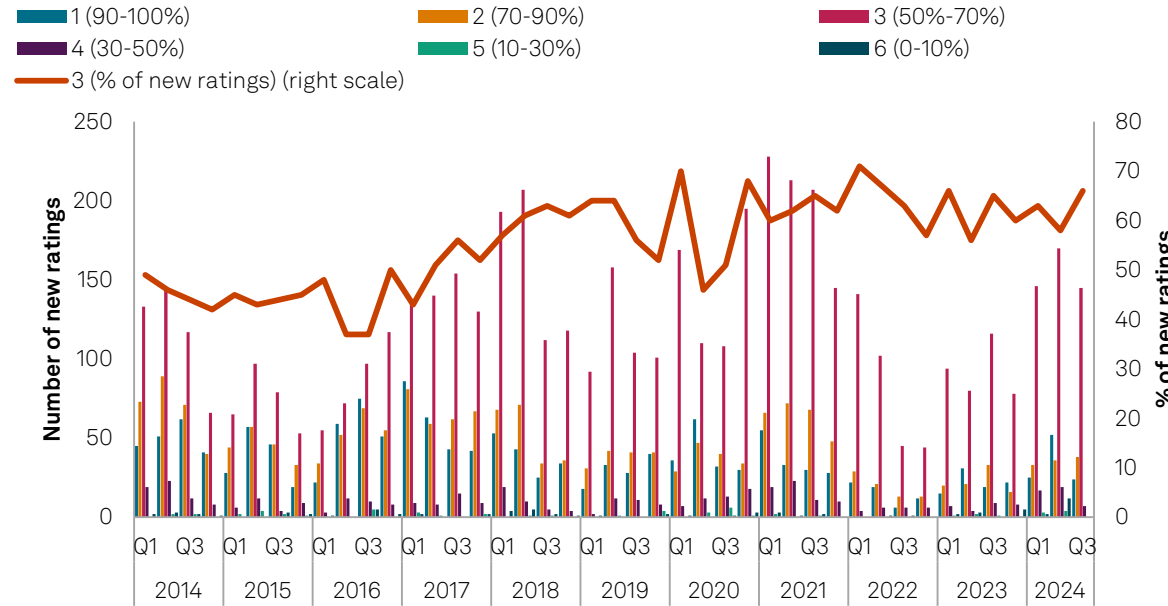
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Chart 7 | Average recovery estimate of first-lien new issues (U.S. and Canada)



Source: S&P Global Ratings.
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Chart 8 | U.S. recovery rating distributions of new first-lien secured



Source: S&P Global Ratings.
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Appendix

Table 1a | Median EBITDA interest coverage (x) by industry

Industry	Entity count	12 months ended															
		Dec. 31, 2019	Dec. 31, 2020	March 31, 2021	June 30, 2021	Sept. 30, 2021	Dec. 31, 2021	March 31, 2022	June 30, 2022	Sept. 30, 2022	Dec. 31, 2022	March 31, 2023	June 30, 2023	Sept. 30, 2023	Dec. 31, 2023	March 31, 2024	June 30, 2024
Aerospace/Defense	17	2.7	1.9	1.7	1.7	1.8	2	2.1	2.1	2	1.9	2	1.9	2.1	1.9	1.9	2
Auto/Trucks	30	3.1	2.6	3.1	4.1	4.1	3.7	3.5	3.4	3.1	2.6	2.6	2.6	2.2	2.1	2.3	2.2
Business and consumer services	62	2.8	2.5	2.6	2.8	2.9	2.8	3.2	2.9	2.9	2.4	2	1.9	1.7	1.8	1.8	1.7
Cap goods/Machine and equip	97	3	3	3	3.1	3.2	3.5	3.6	3.5	3.5	3.4	3.3	3.3	3.1	3.1	2.9	2.8
Chemicals	26	3.3	2.7	3.2	3.9	4.8	4.7	5.2	5.2	5.5	4.7	4	2.3	1.7	1.9	1.7	2.3
Consumer products	87	2.7	2.8	3.2	3.3	3.6	3.3	3.1	3.3	3.3	2.9	2.6	2.2	2.1	2.1	1.9	2.2
Forest prod/Bldg mat/Packaging	41	3.1	4.4	4	4.8	4.7	5.2	4.8	4.8	4.7	5	4.4	4.1	4.2	4.1	3.4	2.8
Healthcare	80	1.9	1.8	2.2	2.4	2.4	2.2	2.1	2	1.7	1.6	1.5	1.5	1.6	1.4	1.5	1.5
Media, entertainment and leisure	129	3.4	1.7	1.8	2.2	2.3	2.5	2.8	3	2.8	3	3	2.6	2.4	2.4	2.4	2.3
Mining and minerals	38	5.1	3.8	4.3	5.7	6.7	8.7	9.3	9.4	9.2	9.1	8	6.5	5.9	6.5	6.6	6.3
Oil and gas	60	5.3	2.6	2.7	3.4	4.7	6.3	7.6	10.8	12.9	14.5	13.8	12.3	10.6	9.7	8.4	8.7
Restaurants/Retailing	80	3.4	2.7	3.2	3.9	4	4.1	4.5	4.7	4.5	4.4	3.9	3.5	3.1	3	3	3.1
Real estate	21	3.5	3.4	3.4	3.5	3.2	3.5	3.8	3.8	3.8	3.9	3.5	3.2	2.9	2.3	2.4	2.3
Technology	83	2.1	2.6	2.7	2.7	2.6	2.7	2.9	2.8	2.7	2.5	2.5	2.3	2.1	1.9	1.7	1.9
Telecommunications	38	2.8	3.4	3.6	3.7	4.2	4.8	4.7	4.3	4.2	4.3	4	3.8	3.4	3.3	3.2	2.9
Transportation	18	6	0.9	0.8	1.3	2	2.5	2.7	2.8	2.1	2.6	2.7	3.1	2.7	2.8	2.6	2.1
Total	907	3.1	2.6	2.8	3.2	3.4	3.5	3.7	3.7	3.8	3.5	3.2	3	2.7	2.6	2.6	2.5

Coverage calculated as reported EBITDA over reported interest expense, without adjustment by S&P Global Ratings. The sample in this study is rebalanced each quarter following selection criteria, as detailed in the "The Data Used in This Report" section.
EBITDA--Earnings before interest, taxes, depreciation, and amortization.
Source: S&P Global Ratings.
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Table 1b | Median EBITDA interest coverage (x) by issuer credit rating

Issuer credit rating*	Entity count	12 months ended															
		Dec. 31, 2019	Dec. 31, 2020	March 31, 2021	June 30, 2021	Sept. 30, 2021	Dec. 31, 2021	March 31, 2022	June 30, 2022	Sept. 30, 2022	Dec. 31, 2022	March 31, 2023	June 30, 2023	Sept. 30, 2023	Dec. 31, 2023	March 31, 2024	June 30, 2024
BB+	103	6.2	5.6	6.2	7	8.2	7.9	8.6	9.1	8.8	8.8	7.5	6.6	6.6	6.3	6.4	6.2
BB	114	5.8	5.2	6	6.1	7.1	7.8	8.3	8.4	7.9	6.5	6.1	5.7	5.8	5.5	5.7	5.8
BB-	115	4.1	3.5	3.7	4.7	4.8	5.6	5.7	5.8	5.5	5.2	5	4.5	4.3	4.2	4	3.9
B+	116	3	2.7	3	3.3	3.6	3.8	3.9	3.9	4	3.9	3.7	3.4	3.2	3	2.9	3
B	154	2.7	2.4	2.6	2.6	2.8	3.2	3.4	3.4	3.4	3.3	2.9	2.6	2.4	2.3	2.1	2.2
B-	190	1.7	1.8	1.9	2	2	1.8	1.8	1.7	1.7	1.7	1.5	1.4	1.3	1.2	1.2	1.3
CCC+	72	1.5	1.3	1.4	1.6	1.6	1.4	1.3	1.3	1.5	1.4	1.3	1.2	1	0.9	1	1
CCC	28	1.6	1.5	1.5	1.8	1.7	1.7	1.8	1.6	1.5	1.5	1.2	1	0.8	0.6	0.6	0.6
CCC-	11	2.1	2.6	2.8	2.4	2.4	2.5	2.4	2.2	2.2	2.7	2.1	1.9	1.7	1.5	1.5	1.4
CC	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.
Total	907	3.1	2.6	2.8	3.2	3.4	3.5	3.7	3.7	3.8	3.5	3.2	3	2.7	2.6	2.6	2.5

*Rating as of Sept. 17, 2024.
N.M.--Not meaningful due to small sample size. EBITDA--Earnings before interest, taxes, depreciation, and amortization.
Coverage calculated as reported EBITDA over reported interest expense, without adjustment by S&P Global Ratings. The sample in this study is rebalanced each quarter following selection criteria, as detailed in the "The Data Used in This Report" section.
Source: S&P Global Ratings.
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Table 1c | Median EBITDA interest coverage (x) by company size

Entity size (measured by EBITDA)	Entity count	12 months ended															
		Dec. 31, 2019	Dec. 31, 2020	March 31, 2021	June 30, 2021	Sept. 30, 2021	Dec. 31, 2021	March 31, 2022	June 30, 2022	Sept. 30, 2022	Dec. 31, 2022	March 31, 2023	June 30, 2023	Sept. 30, 2023	Dec. 31, 2023	March 31, 2024	June 30, 2024
<50	83	1.7	1.4	1.6	1.9	1.7	1.7	1.6	1.3	1.2	1	1.1	0.8	0.9	0.6	0.5	0.4
50-100	98	1.9	1.7	1.8	2.1	2.1	2	2.2	2.2	1.9	1.8	1.7	1.5	1.5	1.5	1.5	
100-200	168	2.3	2.3	2.4	2.4	2.5	2.5	2.7	2.6	2.7	2.4	2.2	2.2	2	1.9	1.8	1.8
200-300	133	2.9	2.9	3.1	3.2	3.5	3.2	3.3	3.4	3.2	3	3.1	3	2.7	2.5	2.4	2.2
300-500	154	3.5	3.2	3.5	4.2	4.1	4.6	4.4	5	4.7	4.5	3.9	3.8	3.9	3.6	3.5	3.5
500-1000	138	4.4	3.6	3.6	4.7	4.9	5.7	5.6	5.8	5.6	5.5	5.3	5	4.6	4.5	4.3	4.3
>1000	133	5.2	3.8	4.2	5.4	5.7	6.4	6.9	7.8	7.5	6.5	5.7	5.2	5.2	5.2	5.2	5.1
Total	907	3.1	2.6	2.8	3.2	3.4	3.5	3.7	3.7	3.8	3.5	3.2	3	2.7	2.6	2.6	2.5

Coverage calculated as reported EBITDA over reported interest expense, without adjustment by S&P Global Ratings. The sample in this study is rebalanced each quarter following selection criteria, as detailed in the "The Data Used in This Report" section.

EBITDA--Earnings before interest, taxes, depreciation, and amortization.

Source: S&P Global Ratings.

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Table 2a | Median free operating cash flow-to-debt (%) by industry

Industry	Entity count	12 months ended															
		Dec. 31, 2019	Dec. 31, 2020	March 31, 2021	June 30, 2021	Sept. 30, 2021	Dec. 31, 2021	March 31, 2022	June 30, 2022	Sept. 30, 2022	Dec. 31, 2022	March 31, 2023	June 30, 2023	Sept. 30, 2023	Dec. 31, 2023	March 31, 2024	June 30, 2024
Aerospace/Defense	17	6.1	4.6	6	3.5	3.1	2.6	1.5	1.1	4.3	3.7	4.5	1.2	0.5	0.8	2.6	4.9
Auto/Trucks	30	7	7.5	9.2	11.2	0.5	0.4	-0.9	0	0.5	1	3.1	4.5	3	3.4	3.3	3
Business and consumer services	62	5.2	7.2	8.3	6.9	6.2	4.3	3.8	3.5	2.4	3.3	2.6	4.1	4.1	4	3.7	4.4
Cap goods/Machine and equip	97	2.6	8.5	9.9	6.9	3.2	0.9	-0.4	-1.3	-1.2	0.3	1.3	2.7	3.9	5.2	3.5	3
Chemicals	26	4.2	5.6	5.8	5.8	8.1	5.9	1.9	0.8	3.1	4.9	4.4	3.6	3.3	2.2	2.5	3.8
Consumer products	87	7.2	10.8	9.4	6.8	5.2	3.1	0.8	-0.6	-0.4	1.3	2.2	5.6	7.9	9.9	8.8	7.7
Forest prod/Bldg mat/Packaging	41	8.8	14.9	16.3	10.3	4	1.8	0.2	0.3	0.9	6.4	7.2	7.6	10.2	10	10.7	8.1
Healthcare	80	2.1	7.4	8.2	4.9	3.1	2	1.3	0.4	-0.3	-1	-0.7	-0.6	1.6	1.9	1	1.1
Media, entertainment and leisure	129	6.7	5.2	5.4	8.2	6.6	6	6.3	7.1	6.5	6.1	5.8	6.3	5.3	5.5	5.7	6.4
Mining and minerals	38	5.1	7.9	11.8	11.3	7	10.4	12.2	11.9	9.9	10.2	7.6	3.5	3.3	6.1	2.1	5.2
Oil and gas	60	0.7	2	4.4	7.6	7.8	12.2	14	26	35.3	38.8	31.2	23.3	21.1	19.9	14.1	13.8
Restaurants/Retailing	80	5.8	13.1	16.7	16.9	14.1	11.9	7.6	3.4	2.2	2.3	4.6	6.3	7	8.3	6.2	7.9
Real estate	21	5.8	6.8	7.7	6.3	6.3	-0.7	0.7	2.9	3.2	5.7	5.8	6.1	5.6	5.2	6.6	2.9
Technology	83	5.1	9.2	11.4	12.1	11.8	10.6	8.4	6.7	5.5	4.1	4.5	4.5	5.8	4	3.4	4.3
Telecommunications	38	3.3	4.9	7.1	5.5	5.5	3.9	3.8	3.3	2.1	2	2	-0.7	0.1	0.7	-0.9	-0.1
Transportation	18	4.1	-1.9	0.7	0.7	1.1	1.5	2.7	0.3	-1.2	-2.4	0.5	-0.1	0.2	-1.9	-1.7	-2.8
Total	907	5	7.4	8.1	7.7	6.2	4.9	3.8	3.2	2.6	3.4	3.8	4.7	5.1	5.3	4.8	4.8

FOCF--Free operating cash flow, as reported and without adjustment by S&P Global Ratings.

The sample in this study is rebalanced each quarter following selection criteria, as detailed in the "The Data Used in This Report" section.

Source: S&P Global Ratings.

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Table 2b | Median free operating cash flow to debt (%) by issuer credit rating

Issuer credit rating*	Entity count	12 months ended															
		Dec. 31, 2019	Dec. 31, 2020	March 31, 2021	June 30, 2021	Sept. 30, 2021	Dec. 31, 2021	March 31, 2022	June 30, 2022	Sept. 30, 2022	Dec. 31, 2022	March 31, 2023	June 30, 2023	Sept. 30, 2023	Dec. 31, 2023	March 31, 2024	June 30, 2024
BB+	103	12.3	18.6	20.7	19.1	21.1	18.2	16.8	13.5	13.7	13.4	11.4	12.1	12.6	12.4	14.4	15
BB	114	12.4	16.8	17.8	18	15.4	15.1	12.6	12.2	10	9.7	10.6	15	15	17.2	17.1	17.8
BB-	115	7.8	10	13.5	12.6	13	10.9	9.3	9.8	7.8	8.9	9.5	11.1	13.2	13.2	11.8	9.3
B+	116	6.3	7.8	8.1	8.6	7.3	5.6	4.5	3.4	3.7	5.8	7	7.7	8.5	9.8	10.1	9.1
B	154	3.4	7.9	7.8	6.5	4.7	3.9	2.6	1.7	1.7	2.5	3.7	4.3	5.3	4.6	3.5	3.6
B-	190	1.6	4	4.3	2.3	1.3	0.8	-0.4	-0.6	-1.2	-0.6	-1	-0.6	-0.6	0	-0.4	-0.3
CCC+	72	-0.5	1.3	3.5	1	-0.9	-2.4	-4.4	-6.2	-6.1	-4.4	-3.3	-2.5	-1.1	-0.4	-0.4	-1.3
CCC	28	1.7	4.6	6.5	4.3	0.5	-1.1	-5.2	-5.7	-5.9	-6.3	-5.7	-4.8	-4.6	-3.4	-2.5	-1.8
CCC-	11	6.6	3.6	2.6	5.8	5.1	4.6	3.5	2.1	0.4	-0.5	-0.4	1	0	-2.1	-4.3	-4.2
CC	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.
Total	907	5	7.4	8.1	7.7	6.2	4.9	3.8	3.2	2.6	3.4	3.8	4.7	5.1	5.3	4.8	4.8

*Rating as of Sept. 17, 2024.

N.M.--Not meaningful due to small sample size. FOCF--Free operating cash flow, as reported and without adjustment by S&P Global Ratings.

The sample in this study is rebalanced each quarter following selection criteria, as detailed in the "The Data Used in This Report" section.

Source: S&P Global Ratings.

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Table 2c | Median free operating cash flow to debt (%) by company size

Entity size (measured by EBITDA)	Entity count	12 months ended															
		Dec. 31, 2019	Dec. 31, 2020	March 31, 2021	June 30, 2021	Sept. 30, 2021	Dec. 31, 2021	March 31, 2022	June 30, 2022	Sept. 30, 2022	Dec. 31, 2022	March 31, 2023	June 30, 2023	Sept. 30, 2023	Dec. 31, 2023	March 31, 2024	June 30, 2024
<50	83	2.3	6.6	6.9	4.8	1.2	-0.1	-2	-3.4	-4.5	-2.7	-3	-3.3	-0.7	-0.3	-1	-1.6
50-100	98	1.3	3.6	4.1	1.6	1.5	0.8	-1.3	-2.6	-2.9	-2.4	-1.7	-0.1	0.9	0.8	1.1	0.5
100-200	168	2.5	5.8	6.1	4.8	3.4	3	1.2	1.1	0.5	1.4	1.9	2.6	2.9	2.2	2	
200-300	133	4.6	8.6	8.8	8.9	7.5	5.5	4.4	2.2	2.2	2.4	4.1	4.5	5.2	5.3	4.5	4.5
300-500	154	6.2	10.5	10.2	8.6	6.8	5.8	5.8	5.3	4.2	4.3	4.6	6.1	7.1	8.7	7.8	8
500-1000	138	7.6	8.7	9.8	12.8	11.2	10.3	8.8	8.4	7.6	6.3	7.4	7	7.9	7.4	7.2	8.7
>1000	133	8.3	8.4	11.3	12.4	12.8	10.4	11.1	11.5	11	10.8	10	10.8	11.4	10.4	9.9	10.3
Total	907	5	7.4	8.1	7.7	6.2	4.9	3.8	3.2	2.6	3.4	3.8	4.7	5.1	5.3	4.8	4.8

FOCF--Free operating cash flow, as reported and without adjustment by S&P Global Ratings. EBITDA--Earnings before interest, taxes, depreciation, and amortization.

The sample in this study is rebalanced each quarter following selection criteria, as detailed in the "The Data Used in This Report" section.

Source: S&P Global Ratings.

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Table 3a | Median gross leverage (x) by industry

Industry	Entity count	12 months ended															
		Dec. 31, 2019	Dec. 31, 2020	March 31, 2021	June 30, 2021	Sept. 30, 2021	Dec. 31, 2021	March 31, 2022	June 30, 2022	Sept. 30, 2022	Dec. 31, 2022	March 31, 2023	June 30, 2023	Sept. 30, 2023	Dec. 31, 2023	March 31, 2024	June 30, 2024
Better: Improved or deleveraged compared to year-end 2022 levels																	
Aerospace/Defense	18	4.7	6.4	8.7	8.2	5.8	9.1	8.8	8.2	7.6	6.7	6.5	6.2	6.3	5.9	5.7	5.5
Business and consumer services	65	5.8	6.3	6.6	6.7	6.4	6.2	6.7	6.5	6.6	6.8	6.6	7	6.2	6	6.2	6.1
Cap goods/Machine and equip	101	5.7	5.1	5.3	5.4	5.3	5.6	5.8	5.5	5.2	5.9	5	4.8	4.9	4.7	4.6	4.5
Consumer products	90	5.7	5.8	4.8	4.8	5.4	6.1	6.2	6.1	6	5.9	6.2	6.1	5.9	5.4	5.1	5.2
Healthcare	86	6.9	7.7	7	6.5	6.6	6.5	7.1	8.5	8.8	8.9	8.6	8	7.9			

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Table 3c | Median gross leverage (x) by company size

Entity size (measured by EBITDA)	Entity count	12 months ended																	
		Dec. 31, 2019	Dec. 31, 2020	March 31, 2021	June 30, 2021	Sept. 30, 2021	Dec. 31, 2021	March 31, 2022	June 30, 2022	Sept. 30, 2022	Dec. 31, 2022	March 31, 2023	June 30, 2023	Sept. 30, 2023	Dec. 31, 2023	March 31, 2024	June 30, 2024		
<50	88	6.6	7.9	7.4	7	7.5	9.7	10.9	10.8	11.6	12.2	11.5	12.9	14.2	19.6	21.5	21		
50-100	103	6.4	7.3	7.5	6.8	7.3	7.3	7.2	6.9	7.1	6.6	6.8	6.9	6.5	6.3	6.8	6.3		
100-200	179	6	6.3	6.2	6	6	6.3	6.1	6.1	6	6.1	6.2	5.9	6.3	5.9	6.2	6		
200-300	142	5.6	5.9	5.8	5.8	5.6	5.7	5.9	5.9	5.5	5.5	5.2	5	5.1	4.9	5	5.1		
300-500	164	4.9	5.4	5.4	5	4.6	4.4	4.4	4.5	4.5	4.4	4.2	4.2	4.2	4.1	4			
500-1000	144	4	4.9	4.6	4	3.6	3.6	3.6	3.5	3.5	3.7	3.6	3.4	3.5	3.5	3.5	3.5		
>1000	134	3.6	4.7	4.2	3.7	3.4	3.6	3.5	3.1	3.3	3.3	3.4	3.2	3.2	3.2	3.1			
Total	954	5	6	5.7	5.2	5.1	5.3	5.2	5	5	5.2	5	5	5.1	4.9	5	4.9		

Leverage is calculated as reported gross debt over reported EBITDA, without adjustment by S&P Global Ratings. The sample in this study is rebalanced each quarter following selection criteria, as detailed in the "The Data Used in This Report" section.
 EBITDA--Earnings before interest, taxes, depreciation, and amortization.
 Source: S&P Global Ratings.
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Table 4a | Median EBITDA growth (%) by industry

Industry	Entity count	12 months ended, QOQ													
		March 31, 2021	June 30, 2021	Sept. 30, 2021	Dec. 31, 2021	March 31, 2022	June 30, 2022	Sept. 30, 2022	Dec. 31, 2022	March 31, 2023	June 30, 2023	Sept. 30, 2023	Dec. 31, 2023	March 31, 2024	June 30, 2024
Aerospace/Defense	17	-3.2	11.9	11.0	7.6	5.9	4.1	4.0	5.1	4.7	0.8	0.8	4.7	0.3	2.9
Auto/Trucks	30	16.6	29.5	4.7	3.2	2.4	1.8	1.2	2.7	2.5	5.5	2.0	1.4	-1.3	-1.8
Business and consumer services	62	3.5	6.4	2.2	2.5	1.4	3.3	3.1	0.3	1.5	1.6	1.7	2.2	1.5	1.9
Cap goods/Machine and equip	97	4.2	5.4	1.9	0.2	3.6	6.6	7.4	6.9	3.7	3.4	1.7	2.5	-1.2	0.6
Chemicals	26	12.2	14.9	8.6	5.3	3.7	4.6	-1.1	-7.1	-9.0	-14.6	-2.4	0.0	0.8	-0.7
Consumer products	87	8.6	10.1	1.8	-0.6	-0.4	0.8	-1.4	0.2	-1.4	-1.5	1.3	2.1	1.0	1.8
Forest prod/Bldg mat/Packaging	41	6.2	11.2	1.2	1.4	7.4	6.1	4.0	0.8	0.4	-0.8	0.1	0.1	-0.1	-0.8
Healthcare	80	8.9	8.2	3.2	0.6	-1.2	-2.4	-2.2	-1.4	1.5	5.2	4.0	3.9	4.3	2.1
Media, entertainment and leisure	129	3.1	27.4	8.2	5.5	3.9	2.5	1.1	2.4	0.3	-0.4	0.0	-0.5	0.0	0.7
Mining and minerals	38	6.6	18.4	16.1	12.8	12.3	6.8	-0.9	-9.8	-3.7	-9.0	-2.2	2.8	-4.7	-3.6
Oil and gas	60	9.9	33.5	28.1	37.4	19.0	27.8	17.2	5.6	1.4	-10.3	-3.5	-1.2	-2.5	2.1
Restaurants/Retailing	80	10.3	30.1	2.5	5.4	1.6	-0.7	0.3	0.0	0.3	0.0	-0.7	-1.3	0.4	-1.0
Real estate	21	0.4	5.0	4.5	5.0	2.6	2.2	4.3	3.6	-0.3	-1.4	-2.4	-2.4	0.3	1.6
Technology	83	7.5	5.4	4.1	4.7	2.0	0.1	2.7	0.0	1.9	2.5	2.8	-0.4	2.4	1.4
Telecommunications	38	2.8	2.6	1.2	0.1	-1.2	-2.4	-1.4	-0.7	-2.3	-0.4	0.3	0.7	0.0	-0.3
Transportation	18	0.4	28.2	16.8	19.7	-0.6	-2.6	6.1	9.6	13.3	10.2	-2.4	-0.7	-1.6	-1.7
Total	907	5.8	10.9	4.5	3.6	2.6	2.2	1.5	1.4	0.6	0.2	0.6	0.9	0.3	0.9

Reported EBITDA without adjustment by S&P Global Ratings. The sample in this study is rebalanced each quarter following selection criteria, as detailed in the "The Data Used in This Report" section.
 EBITDA--Earnings before interest, taxes, depreciation, and amortization.
 Source: S&P Global Ratings.
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Table 4b | Median EBITDA growth (%) by issuer credit rating

Issuer credit rating*	Entity count	12 months ended, QOQ													
		March 31, 2021	June 30, 2021	Sept. 30, 2021	Dec. 31, 2021	March 31, 2022	June 30, 2022	Sept. 30, 2022	Dec. 31, 2022	March 31, 2023	June 30, 2023	Sept. 30, 2023	Dec. 31, 2023	March 31, 2024	June 30, 2024
BB+	103	5.1	11.0	4.5	3.9	4.5	3.0	1.7	0.4	-1.7	-0.2	0.7	0.9	-0.4	0.2
BB	114	4.9	10.4	6.0	3.7	2.9	2.8	2.1	1.9	0.2	-0.4	0.2	0.2	0.8	0.5
BB-	115	5.6	16.7	5.2	5.4	4.4	0.6	1.5	1.6	1.8	0.2	1.0	1.3	0.1	0.6
B+	116	7.6	10.2	6.8	5.2	3.4	2.7	2.7	3.7	1.1	0.9	-0.7	-0.2	-0.3	-0.6
B	154	8.1	14.8	6.4	5.0	4.4	4.3	2.7	1.9	0.3	-1.2	0.9	1.1	0.1	1.4
B-	190	5.6	7.1	3.4	-0.2	1.6	1.0	1.9	3.3	1.8	2.9	1.8	2.2	1.9	2.1
CCC+	72	6.7	7.2	2.1	1.5	-1.9	-2.3	-1.6	-2.1	1.9	-2.2	-0.6	0.5	-0.5	-0.6
CCC	28	6.4	11.0	1.2	-0.8	-5.8	-1.1	-1.3	-3.0	-1.9	-8.0	-4.2	-6.2	2.0	-0.4
CCC-	11	5.0	2.3	0.0	-3.0	-1.6	-6.0	-8.6	-3.3	-5.3	-4.8	-5.5	-7.1	1.9	-2.1
CC	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.	N.M.
Total	907	5.8	10.9	4.5	3.6	2.6	2.2	1.5	1.4	0.6	0.2	0.6	0.9	0.3	0.9

*Rating as of Sept. 17, 2024.
 N.M.--Not meaningful due to small sample size. EBITDA--Earnings before interest, taxes, depreciation, and amortization.
 Reported EBITDA without adjustment by S&P Global Ratings. The sample in this study is rebalanced each quarter following selection criteria, as detailed in the "The Data Used in This Report" section.
 Source: S&P Global Ratings.
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Table 4c | Median EBITDA growth (%) by company size

Entity size (measured by EBITDA)	Entity count	12 months ended QoQ																	
		March 31, 2021	June 30, 2021	Sept. 30, 2021	Dec. 31, 2021	March 31, 2022	June 30, 2022	Sept. 30, 2022	Dec. 31, 2022	March 31, 2023	June 30, 2023	Sept. 30, 2023	Dec. 31, 2023	March 31, 2024	June 30, 2024				
<50	83	9.9	14.6	2.2	0.4	-4.8	-7.3	-4.9	-3.2	-1.4	-3.6	-2.4	-10.9	-0.7	-4.3				
50-100	98	5.8	10.7	4.6	0.8	1.3	1.8	1.1	-0.2	0.1	0.8	0.4	3.1	-1.1	0.8				
100-200	168	6.5	8.7	2.2	0.9	0.3	0.4	1.3	1.1	0.5	1.8	1.0	0.9	0.4	1.5				
200-300	133	4.2	11.3	2.2	2.5	2.4	1.7	1.0	3.3	1.6	0.7	1.0	1.4	0.2	0.9				
300-500	154	5.2	9.0	4.4	4.6	3.7	4.2	2.6	1.6	1.0	0.1	1.1	1.1	0.3	1.3				
500-1000	138	6.0	16.9	8.2	5.9	4.1	3.0	2.0	1.2	1.0	0.0	0.6	1.0	1.0	0.7				
>1000	133	6.5	11.2	7.5	7.2	4.9	4.6	3.0	2.2	-0.6	-0.3	0.1	1.4	0.3	0.9				
Total	907	5.8	10.9	4.5	3.6	2.6	2.2	1.5	1.4	0.6	0.2	0.6	0.9	0.3	0.9				

Reported EBITDA without adjustment by S&P Global Ratings. The sample in this study is rebalanced each quarter following selection criteria, as detailed in the "The Data Used in This Report" section.
 EBITDA--Earnings before interest, taxes, depreciation, and amortization.
 Source: S&P Global Ratings.
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Table 5a | Median capex growth (%) by industry

Industry	Entity count	12 months ended, QOQ									
		June 30, 2022	Sept. 30, 2022	Dec. 31, 2022	March 31, 2023	June 30, 2023	Sept. 30, 2023	Dec. 31, 2023	March 31, 2024	June 30, 2024	
Aerospace/Defense	19	5.2	11.3	1.9	-0.5	7.1	-0.1	3.6	0.4	-7.3	
Auto/Trucks	35	3.3	-2.8	1.4	-2.5	0.8	2.3	0.7	2.6	2.2	
Business and consumer services	75	7.5	5.9	3.1	2.7	0.4	-1.0	-1.3	-1.0	0.0	
Cap goods/Machine and equip	116	3.5	4.7	3.4	3.0	3.5	2.7	2.3	0.9	-0.4	
Chemicals	33	4.3	1.6	0.5	3.5	1.8	1.7	-2.3	-3.4	-1.8	
Consumer products	99	5.0	1.9	1.2	-1.2	2.0	-1.8	1.1	-3.0	-2.8	
Forest prod/Bldg mat/Packaging	49	4.4	1.2	5.7	4.8	3.5	4.9	3.4	-2.0	-1.7	
Healthcare	104	4.7	4.7	4.7	0.7	-0.6	-1.3	-1.8	-0.7	0.2	
Media, entertainment and leisure	156	8.9	7.2	3.4	4.9	2.0	1.0	-1.6	-0.6	-1.3	
Mining and minerals	41	7.2	8.0	8.2	9.0	6.9	3.5	4.2	-0.8	1.1	
Oil & Gas	77	14.8	14.0	16.0	8.1	5.9	0.9	1.9	0.4	-2.4	
Restaurants/Retailing	86	6.1	8.2	6.1	2.2	1.9	0.0	-0.5	1.8	-0.7	
Real estate	29	5.3	6.0	2.7	1.7	2.0	6.3	0.4	1.1	3.5	
Technology	102	4.2	4.8	5.0	1.2	2.0	-0.4	-3.8	-0.3	-1.6	
Telecommunications	43	6.3	4.5	5.3	3.1	-0.6	-2.0	-5.7	-3.4	-4.4	
Transportation	25	4.5	7.7	12.2	4.4	8.3	1.0	-0.5	2.9	0.3	
Total	1089	5.6	6.2	4.7	2.7	2.3	0.8	-0.1	-0.4	-1.2	

Reported capex without adjustment by S&P Global Ratings. The sample in this study is rebalanced each quarter following selection criteria, as detailed in the "The Data Used in This Report" section.
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Table 5b | Median capex growth (%) by issuer credit rating

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Table 5c | Median capex growth (%) by company size

Entity size (measured by EBITDA)	Entity count	12 months ended, QOQ									
		June 30, 2022	Sept. 30, 2022	Dec. 31, 2022	March 31, 2023	June 30, 2023	Sept. 30, 2023	Dec. 31, 2023	March 31, 2024	June 30, 2024	
<50	113	4.6	5.5	5.9	-0.8	-1.4	-3.0	-6.6	-5.1	-1.7	
50-100	125	4.5	2.9	3.0	0.5	0.8	-1.2	-1.4	-2.1	-2.8	
100-200	213	6.0	5.4	4.1	2.0	3.2	0.4	0.0	-0.6	-2.1	
200-300	157	5.2	5.5	2.1	2.3	1.3	2.1	0.5	0.3	0.3	
300-500	180	5.9	6.4	6.6	4.3	3.2	1.6	-2.0	-0.3	-0.5	
500-1000	159	5.7	7.7	4.2	3.1	2.2	0.6	0.8	0.0	-0.4	
>1000	142	6.0	7.2	7.3	5.9	4.4	1.9	1.2	0.2	-1.6	
Total	1089	5.6	6.2	4.7	2.7	2.3	0.8	-0.1	-0.4	-1.2	

Reported capex without adjustment by S&P Global Ratings. The sample in this study is rebalanced each quarter following selection criteria, as detailed in the "The Data Used in This Report" section.

EBITDA--Earnings before interest, taxes, depreciation, and amortization.

Source: S&P Global Ratings.

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Table 6a | Median working capital change as a percentage of revenue by industry (%)

Industry	Entity count	12 months ended, QOQ									
		June 30, 2022	Sept. 30, 2022	Dec. 31, 2022	March 31, 2023	June 30, 2023	Sept. 30, 2023	Dec. 31, 2023	March 31, 2024	June 30, 2024	
Aerospace/Defense	19	-1.0	-2.2	-3.3	-1.9	-3.1	-1.4	-1.4	-0.4	-1.1	
Auto/Trucks	35	-2.4	-0.9	-1.0	-0.4	-0.3	0.3	0.1	-0.1	-0.5	
Business and consumer services	77	-2.2	-2.0	-2.0	-1.2	-0.8	-0.6	-0.2	-0.2	-0.3	
Cap goods/Machine and equip	124	-3.5	-3.7	-2.9	-1.9	-1.1	-0.3	0.4	0.7	0.3	
Chemicals	35	-4.1	-3.9	-2.9	-1.3	0.9	0.8	2.1	2.7	1.5	
Consumer products	101	-5.6	-4.3	-3.7	-1.5	0.1	1.7	2.6	2.4	1.5	
Forest prod/Bldg mat/Packaging	51	-5.1	-4.1	-2.7	-1.1	0.3	2.0	2.1	1.5	0.9	
Healthcare	108	-2.4	-2.4	-2.2	-2.1	-2.1	-1.1	-0.3	-1.0	-0.6	
Media, entertainment and leisure	162	-1.4	-1.3	-1.1	-0.8	-0.6	-0.6	0.0	-0.1	-0.3	
Mining and minerals	42	-4.5	-3.4	-2.6	-2.1	-1.5	-1.4	0.3	0.4	0.4	
Oil and gas	82	-2.0	-0.9	-0.2	0.1	0.6	-0.8	-0.1	-0.5	-0.7	
Restaurants/Retailing	91	-1.2	-1.6	-1.9	-1.2	-0.5	0.1	0.3	0.0	0.1	
Real estate	33	-5.2	-3.7	-5.0	-2.0	0.8	0.9	-0.5	-2.7	-3.1	
Technology	107	-1.7	-2.2	-2.5	-2.0	-1.6	-1.1	-0.6	-0.7	-0.7	
Telecommunications	45	-1.4	-0.9	-0.9	-1.4	-1.8	-1.8	-1.2	-1.6	-0.1	
Transportation	29	-0.5	0.0	-0.2	0.3	0.9	0.8	0.3	-0.7	-0.6	
Total	1141	-2.6	-2.3	-2.0	-1.2	-0.6	-0.3	0.2	0.0	-0.1	

Reported working capital change and revenue without adjustment by S&P Global Ratings. The sample in this study is rebalanced each quarter following selection criteria, as detailed in the "The Data Used in This Report" section.

Source: S&P Global Ratings.

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Table 6b | Median working capital change as a percentage of revenue by issuer credit rating (%)

Issuer credit rating*	Entity count	12 months ended, QOQ									
		June 30, 2022	Sept. 30, 2022	Dec. 31, 2022	March 31, 2023	June 30, 2023	Sept. 30, 2023	Dec. 31, 2023	March 31, 2024	June 30, 2024	
BB+	113	-1.8	-1.7	-2.0	-1.3	-1.0	-1.0	-0.7	-0.4	-0.3	
BB	127	-2.7	-2.5	-2.8	-1.8	-1.1	-0.4	-0.1	0.0	0.0	
BB-	140	-2.7	-2.7	-2.0	-1.2	-0.6	-0.4	0.0	-0.3	-0.4	
B+	154	-2.7	-2.0	-1.8	-1.6	-1.0	-0.8	-0.1	0.1	-0.1	
B	211	-3.4	-2.7	-2.4	-1.2	-0.6	-0.2	0.0	-0.1	-0.4	
B-	253	-2.1	-1.9	-1.6	-0.8	-0.4	0.4	0.6	0.2	-0.1	
CCC+	92	-3.1	-2.9	-2.2	-0.9	0.0	0.7	1.3	0.6	0.4	
CCC	34	-4.3	-3.0	-3.2	-2.3	-0.6	2.2	2.7	1.5	1.4	
CCC-	13	-1.4	-0.1	-1.4	0.3	1.3	1.7	2.3	1.0	0.9	
CC	4	-4.5	-2.8	0.7	-0.5	-2.1	-2.0	-1.1	-2.7	-0.4	
Total	1141	-2.6	-2.3	-2.0	-1.2	-0.6	-0.3	0.2	0.0	-0.1	

*Rating as of Sept. 17, 2024.

Reported working capital change and revenue without adjustment by S&P Global Ratings. The sample in this study is rebalanced each quarter following selection criteria, as detailed in the "The Data Used in This Report" section.

Source: S&P Global Ratings.

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Table 6c | Median working capital change as a percentage of revenue by company size (%)

Entity size (measured by EBITDA)	Entity count	12 months ended, QOQ									
		June 30, 2022	Sept. 30, 2022	Dec. 31, 2022	March 31, 2023	June 30, 2023	Sept. 30, 2023	Dec. 31, 2023	March 31, 2024	June 30, 2024	
<50	122	-1.8	-1.4	-0.9	-0.2	0.4	1.4	2.0	1.1	1.4	
50-100	135	-2.7	-3.1	-2.9	-1.3	-0.6	0.0	0.6	0.9	-0.3	
100-200	228	-2.9	-2.9	-2.4	-1.6	-0.6	-0.3	0.3	0.1	-0.2	
200-300	162	-3.0	-2.2	-1.8	-1.2	-0.5	0.0	0.7	0.4	0.1	
300-500	190	-3.0	-3.0	-2.5	-1.5	-1.0	-0.7	-0.3	-0.4	-0.3	
500-1000	162	-2.2	-2.1	-1.8	-1.1	-0.5	-0.6	-0.2	-0.2	-0.5	
>1000	142	-2.0	-1.6	-1.1	-0.7	-0.8	-0.7	-0.4	-0.7	-0.3	
Total	1141	-2.6	-2.3	-2.0	-1.2	-0.6	-0.3	0.2	0.0	-0.1	

Reported working capital change and revenue without adjustment by S&P Global Ratings. The sample in this study is rebalanced each quarter following selection criteria, as detailed in the "The Data Used in This Report" section.

EBITDA--Earnings before interest, taxes, depreciation, and amortization.

Source: S&P Global Ratings.

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Data Used In This Report

Our large data set contains financial data for all speculative-grade corporate entities rated in the U.S. and Canada, covering both public and private companies for which we have received and spread financial statements for the latest quarter. Each quarter, we construct a sample pool from the large set in which we have quarter-end financial reports for every quarter since Dec. 31, 2019. This sample set varies somewhat quarter by quarter because it excludes entities rated 'S.D.' (selective default) or no longer outstanding as of the end of each quarter (due to default or being withdrawn) but includes new issuers for which we have historical financial reports.

The sample set is generally smaller than the large set but is nonetheless a representative sample of the North American speculative-grade universe. The sample in this report consists of approximately 910 companies because some private companies had yet to report second-quarter 2024 financial results before our extraction date of Sept. 17, 2024. These companies will re-enter the sample once we have all the financial statements and have built the next sample.

Related Research

- Debt Restructuring Snapshot: Del Monte Foods Inc., Oct. 8, 2024
- Debt Restructuring Snapshot: Magenta Buyer LLC (dba Trellix And Skyhigh Security), Oct. 2, 2024
- U.S. Leveraged Finance Q2 2024: Credit Trends Generally Positive, But First-Lien Recovery Prospects Still Under Pressure, Aug. 7, 2024
- U.S. Leveraged Finance Q1 2024 Update: For Most 'B-' Rated Issuers, Solid Businesses Have Shaky Finances, May 23, 2024
- Recovering From COVID-19: Why The Timing Of Bankruptcy And Emergence Matters For Debt Recovery, Feb. 7, 2022

This report does not constitute a rating action.

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Documentation, Flexible Structuring Continue To Reign In Private Credit

September 17, 2024

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Key Takeaways

- Private credit agreements have tighter loan documentation than the syndicated loan market based on our review of select provisions from a sample of companies that moved from the broadly syndicated loan market to the private market.
- Most private credit agreements have financial maintenance covenants; there is an inverse relationship between the size of entities and the presence of financial maintenance covenants.
- Distressed private credit entities have utilized payment-in-kind (PIK) provisions and extension of maturities extensively to address liquidity and financing issues. Increasingly, PIK is used as an opportunistic pricing option to address high interest rates, even among better-performing credits.

The upper end of the private credit market has converged with the broadly syndicated loan market in the last two years or so. Many companies in this space transitioned to the private credit market to refinance their capital needs while the institutional loan market was largely dormant from early 2022 through late 2023.

However, the trend reversed somewhat this year with the syndicated loan market reclaiming some lost ground.

In such crossovers, a question emerges as to whether loan documentation has changed for issuers that refinanced out of the broadly syndicated loan (BSL) markets into private credit markets. Given the relative opacity of the latter, it is a challenge to make definitive observations on specific covenant trends. Moreover, market dynamics of demand and supply of loans at the time of a transaction also drive documentation quality. However, based on our review of credit agreements of 22 such companies that refinanced out of BSL into private credit, private credit markets tend to tighten agreements.

Another question raised is whether private credit agreements for the core and upper middle markets do away with financial maintenance covenants. We reviewed more than 1,000 credit agreements in the private credit universe and found most include at least one financial maintenance covenant, except for loans to larger entities (debt size of \$1 billion and above). Most of those larger entities are without financial maintenance covenants.

We also note that borrowers in the private credit market utilize payment-in-kind (PIK) provisions to address their liquidity and refinancing needs. We looked at the phenomena and motivation issuers have in opting for a PIK structure.

Financial Maintenance Covenants

Bank lending and BSL markets

The syndicated leveraged loan market of today has roots in traditional bank lending, albeit with some features significantly altered as the investor base has changed and broadened dramatically. Instead of holding loans on their balance sheets, banks leveraged their relationships with sponsors and issuers to originate and distribute term loans predominantly to collateralized loan obligations (CLO) and other institutional investors. This has allowed banks to reduce their capital reserve requirements and increase fee income. When banks held the loans on their books, they relied on financial maintenance covenants to monitor issuer health and intervene if performance deviated from agreed credit metrics.

In the early years of the institutional loan market, covenant-lite term loan structures (without financial maintenance covenants) were granted only to select borrowers deemed worthy of this accommodation. However, with the evolution of a secondary loan market, which emerged sharply and provided institutional investors an option to exit their loan positions, covenant-lite term loans gained broad market acceptance after the global financial downturn.

Moreover, issuers and sponsors became concerned about their ability to renegotiate financial maintenance covenant thresholds with a large base of lenders whenever they ran into operational issues. This is unlike the quick and efficient process of dealing with a small base of bank lenders traditionally. The covenant-lite loan structure became the BSL standard and today represents almost 90% of loans in the LSTA LCD Index. Banks still preserve maintenance covenants for the pro rata revolving and term loans they issue and hold, although revolver covenants are typically in the form of springing covenants tested only if revolver borrowings exceed a preset threshold (typically 25%-40% of the commitment).

As the syndicated loan market expanded, fueled by the CLO market, power dynamics shifted to issuers and sponsors. This led to more flexibility in documentation, including wider definitions of EBITDA, larger incremental loan buckets, flexible language around restricted payments, investment baskets, and an umbrella of hidden flexibilities to be tapped for a rainy day.

Bank lending and private credit markets

Banks shied away from lending to middle market entities given the consolidation and growth of banks and the focus on generating financing, syndication, and advisory fees from larger issuers. Further, regulatory considerations such as interagency guidelines on leveraged lending also discouraged banks from making loans to leveraged entities.

As banks retracted from such lending, private credit managers moved in and focused on middle market entities, often holding the loans in the fund complex they managed or in their books, generally through maturity. Given the buy-and-hold to maturity nature of these loans, private credit lenders instituted financial maintenance covenants in their loan agreements, keeping the option to intervene early to course-correct and protect their position and interest. Most lending in the middle market is done through small groups of private credit lenders (club lending).

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Overlap Of Private And Syndicated Loan Markets

The BSL and private credit markets, for the most part, addressed the needs of different sizes and profiles of borrowers until around the time of the COVID-19 pandemic. In 2022 and 2023, the rise in inflation and general uncertainty in capital markets stalled bank syndication of loans and brought institutional loan issuance to a 12-year low of \$225.3 billion in 2022, which only increased marginally to \$234.2 billion in 2023 (based on Pitchbook LCD data). The near freeze in bank lending and syndication meant several issuers looked for alternative options to refinance, and private credit markets stayed open to provide financing and liquidity to issuers traditionally from the BSL market.

BSLs have since come back strongly this year and reclaimed some ground. However, we expect issuers and sponsors to continue to tap both markets, depending on their circumstances and motivations, including pricing and deal economics, flexibility of structure, and time to execution. (See "Credit Trends: Public-To-Private Borrowing Is A Two-Way Street", published May 7, 2024.)

Utility Of Maintenance Covenants

An incurrence covenant requires a company to meet a certain dollar or ratio threshold before taking a variety of actions such as borrowing incremental debt, making investments, adding new liens, and making restricted payments.

A maintenance covenant is a recurring test of specific financial metrics. The company is required to adhere to it for the duration of the loan, providing a mechanism to renegotiate loan terms if credit deteriorates below agreement thresholds.

Covenant violations generally reset thresholds for a fee or a higher margin as a premium for the additional credit risk. This allows lenders to get a better grip on the company's performance, including the option to revise other terms to help reduce potential losses or limit further deterioration. Provisions include tighter collateral terms, increased amortization payments, limited capital expenditure or revolver availability, or restricted ability to pay dividends or make investments outside of the credit group.

Financial Covenants And Impact On Recoveries

In S&P Global Ratings' view, loans structured with financial maintenance covenants recover higher than those without, given similar capital structure and business prospects. In the former, lenders can intervene to tighten loan terms or technically trigger a default before operating performance deteriorates more substantially. In our recovery ratings methodology, we assume borrowers with maintenance covenants breach them on their path to default and must pay a higher spread or fee to compensate lenders for increased credit risk. The incremental borrowing costs lead to an earlier assumed default at higher EBITDA and enterprise value, which prevents further leakage of enterprise value and helps preserve lender recovery prospects.

This hypothesis is borne out in two empirical studies we did of companies that emerged from bankruptcy. We found that covenant-lite loans had an average recovery rate 11 percentage points below that on covenanted loans and a median recovery rate 34 percentage points below. (See "Settling For Less: Covenant-Lite Loans Have Lower Recoveries, Higher Event And Pricing Risks", published Oct. 13, 2020, and "Lenders Blinded By Cov-Lite? Highlighting Data On Loan Covenants And Ultimate Recovery Rates", published April 12, 2018.)

We also reflect higher recoveries for loans with financial maintenance covenants in our CLO rating methodology. If a loan has a recovery rating from S&P Global Ratings (which most do in the BSL universe), the recovery rating takes into account financial maintenance covenants and may be lower for covenant-lite loans. For loans that don't have an S&P Global Ratings recovery rating, which describes most of the loans in middle-market CLOs, recovery assumptions used in the CLO analysis are lower for covenant-lite loans.

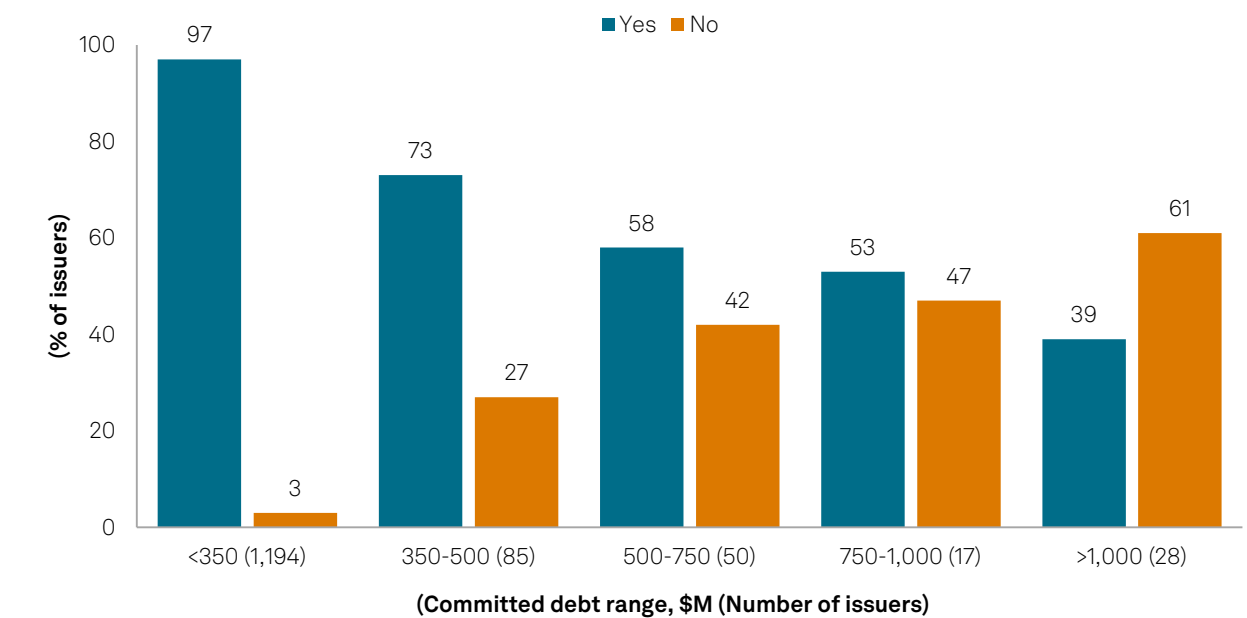
Maintenance covenants in loan structures

We reviewed a vast majority of the credit agreements for which we provided credit estimates last year. More than 90% had some form of financial maintenance covenant, the most common being leverage-based. When a second financial maintenance covenant was present, it was a fixed-charge coverage ratio. Lenders likely want to keep a pulse on a company's ability to service fixed costs, especially when benchmark rates are at a 15-year high.

For many distressed issuers, lenders also want to keep track of cash balances and ensure issuers proactively address liquidity concerns. Consequently, liquidity covenants were tested monthly or bi-weekly. These lenders typically require the submission of 13-week cash flow projections.

We observed a negative relation between the size of the companies and the prevalence of maintenance covenants. We broke out the presence of maintenance covenants by debt size (Chart 1). The inclusion of maintenance covenants remains strong (more than 95%) until debt reaches about \$350 million, then starts to decline gradually. For the largest deals in our study (more than \$1 billion), only 39% still had a maintenance covenant. Overall, the percentage of entities without a maintenance covenant across the credit-estimated companies is less than 10%.

Chart 1 | Presence of maintenance covenants



Committed debt includes term loans and delayed-draw term loans.

Source: S&P Global Ratings.

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Comparison Of Select Provisions In Private Credit And BSL Documentation

For 22 entities that moved from BSL to private credit, we reviewed select provisions from their respective credit agreements from the two markets. These loans are now held in middle market CLOs that private credit managers issue and we rate.

In addition to the financial maintenance covenants, the other provisions we reviewed included EBITDA definitions and guardrails around asset transfer.

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We noted that of the 17 syndicated loan market credit agreements, which were covenant-lite previously, eight required a financial maintenance covenant on moving to the private credit market, indicating the relative negotiating strength of private lenders. The covenant was for the most part leverage (debt to EBITDA) and, in the remaining cases, fixed-charge coverage.

EBITDA Addbacks In Loan Agreements

The typical EBITDA definition in credit agreements includes an array of addbacks, including restructuring charges, acquisition costs, transaction expenses, stock compensation expenses, severance costs, earn-outs, losses from discontinued operations, and a broad definition of nonrecurring expenses. EBITDA definitions in most credit agreements also allow for cost savings and synergies that an issuer can expect to realize coming out of mergers and acquisitions, buyouts, etc. Credit agreements generally cap the amount that can be added under this bucket. More aggressive credit agreements don't cap the addbacks, providing borrowers with unbounded flexibility to add back anticipated synergies and cost savings. Over and above calculation for financial maintenance purposes, EBITDA is also used in the calculation of incurrence ratios and to set capacities under various other negative covenants.

EBITDA calculations for S&P Global Ratings

To be clear, EBITDA used in our ratings and credit estimates analysis is based on our view of a company's EBITDA regardless of how they are defined in credit agreements. In our reviews, we determined that issuers/sponsors are a lot more aspirational in their forecast of synergies and cost savings. (See "Adding Up: EBITDA Addback Study Shows Moderate Improvement In Earnings Projection Accuracy", published March 27, 2024.) However, EBITDA, as defined in loan credit agreements, is applied in the calculation and sizing of various baskets. Hence, an open and broad definition of EBITDA poses more potential risks, given the flexibility for issuers and sponsors for additional borrowings, payment to subordinate debt, and other applications that dilute recovery prospects for senior lenders.

For these 22 companies before transitioning to private credit, eight of their syndicated loan credit agreements did not cap anticipated cost savings that could be added back to agreement-defined EBITDA. Seven of them were also covenant-lite and did not issue covenant compliance certificates. This makes it that much more challenging for BSL investors to know the likely magnitude of EBITDA addbacks and the potential flexibility it provides under other baskets or when an issuer effects a transaction. When the entities transitioned to private credit, synergy and cost saving was capped in all but one case. In that instance, the deal dispensed with the EBITDA-based covenant and switched to a liquidity covenant when it moved to the private credit market. There was one deal that did have a cap for cost saving but got rid of it when it moved to private credit.

The median cap for the loans that transitioned was 30%, and the range of addbacks was between 10% and 35% for private credit. However, among BSL credit agreements, which had a percentage cap for addbacks, the overall median EBITDA addback percentage was 25%.

Asset transfers to unrestricted subsidiaries and other non-guarantor subsidiaries

In the syndicated loan market, some distressed issuers have utilized unrestricted subsidiaries to transfer or "drop down" assets from their loan groups. Unrestricted subsidiaries are generally not required to comply with the covenants of the credit agreement and do not provide guarantees and security. Consequently, the assets transferred to unrestricted subsidiaries are removed from the collateral package backing existing loans. These assets are then pledged as collateral for new funding incurred by the unrestricted subsidiary to address the company's liquidity needs.

Most commonly, the transferred assets are intellectual property, which lends itself to flexibility in valuation. The transfer of assets out of the existing loan group to the unrestricted subsidiary can be accomplished either by an actual transfer or by designating a restricted subsidiary that owns such assets as an unrestricted subsidiary (in either case, using flexibility under the credit agreement allowing such an action).

Historically, such financings have mostly been in the BSL universe. Recently, however, a high-profile drop-down financing involving a transfer of intellectual property occurred in the private credit market. Our understanding is that this transaction also involved a variation sometimes seen in such financings. The assets were transferred not to an unrestricted subsidiary but instead to a non-guarantor restricted subsidiary--a subsidiary not required to provide a guarantee or security but otherwise generally bound by the covenants of the credit agreement. As in the case of an unrestricted subsidiary, the new debt raised by the non-guarantor restricted subsidiary (and backed by the newly transferred assets plus any of its existing assets) will be structurally senior to the existing debt.

A drop-down to a non-guarantor restricted subsidiary might be the lesser of two evils compared to a drop-down to an unrestricted subsidiary, but such transactions could nevertheless impair the recovery prospects of existing claims.

Before and after the J. Crew deal

Following the much-discussed J. Crew Group Inc. drop-down financing in late 2016, some lenders began including in their credit agreements "J. Crew blocker" provisions that restrict the ability of borrowers to remove material intellectual property from the loan group using unrestricted subsidiaries and, in some cases, other non-guarantor subsidiaries. We reviewed the 22 credit agreements in our samples from the BSL and private credit markets for such blockers and certain common components of those blockers. (The strength of such blockers ultimately varies from agreement to agreement based on other factors as well, such as how they are drafted and any exceptions.)

Among the 22 BSL credit agreements, 10 were executed before 2018 and the heightened market awareness of drop-downs following the J. Crew financing, so it is likely that none considered such a transaction. Six of the 12 agreements executed after the J. Crew financing included a blocker. One of the six had a restriction on transfers of material intellectual property to an unrestricted subsidiary. Four restricted such transfers as well as the ability of the borrower to designate a subsidiary that owns material intellectual property as an unrestricted subsidiary or the ability of an unrestricted subsidiary to own such intellectual property. Of these four, one also incorporated restrictions on the transfer of material intellectual property to a non-guarantor restricted subsidiary. One agreement formulated the blocker as restricting ownership of material intellectual property by an unrestricted subsidiary.

For the six borrowers under post-2017 BSL credit agreements that did not include a J. Crew blocker and then transitioned to refinance in the private credit market, the private market credit agreements of five added a blocker. The sixth removed the concept of unrestricted subsidiaries. Overall, 18 private market credit agreements include a blocker, and 17 include an unrestricted subsidiary concept. Of the latter, 14 include a blocker, and seven of the 14 restrict the transfer of material intellectual property to unrestricted subsidiaries and also restrict the ability of the borrower to designate a subsidiary that owns such intellectual property as an unrestricted subsidiary or the ability of an unrestricted subsidiary to own such intellectual property. The other seven of these agreements also include restrictions applicable to non-guarantor restricted subsidiaries.

Of the remaining five agreements without an unrestricted subsidiary concept, one includes a restriction on transfers of material intellectual property to a non-guarantor subsidiary, and two include both such a restriction and a restriction on the ability of a non-guarantor subsidiary to own material intellectual property. One of the five agreements formulates the blocker as restricting ownership of such intellectual property by a non-guarantor subsidiary.

Private Credit: PIK And Extension To Address Liquidity Challenges

The taxonomy of defaults for credit-estimated private credit entities borrows from our rated universe. A credit estimate of 'd' corresponds to a general payment default such as bankruptcy or missed payment across the capital structure. An 'sd' (selective default), on the other hand, is at the issue level and where there is a breach of the original promise of payment. The issuer executes a distressed exchange to avoid a traditional default. There is no adequate and offsetting compensation for the lender for such a breach. Examples of 'sd' are a below-par exchange or amend-to-extend transaction, deferral of interest, or postponement of scheduled principal payments.

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As of the end of June 2024, the private credit-derived default rate, which is based on the 'd' and 'sd' credit estimates, stood at 4.57%. This may be different from other default rate citations because of different methodologies and sample considerations adopted by other institutions that provide this metric.

Last year, selective defaults ticked up significantly. Instances of selective default rose from 83 in the last 12 months ended in June 2023 to over 100 in the same period ended in June 2024. The uncertainty around the direction of the interest rate environment and the divergence in valuations reduced asset sales and, therefore, sponsor exits. Issuers thus executed amendments to push back their near-term maturities.

Further, high debt servicing costs put significant pressure on the liquidity of companies leading several of the challenged ones to get a reprieve via conversion of their cash interest payments to a partial or full PIK. Unsurprisingly, the two primary drivers of selective defaults were cash interest conversion to PIK (69%) and maturity extensions (41%), with some transactions doing both.

Issuers and lenders have different motivations for negotiating a particular PIK structure: one that suits an issuer's business model, accommodates a transaction or waiver, supports during a macroeconomic environment, or typically one that helps through a distress situation. Depending on the motivation and circumstances of the issuer, we classify PIK payments into four categories:

The structure allows PIK from the onset, which gets exercised (typically recurring revenue deals).

In these agreements, especially those drafted for middle market companies with a recurring revenue-based business model and maintenance covenant, the business thesis is predicated on high upfront investments toward customer acquisitions, growth, and business development to scale to a critical mass of customers. As a result, in most cases, such interest deferral is permitted until a "conversion date" (the "pre-conversion" period wherein a company is anticipated to scale up)--i.e., when the maintenance covenant test flips from leverage based on recurring revenue to EBITDA.

The structure provides an option to PIK (but may not get exercised). Since 2023, we have seen a pick-up in deals that provide the option to PIK a portion or the entire applicable margin. The interest is deferred for a limited duration (usually the first two years) as issuers see some benefits to the buffer this optionality will provide with the current high interest rate environment. Despite the availability of this option, several credits haven't exercised it mainly due to sufficient operating cash flow or available on-balance-sheet liquidity. In contrast to the broader credit estimated universe with a median EBITDA of \$35 million, these credits have median EBITDA of \$78 million, pointing to the relatively larger entities offered this option. We also note limited sectoral themes and believe it is issuer-specific.

PIK over and above cash pay. In a limited number of agreements, PIK interest is in addition to cash interest. In a couple of them, the additional PIK was either used to sweeten a highly leveraged buyout, to deter against higher leverage (where PIK is added only to the highest pricing slab by leverage tier), or as increased economics in exchange for a covenant reset. Further, because these are either a part of the original terms or added over and above the cash pay rate, the issuer with such loans is not considered to be in selective default.

Instances recently also include a delayed-draw term loan facility to fund interest payments on the funded term loans and revolver draws for a limited duration. None of the above are categorized as a selective default because the issuer's option to PIK the entire interest, or a portion of it, is part of the original terms.

PIK to address distress. Among all the types of PIK structures we reviewed in the last few years, the most common address liquidity stress arising from operational underperformance coupled with rising benchmark rates. These are typically distressed entities that execute amendments to defer interest payments either partially or in full. These generally constitute a selective default because these terms are granted to help avoid a near-term default and because there is a breach in the original terms of payment and, in our view, an absence of adequate and offsetting compensation.

We reviewed nearly 100 entities that executed amendments to convert their cash pay to partial or full PIK payments within our credit estimates from the start of 2022. (Some of these issuers paid in kind multiple times.) The duration of the PIK period varied. The median duration of PIK was four quarters,

with the average slightly higher at five quarters. Instances where companies could PIK until maturity drove up the median and average.

In some instances, the company was allowed to PIK not for a specific time but until a particular condition, typically a liquidity threshold, was met. Full cash interest pay resumed at a minimum dollar value of liquidity or other credit performance metric. The primary difference between these distressed PIKs and the third category of PIK (over and above cash pay) is that in these cases, cash interest paid is being reduced, which is a breach of the original promise.

In several instances, sponsors contributed equity financing to address liquidity issues, including guaranteeing liquidity if it drops below a minimum certain threshold. In some instances, the sponsors suspended their management fees.

A handful of the companies utilized PIK as a form of bridge. They would PIK multiple times consecutively to bridge the time gap until it executed a broader and more fulsome amendment. In others, there was recidivism in which the companies would PIK for a short time, resume full cash pay, and then return, typically a year later, to PIK.

The median EBITDA of all credit estimates updated in 2023 was approximately \$35 million. In contrast, the median EBITDA for the companies that used PIK out of necessity was close to \$17 million, underscoring the financial distress these companies face. That said, we don't find a strong relationship between entity size and its performance, reflected by a downgrade of credit estimates.

Flexibility In Market Dynamics

Given the buy-and-hold nature of private credit deals, it is only logical that lenders will want better protections in their lending documents. Further, given the relatively small base of lenders and the relationship-based nature of the market, private credit deals may be unlikely to engage in some forms of liability management transactions such as priming, impairing a select subset of senior lenders.

This market is constantly evolving with more opportunities for private credit lenders as banks continue to retract from lending. Market dynamics have already resulted in some flexibility that private credit lenders provide, such as a higher prevalence of larger entities without financial maintenance covenants and the ability to reclassify incremental loans. (See "Common Themes In Middle-Market Credit Agreements", published July 6, 2022). As the asset allocation for private credit widens, more private credit lenders will likely compete for deals. This could shift the dynamics of power and negotiating leverage to the borrower's side, which in turn could have the effect of eroding some document provisions.

While documentation in certain portions of the private credit market may begin to resemble those of BSL markets, for broader private credit market loan documentation to shift to BSL-type credit agreements, the structure of the market needs to change significantly, the least of which would be the availability of a dynamic secondary market as an exit option for lenders.

Related Research

- Credit Trends: Public-To-Private Borrowing Is A Two-Way Street, May 7, 2024
- Adding Up: EBITDA Addback Study Shows Moderate Improvement In Earnings Projection Accuracy, March 27, 2024
- Common Themes In Middle-Market Credit Agreements, July 6, 2022
- Settling For Less: Covenant-Lite Loans Have Lower Recoveries, Higher Event And Pricing Risks, Oct. 13, 2020
- Lenders Blinded By Cov-Lite? Highlighting Data On Loan Covenants And Ultimate Recovery Rates, April 12, 2018

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Thirty Years Strong: U.S. CLO Tranche Defaults From 1994 Through Third-Quarter 2024

September 27, 2024

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Since S&P Global Ratings rated its first collateralized loan obligation (CLO) transaction 30 years ago in 1994, we have rated almost 20,000 U.S. CLO tranches, totaling nearly \$1.5 trillion in issuance (including CLO refinancing and reset activity). To date, through 30 years and several recessions (including the pandemic-related downturn in 2020), these CLO ratings have shown only a modest number of defaults, and they have outperformed most other rated asset types.

The CLO 1.0 generation of transactions--those rated from the inception of the market in the mid-1990s through 2009--comprised 4,322 tranches from around 800 cash flow CLOs rated by S&P Global Ratings. The last of these transactions paid down in 2021, and their default history is complete: of the 4,322 ratings, just 40 defaulted, 15 of which began life with an investment-grade rating ('BBB- (sf)' or higher) when originally issued (see table 1).

The CLO 2.0 generation of transactions began in 2010 with the reemergence of CLO transaction new issuance in the aftermath of the Global Financial Crisis (GFC). There were a number of differences between the first-generation CLO 1.0 transactions and the post-GFC CLO 2.0 transactions, including:

- More credit enhancement for the rated CLO notes, especially at the top of the CLO capital structure. For example, a 2006 vintage CLO might have had 26% par subordination for its 'AAA' tranche, but many CLO 2.0 transactions in recent years have had 35% or more par subordination for their 'AAA' tranches, although some CLOs with higher-than-average quality collateral pools may have less.
- Collateral pools that exclude investments in assets other than corporate loans and a small portion of corporate bonds. Most CLO 1.0 transactions had the ability to invest up to 10% of their assets in tranches from other CLOs.
- Transaction documents that incorporate lessons learned from the GFC. For example, CLO 2.0 indentures include provisions intended to prevent or mitigate CLO note cancellation and limit the manager's ability to extend the life of the CLO transaction via trades done after the end of the reinvestment period.

Additionally, the investor base for the 2.0 transactions was (and is) less levered and less sensitive to changes in market value of the tranches than the CLO 1.0 universe had been.

From 2010 through third quarter 2024, S&P Global Ratings rated 15,501 classes from more than 1,850 U.S. CLO 2.0 transactions totaling over \$1.19 trillion (including CLO refinancing and reset activity). While there was a downturn in the energy and commodities sectors in 2015 and 2016, the CLO 2.0 generation of transactions hadn't seen a full-blown recession until the 2020 pandemic-related downturn, and a modest number of CLO 2.0 tranches have now defaulted (see table 1; the full list of CLO 1.0 and 2.0 tranche defaults is in table 3).

Table 1 | US CLO 1.0 and 2.0 default summary by original rating

	CLO 1.0			CLO 2.0		
	Number of original ratings ¹	Number of defaults ²	Number currently rated	Number of original ratings ¹	Number of defaults ²	Number currently rated
AAA (sf)	1,540	0	0	4,228	0	1,917
AA (sf)	616	1	0	3,364	0	1,590
A (sf)	790	5	0	2,794	0	1,360
BBB (sf)	783	9	0	2,622	0	1,406
BB (sf)	565	22	0	2,083	10	1,097
B (sf)	28	3	0	410	11	173
Total	4,322	40	0	15,501	21	7,543

¹ Original rating counts as of Sept. 16, 2024.

² CLO tranche default counts as of Sept. 27, 2024.

Source: S&P Global Ratings Credit Research & Insights and S&P Global Market Intelligence's CreditPro®.

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Table 2 | Likely future defaults: US CLO tranches currently rated 'CCC-' or 'CC'

Transaction	Tranche	Year originated	Rating	
			Original	Current
Telos CLO 2013-4 Ltd.	E-R	2018	BB- (sf)	CC (sf)
BNPP IP CLO 2014-II Ltd.	E	2014	BB (sf)	CC (sf)
Avery Point IV CLO Ltd.	F	2014	B- (sf)	CC (sf)
Telos CLO 2014-5 Ltd.	E-R	2018	BB- (sf)	CC (sf)
Tralee CLO IV Ltd.	F	2018	B- (sf)	CCC- (sf)
Tralee CLO II Ltd.	F-R	2017	B- (sf)	CCC- (sf)
Telos CLO 2014-6 Ltd.	E	2014	BB (sf)	CCC- (sf)

CLO = collateralized loan obligation.

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In addition to these 61 defaulting CLO 1.0 and 2.0 tranches, we also have seven tranches from seven U.S. CLO 2.0 transactions that we view as likely candidates for future default based on the current rating assigned (see table 2). These tranches are currently rated 'CC (sf)', indicating our view that a default is a near certainty, or 'CCC- (sf)', which we view as vulnerable to nonpayment. Most of the CLOs from which these tranches come from are earlier vintage 2.0 CLO transactions that experienced both the energy and commodity downturn in 2015-2016 and the pandemic-related downturn in 2020. While these tranches haven't yet defaulted, they have experienced downgrades to their current ratings due to significant credit deterioration, and the current ratings assigned reflect our view that it is unlikely the notes will get repaid in full by the CLOs' legal final maturity dates. While the notes are undercollateralized (the balance of CLO notes at their level and senior exceeds the balance of the CLO's performing assets, excluding equity), they are deferrable and it may be some time before a payment default occurs (typically when the CLO hits its final maturity date, or the assets are liquidated and the proceeds are insufficient to pay off the CLO notes in full).

Since the asset class emerged 30 years ago, CLOs have shown resilient performance through multiple economic downturns. The reasons for this go back to basic CLO structural mechanics and protective mechanisms. First and foremost is the CLO structure itself, with the equity tranche sitting at the bottom of the capital stack, first in line to absorb any losses ahead of the rated CLO notes. Further, in times of stress, the mechanics of the CLO structure work to protect the senior CLO notes, and no CLO note originally rated 'AAA (sf)' has defaulted.

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Table 3 | US CLO tranches rated by S&P Global Ratings with ratings lowered to 'D' (1994-Sept. 30, 2024)

Transaction	Tranche	Year originated	Original rating	Year rating lowered to 'D'	Cause
KBC - Orion Commercial Loan Master Trust	D-1	1999	BB (sf)	2002	Collateral deterioration.
KBC - Orion Commercial Loan Master Trust	D-2	1999	BB (sf)	2002	Collateral deterioration.
Kingfisher Capital CLO Ltd.	A	2008	BBB+ (sf)	2009	Missed interest/non-deferrable.
Pine CCS Ltd.	A-1	2008	A- (sf)	2009	Missed interest/non-deferrable.
Pine CCS Ltd.	A-2	2008	A- (sf)	2009	Missed interest/non-deferrable.
GE Commercial Loan Trust Series 2006-1	PTC	2006	BB (sf)	2010	Market value provisions.
Landmark II CDO Ltd.*	B	2002	AA (sf)	2010	Missed interest/non-deferrable.
Spruce CCS Ltd.	Senior notes	2008	A (sf)	2010	Missed interest/non-deferrable.
Verano CCS Ltd.	Senior notes	2008	A- (sf)	2010	Missed interest/non-deferrable.
Confidentially rated tranche (CLO 2)	N/A	1999	B+ (sf)	2011	Collateral deterioration.
Confidentially rated tranche (CLO 2)	N/A	1999	B+ (sf)	2011	Collateral deterioration.
Confidentially rated tranche (CLO 3)	N/A	2000	B (sf)	2011	Collateral deterioration.
GE Commercial Loan Trust Series 2006-2	D	2006	BBB- (sf)	2011	Market value provisions.
GE Commercial Loan Trust Series 2006-2	PT	2006	BB (sf)	2011	Market value provisions.
GE Commercial Loan Trust Series 2006-3	C	2006	A (sf)	2011	Market value provisions.
GE Commercial Loan Trust Series 2006-3	D	2006	BBB- (sf)	2011	Market value provisions.
GE Commercial Loan Trust Series 2006-3	PTC	2006	BB (sf)	2011	Market value provisions.
Landmark II CDO Ltd.	C	2002	BBB (sf)	2011	Collateral deterioration.
Landmark II CDO Ltd.	D	2002	BB (sf)	2011	Collateral deterioration.
Sandelman Finance 2006-1 Ltd.	E	2006	BB (sf)	2011	Investor action.
Confidentially rated tranche (CLO 4)	N/A	2001	BB (sf)	2012	Missed interest/non-deferrable.
Rosedale CLO II Ltd.	E	2007	BB (sf)	2012	Investor action.
Confidentially rated tranche (CLO 1)	N/A	1999	BB- (sf)	2013	Collateral deterioration.
Confidentially rated tranche (CLO 1)	N/A	1999	BB- (sf)	2013	Collateral deterioration.
Confidentially rated tranche (CLO 1)	N/A	1999	BB- (sf)	2013	Collateral deterioration.
Katonah V Ltd.	D	2003	BB (sf)	2013	Collateral deterioration.
Longhorn CDO III Ltd.	E	2003	BB (sf)	2013	Collateral deterioration.
Foxe Basin CLO 2003 Ltd.	D	2003	BB (sf)	2014	Collateral deterioration.
Highland Loan Funding V Ltd.	C-1	2001	BBB (sf)	2014	Collateral deterioration.
Highland Loan Funding V Ltd.	C-2	2001	BBB (sf)	2014	Collateral deterioration.
Highland Loan Funding V Ltd.	D	2001	BB+ (sf)	2014	Collateral deterioration.
Premium Loan Trust I Ltd.	C	2004	BBB (sf)	2014	Collateral deterioration.
Premium Loan Trust I Ltd.	D	2004	BB (sf)	2014	Collateral deterioration.
Stanfield Carrera CLO Ltd.	C-1	2002	BBB (sf)	2014	Missed interest/non-deferrable.
Stanfield Carrera CLO Ltd.	C-2	2002	BBB (sf)	2014	Missed interest/non-deferrable.
Stanfield Carrera CLO Ltd.	D-1	2002	BB (sf)	2014	Collateral deterioration.
Stanfield Carrera CLO Ltd.	D-2	2002	BB (sf)	2014	Collateral deterioration.
Airlie CLO 2006-II Ltd.	D	2006	BB (sf)	2017	Collateral deterioration.
Global Leveraged Capital Credit Opportunity Fund I	E-1	2006	BB (sf)	2019	Collateral deterioration.
Global Leveraged Capital Credit Opportunity Fund I	E-2	2006	BB (sf)	2019	Collateral deterioration.
Blue Ridge CLO Ltd. I	D	2014	BB (sf)	2021	Collateral deterioration.
Blue Ridge CLO Ltd. I	E	2014	B (sf)	2021	Collateral deterioration.
Flagship VII Ltd.	F	2014	B (sf)	2021	Collateral deterioration.
Mountain Hawk II CLO Ltd.	E	2013	BB (sf)	2021	Collateral deterioration.
WhiteHorse VII, Ltd.	B-3L	2013	B (sf)	2021	Missed interest/non-deferrable.
B&M CLO 2014-1 Ltd.	E	2014	B (sf)	2022	Collateral deterioration.
Blue Ridge CLO Ltd. II	E	2014	B (sf)	2022	Collateral deterioration.
BNPP IP CLO 2014-1 Ltd.	D	2014	BB (sf)	2022	Collateral deterioration.
BNPP IP CLO 2014-1 Ltd.	E	2014	B (sf)	2022	Collateral deterioration.
GLG Ore Hill CLO 2013-1 Ltd.	F	2013	B (sf)	2022	Collateral deterioration.

Table 3 | US CLO tranches rated by S&P Global Ratings with ratings lowered to 'D' (Contd.)

Transaction	Tranche	Year originated	Original rating	Year rating lowered to 'D'	Cause
OFSI Fund VI Ltd.	E	2014	B (sf)	2022	Collateral deterioration/investor action.
Catamaran CLO 2014-2 Ltd.	E	2014	B (sf)	2023	Collateral deterioration.
Halcyon Loan Advisors Funding 2012-1 Ltd.	D	2012	BB (sf)	2023	Collateral deterioration.
Halcyon Loan Advisors Funding 2013-1 Ltd.	D	2013	BB (sf)	2023	Collateral deterioration.
Hull Street CLO Ltd.	E	2014	BB (sf)	2023	Collateral deterioration.
Hull Street CLO Ltd.	F	2014	B (sf)	2023	Collateral deterioration.
Mountain View CLO 2014-1 Ltd.	E	2014	BB- (sf)	2023	Collateral deterioration.
Mountain View CLO 2014-1 Ltd.	F	2014	B- (sf)	2023	Collateral deterioration.
Staniford Street CLO Ltd.	E	2014	BB (sf)	2023	Collateral deterioration.
Marathon CLO VI Ltd.	D-R2	2018	BB- (sf)	2024	Collateral deterioration.
Marathon CLO VII Ltd.	D	2014	BB (sf)	2024	Collateral deterioration.

CLO = collateralized loan obligation; N/A = not applicable; PTC = preferred trust certificates; PT = preferred trust.

* Landmark II CDO Ltd.'s class B note, a non-deferrable note originally rated 'AA', had its rating lowered to 'D' in 2010 after the trustee escrowed the note's interest payments after filing an interpleader action with the U.S. courts. The class B note did not suffer economic loss as its rating was raised to 'BB+ (sf)' from 'D' in 2011 after receiving all interest owed, as well as interest on interest. Class B paid off its full principal balance shortly after.

Source: S&P Global Ratings Research.

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Will Market Volatility Reset CLO Reset/ Refi Volume Expectations For Second-Half 2024?

August 14, 2024

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Key Takeaways

- The steady descent of CLO 'AAA' credit spreads has caused resets and refinancings of U.S. CLOs to rebound impressively this year, nearly matching the record pace of 2021. However, the recent tumult in global markets and potential spread volatility could hinder the prospects of further spread tightening, reducing the likelihood of a historic U.S. reset/refi wave. That said, reset/refi activity has not wavered as of early/mid-August.
- In the U.S., the 2021 CLO vintage is the focal point of potential reset/refi issuance. If the reset/refi incentive for 2021 CLOs increases much further, 2024 reset/refi volume could approach, or even surpass, the record \$252 billion full-year issuance that was priced in 2021.
- While 'AAA' spread tightening has spurred lively CLO new issuance activity in Europe, reset/refi deal flow has been comparatively quiet this year. Generally, this is because the majority of outstanding, refinance-reset-eligible European CLOs were priced with 'AAA' spreads much tighter than current levels.
- We present potential scenarios for U.S. and European CLO reset and refinancing volumes considering the universe of transactions outstanding in each market, how many of those transactions are eligible to be called, the incentives of CLO equity holders, and two paths of 'AAA' credit spreads.

Resets and refinancings (refis) of U.S. collateralized loan obligations (CLOs) have rebounded impressively in 2024, after coming to a near-halt in 2022 and 2023 amidst higher-for-longer interest rates and widening credit spreads. Reset/refi issuance totaled \$140 billion through July 2024, which ranks second only to 2021--when CLO liability spreads compressed sharply amidst near-zero benchmark interest rates and robust investor appetite--resulting in \$155 billion of issuance through July and record full-year volume of \$252 billion. However, recent market volatility and the potential for "risk-off" sentiment taking hold among investors could affect CLO tranche spreads and alter the outlook for resets and refinancings over the remainder of this year.

The pace of resets and refinancings has not wavered so far, with over 30 U.S. transactions pricing in the first two weeks of August. But given the change in market sentiment, we thought now would be a good time to revisit our analysis of potential CLO reset and refinancing volumes using the same methodology as our previous publication on this topic (see "CLO Spotlight: Calling All CLOs! Or Not? Assessing The Potential Volume Of CLO Refinances And Resets," published Feb. 22, 2024). In this article, S&P Global Ratings presents potential scenarios for U.S. and European CLO reset and refinancing volumes considering the universe of transactions outstanding in each market, how many of those transactions are eligible to be called, and the incentives of CLO equity holders.

A Look Ahead At U.S. CLO Reset And Refinancing Volumes For The Remainder Of 2024: 2021 Vintage In Focus

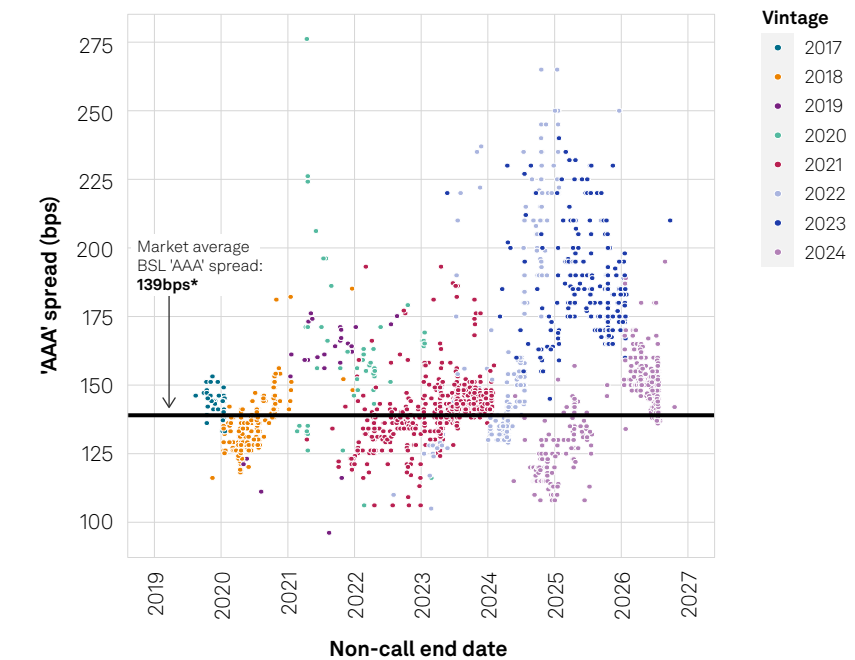
Despite the steady descent of CLO 'AAA' tranche credit spreads through the first half of 2024, the recent tumult in global markets will likely hinder the prospects of continued spread tightening in the U.S. CLO market, at least while these conditions/views persist. Demand for CLO notes might soften if investors believe a recession could soon materialize, and likely Fed rate cuts on the horizon may reduce the allure of floating-rate debt. That said, if CLO tranche spreads remain stable or widen only moderately, we think 2024 will still likely be the second busiest year for refinances and resets in the history of the U.S. CLO market. Should spreads continue to tighten, full-year 2024 reset/refi volume could approach, or even surpass, the volume that was priced in 2021, although this is a less likely scenario.

From December 2023 to July 2024, the average U.S. broadly syndicated loan (BSL) CLO 'AAA' tranche spread to three-month SOFR fell by nearly 40 basis points (bps), renewing incentives for CLO managers and third-party equity holders to call outstanding deals. Middle-market CLO spreads have also fallen, and the basis between middle-market 'AAA' notes and BSL 'AAA' notes has narrowed significantly this year, to about 30 bps as of July 2024 from over 60 bps in late 2023.

Chart 1 below shows the distribution of CLO 'AAA' spreads and non-call period end dates that could affect individual call decisions in the U.S. (for European CLOs, see chart 5). While the overall cost of capital for the CLO's debt stack will drive the decision to refinance or reset the CLO (other than for a partial refinancing), we (consistent with the broader CLO market) often use the 'AAA' tranche spread as a proxy because the 'AAA' notes typically make up about two-thirds of the CLO capital stack by par value.

Chart 1

Outstanding U.S. BSL CLO 'AAA' spreads and non-call period end dates, by vintage



Data as of July 2024. *Market average spread calculation excludes refinances and partial refinances. The spreads of reinvesting CLOs and CLOs outside of their reinvestment period end date by no more than two years are plotted. The spreads of CLOs that have already refinanced or reset previously are plotted (vintage is adjusted to reflect most recent iteration of the CLO). BSL--Broadly syndicated loan. CLO--Collateralized loan obligation. Bps--Basis points.

Sources: Pitchbook LCD and S&P Global Ratings.
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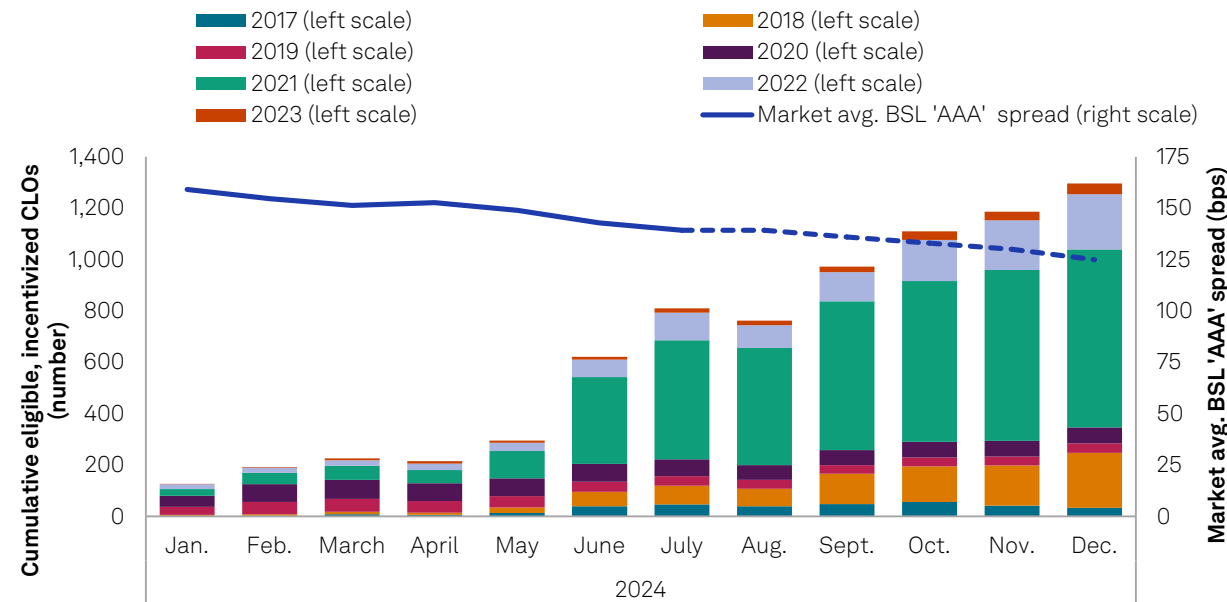
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Most of the 2021 vintage (shown in red), which represents the largest cohort of outstanding CLOs and 60% of refinance-reset-eligible and incentivized transactions, is already “in-the-money”. Still, it is important to consider that equity holders might not opt to reset or refinance a CLO until their “moneyness” (defined here as the outstanding ‘AAA’ spread minus current market average ‘AAA’ spread) is sufficient to cover costs and make the reset/refi economically advantageous. In other words, the benefit of lowering the CLO’s interest expense should outweigh the potential costs of completing a reset/refi. These costs might include CLO arranger fees, collateral contributions to shore up the existing loan portfolio, and rating agency fees, for example.

U.S. market spread tightening and widening scenarios

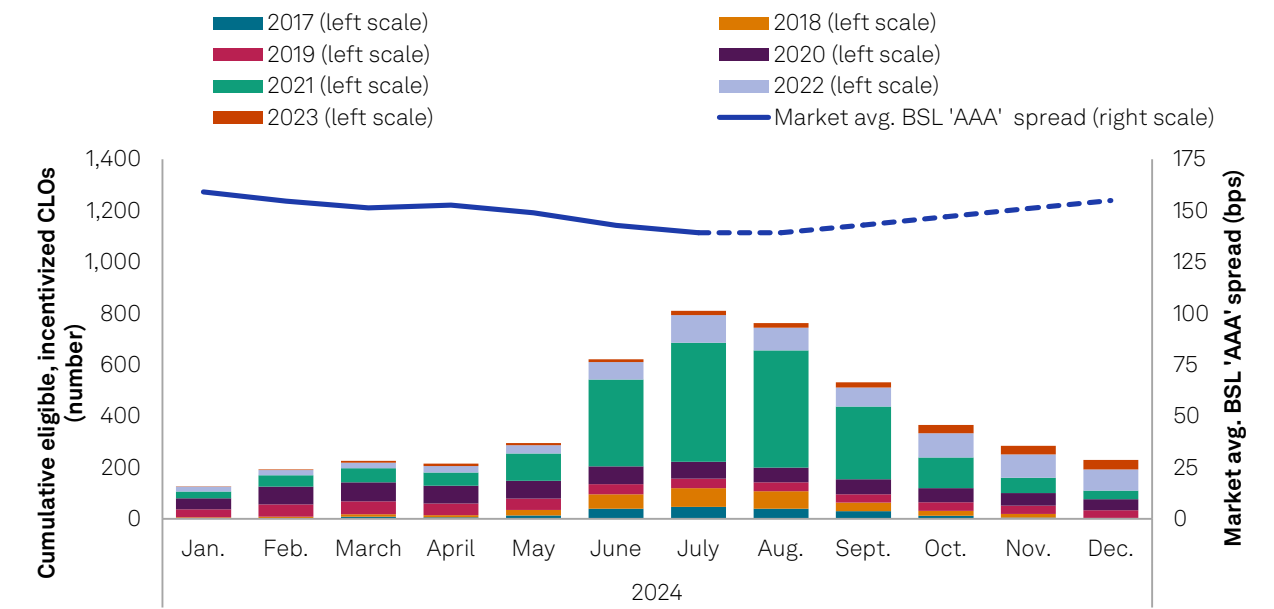
In charts 2 and 3, we provide estimates of cumulative potential U.S. resets and refinancings through the end of 2024 under market spread tightening and widening scenarios. The tightening scenario assumes market ‘AAA’ spreads fall 15 bps by 2024 year-end, and the widening scenario assumes ‘AAA’ spreads rise 15 bps by year-end. Note that for the U.S. tightening scenario, we set middle-market ‘AAA’ spreads 30 bps higher than BSL ‘AAA’ spreads, and under the U.S. widening scenario, we set middle-market ‘AAA’ spreads 45 bps higher than BSL ‘AAA’ spreads, supposing that the basis between the two would widen under the credit stress that might accompany such a scenario.

Chart 2 | Tightening scenario: Potential US CLO refinance/reset volume, by vintage*



As of July 2024.
 CLO = collateralized loan obligation; BSL = broadly syndicated loan; bps = basis points.
 * Data as of July 2024. Market average BSL ‘AAA’ spread calculation excludes refinances and partial refinances.
 Sources: S&P Global Ratings and Pitchbook LCD.
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Chart 3 | Widening scenario: Potential US CLO refinance/reset volume, by vintage*



As of July 2024.
 CLO = collateralized loan obligation; BSL = broadly syndicated loan; bps = basis points.
 * Data as of July 2024. Market average BSL ‘AAA’ spread calculation excludes refinances and partial refinances.
 Sources: S&P Global Ratings and Pitchbook LCD.
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2021 vintage a focal point

In the U.S., the 2021 vintage is the focal point of potential reset/refi issuance--a 15 bps drop in market spreads through year-end would render nearly all 2021 CLOs in the money, with a substantial proportion seeing moneyness greater than 15 bps. Under the tightening scenario, the count of cumulative reset/refi contenders would reach 1,305, which is more than any historical observation in our dataset. On the other hand, a 15 bps increase in market spreads would render most of the 2021 vintage out of the money, causing the count of cumulative reset/refi candidates to plummet to only 229 in December from 763 in August. Assuming stable market conditions and no movement in the current market average ‘AAA’ spread of 139 bps for the remainder of 2024, cumulative potential U.S. reset/refi volume would increase modestly to 805 CLOs by year-end, with the 2021 vintage only slightly in-the-money.

The analysis above incorporates a simplifying assumption: we assume that CLO equity holders are incentivized to exercise call options as soon as their CLO’s outstanding ‘AAA’ spread exceeds the market average by any margin. As discussed, there are frictional costs such that, in practice, most CLO equity investors tend to exercise call options once their moneyness exceeds about 25 bps. The histogram below displays the distribution of ‘AAA’ tranche moneyness achieved by equity holders across a sample of 1,757 refinancings and resets in the U.S. The chart could be used to gauge the likelihood of a reset/refi given a particular CLO’s degree of moneyness.

Based on the spreads of U.S. BSL CLOs priced in July, we estimate the median ‘AAA’ moneyness of the U.S. 2021 vintage stands at only 2 bps, far below the median realized moneyness of 25 bps in the histogram above. If spreads descend much lower in late 2024, the 2021 vintage could propel U.S. reset/refi issuance to new heights. In the event that spreads remain flat or widen modestly, the backend of 2024 is still poised for lively reset/refi activity. Nearly 80 CLOs issued at historically wide spreads in 2022 and 2023 will exit their non-call periods between August and December 2024, with clear incentives to call outstanding notes (i.e., median estimated moneyness of 66 bps, based on current market spreads). However, without considerable spread compression to bring the 2021 vintage fully “online”, we think 2024 is unlikely to be a record-breaking year for U.S. CLO reset/refi volume.

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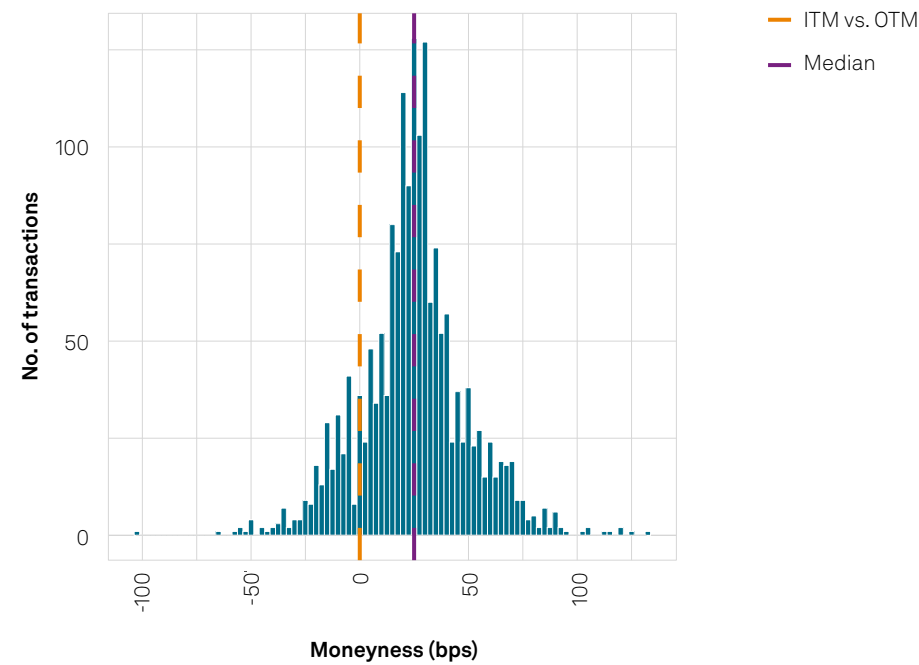
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Chart 4

'AAA' moneyness achieved at the time of reset/refinancing for U.S. CLOs



Data as of July 2024. Data derived from a sample of 1,757 transactions. CLO--Collateralized loan obligation. ITM--In-the-money. Bps--Basis points. OTM--Out-of-the-money. Sources: Pitchbook LCD and S&P Global Ratings. Copyright © 2024 by Standard & Poor's Financial Services LLC. All rights reserved.

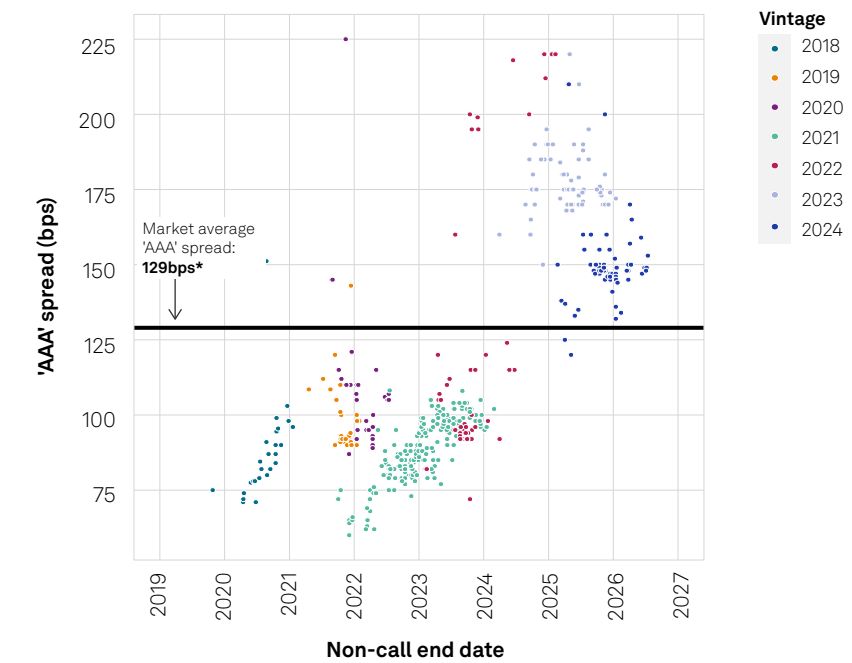
European CLO Resets And Refinancings: Modest Volume Expected In Second Half Of 2024

Meanwhile, European CLO reset/refi deal flow has been comparatively quiet this year, posting \$14 billion in volume through July versus \$52 billion through July 2021. From December 2023 to July 2024, average European CLO 'AAA' spreads tightened more than in the U.S., with spreads falling 44 bps to three-month EURIBOR + 129 bps. While cheaper liability costs have helped reinforce new issue arbitrage and spur record year-to-date CLO formation in Europe, the impact on reset and refinancing activity has been less appreciable. Generally, this is because the majority of outstanding, refinance-reset-eligible European CLOs were priced with 'AAA' spreads over 20 bps tighter than current levels (see chart 5).

In Europe, there are relatively few outstanding and eligible CLOs currently incentivized to reset or refinance. Nevertheless, we expect to see several CLOs originally issued in 2022 and 2023 carry out a reset/refi later this year--about 20 will exit their non-call periods between August and December with a median estimated moneyness of 51 bps, based on current market spreads. Barring extraordinary spread tightening, 2024 European reset/refi issuance should not come close to the record \$73 billion that was priced in full-year 2021.

Chart 5

Outstanding European CLO 'AAA' spreads and non-call period end dates, by vintage



Data as of July 2024. *Market average spread calculation excludes refinances and partial refinances. The spreads of reinvesting CLOs and CLOs outside of their reinvestment period end date by no more than two years are plotted. The spreads of CLOs that have already refinanced or reset previously are plotted (vintage is adjusted to reflect most recent iteration of the CLO). CLO--Collateralized loan obligation. Bps--Basis points. Sources: Pitchbook LCD and S&P Global Ratings. Copyright © 2024 by Standard & Poor's Financial Services LLC. All rights reserved.

European market spread tightening and widening scenarios

In charts 6 and 7, we provide estimates of cumulative potential European reset/refi volume through the end of 2024 under market spread tightening and widening scenarios. As we did for U.S. CLOs in charts 2 and 3 above, the tightening scenario presumes market 'AAA' spreads fall 15 bps by year-end, and the widening scenario assumes 'AAA' spreads rise 15 bps by year-end.

As discussed previously, most of the outstanding and reset/refinance-eligible European CLO universe is firmly out-of-the-money. Regardless of whether market spreads tighten or widen by 15 bps, potential reset/refi volume is little changed. Almost all the European CLOs that would be incentivized to reset/refi after 15 bps of spread tightening are already incentivized. These CLOs, which primarily belong to the 2022 and 2023 vintages, are also incentivized after spread widening of 15 bps, albeit with lesser moneyness. Should European market spreads hold steady at 129 bps through year-end, the cumulative count of reset/refi contenders would reach 34, exceeding the year-end CLO count in the widening scenario by only one.

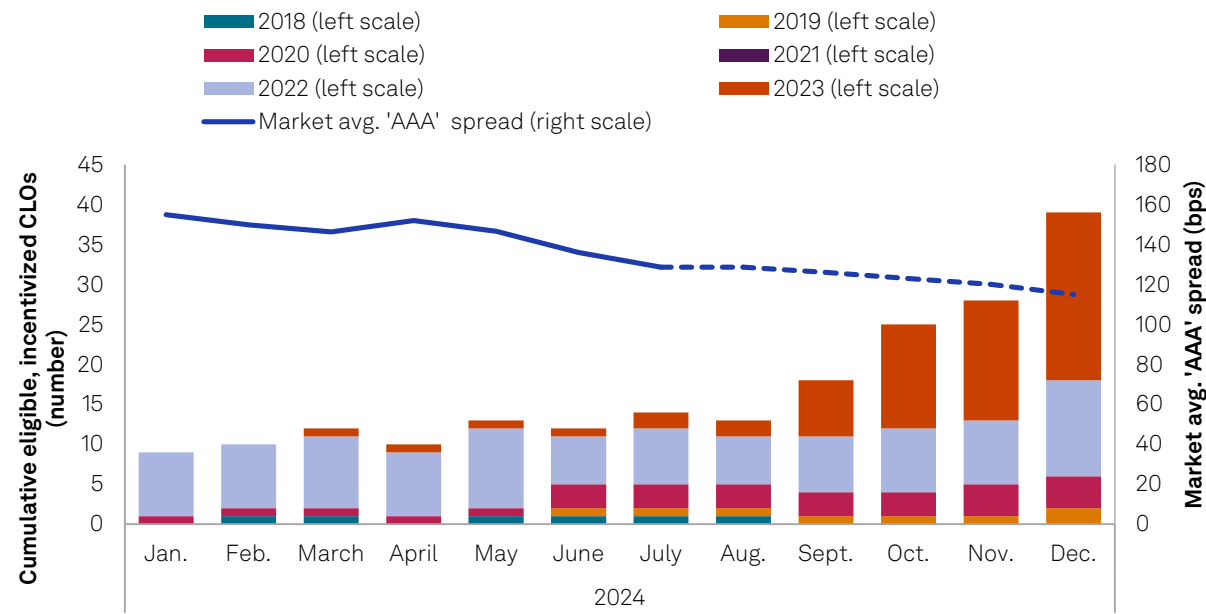
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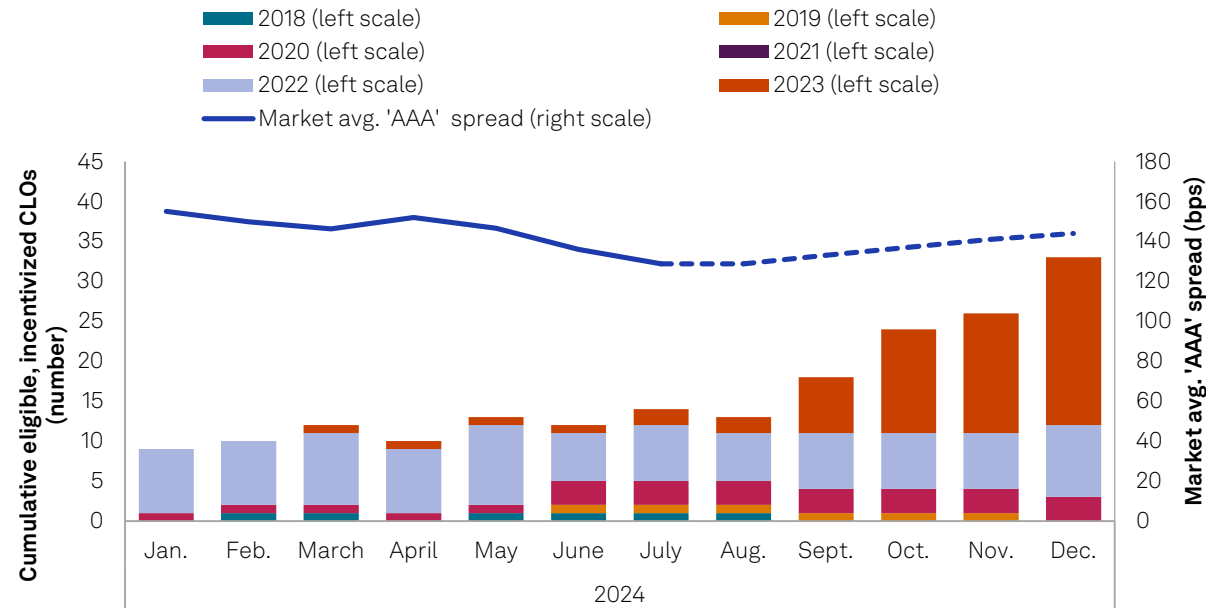
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Chart 6 | Tightening scenario: Potential European CLO refinance/reset volume, by vintage



As of July 2024.
 CLO = collateralized loan obligation; bps = basis points.
 Market average 'AAA' spread calculation excludes refinances and partial refinances.
 Sources: S&P Global Ratings and Pitchbook LCD.
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Chart 6 | Widening scenario: potential European CLO refinance/reset volume, by vintage



As of July 2024.
 CLO = collateralized loan obligation; bps = basis points.
 Market average 'AAA' spread calculation excludes refinances and partial refinances.
 Sources: S&P Global Ratings and Pitchbook LCD.
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Outlooks For U.S. And European CLO Reset/Refi Volume For Second Half Of 2024

While broader market conditions and potential credit spread volatility will continue to influence the pace of CLO refinance and reset activity in the second half of 2024, our analysis suggests that U.S. volume will rank second highest in the market’s history, and European reset/refi volumes will remain modest due to the limited number of outstanding and eligible CLOs currently incentivized to reset or refinance.

This report does not constitute a rating action.

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Stress Tests Show U.S. BSL CLO Ratings Able To Withstand Significant Loan Defaults And Downgrades (2024 Update)

October 10, 2024

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Key Takeaways

- Following two years of “higher-for-longer” interest rates and economic uncertainty, in September, the Federal Reserve provided a tailwind to corporate credit with a 50-basis-point rate cut that should be broadly supportive of corporate credit going forward and benefit CLO collateral.
- As we’ve done in previous years, we have generated a series of stress scenarios to see how our BSL CLO ratings would perform under different economic environments. For this year’s stress scenarios, we added scenarios with a 30% recovery assumption for defaulted assets alongside the 45% recovery assumption modeling we’ve published in prior years.
- We’ve also added two other new stresses where we take a different approach and notch the ratings on all obligors in BSL CLO collateral pools downward by one notch or two notches.
- As with our previous BSL CLO rating stress scenarios, the current analysis shows the CLO structure protecting senior noteholders, with more than 99% of CLO ‘AAA’ ratings remaining investment-grade even under our harshest scenario, where 20% of loans default with a 30% recovery and CLO ‘CCC’ baskets expand to 40%.

While there were elevated levels of speculative-grade corporate rating downgrades in 2022 and 2023, ratings on broadly syndicated loan (BSL) collateralized loan obligation (CLO) fared better during the period, with more CLO ratings raised than lowered despite the economic environment. The difference in rating performance can be explained partly by CLO managers actively repositioning portfolios away from sectors likely to underperform, and the fact that BSL CLO portfolios typically have less exposure to ‘CCC’ and defaulted loans than the loan market as a whole.

The past year has been mostly benign from a CLO ratings perspective despite economic challenges for leveraged loan issuers and an increase in liability management transactions (LMTs), where stressed companies restructure their outstanding debt without going through a bankruptcy process. These could have threatened BSL CLOs with par loss and potential CLO ratings migration, but have only had a modest impact so far. In part, we think this is due to some CLO managers purchasing corporate bonds at a discount to par in the midst of a high rate environment, improving their CLOs’ overcollateralization (O/C) ratios and collateral credit quality at the same time. The fundamentals of the CLO structure also worked to protect CLO ratings, with a large majority (97%) of BSL CLO downgrades from 2022 through third-quarter 2024 being on speculative-grade-rated CLO tranches.

Following two years of “higher-for-longer” interest rates and economic uncertainty, in September, the Federal Reserve provided a tailwind to corporate credit with a 50 basis point (bps) rate cut, reducing interest expenses for the companies that issue the loans backing BSL CLOs. Interest rate cuts should be broadly supportive of corporate credit going forward, benefitting CLO collateral. But as someone once said, every day that goes by brings us one day closer to the next downturn, whenever it may arrive. To that point, as we’ve done in previous years, we generated a series of stress scenarios to test the resiliency of our U.S. BSL CLO ratings if they were subjected to another downturn.

What’s New In The Stress Scenarios For This Year

As we’ve done in previous years, we have generated a series of stress scenarios to see how our BSL CLO ratings would perform under different economic environments (see the Related Research section at the end of this article). For purposes of this year’s exercise, we re-ran the four scenarios that we’ve published previously, allowing for comparisons of how BSL CLO ratings responded to the stresses over time. Each of the four scenarios envisions a proportion of corporate loan issuers experiencing a default, and then assumes that a proportion of the remaining (i.e., non-defaulted) obligors are rated in the ‘CCC’ range. Additionally, based on feedback from investors, we added a set of runs with a 30% recovery assumption for defaulted assets and present these results alongside the 45% recovery assumption modeling we’ve published in prior years. Our goal with these scenarios is to allow CLO market participants to take their forward view of prospective corporate loan defaults and CLO ‘CCC’ basket sizes (and now also recoveries) and assess what the impact on our BSL CLO ratings might be.

Beyond the stresses outlined above, we’ve also added two other new stresses (also based on investor feedback), where we take a different approach and simply notch the ratings on all obligors in BSL CLO collateral pools downward by one notch or two notches, and look at the impact on the CLO ratings. (Given the number of stresses and different ways to present the data, we couldn’t fit results for all of these stresses into the tables shown in this article, but we present the key ones below, and results for all the scenarios are available in a spreadsheet that can be downloaded: [Click here.](#))

The Stress Scenario Sample: 701 U.S. BSL CLOs

To produce our rating stress scenarios, we started with a sample of 701 U.S. BSL CLO transactions rated by S&P Global Ratings. We applied the various collateral default and downgrade stresses described below, and then generated cash flow and credit analysis similar to the quantitative analysis a surveillance committee might review when reviewing a CLO for potential downgrade. The results indicated are based solely on quantitative analytics and lack the qualitative input that a committee might choose to consider when making a rating decision.

Table 1 | Setting up the scenarios

	Current (as of Q2 2024)	"5/10" scenario	"10/20" scenario	"15/30" scenario	"20/40" scenario	One- notch scenario	Two- notch scenario
Number of US BSL CLOs in sample	790	790	790	790	790	790	790
Number of loans	3,161	3,161	3,161	3,161	3,161	3,161	3,161
Number of issuers	1,745	1,745	1,745	1,745	1,745	1,745	1,745
Number of issuers upgraded in scenario	N/A	-	-	-	-	-	-
Number of issuers downgraded in scenario	N/A	426	612	832	1,014	1,702	1,702
Number of 'CCC' category issuers in scenario	254	228	301	406	525	573	878
Number of issuers below 'CCC-' in scenario	60	241	354	469	532	120	174
CLO collateral SPWARF in scenario	2,685	3,069	3,552	4,139	4,738	3,439	4,219
Percent of 'CCC' assets in scenario (%)	6.75	10.09	20.03	29.86	40.00	31.89	57.63
Percent of below 'CCC-' assets in scenario (%)	0.44	5.06	10.00	15.15	20.02	0.82	1.83
Average par loss - assuming 45% recovery for defaults (%)	0.24	2.780	5.50	8.33	11.01	N/A	N/A
Average par loss - assuming 30% recovery for defaults (%)	0.31	3.54	7.00	10.61	14.01	0.58	1.28

BSL = broadly syndicated loan; CLO = collateralized loan obligation; SPWARF = S&P Global Ratings’ weighted average rating factor. N/A = not applicable.

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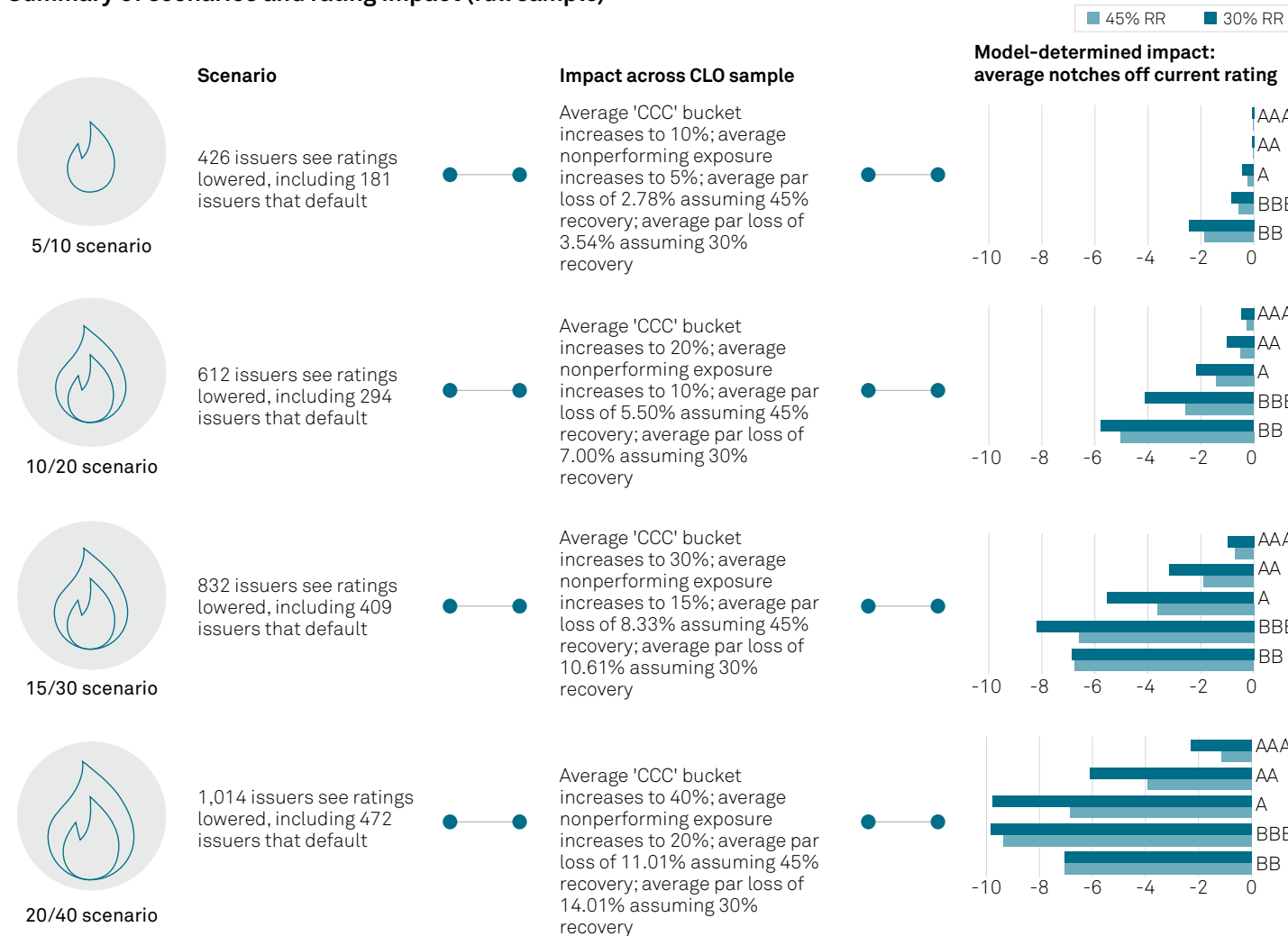
Our full sample of 701 U.S. BSL CLOs has exposure to more than 3,100 loans from 1,700 companies. As of mid-2024, 254 of these companies were rated within the 'CCC' category ('CCC+', 'CCC', and 'CCC-'), and 60 had what we view as a nonperforming rating for purposes of our CLO analysis ('CC', 'SD', and 'D'). Further up the rating scale, the 701 CLO transactions in our sample had 25.5% of their collateral invested in 'B-' loans on average, down from around 30% in our study last year (for more discussion on the reduction of 'B-' companies in BSL CLO collateral pools, see "U.S. BSL CLO Rating Performance Under Four Hypothetical Stress Scenarios (2023 Update)," published July 18, 2023).

The stresses were applied to the universe of obligors within our BSL CLO transactions, not at a CLO-by-CLO level. To achieve the target 'CCC' and default exposure for each of the scenarios above, we adjusted the ratings on as many CLO obligors as needed, starting with the weakest (based on rating and then loan price) across our sample of CLOs. This can produce CLOs with a range of exposures in the stress analysis. For example, in the "5/10" scenario, some CLOs end up with more than 5% exposure to defaulting loans because they start with weaker (lower rated and lower priced) collateral, and others less, but the average ends up at about 5% across the CLOs in the sample. In our view, applying the stresses this way produces more realistic results because it accounts for the starting credit quality of the individual BSL CLO collateral pools, rather than applying a uniform stress across each.

In addition to the 45% recovery we assumed in our published stresses in prior years, this year, based on investor feedback, we added stresses with a 30% recovery assumption. We view both of these as conservative assumptions given historical recovery rates on first-lien senior secured loans, which make up about 99% of BSL CLO collateral by par value held.

Chart 1

Summary of scenarios and rating impact (full sample)



Source: S&P Global Ratings. Copyright © 2024 by Standard & Poor's Financial Services LLC. All rights reserved.

The 701 CLOs in the sample (and the chart above) includes both CLOs still within their reinvestment period and CLOs in their amortization phase. Given the difference in CLO credit metrics between newer and older transactions, within the tables linked above we provide results broken out between the 506 reinvesting CLOs and the 195 amortizing CLOs in the sample, as well as the combined (full sample) results as reflected in the graphic shown above.

Stress Scenario Results For "Core Four" Stresses Using 45% Recovery Assumption

We present the results of our stress scenarios with the 45% recovery assumption below. These four rating stress scenarios are identical to ones we've applied to our U.S. BSL CLO scenario analyses published each year since 2020:

- "5/10" scenario: 5% of loan issuers default and 10% of loan issuers lowered to 'CCC';
- "10/20" scenario: 10% of loan issuers default and 20% of loan issuers lowered to 'CCC';
- "15/30" scenario: 15% of loan issuers default and 30% of loan issuers lowered to 'CCC'; and
- "20/40" scenario: 20% of loan issuers default and 40% of loan issuers lowered to 'CCC'.

Table 2 | "5/10", "10/20", "15/30", and "20/40" scenario cash flow results (full sample at 45% recovery)

Current rating category	Affirmation (%)	Downgrade notches under scenario							Avg. notches	IG (%)	SG (%)	'CCC' (%)	Non-performing (%)
		-1 (%)	-2 (%)	-3 (%)	-4 (%)	-5 (%)	-6 (%)	-7 or greater (%)					
"5/10" scenario													
AAA	98.01	1.99							0.02	100.00			
AA	97.61	2.03	0.36						0.03	100.00			
A	82.51	12.95	4.41					0.14	0.23	99.86	0.14		
BBB	52.37	41.58	3.55	1.58	0.79	0.13			0.57	58.03	41.97		
BB	25.26	32.01	14.88	10.90	5.71	3.81	1.73	5.71	1.87	100.00	11.07	5.71	
"10/20" scenario													
AAA	74.00	26.00							0.26	100.00			
AA	63.60	22.91	12.77	0.48	0.24				0.51	100.00			
A	26.86	18.87	46.14	3.31	3.17	1.38	0.14	0.14	1.43	98.35	1.65		
BBB	8.55	38.68	15.92	10.53	9.08	5.26	3.68	8.29	2.58	11.71	88.29	5.13	3.03
BB	3.81	8.82	7.27	8.65	8.30	7.96	7.27	47.92	5.04	100.00	23.88	47.58	
"15/30" scenario													
AAA	30.80	68.74	0.12		0.35				0.70	100.00			
AA	18.02	15.39	48.33	5.49	4.18	8.00	0.12	0.48	1.89	99.76	0.24		
A	3.99	2.62	32.09	9.37	18.18	24.38	2.34	7.02	3.64	66.39	33.61	0.55	0.69
BBB	0.66	6.71	5.13	7.63	12.24	8.29	8.95	50.39	6.60	0.92	99.08	15.79	34.08
BB	0.17	0.35	0.69	2.42	2.08	2.42	2.08	89.79	6.75	100.00	6.57	89.79	
"20/40" scenario													
AAA	16.86	66.63	7.26	5.04	3.98			0.23	1.14	100.00			
AA	6.68	2.39	22.20	6.92	13.37	36.99	1.79	9.67	3.92	94.15	5.85		
A	0.69	0.14	6.06	2.34	7.16	31.13	9.23	43.25	6.84	17.63	82.37	7.16	7.99
BBB	0.26	0.53		1.18	3.03	2.11	1.45	91.45	9.37	0.26	99.74	9.87	79.87
BB					0.17	0.17	0.17	99.48	7.04	100.00	0.69	99.31	

IG = investment grade; SG = speculative grade. Copyright © 2024 by Standard & Poor's Financial Services LLC. All rights reserved.

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The core four stress scenarios have the benefit of being transparent and simple, allowing market participants to take their view of potential loan defaults and 'CCC' exposure amounts and assess what the potential CLO rating impact might be. Producing the same analysis on outstanding CLOs over time also provides insight into how the transactions are evolving and any changes in how they respond to the stresses. Overall results may have changed because of changes in individual transaction performance over the period, but also because of new issue CLOs being added to the sample of transactions being tested over time.

Table 2 provides a summary of these four scenarios and their ratings impact using a 45% recovery assumption.

The results of our current scenario analysis are in many ways like those in our prior studies. As expected, we see larger rating transitions among junior CLO tranches and a correspondingly lighter rating impact on tranches further up the CLO capital stack. Unsurprisingly, the average notch movement at a given CLO tranche rating level increases as the scenarios become more severe, although the impact across the scenarios isn't linear.

CLOs With Stronger Portfolio Credit Metrics Are Generally More Resilient

We find that the longer a CLO is outstanding, the more likely it will have weaker credit metrics (see table 3). To test this, we broke out our sample into three vintage-based cohorts: CLO originated before 2020, between 2020 and 2022, and in 2023 and the first half of 2024. The 2023 and 2024 vintage transactions are the newest, have closed in a high-rate environment, and have not experienced significant collateral deterioration yet. The 2020-2022 vintage transactions were mostly issued before the rate increases arrived and have reinvested through a period of rising rates; while the pre-2020 vintage transactions experienced the negative effects of the rate increases in 2022 and 2023 as well as the pandemic in 2020.

Table 3 | Average CLO metrics across vintage cohorts

Average CLO metrics	Pre-2020	2020 through 2022	2023/2024
Average of SPWARF	2,775	2,694	2,523
Average exposure to 'CCC+' and below (%)	10.09	7.25	2.88
Average junior O/C Cushion (%)	1.81	4.35	5.22

CLO = collateralized loan obligation; SPWARF = S&P Global Ratings' weighted average rating factor; O/C = overcollateralization.

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Focusing on the "5/10" scenario with 45% recovery, although being the least punitive stress of the core four stresses, the tranches rated in the 'BB' rating category see material potential rating impact. Given the wide range of vintages included in the sample, there were also a wide range of outcomes to these 'BB' tranches under the stress, from affirmations to defaults. One quarter of the sample saw rating affirmations (no downgrades – the CLO tranche can withstand this scenario and still pass our cash flow stresses at its current rating), while the other three quarters of the sample experienced different levels of downgrade: 11.0% of the sample experience a downgrade into the 'CCC' category, while 5.7% saw their ratings lowered to 'CC' under the scenario, indicating a likely default under the stress. The difference in performance can be attributed to starting collateral quality; if we look at just the CLOs that saw 'BB' category tranche ratings affirmed under the "5/10" stress, we observe that these deals have the following characteristics:

- Stronger rating distribution: average S&P Global Ratings' weighted average rating factor (SPWARF) of 2566;
- Less exposure to assets rated 'CCC+' and below: average of 4.64%; and
- Larger 'BB' O/C cushion: average of 4.85%.

Metrics for the transactions that experience a 'BB' rating affirmation look very similar to the newer 2023/2024 vintage transactions summarized above. Meanwhile, the 'BB' tranches that experience larger negative rating movement under the stress scenario are more likely to have weaker CLO metrics even before the stress is applied. For example, the 11.0% and 5.7% of the 'BB' tranches that are at risk of downgrade into the 'CCC' category and default, respectively, under the "5/10" scenario with 45% recovery have CLO metrics that are closer to the average pre-2020 transaction in table 3 above.

When we review the list of 21 CLO 2.0 defaults that have actually occurred (see "Thirty Years Strong: U.S. CLO Tranche Defaults From 1994 Through Third-Quarter 2024," published Sept. 27, 2024), we find all are junior notes from transactions that originally closed in 2014 or earlier; and before defaulting, they all experienced two distinct periods of economic weakness: the commodities slowdown as well as the pandemic. In our prior scenario analysis in 2021, we find the effects of the pandemic in 2020 were somewhat similar to the "5/10" scenario, so by putting them through the scenario analysis, they are effectively experiencing two successive "5/10" scenarios, and it wouldn't be a surprise if some of these 'BB' tranches default under the hypothetical stress.

Table 4 | Pre-stress CLO metrics across 'BB' CLO tranche transitions under "5/10" scenario at 45% recovery

	Affirmation	-1	-2	-3	-4	-5	-6	-7 or greater	Non-performing
'BB' transition (% of tranches)	25.26	32.01	14.88	10.90	5.71	3.81	1.73	5.71	11.07
'BB' transition (number of tranches)	146	185	86	63	33	22	10	33	64
Average SPWARF	2,566	2,659	2,716	2,744	2,822	2,795	2,853	2,783	2,786
Average 'CCC+' and below exposure (%)	4.64	6.32	7.75	8.86	10.72	10.18	11.39	11.48	9.63
Average 'BB' O/C cushion (%)	4.85	4.43	3.60	3.06	1.44	1.51	0.73	1.15	2.01

CLO = collateralized loan obligation; SPWARF = S&P Global Ratings' weighted average rating factor; O/C = overcollateralization.

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Senior (Non-Deferrable) Tranches From Older CLOs Remain Resilient As They Age

Transactions from older CLO vintages tend to have weaker metrics, which, as noted above, tend to see greater CLO rating transitions in the scenario analyses. One exception is that senior non-deferrable tranches (originally rated 'AAA' and 'AA') from older CLOs can become more resilient as they get closer to (or further into) their amortization periods, despite their weaker CLO metrics. In our cash flow modelling, expected paydowns from amortization and coverage test cures generally benefit the model results of senior tranches. This generally does not apply for the deferrable mezzanine and junior CLO tranches (originally rated in the 'A' category and below), as they still have multiple classes of notes above them before they are next in line for paydowns. The deferrable tranches of the older transactions generally see greater average notch downgrades, as noted in table 5 below.

For example, the average impact on the non-deferrable (i.e., senior) tranches across the core four scenarios for the older pre-2020 transactions are:

- 0.89 notches down, on average, across the full sample;
- More resilient than the 2020-2022 vintage transactions, which saw 1.24 notches down, on average, despite the 2020-2022 vintage transactions having relatively better credit quality (as seen in table 3 above); and
- Only slightly less resilient than the newer 2023/2024 vintage transactions, which have much stronger credit metrics and saw 0.80 notches down, on average.

Meanwhile, as expected, the deferrable tranches of the older pre-2020 transactions with weaker credit metrics experience larger average notch downgrades, the deferrable tranches of the 2023/2024 vintage transactions with stronger credit metrics experience less average negative notch movement while average impact to deferrable notes of the 2022-2022 vintage transactions sit right in between.

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Table 5 | Average notch change across core four scenarios at 45% recovery

Core four scenario at 45% recovery	Average transitions across non-deferrable CLO tranches (AAA and AA)			Average transitions across deferrable CLO tranches (rated A+ and below)		
	Pre-2020	2020-2022	2023/2024	Pre-2020	2020-2022	2023/2024
"5/10" scenario	0.03	0.02	0.00	1.25	0.74	0.22
"10/20" scenario	0.29	0.51	0.16	3.81	2.81	1.28
"15/30" scenario	1.09	1.53	0.99	6.50	5.74	3.54
"20/40" scenario	2.17	2.90	2.03	8.44	7.92	6.43
Average across core four scenarios	0.89	1.24	0.80	5.00	4.30	2.87

CLO = collateralized loan obligation.

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Same Core Scenarios With A Lower Recovery Assumption (30%)

Since 2020, for the core four scenarios outlined above, we have used a recovery assumption of 45% recovery for issuers assumed to be defaulted under the stress tests. This year, based on investor feedback, we have also generated these four stresses but at a lower recovery rate assumption (30%). The impact of the lower recovery assumption is an increase in par loss under each of the four scenarios. For example, under the "5/10" scenario above, we assume 5% of loans default with

Table 6 | "5/10", "10/20", "15/30", and "20/40" scenario cash flow results (full sample at 30% recovery)

Current rating category	Affirmation (%)	Downgrade notches under scenario								Avg. notches	IG (%)	SG (%)	'CCC' (%)	Non-performing (%)
		-1 (%)	-2 (%)	-3 (%)	-4 (%)	-5 (%)	-6 (%)	-7 or greater (%)						
"5/10" scenario														
AAA	93.44	6.56							0.07	100.00				
AA	93.08	5.73	1.07	0.12					0.08	100.00				
A	70.11	17.63	11.71	0.28	0.14			0.14	0.44	99.86	0.14			
BBB	40.26	46.32	6.45	4.87	1.18	0.39	0.13	0.39	0.84	45.13	54.87	0.39		
BB	19.55	27.51	16.09	9.34	6.57	6.23	3.46	11.25	2.45	100.00	16.44		10.90	
"10/20" scenario														
AAA	43.56	56.44							0.48	100.00				
AA	35.68	36.63	27.57	0.12					1.03	100.00				
A	15.70	20.94	61.16	1.79	0.28			0.14	2.17	90.63	9.37	0.14		
BBB	6.97	73.03	15.13	4.34	0.53				4.10	6.97	93.03	10.00	12.37	
BB	3.29	10.21	16.44	23.53	21.45	16.26	5.19	3.63	5.78	100.00	16.26		66.44	
"15/30" scenario														
AAA	19.2	71.66	2.93	3.86	1.99		0.23	0.12	0.99	100.00				
AA	9.31	6.09	34.96	6.32	12.05	23.39	1.19	6.68	3.18	96.78	3.22			
A	1.79	1.24	13.36	6.47	13.09	30.85	5.79	27.41	5.53	36.23	63.77	3.17	4.82	
BBB	0.26	3.16	2.89	3.42	5.66	5.00	4.47	75.13	8.20	0.39	99.61	15.92	58.82	
BB		0.35	0.35	0.87	1.90	1.73	1.21	93.60	6.88		100.00	4.84	93.60	
"20/40" scenario														
AAA	9.60	38.64	11.36	11.24	22.37	1.29	2.11	3.40	2.29	99.65	0.35			
AA	2.98	1.67	8.00	2.74	5.37	31.86	3.46	43.91	6.10	69.21	30.79	1.07	1.79	
A		0.28		2.20	1.24	2.62	12.53	6.20	74.93	9.79	7.02	92.98	14.60	32.37
BBB			0.13	0.26	0.39	0.66	2.11	1.05	95.39	9.83	0.13	99.87	3.82	91.45
BB									100.00	7.06		100.00		100.00

IG = investment grade; SG = speculative grade.

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a 45% recovery, resulting in an average par loss of 2.78%. However, using a 30% recovery for that same stress, as we do below, increases the average par loss across the sample to 3.54%, an average increase in par loss of 76 bps.

The increase in par loss from the reduced recovery assumption has a notable impact across the scenarios. For the reinvesting CLOs in the sample, under the very punitive "20/40" scenario (where we assume 20% of loans default with a 30% recovery and CLO 'CCC' baskets increase to 40%), the reduction in recovery assumption has a significant impact on the 'AAA' tranche results, with the average downgrade for these increasing to 2.6 notches from 1.3 notches under the 45% recovery assumption. However, even under this extraordinary stress nearly all of the 'AAA' tranches (99.65%) remain investment grade ('BBB-' and higher), and 96.60% of the 'AAA' tranches remain at 'A-' or higher after the stress is applied.

Two New Scenarios

In addition to the stress scenarios outlined above, based on feedback from a large global CLO investor, we ran two additional scenarios where we lowered ratings across all CLO obligors by one notch (in the first scenario) and two notches (second scenario), while assuming all ratings that ended up being lowered below 'CCC-' default and recover 30%.

In our core four stresses outlined in the previous sections, the proportion of assets assumed to default and obligors assumed to be in the 'CCC' range are, by definition, one-to-two ("5/10" scenario, "10/20" scenario, etc.). For these two new stresses, the proportions are quite different. The "downgrade everything by one notch" scenario results in something like a one-to-thirty two ratio, with 0.82% of CLO collateral assumed to default and 31.89% assumed to end up in the 'CCC' category. The "downgrade everything by two notches" scenario gives us a ratio of 2:58 (1.83% of CLO collateral assumed to default and 57.63% ending up in the 'CCC' basket). Relatively speaking, these two new scenarios are high downgrade/high 'CCC', but low default/par loss scenarios.

The "15/30" stress from our core four scenarios above produces a 'CCC' basket similar in size to the one-notch downgrade scenario here. The ratings impact, however, is very different. The "15/30" scenario is much harsher, given the assumed 15% collateral defaults resulting in par loss of 10.61% (assuming a 30% recovery) compared to par loss of just 0.58% for the one-notch downgrade scenario under the same recovery assumption. The resulting ratings migration under the stress scenarios reflects this, as the average notch downgrade for 'AAA' tranches under the "15/30" scenario at 30% recovery was 1.14 notches, notably higher than the average notch movement of the one-notch scenario (0.72 notches) and even higher than that of the two-notch scenario (1.00 notches).

Table 7 | One-notch downgrade and two-notch downgrade scenario cash flow results (full sample at 30% recovery)

Current rating category	Affirmation (%)	Downgrade notches under scenario								Avg. notches	IG (%)	SG (%)	'CCC' (%)	Non-performing (%)
		-1 (%)	-2 (%)	-3 (%)	-4 (%)	-5 (%)	-6 (%)	-7 or greater (%)						
One-notch downgrade scenario														
AAA	43.56	56.44							0.56	100.00				
AA	35.68	36.63	27.57	0.12					0.92	100.00				
A	15.70	20.94	61.16	1.79	0.28			0.14	1.51	99.86	0.14	0.14		
BBB	6.97	73.03	15.13	4.34	0.53				1.18	9.34	90.66			
BB	3.29	10.21	16.44	23.53	21.45	16.26	5.19	3.63	3.37		100.00	42.39	3.63	
Two-notch downgrade scenario														
AAA	14.99	84.07	0.82	0.12					0.86	100.00				
AA	7.76	2.74	61.46	11.10	14.20	2.74			2.29	100.00				
A	2.20	0.96	35.95	18.18	35.67	6.89		0.14	3.06	93.66	6.34	0.14		
BBB	0.53	4.08	10.39	24.34	47.89	8.95	2.76	1.05	3.58	0.53	99.47	1.05		
BB	0.17	0.35	0.52	1.56	2.25	6.75	10.38	78.03	6.59		100.00	19.03	77.68	

IG = investment grade; SG = speculative grade.

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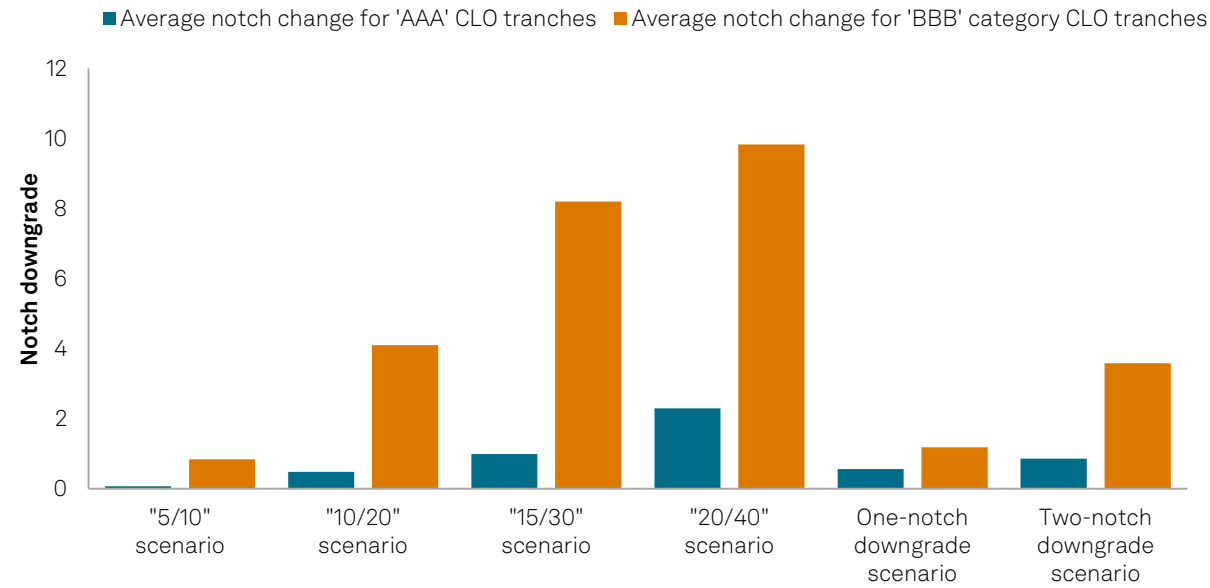
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Chart 2 | Weighted average 'AAA' tranche notch change across scenarios at 30% recovery (full sample)



CLO = collateralized loan obligation.
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The new one-notch and two-notch scenarios, while appealing in their simplicity, are unlikely to play out in reality. The net ratings impact on CLO obligors during the GFC (between start of 2008 and middle of 2009) was just under a one-notch downgrade to CLO collateral ratings on average (or more precisely, 0.9 notch downgrade across all CLO 1.0 obligors). However, looking more closely, we see that those downgrades were distributed unevenly across obligors, with just under half of the U.S. CLO 1.0 obligors (44%) experiencing an average downgrade of 2.7 notches, while 40% experienced no rating action (0 notch) and 16% experienced a 2.0 notch upgrade on average. Given this, it's very unlikely every CLO obligor in a CLO would experience a one- or two-notch downgrade; but still, these studies can be helpful to highlight the different sensitivities across the ratings of senior and junior CLO notes to a systemic stress like these.

Comparing With Last Year's Reinvesting Transaction Results

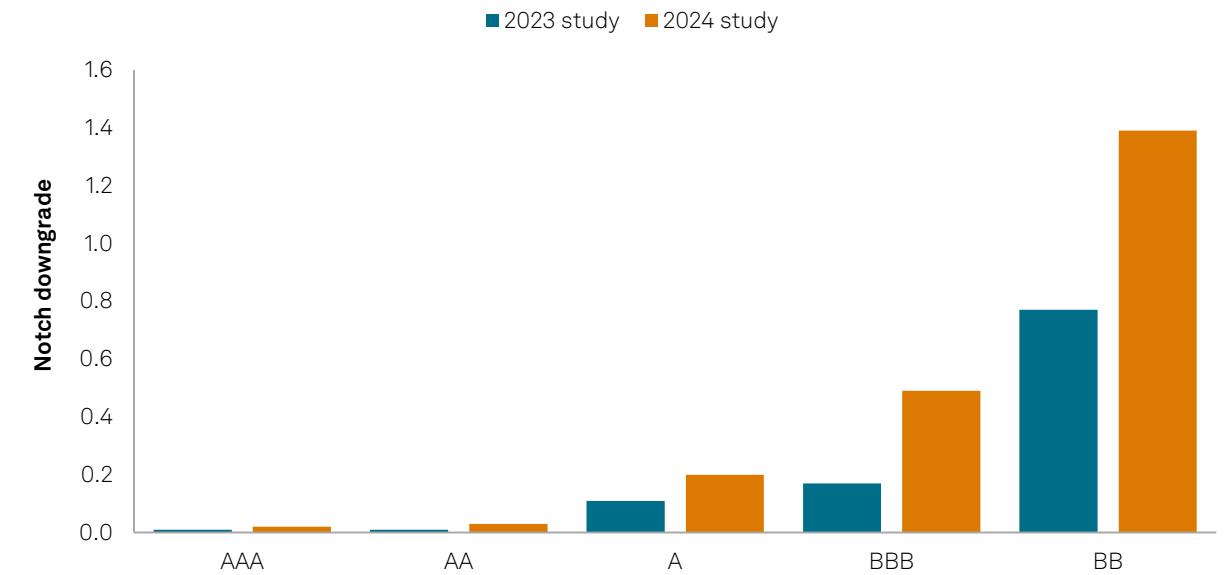
When comparing the results of this year's "5/10" scenario with 45% recovery for reinvesting transactions to last year's study, the transitions this year show a somewhat greater magnitude of ratings migration for the mezzanine CLO tranches, especially at the 'BB' tranche level (see chart 3 below). This makes sense as many transactions within the sample are a bit weaker relative to last year given the deterioration in corporate credit quality over the past year, and junior CLO notes are the most sensitive to rating stress. Further up the capital stack, senior tranches in the sample have similar levels of resilience to the hypothetical stresses as they did last year.

Table 8 | Average CLO metrics for reinvesting samples in 2023 and 2024 (current) study

CLO metrics	2023 scenario analysis	2024 scenario analysis
Average par balance as % of target par (%)	99.94	99.74
Average 'B-' exposure (%)	30.4	24.87
Average 'CCC' bucket exposure (%)	5.72	5.94
Average nonperforming exposure (%)	0.87	0.37
Average SPWARF	2,794	2,653

CLO = collateralized loan obligation; SPWARF = S&P Global Ratings' weighted average rating factor.
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Chart 3 | Comparing 2023 and 2024 results under the "5/10" scenario at 45% recovery across reinvesting CLOs



CLO = collateralized loan obligation.
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When we compare the average reinvesting CLO metrics in this year's study with last year, one change that may stand out is the decline in exposure to assets from 'B-' obligors, which is now 25% of total assets compared to 30% last year. This is a key driver to the lower average SPWARFs across the two published studies despite the average 'CCC' buckets looking similar. The big caveat is the change in the average portfolio par balances (as a percentage of target par), which are now lower by 22 bps. That may not seem like much, but par loss impacts the existing subordination levels for all tranches of the CLO and has a noticeable impact on our scenario results. In last year's scenario analysis, over two-thirds of the reinvesting CLOs were at or above target par, while in this year's study, only 45% of the reinvesting sample were at or above target par as most of the existing transactions have lost par since.

This Year's Stress Scenarios Still Show The CLO Structure Protecting Senior Noteholders

This year's stress tests have produced hypothetical transitions that are modestly more negative than the respective results from last year's study. For example, last year, 93% of 'AAA' CLO notes were within a one-notch downgrade under the "20/40" scenario (assuming a 45% recovery); this year, 83% of 'AAA' ratings were within one notch under the same stress. We find the difference is mostly attributed to the change in the sample used for this study. The bulk of the transactions are the same as the ones from last year, and they experienced additional credit deterioration and par loss over the past year given the economic (and corporate rating downgrade) environment.

We also explored the impact to our CLO ratings under the core four scenarios if we assume a lower recovery rate of 30% (in addition to the 45% recovery assumption we've used in the past). By changing the recovery assumption to 30% from 45%, the proportion of 'AAA' CLO notes remaining within a one-notch downgrade drops to 48% from 83% under the "20/40" scenario. But even under this very punitive assumption, CLO 'AAA' tranches showed impressive resilience. As in previous years, this year's study continue to show the fundamentals of the CLO structure protecting senior noteholders, with no 'AAA' CLO tranche defaults under any of the scenarios, and 99% of the non-deferrable CLO tranches ('AAA' and 'AA') paying off in full even under our most punitive scenario (20% loans defaults with a 30% recovery and 40% CLO 'CCC' baskets).

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Many of the scenarios outlined in this article would be very unlikely to occur in the real world. For example, CLO collateral defaults and 'CCC' baskets reached about 7% and 11%, respectively, by mid-2009 after the GFC, and the history of the leveraged loan market has never seen defaults reach 20% or CLO 'CCC' get to 40% (or even halfway to 40%). However, looking at how our BSL CLO ratings might perform under such stresses gives us confidence in our analytical approach for rating CLO transactions, and provides transparency about how ratings might under scenarios ranging from realistic to those further out on the tail of the distribution.

Related Research

- Scenario Analysis: How Resilient Are Middle-Market CLO Ratings (2023 Update)? Oct. 16, 2023
- Scenario Analysis: U.S. BSL CLO Rating Performance Under Four Hypothetical Stress Scenarios (2023 Update), July 18, 2023
- Scenario Analysis: How Resilient Are Middle-Market CLO Ratings (2022 Update), Oct. 19, 2022
- Scenario Analysis: How The Next Downturn Could Affect U.S. BSL CLO Ratings (2022 Update), Aug. 4, 2022
- Scenario Analysis: How The Next Downturn Could Affect U.S. BSL CLO Ratings, June 17, 2021
- Scenario Analysis: How Resilient Are Middle-Market CLO Ratings? Feb. 26, 2021
- Scenario Analysis: How Credit Distress Due To COVID-19 Could Affect U.S. CLO Ratings, April 24, 2020

This report does not constitute a rating action.

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North American Debt Recoveries May Trend Down For Longer

December 11, 2023

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Key Takeaways

- Actual debt recoveries for North American corporate entities in 2023 are likely to trend down, with several liquidations in process as a precursor of low recoveries.
- A prolonged high interest rate environment in North America could result in lower debt recovery levels over the next few years.
- A brief spike of improved recoveries in 2021 and 2022 reflected the North American economy recuperating from the pandemic but may not reflect long-term trends.
- The timing of an emergence from bankruptcy is often a major factor in debt recoveries, as reflected in our dataset covering 15 years.

S&P Global Ratings is seeing an uptick in defaults for North American corporate entities in 2023 amid higher-for-longer policy rates from the Federal Reserve, sticky inflation, uneven economic performance, and more cautious capital markets. We expect this to pressure cash flows and profitability, as well as hurt valuations. While a majority of the loan issuances in 2023 were through refinances, not all companies found the appropriate spread windows to refinance their maturity wall. If these difficult credit conditions, higher rates, and reduced valuations persist, lower debt recoveries are likely for entities that enter or emerge from bankruptcy over the next few years.

Furthermore, depressed valuations and secondary pricing have led to a vast number of borrowers entering out-of-court restructurings over the past 18 months via liability management transactions. Often, these restructurings do not permanently fix unsustainable debt structures and, as such, may further impair future recovery rates absent substantial improvements to operations or credit market conditions. These transactions provide borrowers with new capital and temporary relief from near-term liquidity pressures, but, more often than not, to the detriment of a group of existing lenders particularly in terms of collateral position and rights of claim.

The current high interest rate environment is in stark contrast to the low rates that have persisted since the global financial crisis of 2007-2009, which allowed companies and markets to be comfortable with high debt leverage. The ample availability of capital made it relatively easier for firms to access markets before the pandemic and through early 2022. What the market considered sustainable debt structures and leverage then are now strained following the sharp increase in interest costs starting early 2022 while inflation continued its incline.

In the first nine months of 2023, about 30 companies rated by S&P Global Ratings have filed for bankruptcy, including high-profile names such as Bed Bath & Beyond Inc., Party City Holdings Inc., Serta Simmons Bedding LLC, Yellow Corp., KNB Holdings Corp., and Diamond Sports Group LLC.

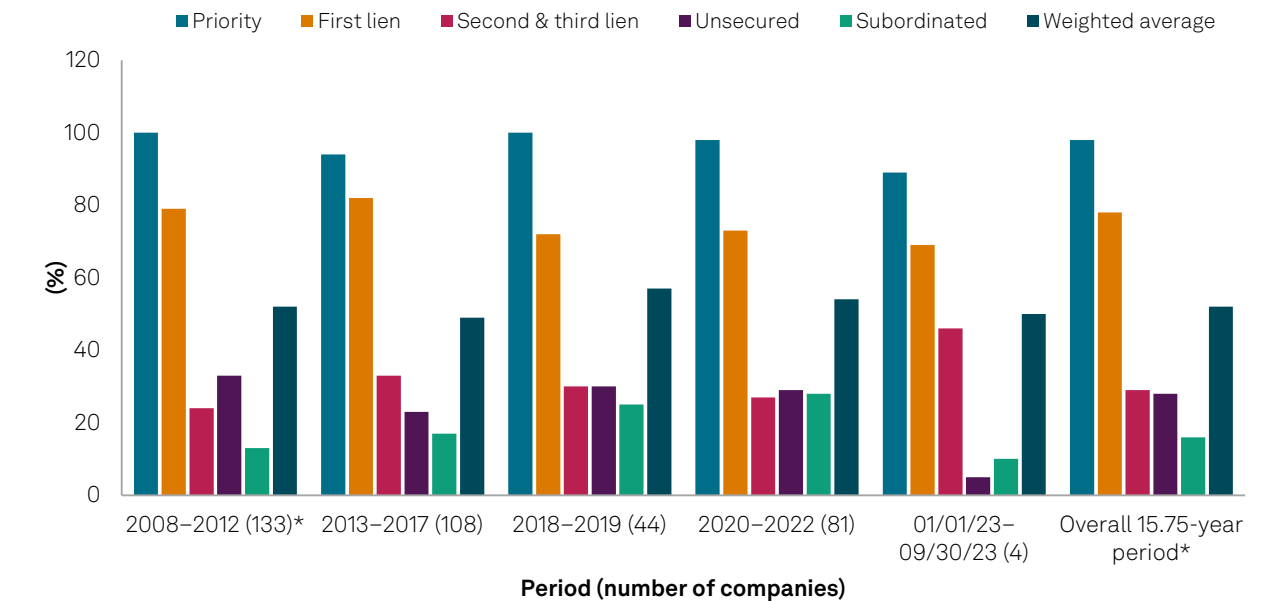
Some of these 2023 bankruptcy cases have resulted in liquidations and partial wind downs of its businesses, leading to worst-case scenarios for some creditors. This may be a precursor to a period of depressed recoveries overall, especially given widespread expectations that the economic environment may worsen before inflation and rate hikes reverse meaningfully.

For information on the dataset and our process, see the appendix.

Average Recoveries By Debt Class

Chart 1 | Average actual recovery by debt class

2008-Sept. 30, 2023



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First-lien debt recoveries

In the most recent five-year period of 2018-2022, average first-lien recoveries totaled 72%. This was a decline from the previous 10 years, mainly due to below average first-lien recoveries of 67% in 2018 and 66% in 2020. The low recoveries for companies that emerged in 2018 primarily reflect poor first-lien recoveries for retailers under strong secular pressure with large priority working capital claims, while the 2020 recoveries reflect the effect of emerging during the economic weakness and uncertainty during the COVID-19 pandemic. Together, these years included 61 of the 105 companies that had first-lien debt in this period, with the bulk of the data points in 2020 (42 firms).

On the other hand, emergences in 2021 and 2022 saw average first-lien recoveries spike to 78% and 100%, respectively. First-lien lenders received full recoveries for 18 out of 27 companies as the economy normalized, oil prices reverted to its historical \$50-\$80 dollars per barrel, and retail consumption returned. Companies with full first-lien recoveries included rental car company Hertz Global Holdings Inc. (BB-/Stable/--), telecommunications group Frontier Communications Corp., as well as retail mall REITs Washington Prime Group Inc. and CBL & Associates Properties Inc. (B/Negative/--).

Entities that bucked the trend of high recoveries in 2021 and 2022 were Fieldwood Energy LLC, J.C. Penney Corp. Inc., Ascena Retail Group Inc., and media and publishing company LSC Communications Inc. While Fieldwood averaged a 51% recovery on \$1.1 billion of first-lien debt through a credit bid, the others exited bankruptcy through 363 asset sales, with J.C. Penney garnering 25% first-lien recovery, Ascena with 19%, and LSC with 15%. Still, there was a 100% recovery for the asset-based loans (ABL) in each case.

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For the nine months ended Sept. 30, 2023, the average first-lien recovery was 69%, consisting of four companies. This includes retailer Party City (which we included as we were able to obtain the recovery data earlier although its effective emergence date was October 12, 2023), which weighed down first-lien recovery rates because its \$900 million in secured notes received a negligible recovery of less than 5%. Several recent bankruptcy cases are currently being resolved and liquidating assets. As such, their recoveries are not available or included at this time. However, they will likely drag down recovery rates further when the data becomes available.

Unsecured debt recoveries

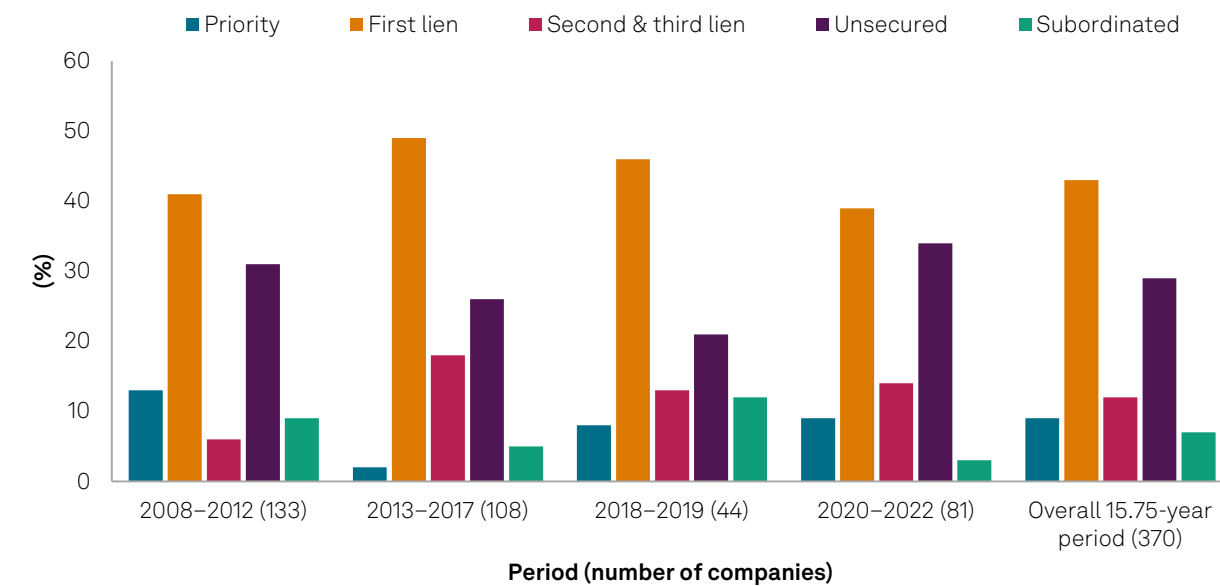
Average unsecured recoveries have been close to 30% in each of our five-year periods, including the latest. However, there is quite a bit of variation in annual average unsecured recoveries in the most recent period. For example, amid the COVID-19 pandemic in 2020, average unsecured recoveries dipped to 19%, then rebounded to 41% in 2021 alongside the economy. However, through the first nine months of 2023, unsecured recoveries dipped sharply to about 5% on average, which has pulled the overall 15.75-year average down slightly to 28%. A significant portion of this was Bed Bath & Beyond’s \$1 billion of unsecured notes, of which we expect a recovery of no more than 2.5% as the company exits bankruptcy via a wind down of its assets through various asset sales. The other unsecured recoveries included 13% on Alterra Infrastructure L.P. and slightly less than 2% on Party City.

From 2018-2022, several large entities with significant unsecured debt stacks, such as Hertz, Washington Prime, West Coast utility Pacific Gas & Electric Co. (PG&E; BB-/Stable/NR), and infrastructure company Ferrellgas Partners L.P. (B/Stable/--), defaulted and emerged. They garnered high recoveries, benefitting from valuations boosted by favorable economic conditions and a relatively thin layer of secured debt. Frontier is also noteworthy company, given its large \$10.9 billion unsecured stack that makes up 5.4% of aggregate unsecured debt in the dataset. It recovered 46% in 2021, which was well above the 28% average.

Focusing in on 2020-2022, we saw a much higher mix of unsecured debt as several larger companies filed for bankruptcy before or during the pandemic and emerged during this period. Prior to bankruptcy, these large companies had considerable access to the high-yield debt market.

Chart 2 | Weighted average debt mix

2008-Q3 2023



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For example, after the pandemic lockdown led to Hertz defaulting, it had \$5.3 billion in prepetition debt, of which about 67% was unsecured bond issuances. PG&E also had a substantial secured and unsecured bond debt before it filed for bankruptcy in early 2019. Its bankruptcy filing was primarily due to the class action lawsuits and legal liability that arose from the West Coast wildfires. PG&E emerged in July 2020 and had over \$21 billion in prepetition debt, consisting of 60% secured debt and 40% unsecured.

First-Lien Recoveries Show Stress In Recent Periods

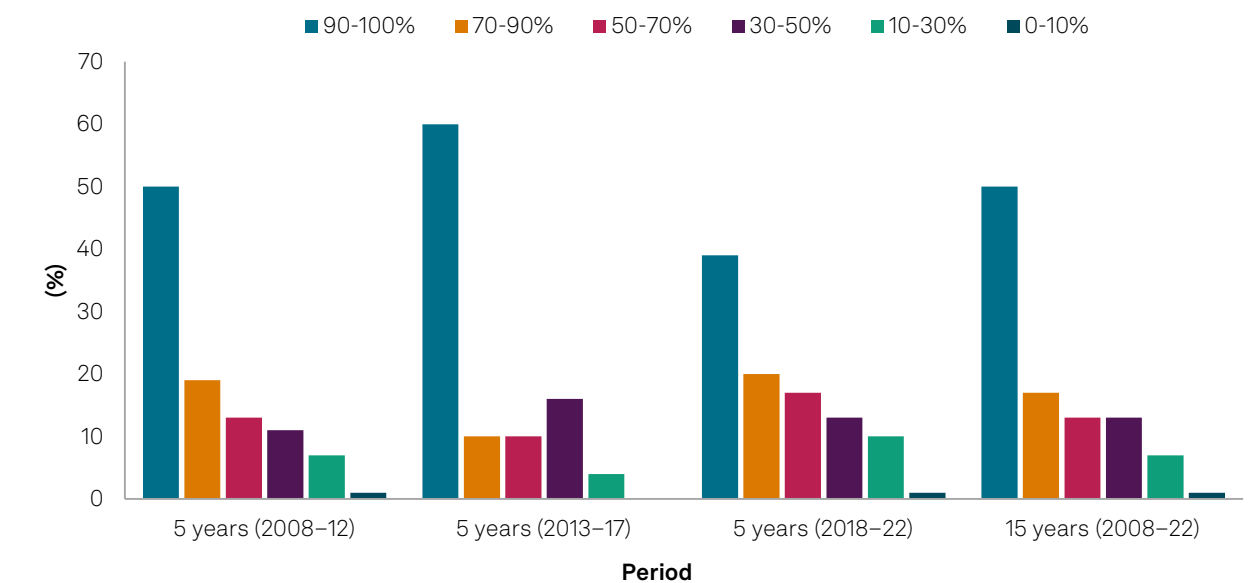
The drop in first-lien recovery rates for the 125 companies that emerged over from 2018-2022 reflects a decline in companies that achieved over 90% recovery (chart 3). Recoveries over 90% shrank to 39% of the companies in comparison to 60% in the prior five-year period. Over the full 15 years, half of first-lien lenders achieved greater than 90% recovery.

In particular, trough periods in 2018, 2020, and year-to-date 2023 have pulled down first-lien lender recovery rates over the most recent 5.75-year period. These troughs include companies concentrated in sectors under stress even in otherwise healthy economic years. For example, in 2018, only 32% (6 out of 19 companies) of first-lien lenders garnered 90% or more in actual recoveries, with the next biggest grouping at 30%-50% realized by 26% of the lenders. These low recoveries were primarily driven by the secular decline in the brick-and-mortar retail sector as struggling retailers entered bankruptcy proceedings after the COVID-19 pandemic exacerbated an ongoing decline for the sector. In general, retail companies are inventory intensive; as such, their debt structure typically includes relatively large ABL facilities that represent much of the debt structure and absorbs most of the recovery value.

Amid the broad economic dislocation due to the pandemic, only 21% of first-lien lenders saw recoveries of 90% or greater in 2020, with another 29% of lenders realizing a 70%-90% recovery. While 2021 and 2022 emergences resulted in high recoveries as the economy expanded quickly and broadly, we anticipate seeing recoveries contract again in 2023 and 2024 as the economy softens and affects sectors unevenly.

Chart 3 | Distribution of actual first-lien recoveries

2008–Sept. 30, 2023



Source: S&P Global Ratings.

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Still, there are many entity-specific factors that influence ultimate recovery, including leverage, debt mix, and going-concern prospects. Also, as noted previously, the increase in aggressive out-of-court loan restructurings in recent years using priming loan exchange (or uptiering) strategies has the potential to complicate and skew recovery rates for first-lien debt by subordinating the priorities of a subset of first-lien lenders that did not participate in the restructuring. To mitigate this, we excluded from our dataset three companies (Murray Energy Corp., NPC International Inc., and Serta Simmons) that emerged from bankruptcy after September 2020. The NPC and Serta restructurings included new money super-priority loans that received full recoveries, with strong recoveries on the debt rolled up by participating creditors of 88% and 75%, respectively. The Murray Energy and Serta Simmons creditors subordinated in these transactions were essentially wiped out; for NPC, essentially all first-lien lenders participated.

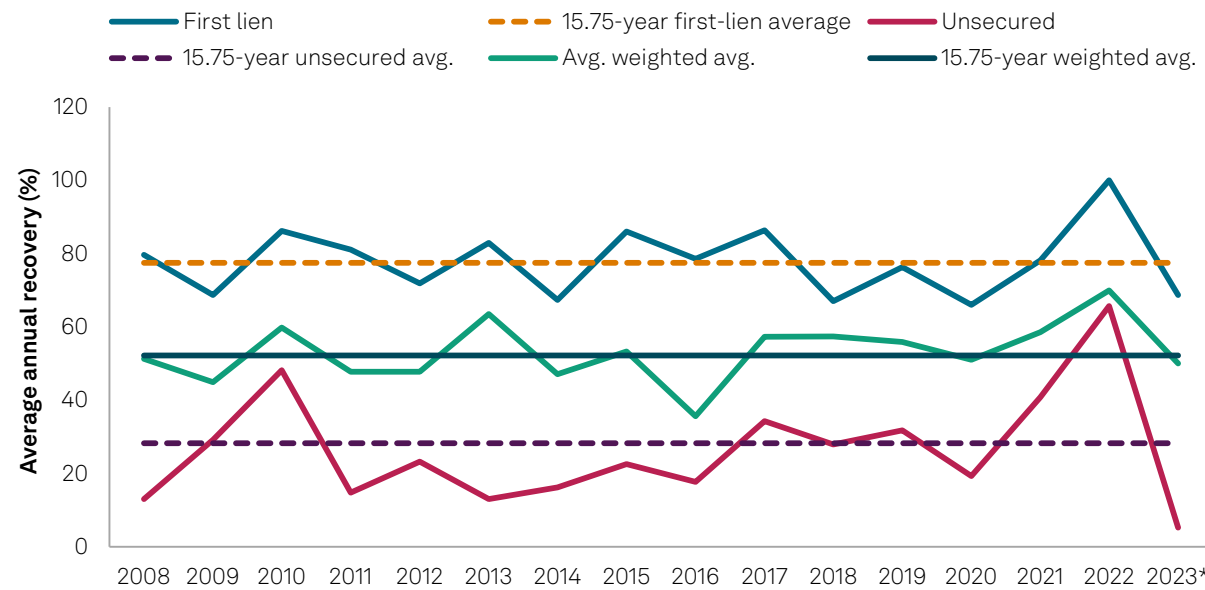
Timing Of Emergence Influences Recoveries

A major factor in determining recovery levels is the credit and economic environment at the time of emergence from bankruptcy (see “Recovering From COVID-19: Why The Timing Of Bankruptcy And Emergence Matters For Debt Recovery”, published Feb. 7, 2022). For example, we saw economic stress squeeze recoveries and cause uncertainty in 2020 at the height of the pandemic, only to rebound notably in 2021 and 2022 when economic growth returned. Additionally, there are peaks and troughs for debt recoveries that generally track to economic cycles or, more recently, the pandemic.

Over the long run, average actual first-lien recoveries were historically at 70%-80%, although it is lumpier on an annual basis because of the smaller sample set for each period. As such, the average actual recoveries for some years dropped to as low as 65%-70%. These low-average recovery years coincide with economic downturns, secular decline in sectors, or extraneous factors such as disruption from a pandemic, highlighting how the timing of an exit from bankruptcy influences debt recoveries, given the overall views on valuation and rates. The running average over our entire dataset is 78%, which is a percentage point below the pre-pandemic average.

Chart 4 | Actual annual average recovery—first-lien, unsecured, and weighted average

North American companies rated by S&P Global Ratings

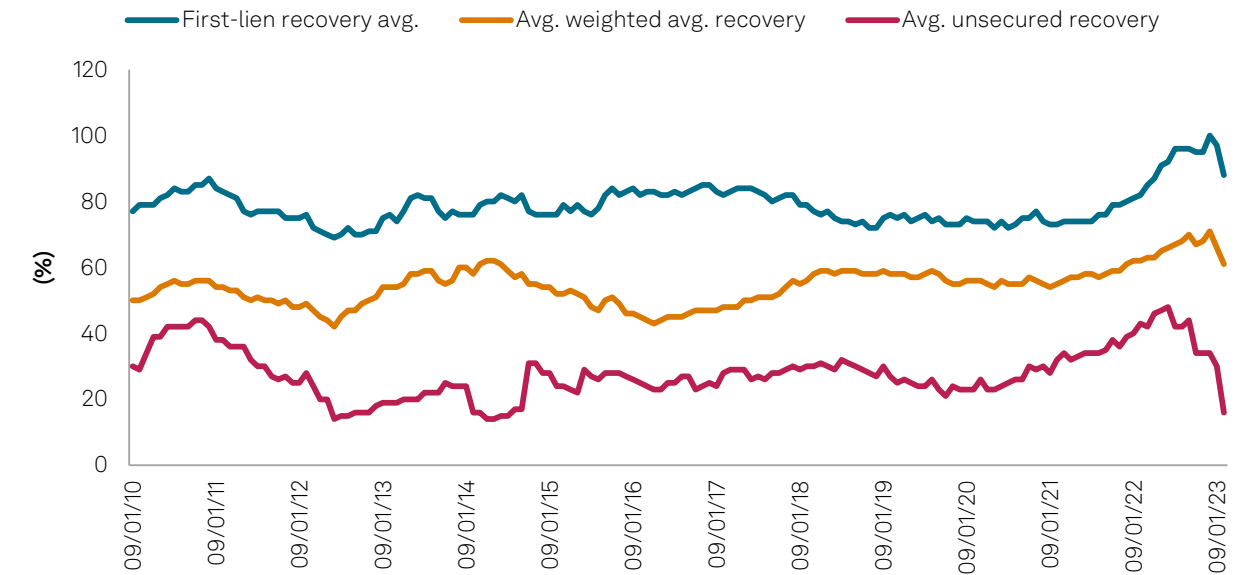


* As of Sept. 30, 2023.
Source: S&P Global Ratings.
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Like first-lien recoveries, unsecured recoveries have demonstrated fluctuating recovery rates when looking at annual data. The key difference is that they primarily depend on residual value because senior secured or structurally senior creditors receive recovery values first with respect to its collateral and its respective rights of claim.

To smooth out the annual average recovery data, we also use a rolling 24-month average recovery for first-lien debt, weighted average, and unsecured debt (chart 5). Using this lens, we see troughs below 50% in weighted average recoveries from 2012-2013 and for a longer stretch in 2016-2017 (during the oil and gas downturn). For first-lien debt, we see an extended period below 80% between 2011-2013 (while coming out of the global financial crisis) and for a much longer stretch between 2018-2022 (amid secular decline in retail and oil and gas bankruptcies from 2018-2019 and during the pandemic before spiking up in 2022). We now see an indication that it is heading downwards so far in 2023.

Chart 5 | Rolling 24-month average recoveries



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Recent Weighted Average Recoveries Skew Higher

The weighted average recovery is the recovery rate for a company’s total debt structure. Within each five-year period, it has averaged 49%-55%, with an overall average of 52% across the 15 years. The 15-year distribution reflects a normal bell curve (chart 6).

However, the weighted average recovery for the most recent five-year period of 2018-2022 was 55%, which is six percentage points over the prior period. This reflects the higher level of very high recoveries not only for first-lien debt, but also for junior-level debt, as well as the sharp economic rebound in 2021 and 2022 that boosted valuations and recovery rates.

Lenders that benefitted during this period include Ferrellgas Partners, Hertz, and Mallinckrodt, which had large unsecured debt stacks that realized above average recovery rates, thus shifting the distribution toward the 60%-80% range. Furthermore, we see a 70% average weighted average in 2022, which reflects these companies with high unsecured debt stacks (chart 4).

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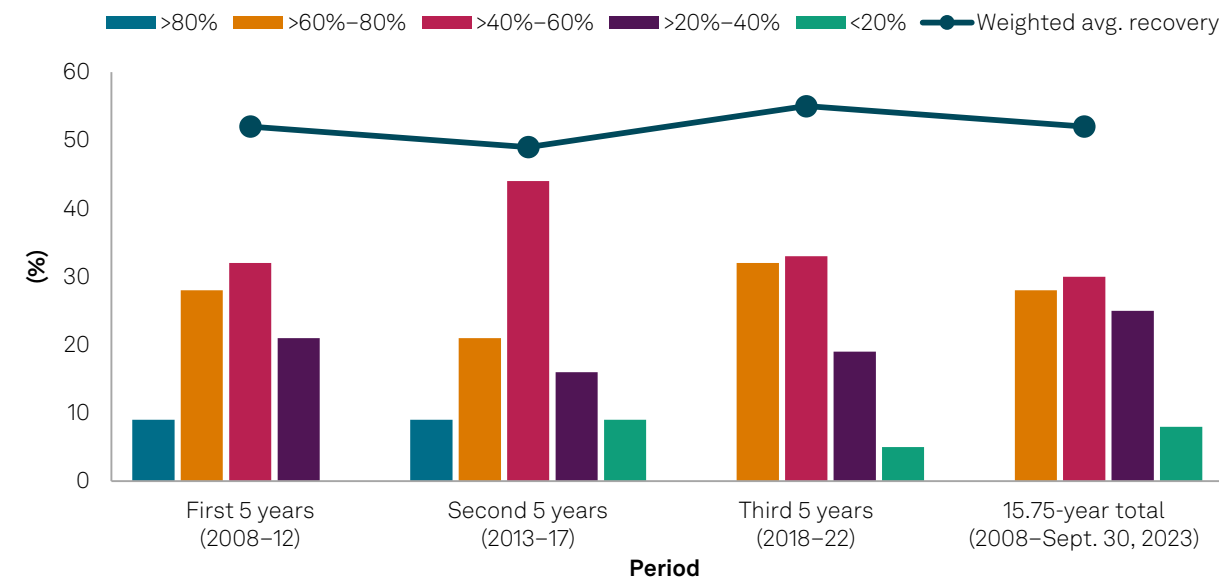
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Chart 6 | Distribution of weighted average recoveries
15.75-year period (2008 to Sept. 30 2023)

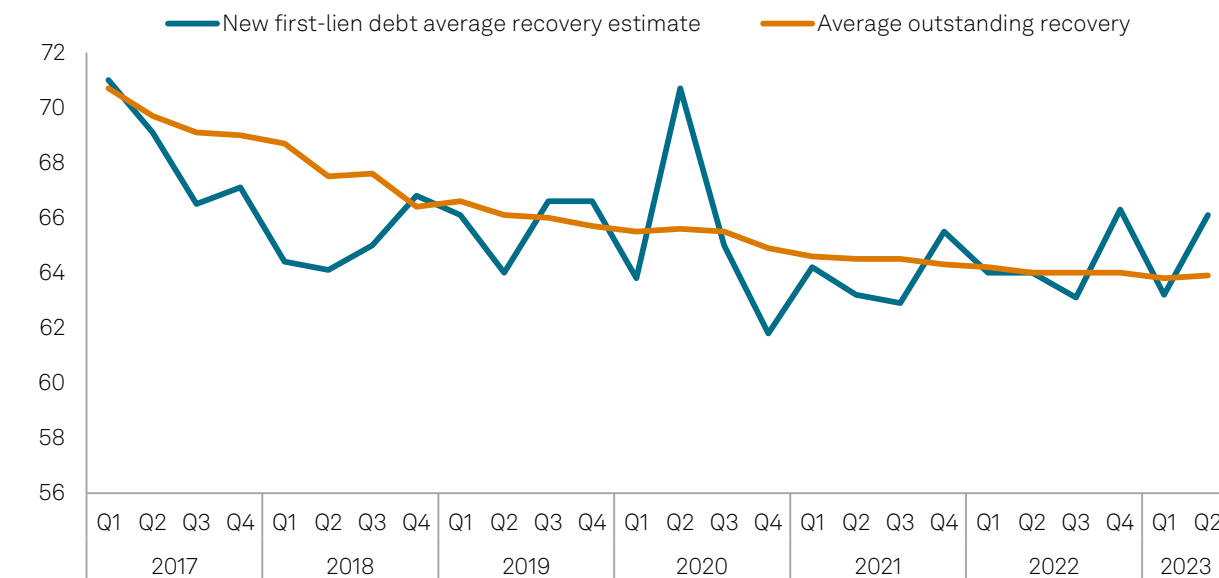


Source: S&P Global Ratings.
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Long-Term Recoveries Potentially Constrained

We saw above average first-lien recoveries in 2021 and 2022 as North America recovered from the height of the pandemic, with valuations benefiting from strong growth, low rates, and robust market liquidity. However, outside of these two years, the overall long-term trend for first-lien recoveries is down, as evidenced by just 38% percent of companies with first-lien debt achieving greater than

Chart 7 | Expected recovery on newly issued North America first-lien debt



Source: S&P Global Ratings.
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90% recoveries over the past five years while an increasing number of companies (39%) is achieving 50%-90% first-lien recoveries. This trend generally correlates to our recovery rating average recovery estimates of low-60% (chart 7).

Further, with the current high interest rate, inflationary pressures on borrowers' cash flows, and the volatility of rates, we anticipate valuations to follow along the expected recovery trends. As debt capacity is potentially limited and equity investors demand higher returns to offset their own cost of capital, recoveries could be constrained for defaulted companies, unlike the high recoveries achieved in 2021 and 2022.

Appendix

Table 1 | Prepetition debt (\$B)

	Priority	First lien	Second and third lien	Unsecured	Subordinated	Total
2008-2012 (133 companies)	29.0	93.2	13.5	70.5	20.7	227.0
2013-2017 (108)	3.3	94.9	33.8	50.9	9.3	192.3
2018-2019 (44)	6.0	35.8	10.4	16.5	9.6	78.4
2020-2022 (81)	17.0	71.3	25.5	62.3	5.5	181.7
01/01/2023-09/30/2023 (4)	3.4	1.7	1.1	1.4	0.1	7.7
Overall 15.75-year period (370)	58.7	297.0	84.3	201.7	45.3	687.0
Percent of total debt	9	43	12	29	7	100

Excludes recoveries from distressed exchange transactions. Excludes companies that we were unable to obtain actual recovery data from bankruptcy dockets.

Source: S&P Global Ratings.

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Our empirical recovery dataset covers 15 years and consists of 370 North American companies, aggregating to almost \$0.7 trillion dollars in total debt. This data set covers entities rated by S&P Global Ratings that defaulted, entered bankruptcy administration, and emerged between 2008 and the end of third-quarter 2023. We broke the first decade into two five-year periods; the final five-year timeframe, which includes the COVID-19 pandemic, we further split into pre-lockdown and post-lockdown segments, with one final segment representing the nine months ended Sept. 30, 2023.

Our dataset covers rated companies that filed for bankruptcy in the U.S. or Canada where we have sufficient information to obtain actual recovery rates from the bankruptcy documents. Debt amounts reflect the amounts outstanding at default. We exclude recoveries from distressed exchange transactions and companies that we could not obtain actual recovery data from--in particular, bankruptcy dockets.

In addition, our recent data excludes three companies that completed priming loan exchanges in recent years. These transactions can skew and complicate first-lien recovery rates because the newly issued first-lien debt (and typically some of the existing debt held by participating lenders) is structured to have a higher priority claim than the first-lien debt held by non-participating lenders. The three companies that we excluded, Murray Energy, NPC International, and Serta Simmons Bedding LLC, emerged from bankruptcy between September 2020 and Sept. 30, 2023.

This report does not constitute a rating action.

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New Obstacles Haven't Blocked Europe's Preference For English Restructuring

March 26, 2024

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Key Takeaways

- English courts' recent decisions in two restructuring cases involving Germany-focused companies have highlighted how fraught with challenges pre-insolvency court sanctioned restructuring can be.
- Statements made by an Appeal Court judge suggest that new cases will continue to be scrutinized for evidence that companies from Europe have established a reasonable argument for accessing English courts.
- Companies may increasingly look to alternative pre-insolvency court options, such as Germany's Stabilization and Restructuring Framework (StaRUG), or could shy away from the challenge and cost of pre-insolvency court restructuring by opting for insolvency, despite its typically lower debt recoveries.

England has long been the voluntary restructuring capital of Europe. That is likely to continue, albeit with new risks, after an English appeals court, in February 2024, set aside an earlier order sanctioning the restructuring of a Germany-focused real estate business.

The decision is part of a recent trend in which courts have increasingly focused on the issue of whether companies without evident links to the U.K. should have access to England's legal system for pre-insolvency debt exchange processes. The resulting uncertainty is additional to the risks relating to cross-border recognition of U.K. court decisions--though a U.K. ruling is yet to be challenged in continental Europe.

It remains to be seen to what extent, if any, these issues slow European companies' use of English courts for restructuring. For that to happen, companies seeking court sanctioned pre-insolvency debt exchanges, also known as distressed exchanges, would need to increasingly look beyond the U.K., and possibly stay at home.

It is hard to overstate how big a change that would be. Among German-speaking countries (DACH), distressed exchanges are the most common reason for corporate default rating actions, accounting for about 80% of the default ratings ascribed by S&P Global Ratings (S&PGR) over the past four years (see table below). Every one of those distressed exchanges (that required a court ruling) were conducted in an English court--despite all of the issuers being based in DACH, often without U.K. operations, and, in at least one case, the debt documentation conforming to German law.

Debt Restructurings Account For Most Default Ratings

Debt restructuring plays an important role when corporates fall into distressed situations, not least as a pre-emptive step to avoid defaulting on payments or bankruptcy. Lenders and borrowers can agree to reset elements of the financing agreement (including maturity, interest, and ranking), to write-off principal, or to convert debt to equity. Restructuring can be executed by amending existing agreements or by replacing existing instruments with new ones for the same group of lenders.

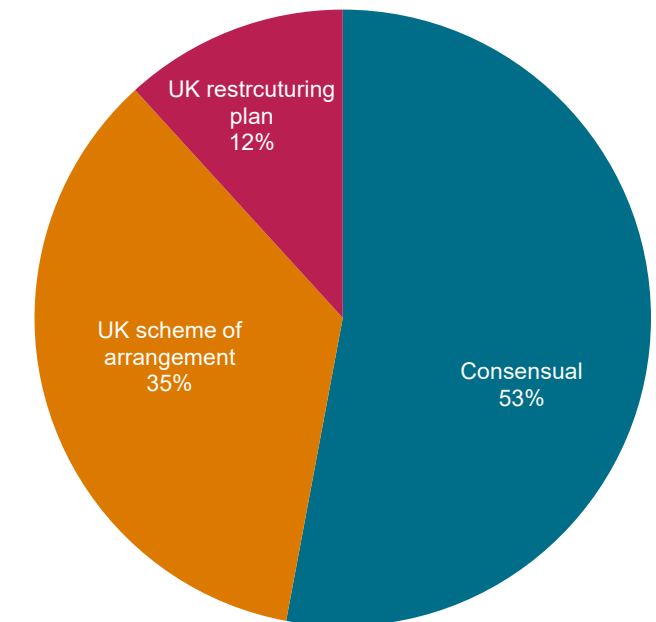
Distressed exchanges are, (strictly) consensual in only about 50% of cases involving S&PGR-rated issuers in DACH. That split reflects the high level of acceptance typically required from lenders before significant amendments can be made to credit agreements. For example, bond indentures require the support of 75% or 90% of bondholders, while significant amendments to most syndicated leverage loans require the unanimous support of all lenders who vote.

To circumvent those voting barriers, pre-insolvency legal procedures enable, in certain situations, court-sanctioned restructuring. This allows parties to secure a distressed exchange without meeting the necessary approval thresholds and thus avoid lengthy bankruptcy procedures, or lengthier consensual restructuring processes, which tend to be operationally disruptive, value destroying, and harmful to a company's ability to generate earnings. How we view restructuring under a pre-insolvency regime in our criteria depends on the details of the transaction. We do not mechanically treat a restructuring as tantamount to a default under our criteria as they are not official bankruptcies, though the vast majority of past cases have been regarded as tantamount to a default.

Of the distressed restructuring cases affecting S&PGR-rated issuers in DACH region over the past four years, about half were referred to a court (see chart).

DACH distressed exchange implementation routes

For issuers rated by S&P Global Ratings, since 2020



DACH = Germany, Austria, Switzerland.

Source: S&P Global Ratings.

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Why English Courts Are Preferred

Not all courts are equally popular when it comes to distressed exchanges. The English judicial system has the longest tradition in pre-insolvency restructuring proceedings, experienced courts, and a track record of predictability and speed that is valued by companies and lenders. It is a combination that attracts restructuring business from across the globe and very often from companies that otherwise have little connection to England.

For English courts to rule on a restructuring there must be some link to the U.K. Historically, English courts have been satisfied that they have jurisdiction because:

- An English domiciled co-borrower was established under the borrower-substitution-mechanism in debt indentures.
- The lenders and the borrower have agreed to change the governing law to English law.
- Most syndicated loan agreements are governed by English law.

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Recent Cases Highlight The Issues Involved

The Court of Appeal's decision to set aside a lower English court's ruling on the Germany-focused Adler Group's restructuring highlights the risks involved in court-sanctioned pre-insolvency restructuring.

We consider three elements of the Court of Appeal's decision to be particularly pertinent for future restructuring cases:

- The judge questioned whether inserting an English domiciled co-borrower into a group domiciled and operating in Germany and Luxembourg (and with bond indentures according to German law) was sufficient to justify English jurisdiction;
- The criticism of the violation of the pari passu principle embedded in the senior unsecured capital structure bond indentures. This was based on the failure to amend the companies' later bond maturities so that they were also due and payable alongside the rest of the senior unsecured debt given that the recovery forecasts suggested insufficient value available for later maturities; and
- Criticism of the tight deadline set by the parties, which effectively necessitated a rapid decision by the judge of first instance.

It seems evident that the appeal court ruling has increased uncertainty for any company that is considering changing its "center of main interests" (COMI) to access a more favorable legal jurisdiction.

English courts have recently considered jurisdiction in two further restructuring cases from Germany, Tele Columbus and Aggregate. In the uncontested Tele Columbus' case, the judge ruled that debt documents using English law were sufficient to justify a U.K. hearing (even though the documents relating to the bonds were changed from New York law with the lenders' consent). In the Aggregate case, the judge was satisfied that the company's COMI was in the U.K. on the basis of elements including leased premises, notification of creditors, and employment of U.K. staff.

Legal uncertainty isn't confined to the U.K. In Germany a court has been asked to determine if a COMI change via a co-issuer (established by the Adler Group) is allowed under German law.

The question of whether companies have done enough to shift their COMI, or otherwise come within the jurisdiction of the English courts, will continue to be open to challenges. Questions will also remain as to whether relevant national courts, for example German or Luxembourg courts, will accept a COMI change or uphold a plan that has been sanctioned by the English courts.

Moreover, the Court of Appeal's decision to set aside the lower court's sanctioning of a restructuring plan introduces uncertainty relating to timing. That is because market participants (and particularly new money) rely on the certainty of court sanctioned plans as the foundations for a restructuring. First instance decisions become the legal basis for amending terms, establishing new capital structures, lending new money, and the provision of security. If first instant decisions are challenged, the resulting wait for extended appeal proceedings to conclude can put a company under pressure, particularly when payment dates are looming.

Pre-insolvency Restructurings Maintain Their Role Despite New Risks

It remains to be seen to what extent the recent overturning of the first instance decision dents confidence in pre insolvency restructurings or increases use of alternative procedures in other countries. But companies and lenders do have options across Europe.

They include Germany's Stabilization and Restructuring Framework (StaRUG), established in 2021. That process was used last year in a group of successful restructurings by institutions that we don't rate, including Leoni AG, a previously listed auto-parts supplier, and most recently in the restructuring of real estate group Branicks AG, with respect to extending the maturities of its German law promissory notes.

We expect, however, that the English courts will remain a preferred destination for complex debt restructuring, due to their expertise, experience, and speed. Restructurings under StaRUG can

easily take months and will typically be heard in a relatively inexperienced (and untried) German regional court close to a company's headquarters. Nevertheless the German StaRUG will play a role, particularly in local pre-insolvency restructurings.

Perhaps the greatest risk, however, is that more companies will file for insolvency due to a lack of pre-insolvency restructuring possibilities, or due to an inability to find new money investors willing to fund liquidity shortfalls during longer restructurings. That, in turn, could result in longer insolvency proceedings that are more detrimental to issuers and thus impair expected recoveries in defaults.

DACH defaults of S&P Global Ratings' rated issuers since 2020

	Name	Date	Reason	Incorporation	Country	Implementation route
1	Swissport Group Sarl	December 2020	Distressed exchange-- debt to equity swap	Luxembourg	Switzerland	UK scheme of arrangement
2	Takko Fashio Sarl	May 2020	Payment default-- missed coupon payment	Luxembourg	Germany	Other
3	EuroChem Group AG	April 2022	Payment default-- missed coupon payment	Switzerland	Russia	Other
4	Safari Beteiligungs GmbH	May 2022	Distressed exchange-- debt to equity swap	Luxembourg	Germany	UK scheme of arrangement
5	Transocean Ltd.	September 2022	Distress exchange-- tender offer below par	Switzerland	USA	Consensual
6	Schur Flexibles GmbH	September 2022	Distressed exchange-- debt to equity swap	Germany	Germany	Consensual
7	Covis Finco Sarl	April 2023	Distressed exchange-- debt to equity swap	Switzerland	Switzerland	Consensual
8	Adler Group Sarl	April 2023	Distressed exchange-- interest capitalization, maturity extension	Luxembourg	Germany	UK restructuring plan
9	Takko Fashio Sarl	August 2023	Distressed exchange-- debt to equity swap	Luxembourg	Germany	Consensual
10	Tele Columbus AG	November 2023	Distressed exchange and payment default	Germany	Germany	UK scheme of arrangement, other
11	Wittur International Holding GmbH	December 2023	Distressed exchange-- debt to equity swap	Germany	Germany	Consensual
12	Signa Development Selection AG	December 2023	Insolvency	Austria	Austria	Self-administration restructuring process
13	SK Neptune Husky Intermediate IV Sarl (heubach)	December 2023	Payment default-- forebearance	Switzerland	Germany	Consensual
14	Covis Finco Sarl	January 2024	Distressed exchange-- debt restructuring	Switzerland	Switzerland	Consensual
15	Arvos Luxo Sarl	March 2024	Distressed exchange-- debt to equity swap	Luxembourg	Germany	UK scheme of arrangement

DACH = Germany, Austria, Switzerland.

Source: S&P Global Ratings.

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Related Research

– Adler Group S.A. and Adler Real Estate AG, Feb. 19, 2024

– German Cable Operator Tele Columbus AG Downgraded To 'D' From 'CCC' On Missed Coupon Payment And Debt Restructuring, Nov. 27, 2023

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Twenty-Five Years Strong: European CLOs' Lifetime Default Rate Is Only 1.5%

April 18, 2024

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Key Takeaways

- European CLO 1.0 performance has stood the test of time, with only 1.5% of rated tranches suffering a loss since 2000.
- European CLO 2.0 performance has also been strong, with zero defaults and a low number of downgrades in the past 11 years.
- European CLO ratings have weathered several significant macroeconomic events--such as the global financial crisis and the COVID-19 pandemic and subsequent recessions--with minimal defaults.

European collateralized loan obligations (CLOs) have proved remarkably stable since S&P Global Ratings rated its first transaction in 2000. During this time, European CLOs have resisted several upheavals, including the global financial crisis, the dotcom bubble, and the COVID-19 pandemic, and have seen very few defaults.

In Europe, we refer to CLOs issued since 2013 as CLO 2.0 and those issued before the global financial crisis as CLO 1.0. We include transactions backed by loans to large corporates, but exclude those backed by loans to small and midsize enterprises, those backed by collateral in a single jurisdiction, and the collateralized debt obligations of asset-backed securities.

CLO 1.0: 25 Years Of Solid Credit Performance

From 2000 to the end of 2009, S&P Global Ratings rated almost 1,500 CLO tranches issued by over 220 European CLOs. We have since withdrawn all of these ratings as the tranches were mostly redeemed in full, with only a small number defaulting. Of the almost 1,500 CLO tranches, a mere 22 defaulted, 20 of which were term notes and two combination notes. Four were from tranches that we initially rated investment grade (in the 'BBB' category), and two of these were pari passu tranches in the same transaction. Overall, 13 CLOs, across seven collateral managers, had at least one tranche suffering a default.

Will CLO 2.0 Outperform CLO 1.0?

After 11 years, European CLO 2.0 transactions' credit performance is arguably stronger than that of their earlier counterparts, with no tranche defaulting or having a rating in the 'CCC' category. This is thanks to CLO 2.0 transactions' better structural protections, namely:

- They have greater credit enhancement, especially at the senior level. 'AAA' credit enhancement has increased to 38% from 30% in European CLO 1.0 transactions, while 'AA' credit enhancement has risen to 29% from 23%. At the more junior 'BB'/B level, the credit enhancement is lower than in CLO 1.0 transactions.
- Their eligibility criteria focus on corporate debt and exclude structured finance and synthetic assets.
- A large portion of the issuers now have ratings, whether public, private, or confidential, whereas in CLO 1.0 transactions, credit estimates were more prevalent.
- The structures tend to have less leverage, shorter reinvestment periods, and fewer derivatives such as currency options and basis swaps.
- The structures now include a risk-retention rule to align the interests of different stakeholders. This is otherwise known as "skin in the game".

For the time being, we do not rate any European CLO 2.0 tranches in the 'CCC' category. CLO 2.0 transactions have typically undergone a reset or refinancing, meaning that most of the original notes do not follow the typical amortization pattern.

Table 1 | European CLO transactions — default summary by original rating

	CLO 1.0			CLO 2.0		
	Number of original ratings	Number of defaults	Currently rated	Number of original ratings	Number of defaults	Currently rated
AAA	481	0	0	846	0	495
AA	227	0	0	917	0	648
A	249	0	0	594	0	406
BBB	296	4	0	567	0	391
BB	211	17	0	528	0	381
B	11	1	0	474	0	366
Total	1,475	22	0	3,926	0	2,687

Trustee report data to Jan. 31, 2024.

CLO= collateralized loan obligation; European CLO 2.0 = European CLOs closed between Jan. 1, 2013, and March 31, 2024.

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Table 2 | European CLO 2.0 issuers — default summary by original rating

	Number of CLOs	Number of defaults	Number of outstanding CLOs
AAA	418	0	373
AA	422	0	380
A	423	0	380
BBB	423	0	381
BB	421	0	381
B	393	0	364
Total	2,500	0	2,259

CLO= collateralized loan obligation.

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European CLO 2.0 Transactions Continue To Perform Well In Challenging Conditions

Challenges include the conflicts in Ukraine and Israel and higher interest rates than in the past five years. While the number of corporate defaults is increasing, it remains low compared to historical levels.

In our view, the structural protections that CLO 2.0 transactions have introduced will help sustain their performance. However, concerns persist about the flexibility that the leveraged loan and CLO 2.0 documentation gives portfolio managers. For example, we have seen instances of CLOs exiting the reinvestment period but remaining fully reinvested for several years. The longer the CLO is reinvested, the longer the 'AAA' noteholder will have to wait to receive the principal repayment.

Another challenge that CLOs 2.0 transactions are likely to face concerns the recovery amount when obligors default. The underlying loans' covenant-lite nature and weaker documentation will lead to lower recovery rates than historical levels.

Table 3 | CLO defaults in Europe*

CLO name	Class name	DOA		Initial Reinvestment	Initial rating	Initial credit enhancement	Rating before default	Date of default	Reason for default
		initial rating	Reinvestment						
Avoca CLO II BV	C-1	4-Nov	5.2	BBB	9.1	CCC-	16-Aug	Principal loss	
Avoca CLO II BV	C-2	4-Nov	5.2	BBB	9.1	CCC-	16-Aug	Principal loss	
Avoca CLO II BV	D	4-Nov	5.2	BB	7.7	CC	16-Aug	Principal loss	
Avoca CLO III PLC	E	5-Aug	6.1	BB	7.4	CCC-	17-Mar	Principal loss	
Avoca CLO IV PLC	E Def	6-Jan	6.1	BB	6.9	CCC-	16-Aug	Principal loss	
Avoca CLO V PLC	F	6-Aug	6.0	B	5.6	CCC-	18-Apr	principal loss	
BACCHUS 2007-1 PLC	E	7-Sep	5.6	BB-	8.5	CCC-	18-Feb	Missed interest payment	
Leopard CLO I BV	E-1	3-Jan	5.1	BB	7.7	CCC-	15-Nov	Principal loss	
Leopard CLO I BV	E-2	3-Jan	5.1	BB	7.7	CCC-	15-Nov	Principal loss	
Leopard CLO II BV	D	4-Apr	5.0	BB	9.4	CC	16-Oct	Missed interest payment	
Leopard CLO III BV	E1	5-Apr	5.0	BB-	7.1	CCC-	17-May	Principal loss	
Leopard CLO III BV	E2	5-Apr	5.0	BB-	7.1	CCC-	17-May	Principal loss	
Leveraged Finance Europe Capital III BV	D	4-Oct	5.0	BBB-	9.6	CCC-	17-Feb	Missed interest payment	
Leveraged Finance Europe Capital III BV	E	4-Oct	5.0	BB-	7.1	CC	18-Nov	Principal loss	
Munda CLO I BV	E	7-Dec	6.0	BB-	8.7	CCC	19-Oct	Principal loss	
North Westerly CLO I BV	IV-A	3-Jun	5.0	BB-	7.4	CC	16-Aug	Principal loss	
North Westerly CLO I BV	IV-B	3-Jun	5.0	BB-	7.4	CC	16-Aug	Principal loss	
North Westerly CLO II BV	D-1	4-Sep	6.0	BB-	7.8	CC	17-Sep	Principal loss	
North Westerly CLO II BV	D-2	4-Sep	6.0	BB-	7.8	CC	17-Sep	Principal loss	
Strawinsky I PLC	D	7-Aug	6.0	BBB	10.9	B-	20-Mar	Missed interest payment	

* Table excludes combination notes.

CLO= collateralized loan obligation; DOA = date of assigning.

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Our EMEA CLO Collateral Managers Dashboard compares weekly European CLO data. This is a single snapshot view of CLO-critical credit risk factors where you can examine, compare, and benchmark individual S&P Global Ratings-rated European CLOs: <https://www.spglobal.com/ratings/en/research-insights/topics/powerbinew>

Related Research

– Weekly European CLO Update, April 16, 2024

– 2022 Annual Global Leveraged Loan CLO Default And Rating Transition Study, May 26, 2023

This report does not constitute a rating action.

European CLOs: Awash With Cash

September 3, 2024

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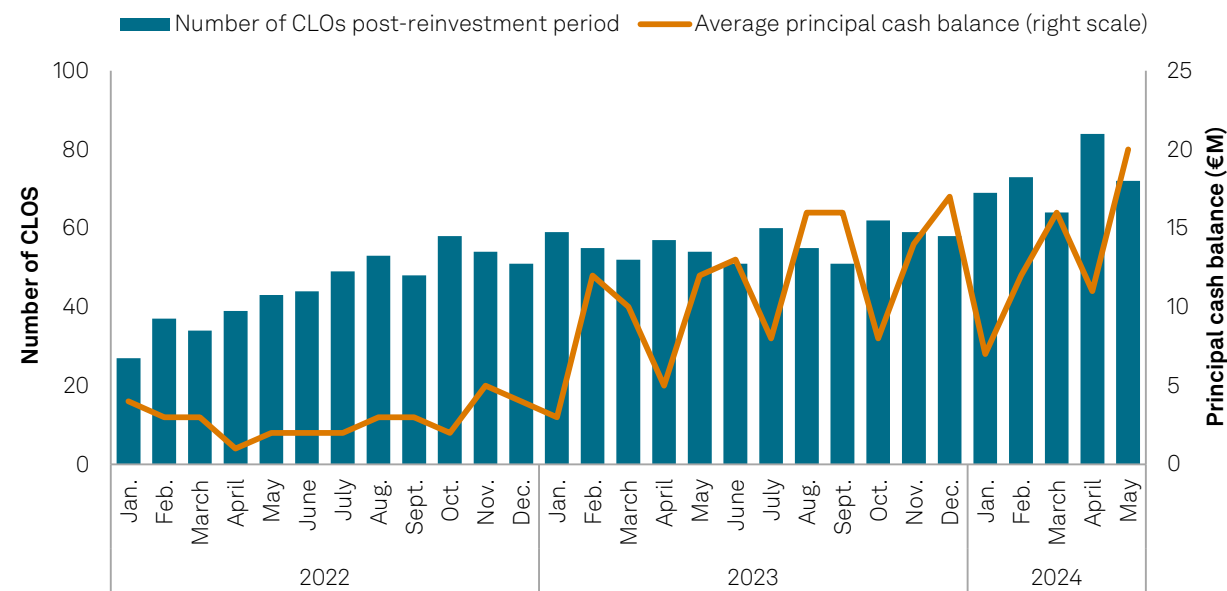
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Key Takeaways

- An accumulation of higher cash balances in European CLOs has in part been driven by limited refinancing opportunities since 2021, a high prepayment rate, and restrictive conditions to reinvest.
- Uninvested cash is an inefficiency for CLOs when maximizing present value and the internal rate of return to equity. Hence, documentation is evolving as managers seek innovative solutions to address this inefficiency and “make the cash work” in their CLOs.
- CLO documentation may become more flexible in future as managers prepare for post-reinvestment period life.

European collateralized loan obligations (CLOs) are seeking more ways to “make the cash work”. The accumulation of higher cash balances has in part been driven by limited refinancing opportunities since 2021. As a result, CLOs have instead exited their reinvestment periods and, due to a high prepayment rate, have accumulated material uninvested cash balances (see chart 1).

Chart 1 | Post-reinvestment period European CLOs’ cash balances surge



CLO = collateralized loan obligation.
Source: S&P Global Ratings.
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Before diving deeper into the cash-utilizing features S&P Global Ratings is observing in CLOs, it’s important to set some context around the CLO product, its primary purpose, and why we believe these features are noteworthy to highlight.

- Once a CLO’s reinvestment period has ended, the conditions to reinvest deliberately become more restrictive thereby resulting in an accumulation of principal proceeds in the CLO’s principal account. CLO managers maintain the ability to reinvest cash in eligible investments however, remain restricted to short-term debt which generates relatively lower returns, resulting in a drag on CLO equity returns (in some cases also referred to as negative carry). See chart 1 and for more information, “Delving Deeper: Why Do CLOs End Up With So Much Cash?”.
- CLOs are primarily arbitrage investment vehicles which look to maximize the return on a portfolio of corporate debt and provide excess returns to CLO equity. The equity tranche, assuming it’s issued at par, typically provides investors with eight to 10 times leverage on the portfolio and acts as the first loss piece upon defaults. Attracting CLO equity depends largely on the arbitrage potential between the cost of CLO liabilities and the interest generated on the portfolio as equity generally receives the residual cash flows. As such, material uninvested cash balances are an inefficiency for CLOs when maximizing present value and the internal rate of return to equity, and both CLO structures and their respective documentation have evolved as managers seek innovative ways to maximize returns.

Here, we explore several ways in which European CLOs are utilizing their cash positions in the most arbitrage-efficient way possible. This ranges from features such as the “synthetic” distribution of principal cash to improve overcollateralization ratios, to applying discount rates to cash-trapping mechanisms to fast-forward CLO equity returns.

Table 1 summarizes the most recent cash-utilizing features being built into CLO documentation and how this affects CLO returns and tests.

Table 1

European CLO documentation features to manage cash balances

	Post-reinvest ment period only	Improves present value of equity returns*	Improves overall equity return§	Reduces negative carry	Improves par value tests
Interim payment dates	Yes	No	Yes	No	Yes
Unscheduled payment dates	No	Yes	No	No	No
Par value test calculations to maximize equity returns	Yes	Yes	Yes	No	Yes
Par value test calculations to continue reinvestment	Yes	No	Yes	No	Yes
Interest smoothing calculations to minimize cash trap	No	Yes	No	No	No
Due period extensions to capture maximum interest	No	Yes	No	No	No

*Improves the present value of CLO equity returns as distributions are made relatively sooner. §Improves the overall notional return to CLO equity by either redirecting proceeds in the waterfall or reducing negative carry. Source: S&P Global Ratings. Copyright © 2024 by Standard & Poor’s Financial Services LLC. All rights reserved.

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Payment Dates: Repay Sooner, Save On Carry

European CLOs pay interest, and if applicable principal, quarterly, however additional payment dates, which repay liabilities earlier, can reduce negative carry and improve the present value of equity returns.

The ability to repay CLO investors earlier than their scheduled payment dates typically comes in two forms in the European CLO market: Interim and unscheduled payment dates. Table 2 provides a comparative analysis between both features and the benefits they offer relative to the CLO instead holding a large principal cash balance.

Table 2 | Comparing interim and unscheduled payment dates

	Interim payment dates	Unscheduled payment dates
How does it work?	- After the reinvestment period the issuer may declare the 15th day of any calendar month as a payment date subject to prior written notice to the rating agencies and the noteholders. - On this interim payment date, the issuer can redeem senior notes, in line with the note payment sequence, with the principal cash available in its account. The issuer can only redeem principal on the notes if interest proceeds are sufficient to pay all the accrued and unpaid interest on the notes redeemed (including any deferred interest). - If a note is only partially redeemed the remaining balance will continue to accrue interest until the next payment date. However, unlike a standard payment date interest cannot be used to pay amounts junior in the waterfall, i.e., interest is not distributed to junior or subordinated noteholders.	- The issuer may designate any date, during the due period, as a payment date subject to timing conditions, i.e., the parties are given sufficient notice, and the new payment date is not within five days of another payment date. - Although not a "new concept", unlike an interim payment date, an unscheduled payment date can only occur after all the rated notes have fully redeemed.
Why is it useful?	- Redeeming the senior notes before a scheduled payment date helps to avoid negative carry and may also help to cure par value tests. This is because the denominator of the test reduces when liabilities are repaid. Curing par value tests in this way enables the manager to continue trading if the condition to satisfy coverage tests was a constraint.	- An unscheduled payment date brings forward interest distributions to equity which therefore improves the present value of cash flows and the overall internal rate of return.
S&P Global Ratings' view	- For structured finance instruments, and covered bonds, our ratings typically address the likelihood of timely interest payments and ultimate principal repayment. As such, if the notes are redeemed at par plus accrued interest, we view this concept to be in line with our framework. - The priority of payments is respected as no interest distributions can be made in junior positions of the waterfall and the transaction must have sufficient interest proceeds to pay accrued interest on the portion of the notes being redeemed. Furthermore, we look to the manager to determine if sufficient interest proceeds will be available to pay senior fees, expenses, and timely interest on the senior notes on the next scheduled payment date.	- Since the rated notes will have fully redeemed before this concept can be utilized, we do not opine.
Where to find this language in a typical offering circular	- As part of condition 7 and typically below the ability to purchase the notes.	- As part of condition 3 and typically below the "Accounts" section.

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Par Value Test Calculations: Do The Math

Par value tests are primarily designed to protect CLO investors from par erosion and defaults and losses in the underlying portfolio by ensuring that interest and/or principal proceeds cure predefined overcollateralization levels on each payment date. At the same time, a CLO's reinvestment conditions also require compliance of the same par value tests to ensure that the underlying portfolio's par value is generally maintained or improved every time the CLO manager is trading the portfolio.

In both cases, recent CLOs have been calculating their par value tests by pre-determining the repayment of the CLO notes by an amount equal to the amount of principal cash the CLO currently holds, and in the case of par value test calculations to continue reinvestment, ahead of when the payment is actually made to CLO investors. Utilizing the calculation of cash (1) in the CLO waterfall and (2) for reinvestment conditions in this manner allows the CLO to maximize equity returns and continue to reinvest for longer. Table 3 summarizes how cash is utilized for par value tests and the benefits they offer in both the instances we mention above.

Table 3 | Par value test calculations

	Par value test calculations in the CLO waterfall to maximize equity returns	Par value test calculations to continue reinvestment
How does it work?	- Post reinvestment period the par value tests in the waterfall are calculated after applying the principal available for distribution on the notes. - To do so, cash is removed from the numerator of the par value test calculation and the portion of the note to be redeemed is removed from the denominator. - For example: if the class A/B par value ratio is 138% (assuming a €400 million portfolio and a €290 million class A and B liability balance) then removing €20 million of cash from the numerator and €20 million of liability repayment from the denominator increases the par value ratio by almost 3% to 141%.	- After the reinvestment period one of the conditions for the manager to continue trading is that coverage tests are passing. When the manager tests par value tests the class balance in the denominator can be reduced by the amount of cash set aside to redeem principal on the next payment date. - In this way the concept is similar to the interim payment date however the class balance is only synthetically, or artificially, reduced in the calculation and the actual principal distributions still occur on the scheduled payment date.
Why is it useful?	- Reducing the denominator of the par value test calculation ensures that principal is used to cure par value tests, instead of interest, to maximize the interest then available in junior positions of the waterfall and improve equity return.	- Similar to the interim payment date this concept may enable managers to improve par value ratios and continue trading after the reinvestment period if the condition to satisfy coverage tests was a constraint.
S&P Global Ratings' view	- In assigning ratings, we have adjusted our cash flow modeling and the impact on our breakeven default rates depends on the sequence of payments in the waterfall, as such: (i) When the note payment sequence is interest, then deferred interest, and then coverage tests, the impact has been low. (ii) When the waterfall tests the coverage ratios before paying deferred interest on the notes the impact has been more material since principal is first used to repay deferred interest on the controlling class of notes and then used to redeem principal. In this way less principal is available to redeem the notes and interest continues to flow down to equity.	- The principal amounts set aside are done so irrevocably and can only be applied toward principal repayment of the notes. - The waterfall, in specific circumstances, permits the use of principal to cover an interest shortfall, rather than to repay the debt. This could result in the denominator of the overcollateralization calculation, after the payment date, differing from what was calculated during the period. We do not view this as a risk since the interest coverage tests need to be satisfied after each reinvestment, meaning the portfolio is currently generating sufficient interest.
Where to find this language in a typical offering circular	- As part of condition 3, in the "Application of Interest Proceeds" section when calculating the par value tests or, - In the "Principal Amount Outstanding" and "Adjusted Collateral Principal Amount" definitions.	- In the "Principal Amount Outstanding" definition and "Adjusted Collateral Principal Amount" definitions.

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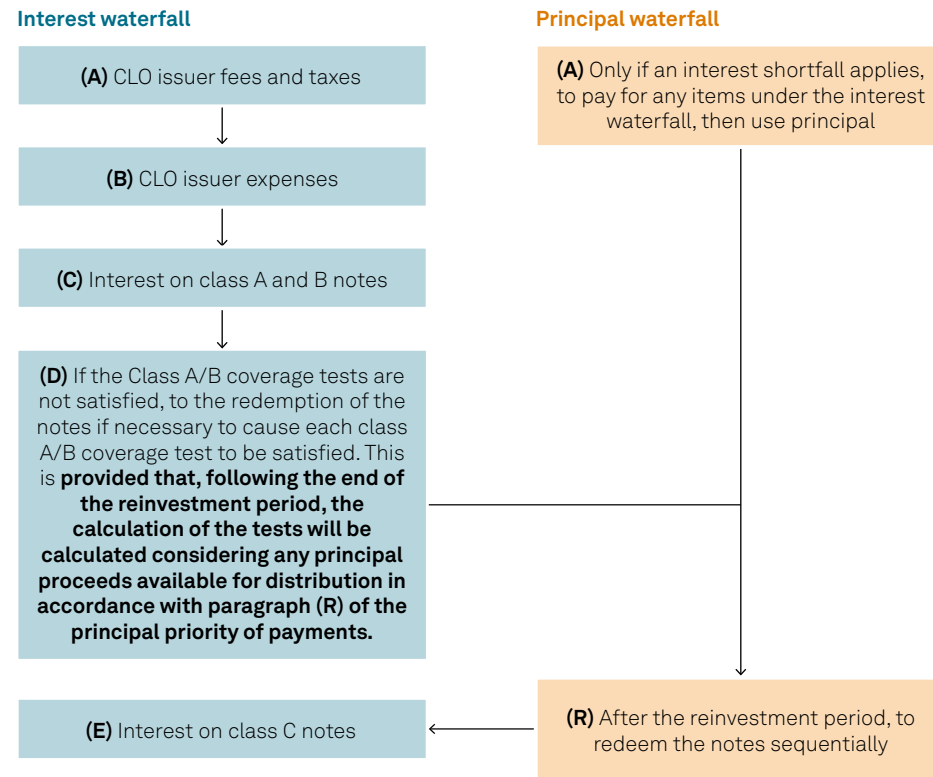
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Chart 2 provides an example of the language we typically see reflected in the CLO waterfall.

Chart 2

More interest to equity, less to cure tests
Representation of the priority of payments



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Interest Collection: It's All About Present Value

The timing to collect and distribute interest on the portfolio is a key driver of equity return, which is why recent CLOs are including updated transaction language aimed at minimizing cash trap from interest smoothing accounts and extending due periods to ensure that interest distributed on the payment date is maximizing equity returns.

Table 4 summarizes and compares two notable evolutions in CLO documentation which aim to utilize interest proceeds in the most arbitrage-efficient way possible: The application of discount rates for interest smoothing mechanisms and the optionality to extend due periods.

Delving Deeper: Why Do CLOs End Up With So Much Cash?

European CLOs typically have a reinvestment period of between four to five years, during which time the manager is actively trading the portfolio. Therefore, any cash received from asset redemptions, or from asset sales, is reinvested in substitute assets. Once the reinvestment period has ended the manager's ability to continue trading is limited, and so cash can begin to accumulate in the principal account to either redeem the senior notes or source substitute assets which meet the more restrictive post-reinvestment period conditions.

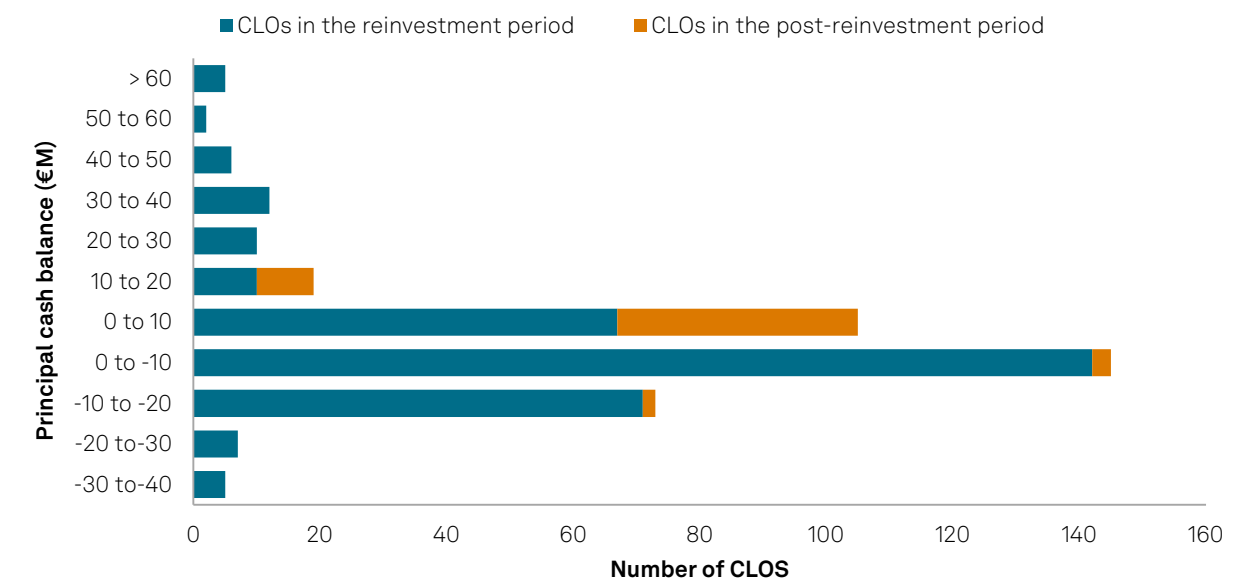
As a result, the average cash balance across European CLOs is highly range-bound between very actively traded transactions, which often have negative cash balances to generate more interest on the assets and improve equity returns, and less actively traded transactions which often have neutral to positive cash balances (see chart 3).

Table 4 | Comparing interest smoothing with due period extensions

	Interest smoothing calculations to minimize cash trap	Due period extensions to capture maximum interest
How does it work?	- We have seen variations of the interest smoothing language which aim to minimize cash set aside from semi-annual payments of interest. To do so, the transaction typically sets a threshold for the percentage of semi-annual obligations in the portfolio or relies on the transaction otherwise having sufficient interest to service the interest due on the notes, i.e., by looking at par value and interest coverage tests for the next period. - A new concept has recently emerged, whereby the cash that is set aside is discounted by the interest rate payable on the account such that by the end of the due period the cash set aside plus the interest generated equals the one-quarter worth of interest which would have otherwise been smoothed.	- Interest collections, up to a limited number of business days before the payment date, can be sent to the interest account for distribution even if they are received after the determination date.
Why is it useful?	- Minimizing the cash required to be set aside in the interest smoothing account increases the interest available for distribution on the next payment date and so improves the present value of cash flows for CLO equity.	- Any additional cash proceeds distributed on the payment date improves the present value of cash flows for CLO equity.
S&P Global Ratings' view	- We analyzed the calculation used to discount the cash proceeds to be set aside and concluded that by the end of the due period, the cash set aside plus the interest generated was equal to the one-quarter worth of interest which would have otherwise been smoothed.	- Our cash flow modeling assumes payment periods on a quarter-by-quarter basis and so our analysis does not consider the determination cut-off date. - We are comfortable that there is no "double counting" i.e., amounts captured by the due period extension in period one are not given credit in the interest coverage tests for period two.
Where to find this language in a typical offering circular	- In the "Interest Smoothing Amount" definition.	- In the "Due Period" definition.

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Chart 3 | Cash balances in European CLOs are highly range-bound



CLO = collateralized loan obligation. Source: S&P Global Ratings. Copyright © 2024 by Standard & Poor's Financial Services LLC. All rights reserved.

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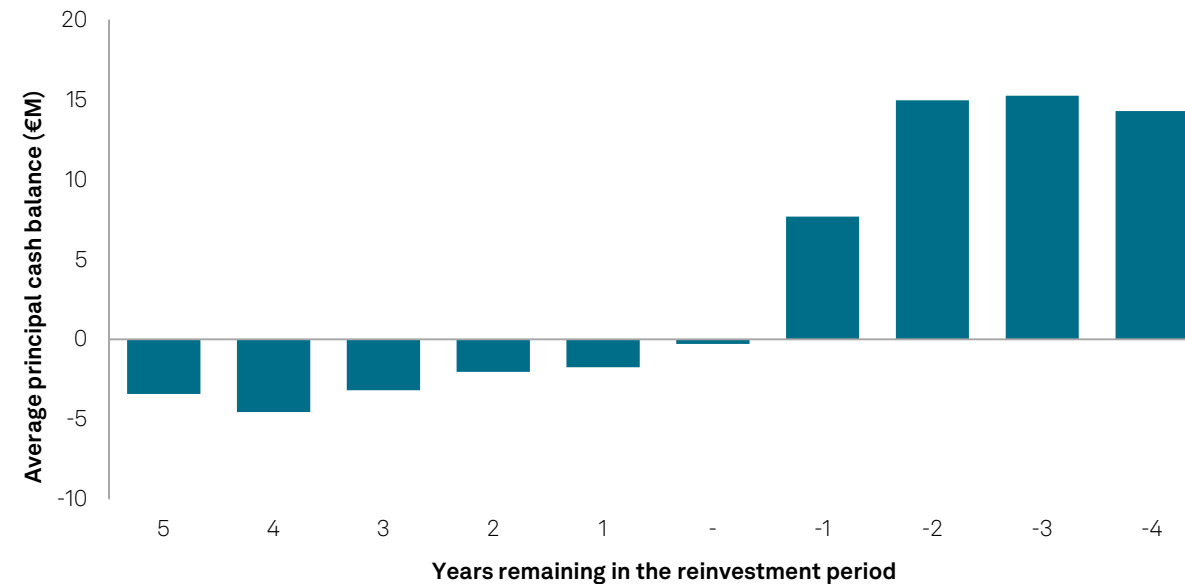
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The time remaining in the reinvestment period often determines whether a transaction is actively traded. As a result, transactions which exit their reinvestment periods are often subject to stricter reinvestment criteria and tend to have higher cash balances (see chart 4).

This report does not constitute a rating action.

Chart 4 | As the time remaining in the reinvestment period decreases, the average cash balance increases



Source: S&P Global Ratings.
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Looking Forward

We believe that the features discussed in this article are captured by our ratings, however, they may still affect the performance of the notes and the impact may not be the same for senior and junior noteholders. For example, an interim payment date may benefit senior noteholders who receive principal redemption before a scheduled payment date, but if by doing so, the par value tests improve and the manager can continue to reinvest, this may be detrimental to junior noteholders in the long run.

CLOs continue to innovate and we expect that managers will develop more features to solve for inefficiencies and maximize returns.

Related Research

- CLO Pulse Q2 2024: Movers And Shakers In The Top 50 Obligor In European CLOs' Portfolios, July 30, 2024
- Twenty-Five Years Strong: European CLOs' Lifetime Default Rate Is Only 1.5%, April 18, 2024
- European CLOs: The Long Road To Amortization, Sept. 6, 2023
- CLO Insights: New Features In European CLOs For 2022, Sept. 7, 2022
- How Is European CLO Documentation Evolving To Address ESG Considerations?, June 9, 2022
- New Features Continue To Appear In European CLOs, Sept. 1, 2021
- A Closer Look At How Uptier Priming Loan Exchanges Leave Excluded Lenders Behind, June 15, 2021

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European Refinancing Flows Have Flipped As Public Leveraged Debt Replaces Private

September 23, 2024

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Key Takeaways

- This year, issuers have taken advantage of tight interest rate margins in public debt markets to refinance private debt, reversing the refinancing flows of recent years.
- Deals have delivered a median 150 basis points (bps) improvement in interest margins, based on our study of 17 issuers that refinanced private debt mainly in the broadly syndicated loan (BSL) market.
- The refinancing trend should continue so long as public market credit spreads remain attractive and supported by stable economic and geopolitical conditions.

The refinancing of private debt with public debt was a notable new trend over the first half of 2024.

Why it matters: Issuers that refinanced private debt with public debt during that period typically improved their credit metrics, securing a median 138 bps to 150 bps improvement in interest expenses based on our estimates.

What we think and why: Public debt will continue to be used to refinance private debt so long as interest rate spreads remain at their currently tight levels. However, private debt markets will remain important providers of interim financing for temporarily stressed issuers that would struggle to find financing in the public market. It is notable that the credit quality of BSL issuers that refinanced private debt in the public market was comparable to their publicly rated peers.

A New Trend In Refinancing

The first half of 2024 witnessed the emergence of a new trend in European debt markets and more specifically in the BSL market, when a handful of leveraged buyout structures refinanced private debt in the public markets. S&P Global Ratings assigned new ratings for nine such issuers (which we will call Group 1) over the first six months of 2024. That is in marked contrast to the previous two to three years, when private lenders were tapped to refinance debt previously placed in the public credit market.

Group 1 refinanced almost €4.5 billion with new term debt. That is a relatively small volume compared to the total of about €130 billion issued in the European BSL market--where demand has benefited from favorable market conditions, increasing investor demand, and tighter interest spreads. Yet, the amount rises to a more meaningful €10.5 billion if we include the refinancing of €6 billion of privately financed debt that was held by eight entities already present in the BSL and high yield bond markets (Group 2).

The general trend to public refinancing of private issuance appears to be a reflection of prevailing stability in debt markets--following two years of higher and more volatile spreads. During periods where debt markets are tighter and more turbulent private lenders are sometimes preferred because they typically offer greater certainty of execution compared to public markets. That is particularly the case for borrowers with greater indebtedness, which often characterizes issuers that turn to private debt markets.

The uptick of private debt refinancing in the public market warrants examination, not least to ascertain if it might continue, the extent of its possible benefits for issuers, and to understand the credit risk taken on by the public markets. To that end, we studied the identity, creditworthiness, and credit metrics of the refinancing issuers and the interest savings they achieved.

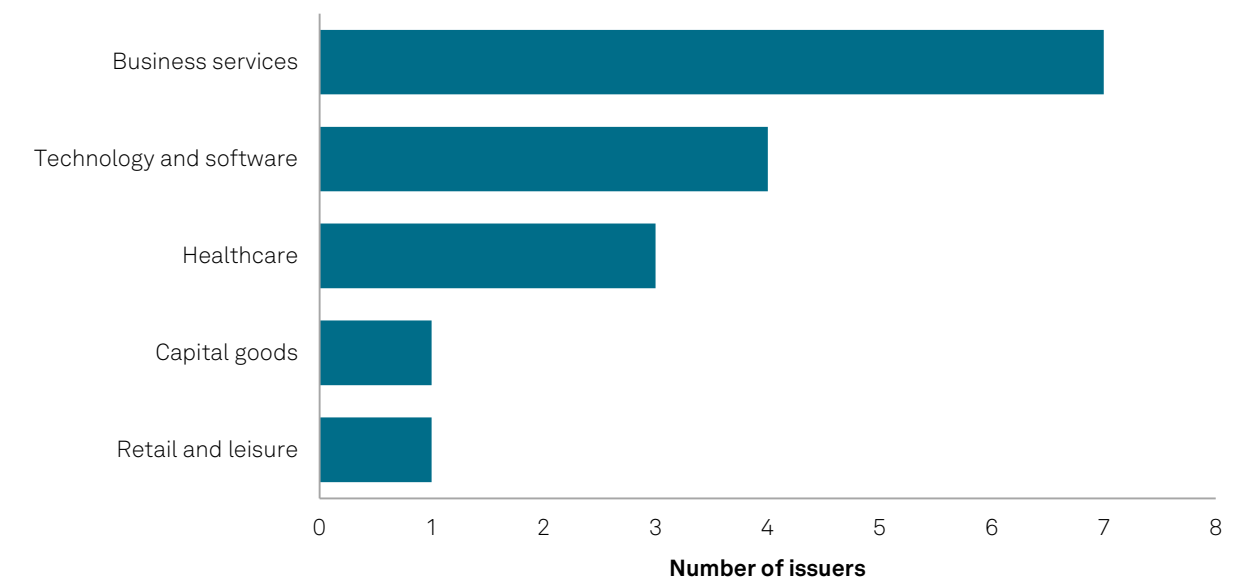
Sectors Involved In Refinancing Matched Primary Public Market Activity

Issuers in Group 1 were predominantly from the business services sector, though the healthcare sector was also well represented. That is perhaps unsurprising given that:

- Both sectors are popular among private lenders, who appreciate their typically low earnings volatility and stable growth.
- Both sectors accounted for significant portions of total European debt issuance in the BSL market during the first-half of 2024 (though there was also strong activity in the consumer products sector).

With the inclusion of Group 2 in our analysis, activity notably expands to include issuers from the technology and software sector. Indeed, that sector then emerges as the second most active group, behind business services (see chart 1).

Chart 1 | Europe: Issuers that refinanced private debt by sector



Source: S&P Global Ratings.

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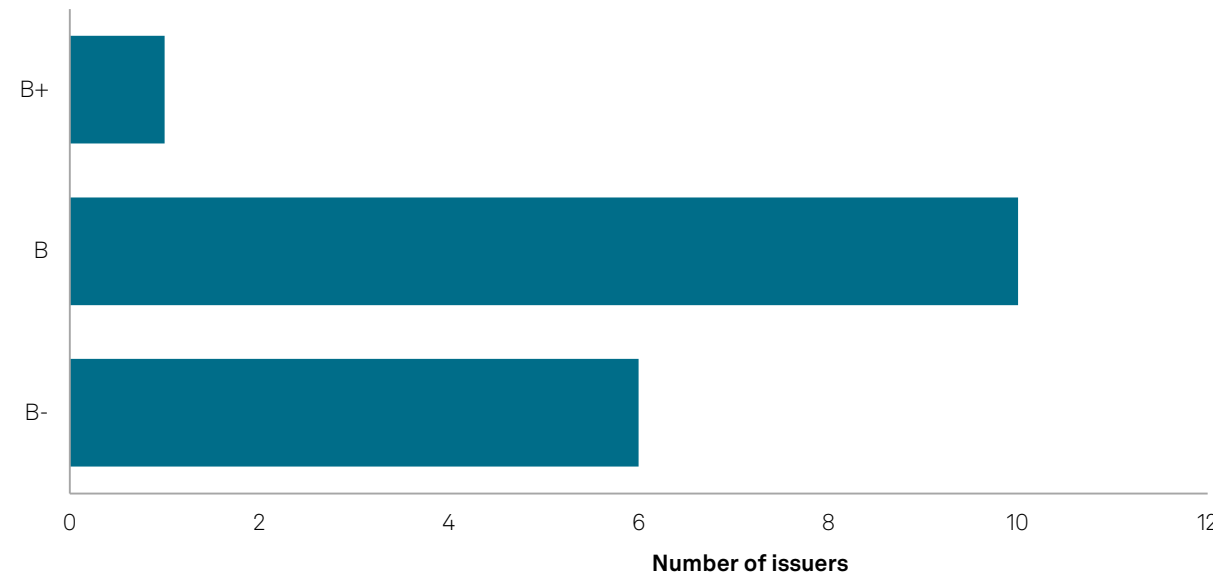
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The Creditworthiness of Refinancing Issuers Reflects Their Rated Peers

Two-thirds of Group 1 (private debt issuers that completely refinanced in the BSL market in 2024) were rated 'B', with the remainder rated 'B-' (see chart 2). This roughly matches the spread of ratings on other leveraged buyouts (LBOs) with similar debt profiles that we rated in Europe over the same period.

Chart 2 | Europe: Issuers that refinanced private debt by rating



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We note that no issuer that refinanced previously privately placed LBOs in the BSL market this year was rated above 'B'. LBOs rated above 'B' are rare among the entities we rate, although they exist.

While new LBOs are typically not rated lower than 'B-', existing ratings occasionally erode in subsequent years. Yet the probability that a 'B' rated issuer will fall into the 'CCC' category (indicative of a capital structure we consider unsustainable) within three years is low at only about 6.1% in Europe (based on rating data since 1981). It remains to be seen if the new BSL issuers will track this statistical rate of decline.

Half of the issuers in Group 2 were rated 'B'. This was broadly in line with all new issuers in Europe over the first half of 2024. Three issuers in Group 2 were rated in the 'B-' category and one issuer was rated 'B+' (interestingly that was one of the biggest deals by value).

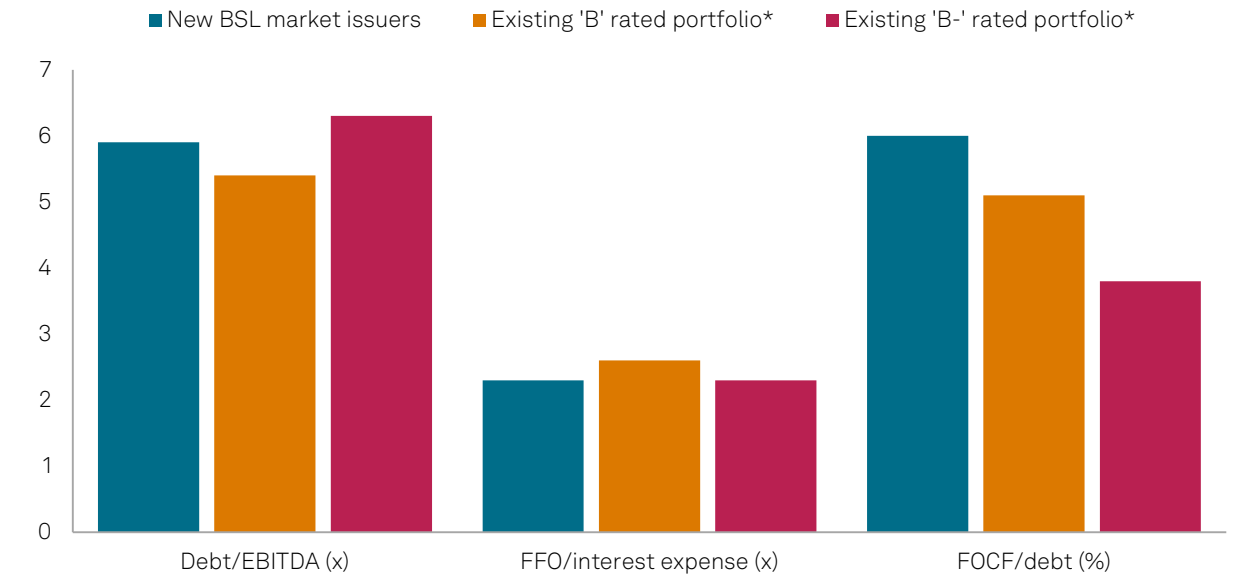
We consider that market participants' increased willingness to lend and a greater confidence in positive economic developments has led to a higher risk tolerance, resulting in more issuers with ratings lower than 'B' refinancing in the BSL market, compared to a year ago. This is a significant departure from the trends observed in recent years, when BSL liquidity decreased due to higher interest rates and credit concerns.

There Are Notable Credit Metric Differences Between The Two Groups

The median credit metrics of Group 1 support 'B' ratings. Median expected debt to EBITDA for 2025 (the first year after the refinancing) is equivalent to those of 'B' and 'B-' rated existing issuers, while the funds from operations (FFO) to interest expenses (the interest coverage ratio) is more in line with 'B-' rated issuers. We think the interest coverage comparison is somewhat misleading given that the new issuers in the public market have refinanced in a higher interest rate environment, while the comparison pool includes fixed interest rate issuers that placed debt in a low interest rate environment.

Chart 3 | Former private debt issuers new to the BSL compare favorably to 'B' and 'B-' rated issuers

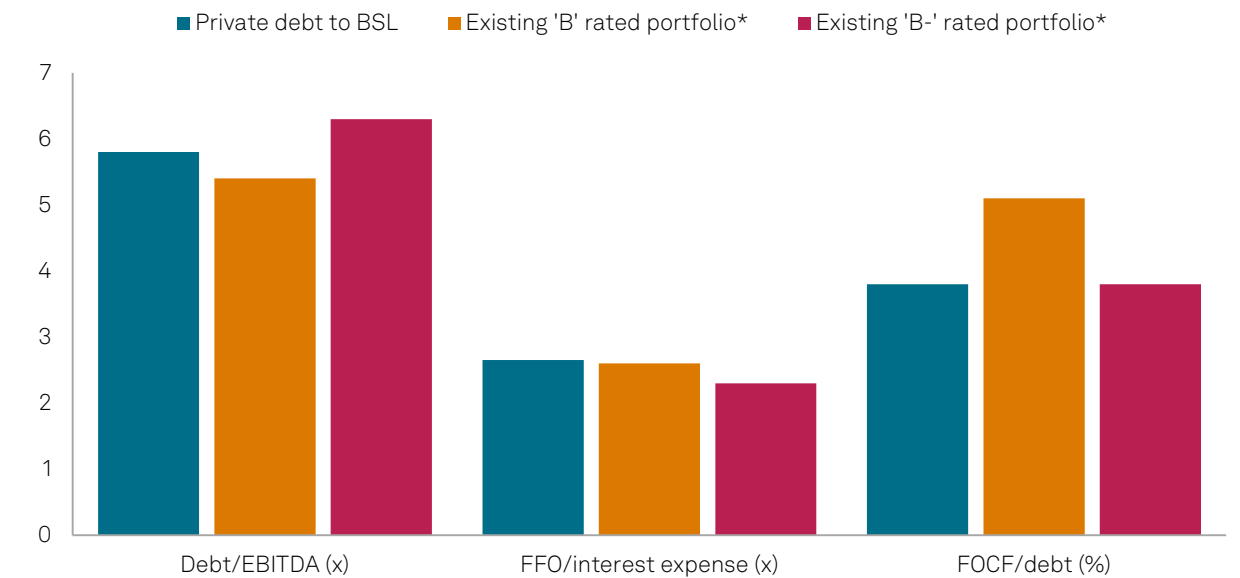
Forecast median credit metrics for 2025



BSL = broadly syndicated loan; FFO = funds from operations; FOCF = free operating cash flow. * Includes issuers rated prior to 2024. All figures are S&P Global Ratings-adjusted. Shareholder contributions treated as debt are excluded from debt. Source: S&P Global Ratings. Copyright © 2024 by Standard & Poor's Financial Services LLC. All rights reserved.

Chart 4 | Existing BSL issuers that refinanced private debt do not neatly match a specific rating

Forecast median credit metrics for 2025



BSL = broadly syndicated loan market; FFO = funds from operations; FOCF = free operating cash flow. * Includes issuers rated prior to 2024. All figures are S&P Global Ratings-adjusted. Shareholder contributions treated as debt are excluded from debt. Source: S&P Global Ratings. Copyright © 2024 by Standard & Poor's Financial Services LLC. All rights reserved.

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We also note that the cash generation of the new issuers is comparably strong, as shown by their median free operating cash flow (FOCF) to debt of 6%, which is above the median of 'B' rated issuers in our portfolio (which consists of corporate issuers we rate in Europe). We consider that this outperformance is likely also supported by the generally lower capital expenditure intensity of the business services and healthcare sectors, which account for the majority of issuers in Group 1.

In comparison, the median credit metrics of Group 2 align to 'B' and lower ratings levels, though they do not neatly match a specific rating category. Group 2's expected FOCF to debt for 2025 is closer to that of existing issuers with a 'B-' rating, while the FFO interest cover is more aligned to issuers in the 'B' rating category (due in part to interest rates that are still relatively high). Group 2's median debt to EBITDA is equidistant between that of a typical 'B' and 'B-' rating. In theory, it could be valuable to assess the credit metrics of refinancing issuers across different rating categories, but we have not split them in this way because the number of issuers is so small that the outcomes in some cases could prove flawed.

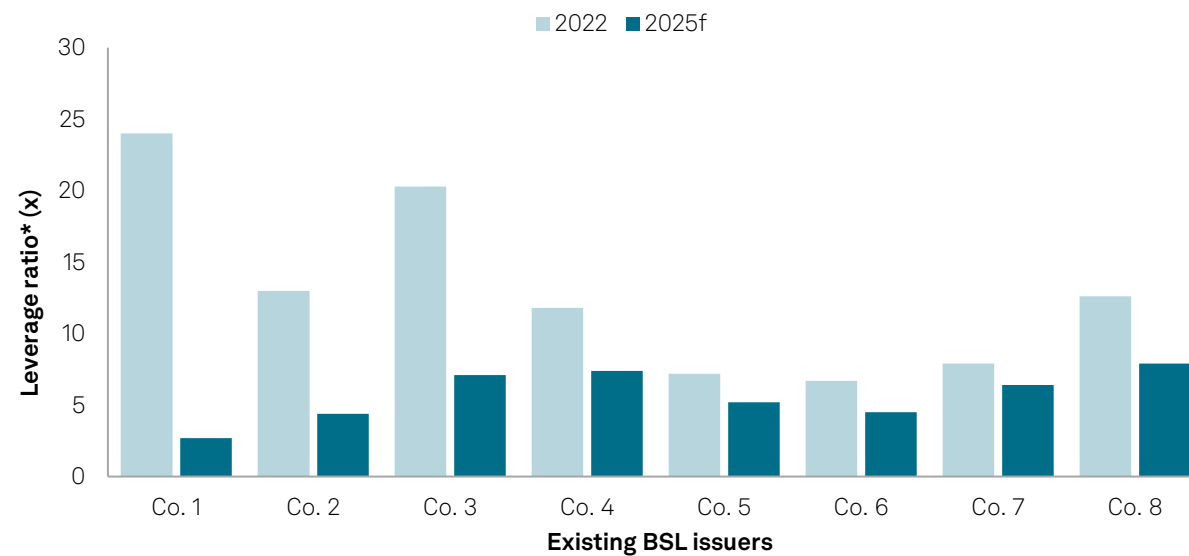
The differences between the two group's credit metrics helps explain their different rating splits. While the groups' debt-to-EBITDA metrics are similar there are notable differences in their interest cover and cash flow metrics. For example, interest coverage is generally stronger for existing BSL issuers (including Group 2), while FOCF to debt is significantly higher among the new BSL issuers (Group 1). We consider this to be the main reason why the share of 'B-' rated issuer is about 50% of Group 2, but accounts for only one-third of Group 1.

BSL Lenders Showed A Lower Risk Tolerance Than The Private Lenders

Banks reduced their exposures to risky credits after the 2007-2008 global financial crisis, while tougher leveraged lending guidelines for banks provided non-bank financial institutions an opportunity to expand their footprints in the private debt market. Guidelines also recommend leverage limits for BSL, while leverage levels in private deals have the capacity to be higher. In Group 2, in every case, issuers' leverage ratios were higher at the time they raised the private debt, compared to when they refinanced in the BSL or high yield bond markets.

Chart 5 | Leverage has declined in recent years

Existing issuers in the BSL market that refinanced debt previously placed with private lenders (Group 2)



BSL= broadly syndicated loan; f = forecast.

* Leverage ratio is debt/EBITDA (S&P Global Ratings-adjusted).

All figures are S&P Global Ratings-adjusted. Shareholder contributions treated as debt are excluded from debt.

Source: S&P Global Ratings.

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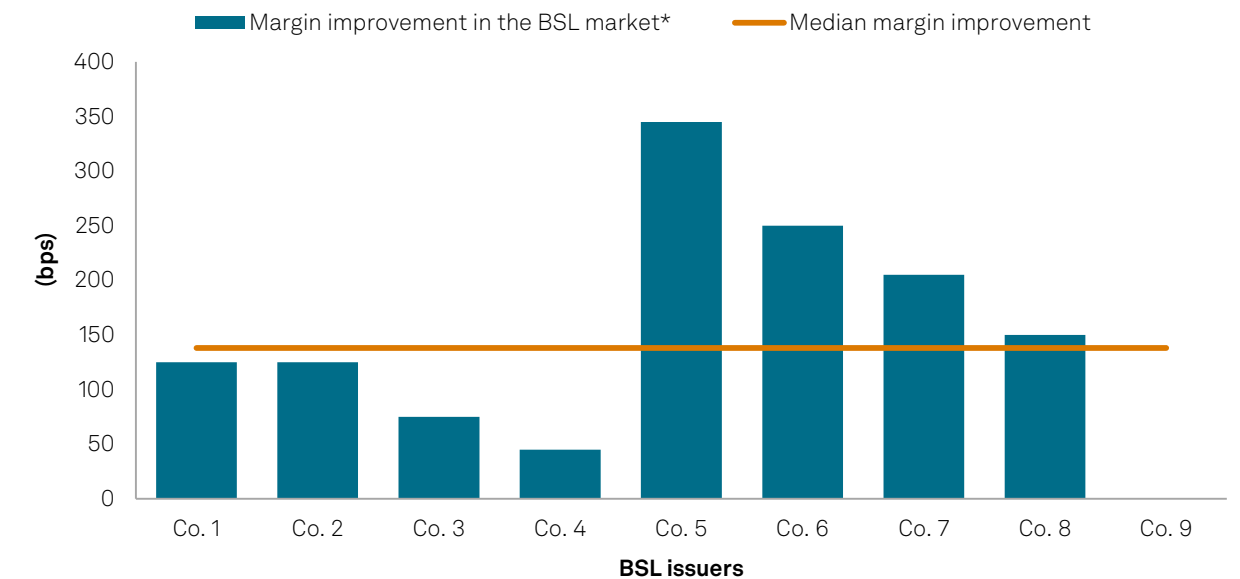
Refinancing Private Debt With BSL Delivered Interest Savings

Based on information available in issuers' accounts, the refinancing of private debt by BSL resulted, on average, in lower interest rates relative to issuers' respective benchmark rates (interest margins). That conclusion is admittedly based on a limited dataset--we were able to retrieve the margins on previous debt instruments for one-third of the issuers entirely new to the BSL market (Group 1). Yet, among that sample, all obtained lower margins in the BSL market than they had achieved in prior years in the private debt market.

The extent of that gain amounted to an estimated median 138bps based on issuers' 2022 interest expenses, prevailing benchmark rates at that time, and after accounting for interest hedging (see chart 6). The variance around that median was large, ranging from almost 350bps positive in one case to 430bps negative in another. We regard both those results as outliers and note that the negative result included transitional M&A that was also funded with the refinancing, and hence is excluded from our calculation (see Company 9 in chart 6). Interpretation of the result should also take into account the generally elevated spreads in public markets during 2022 and 2023, which offer a favorable comparison for issuers that raised debt during those years and then refinanced.

Chart 6 | Refinancing private debt in the BSL market delivered better interest margins, on average

Former private debt issuers entirely new to the BSL market (Group 1)



BSL= broadly syndicated loan; bps = basis points.

* Historical margins are as stated in annual accounts or estimated by S&P Global Ratings using interest expense, debt amount, and adjusting for established hedges.

Source: S&P Global Ratings.

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Similar margin gains were observable in Group 2, where refinancing of private debt in the BSL market achieved a median margin saving of around 150bps (see chart 7).

That gain can be attributed to greater activity in the European BSL market in 2024, due primarily to opportunistic re-pricing. Increased volumes in the BSL market reflect favorable conditions and reduced debt costs that lead to increased refinancing. At the same time, banks have resumed underwriting deals, and significantly reduced pricing to remain competitive, adding to the downward pressure on rates.

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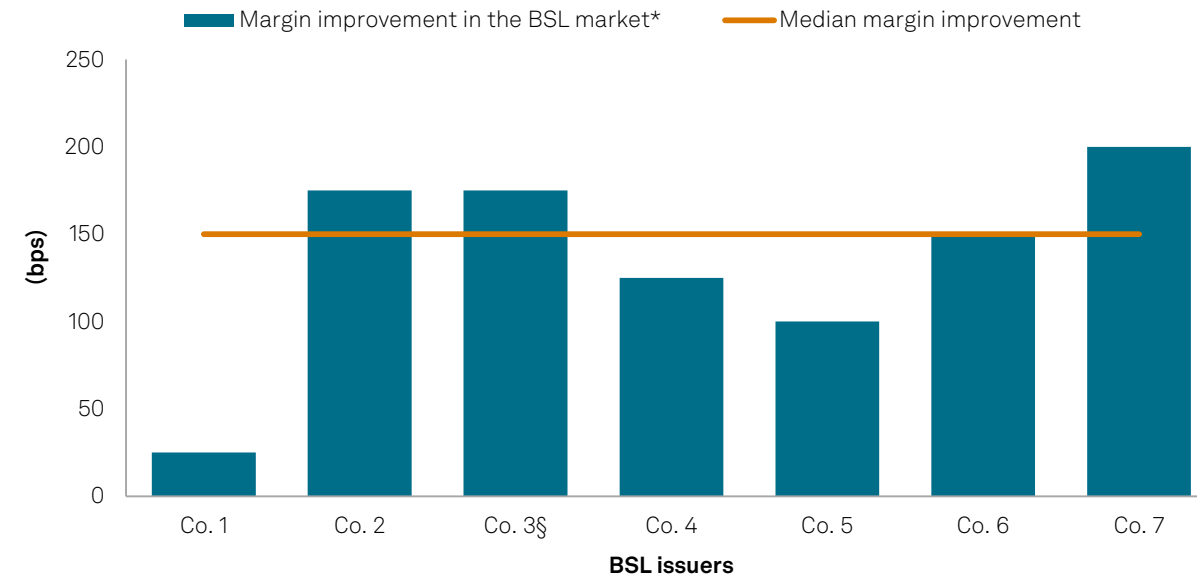
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The combined effect of those factors was notable beyond the syndicated loan market. For example, a UK insurance broker was able to complete a bond offering, with three tranches, that enabled the refinancing of about 50% of its direct lending debt and resulted in interest savings. We expect those benign conditions to persist, enabling larger borrowers to refinance private credit in public debt markets at improved rates.

Chart 7 | Existing BSL issuers that refinanced private debt with further BSL also realized margin gains

Former private debt issuers with existing BSL (Group 2)



BSL= broadly syndicated loan; bps = basis points.

* Historical margins are as stated in annual accounts or estimated by S&P Global Ratings using interest expense, debt amount, and adjusting for established hedges.

[§] Margin improvement was at least 175bps.

Source: S&P Global Ratings.

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A Brief History Of Private Lending

Leveraged finance is typically provided in three ways, via high-yield bonds, broadly syndicated leveraged loans, and through private credit markets. While the first two routes have existed for several decades, private credit has emerged more recently due to a combination of excess funds in credit markets and banks' retreat from lending.

The private credit market is characterized by uni-tranche facilities. Borrowers in the market were historically mid-sized, but deal size has grown in recent years and now notably encompass the refinancing of LBOs--previously the domain of public debt markets. Those larger operations have been facilitated by the emergence of so-called lending clubs, which consist of a pool of private lenders who together can provide larger amounts of debt for LBOs.

Sponsors and borrowers have been attracted to the private debt market by its ability to offer flexible (and often bespoke) terms and conditions, by its typically greater certainty of execution, and in some cases by a higher tolerance for indebtedness (compared to public debt markets).

Those factors have made private lending particularly attractive as a source of funding for private equity investments, which has, in turn, attracted private equity participants to act as lenders. Larger private equity actors have developed private lending business underpinned by life insurance operations, which provide sources of permanent capital. For example, Apollo Global Management acquired Athene/Athora, KKR has Global Atlantic, Blackstone has Allstate Life Insurance, Carlyle has Fortitude, and Ares has F&G Reinsurance.

Continued Refinancing Of Private Debt In Public Markets Will Depend On Spreads

We expect public debt markets will continue to be used to refinance private debt in the near term, underpinned by public market spreads that appear likely to remain at currently tight levels.

We nonetheless remain cautious of economic risks and geopolitical risks, including the possibility of a wider conflict in the Middle East, fallout from the ongoing war between Russia and Ukraine, and tensions between China and the Western World. Escalation of any of those issues could trigger a sudden halt to public debt markets' current pricing advantages and reverse the recent trend in private debt refinancing.

Public Versus Private Debt

We distinguish between debt in the public and private markets. For this publication, we group broadly syndicated loans and speculative-grade bonds together as public debt (or debt from the publicly traded markets) and loans from direct lending as private debt.

Although financial statements are typically not publicly available for syndicated loan issuer and only sporadically for high yield bond issuer, both instruments have a public tradable secondary market in common.

Related Research

- 2023 Annual European Corporate Default And Rating Transition Study, July 15, 2024
- Public-To-Private Borrowing Is A Two-Way Street, May 7, 2024

Writer: Paul Whitfield

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