

---

**S&P Global**  
Ratings

**U.S. BSL CLO And Leveraged Finance Quarterly:**  
High Capital Costs Limit Broad-Based  
Improvement

Q2 2024

Stephen Anderberg

Daniel Hu

Minesh Patel

Steve Wilkinson

May 8, 2024

*This report does not constitute a rating action*



# Q2 2024 Update | Leveraged Finance

## Higher for (even) Longer Interest Rates Will Keep Credit Pressure On Many Lower-Rated Companies

Despite a positive economic outlook, high interest rates and capital costs hinder credit quality in our speculative grade portfolio. Although there is ongoing overall earnings growth and improved cash flow generation, interest coverage deficits are a key pressure point for about 20% of issuers **(see slide 20)**. Companies rated 'B-' and lower, which comprise roughly 37% of the speculative-grade universe, are the most vulnerable to downgrades or defaults. Over half of these have ongoing cash flow deficits that will likely narrow liquidity cushions and keep default rates elevated through 2024.

Higher rates also continue to restrain valuations and M&A and leveraged buyout activity, which is restricting loan market growth.

## Broad Dispersion Within And Across Rating Levels

We believe many of our 'B' and higher-rated issuers would demonstrate good stability or growth in 2024. Many have seen their credit measures improve over the last few years, giving them room to use the balance sheet to support growth investments. However, we see a broad divergence in operating performance across industry sectors and within rating categories. We see the highest pressure for companies within sectors with high secular pressures or cyclical earnings. Secular headwinds faced by some issuers in the telecommunications sector and some segments of the media and entertainment sectors will result in diverging rating trends for some subsectors. Still, the potential end of inventory rebalancing, a soft economic landing, and potentially lower rates could stabilize hard-hit sectors like chemicals.

## First-Lien Recovery Rates Under Pressure

Our recently published global recovery study showed that estimated actual recovery rates on first-lien debt declined notably in the five-year period from 2018-2022 **(slide 23)**. The decline is directionally consistent with the downward trend we've seen in our recovery ratings on first-lien debt since 2017. Key drivers in lower actual first-lien recovery outcomes in the latest five-year period (and in our expectations for future first-lien recovery rates) include an increase in top-heavy debt structures and the dominance of covenant-lite term loan structures in speculative-grade balance sheets. Further, the rise in liability management transactions (LMTs) in recent years often materially impairs the recovery prospects of first-lien lenders that do not participate in (or get unfavorable allocations in) these out-of-court restructurings **(slide 25)**. The impact of this impairment on first-lien lenders may not be captured in aggregate recovery statistics, even in hindsight, since the subordinated (formerly first-lien) lenders no longer have a senior first-lien position after the LMTs occur. We also note that these aggressive restructurings rarely seem to solve the capital structure problems that triggered the transaction in the first place, and it's not uncommon for companies that undertake an LMT to file for bankruptcy, complete a subsequent restructuring, or remain highly vulnerable to another default.

# Q2 2024 Update | Broadly Syndicated Loan CLOs

## Strong Issuance To Start the Year

Year to date (though April), \$66.17 billion of new U.S. collateralized loan obligations (CLOs) have been issued per Pitchbook LCD, making this the busiest start to the year in the CLO 2.0 era (**slide 27**). We expect the high issuance volume to taper off at some point based on our view that there isn't enough corporate loan supply being created from mergers and acquisitions and leveraged buyouts to continue new issue CLO creation at this pace. Some continuing uncertainty over interest rates and the U.S. presidential election could also temper things a bit. Our forecast remains at \$130 billion of new issuance for full-year 2024.

As a proportion of total new issuance, middle-market CLOs are at 17.6% year to date, down from the 23.4% of total U.S. CLO issuance they saw in 2023. This is partly due to exceptionally strong broadly syndicated loan (BSL) CLO issuance this year. On a par basis (through April), middle-market CLO issuance has been \$11.63 billion versus \$8.29 billion at the same point last year, a solid 40.3% increase. But BSL CLO issuance is up 72% year over year, muting the increase. We expect middle-market CLOs to increase as a proportion of issuance based on investor interest in the asset class, and direct lenders who think CLOs are an attractive way to fund.

## Corporate Downgrades And CLO Credit Metrics

Since early March, several widely held BSL CLO obligors have seen downgrades, including subsidiaries of Altice Europe N.V. and Altice USA Inc. At the start of 2024, a large majority of BSL CLOs had exposure to loans from one or more of these companies, but by the end of first-quarter 2024, a considerable amount had been sold. Regardless, the average U.S. BSL CLO 'CCC' bucket across reinvesting transactions ticked up, as did the proportion of assets from obligors with ratings on CreditWatch negative (**slide 28**). Nonperforming asset exposures ticked up as well, but the average junior overcollateralized (O/C) test cushion still sits at just over 4.00%, down from 4.85% a year ago, but still healthy. Individual CLOs will, of course, vary from the averages, and the metrics for CLOs issued before first-quarter 2020 (when the pandemic arrived) are generally weaker (**slide 29**) than post-pandemic CLOs, although results for the two cohorts are converging.

Anecdotally, we're hearing that the loan market is becoming more discriminating in pricing debt from 'CCC' rated companies. Previously, loans would sell off sharply at even a hint of possible downgrade, but now some managers are opting to hold 'CCC' loans if they have conviction on the company, and there's real differentiation in 'CCC' loan pricing. We break out loan prices by GICs sector on **slide 40** as one measure of tail risk.

## What's New

Later in the deck, we highlight some themes from our recent research. New this quarter is a chart showing how managers respond to asset defaults, both before and after they happen. **Slide 44** shows BSL CLO exposure to defaulted assets from 12 months prior to default (including selective defaults) to 12 months after. Some managers sell ahead of default, but the bulk of selling happens post-default. Interestingly, the average loan price seems to bottom out around three months after the default happens, and then rebounds a bit. Finally, we have introduced new functionality in our interactive CLO dashboard (**slide 50**), where you can view average metrics for both BSL and MM CLOs as well as view and download monthly CLO specific metrics.

# Table Of Contents

## Leveraged Finance And Corporate Ratings:

Credit Themes .....	5
Rating Trends .....	6-11
'B-' Credit Risk .....	12-14
Speculative-Grade Maturity Wall .....	15
Corporate Credit Metrics .....	16-19
Scenario Analysis .....	20
Defaults & Recoveries .....	21-25
Further Leveraged Finance Reading .....	26

## Broadly Syndicated Loan CLOs:

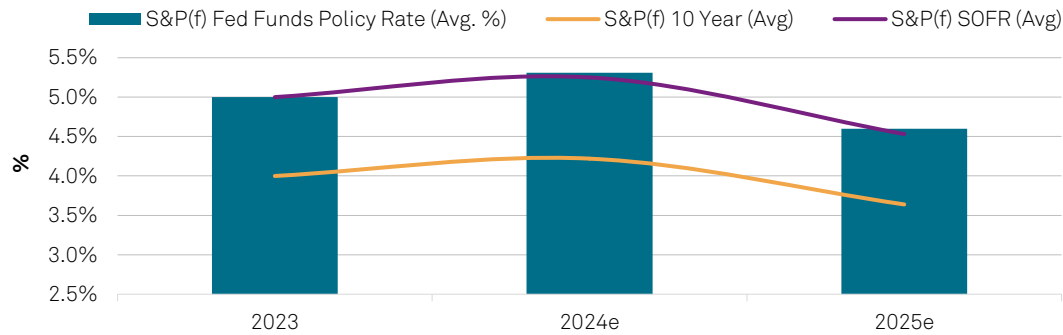
U.S. CLO Issuance .....	27
CLO Credit Metrics .....	28-31
Exposure to 'B-' Assets .....	32-33

## Broadly Syndicated Loan CLOs (cont'd):

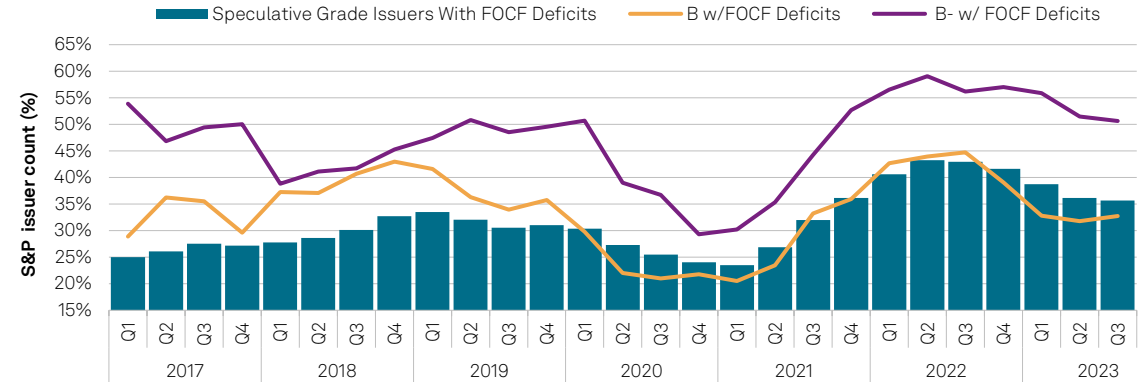
Collateral Rating Actions .....	34-36
CLO Asset Maturity Wall .....	37
Purchases And Sales .....	38
Industry Categories .....	39-40
Recent CLO Research: .....	41-44
• CLO Obligor Revenue & EBITDA by Manager (41)	
• Value Of Active Management (42)	
• Impact Of Asset Diversity (43)	
• When Do Managers Sell Defaulted Assets? (44)	
CLO Rating Actions And Defaults .....	45-46
Scenario Analysis .....	47-48
Further CLO Reading .....	49
Ratings360 Interactive Dashboard .....	50

# Credit Themes | What We're Watching In Mid-2024

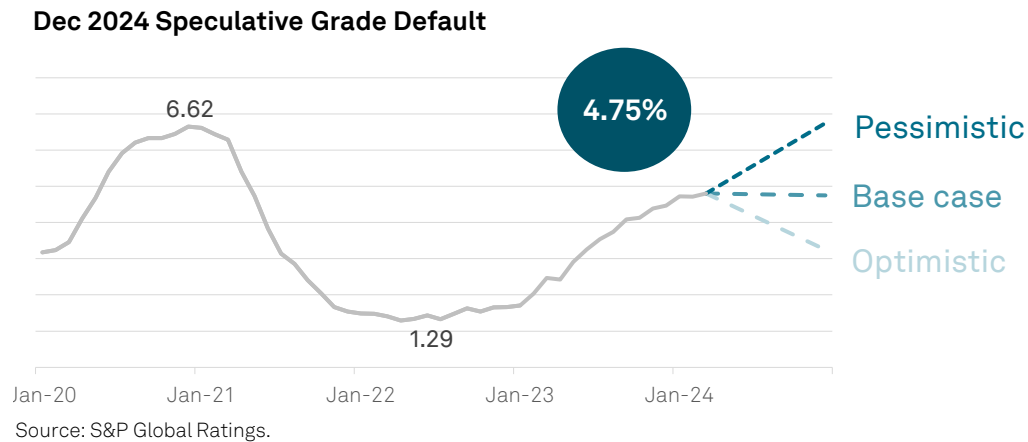
## 1. Higher For (even) Longer Interest Rates



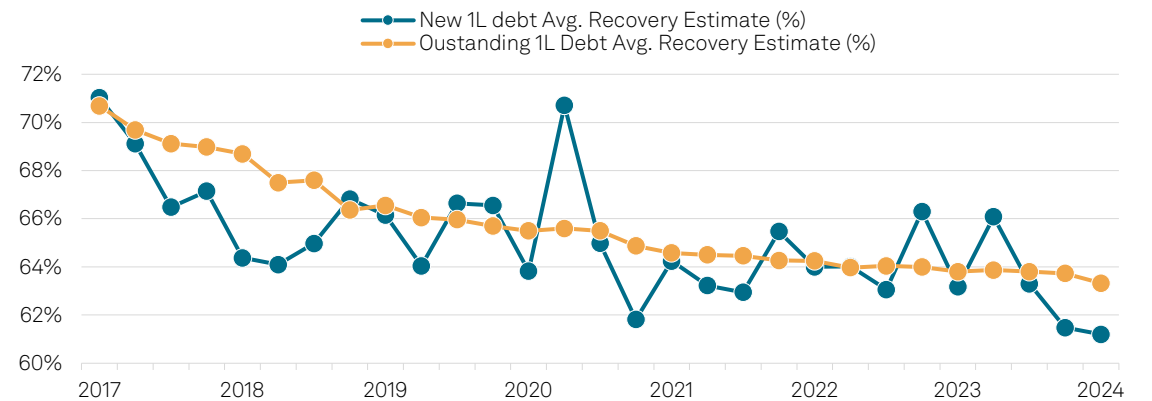
## 2. High Rates Weigh On Cash Flow Of Lower Rated Firms



## 3. Ongoing Speculative grade defaults (Dec. 2024)

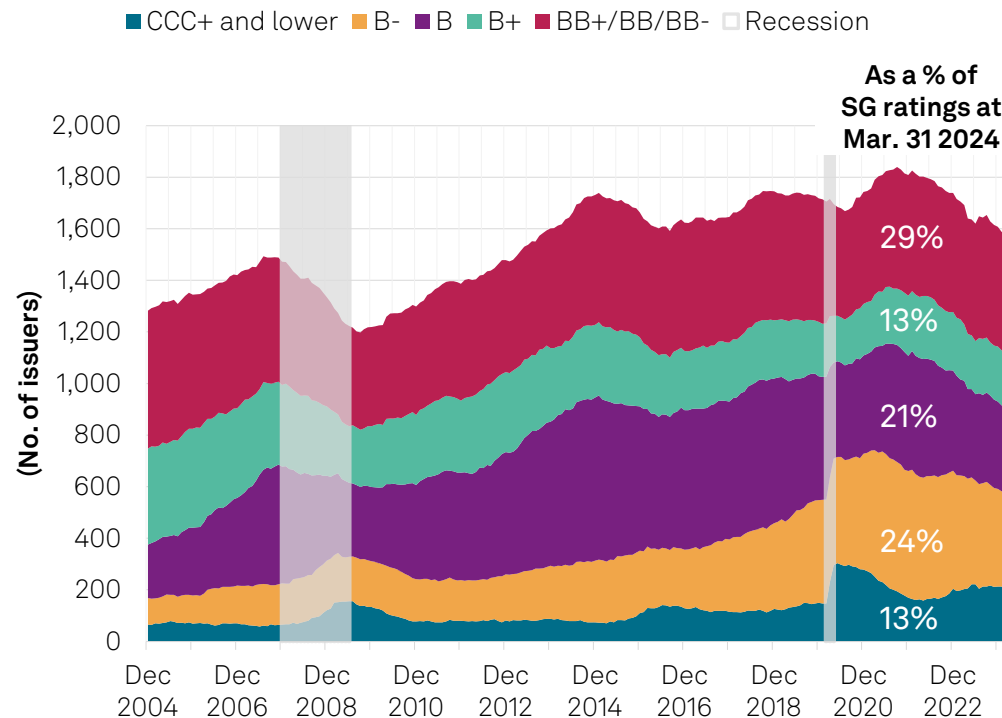


## 4. Top-Heavy Debt Structures Lower 1L Recovery Expectations



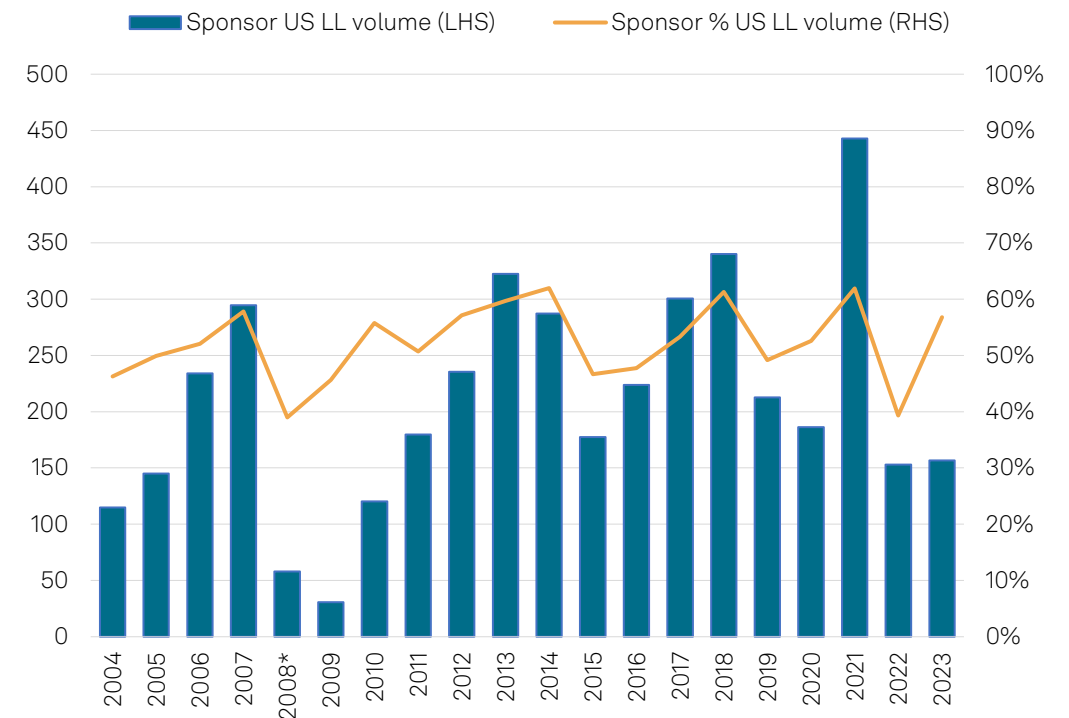
# Rating Trends | Issuer Growth Concentrated At Lower Rungs Since GFC, Largely Due To An Influx Of Sponsor-Owned Firms

U.S. and Canada SG ratings distribution by issuer count



Data through March 31, 2024. SG--Speculative grade. Source: S&P Global Ratings & CreditPro.

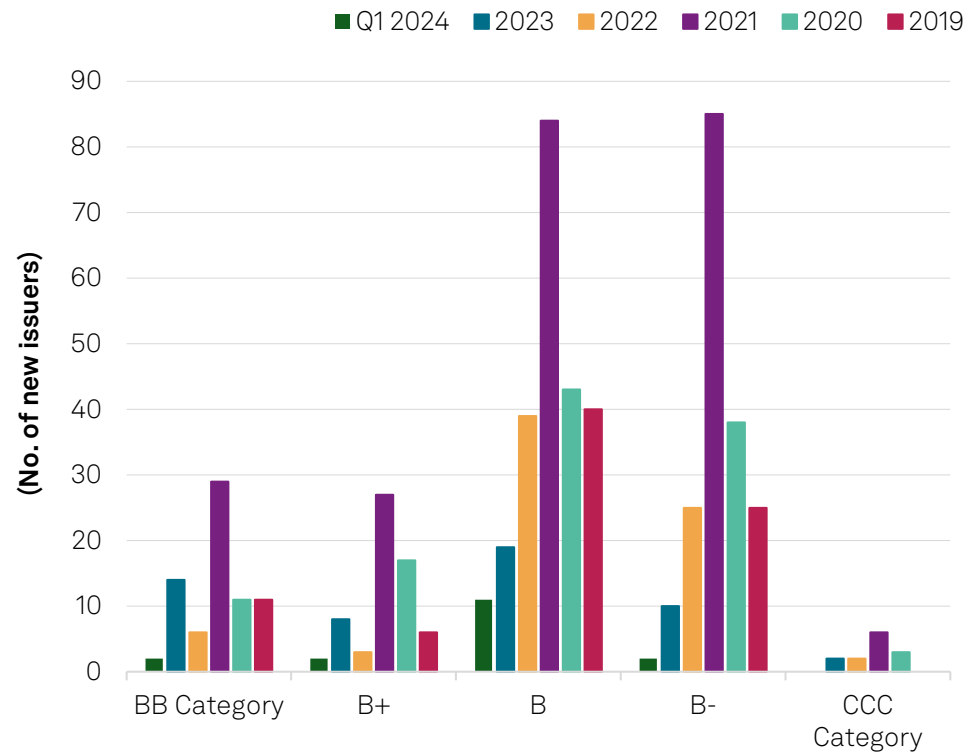
U.S. sponsor new-issue loan volumes vs. total loan volumes



Data through Dec. 31, 2023 in billions of dollars. Source: Leveraged Commentary & Data. 2008 sponsor data excludes Wrigley because Mars was the primary buyer.

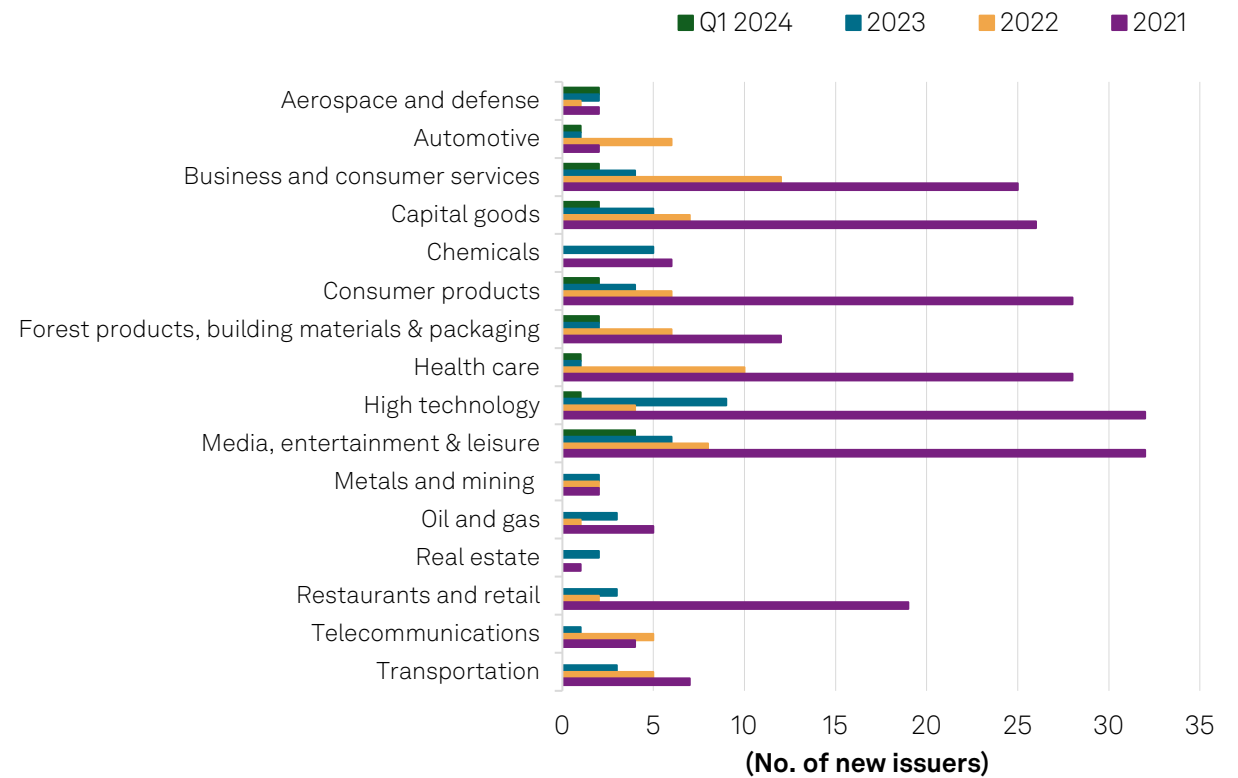
# Rating Trends | New Issuer Credit Quality Continues To Improve

U.S. and Canada distribution of new speculative-grade issuers by credit quality



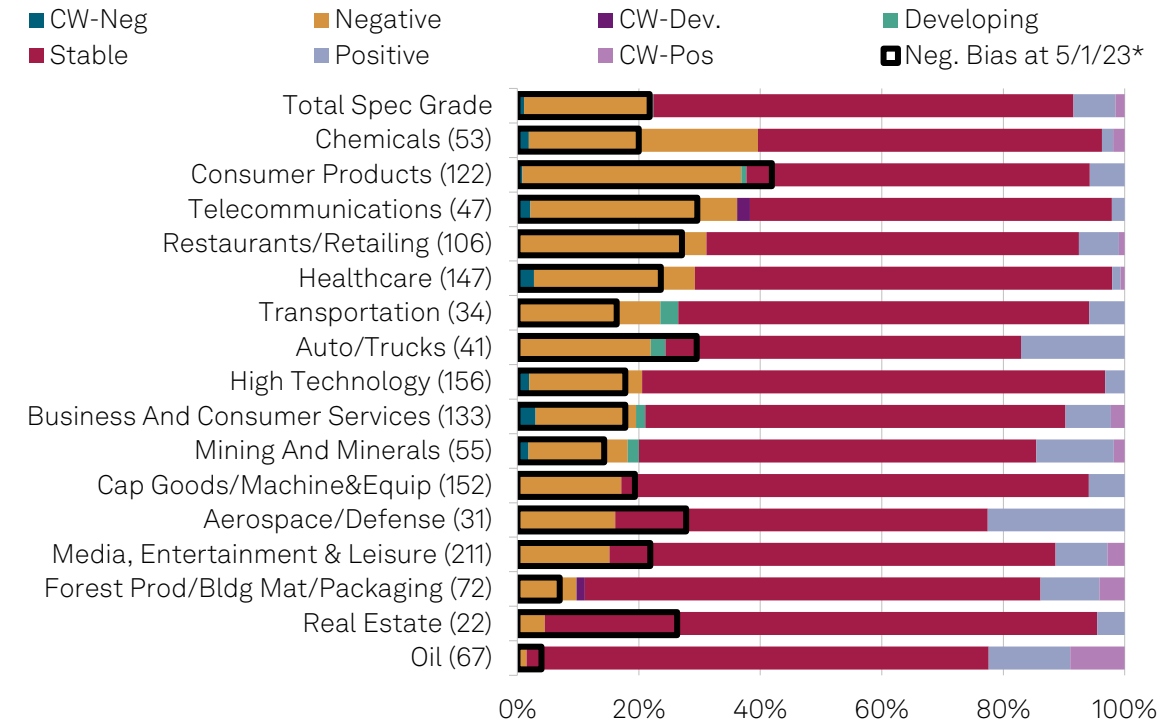
SG--Speculative grade. Source: S&P Global Ratings

U.S. and Canada distribution of new speculative-grade issuers by industry



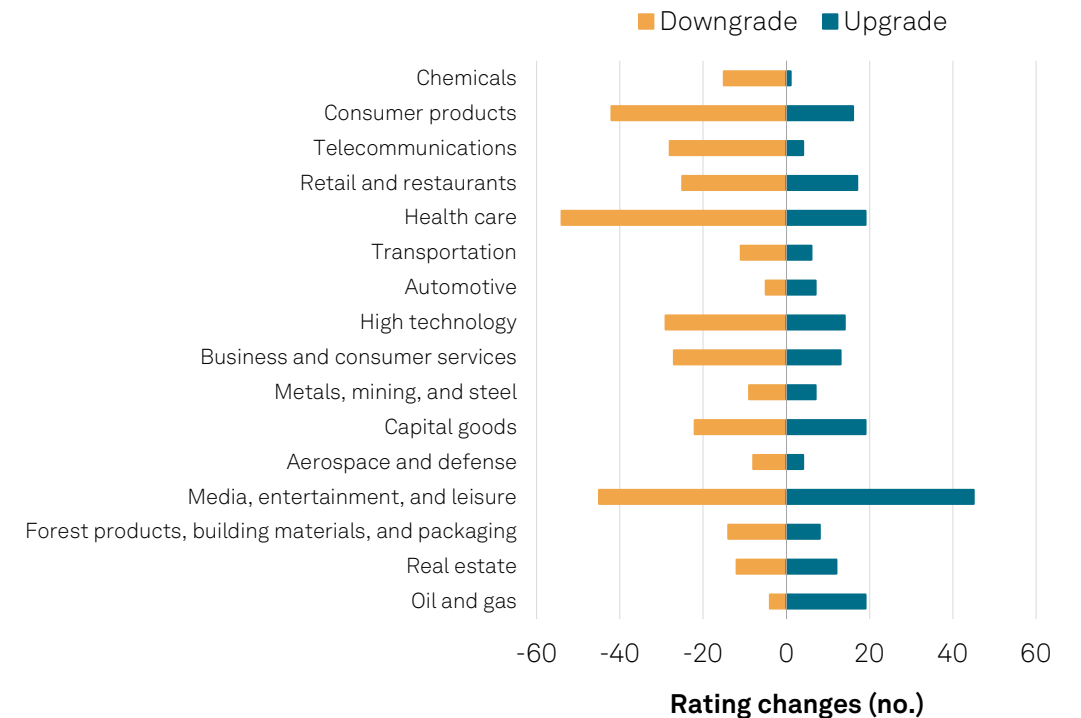
# Rating Trends | Negative Bias Varies Widely Among Sectors; Speculative-Grade Negative Bias Of 22% Slightly Above Long-Term Average Of 20%

Speculative-grade rating outlook by sector  
U.S. And Canada (as of April 12, 2024)



\*Includes issuers with a negative rating outlook and issuers placed on CreditWatch negative. Source: S&P Global Ratings U.S. and Canada ratings.

Speculative-grade issuer credit rating changes by sector\*  
U.S. and Canada (LTM March 2024)

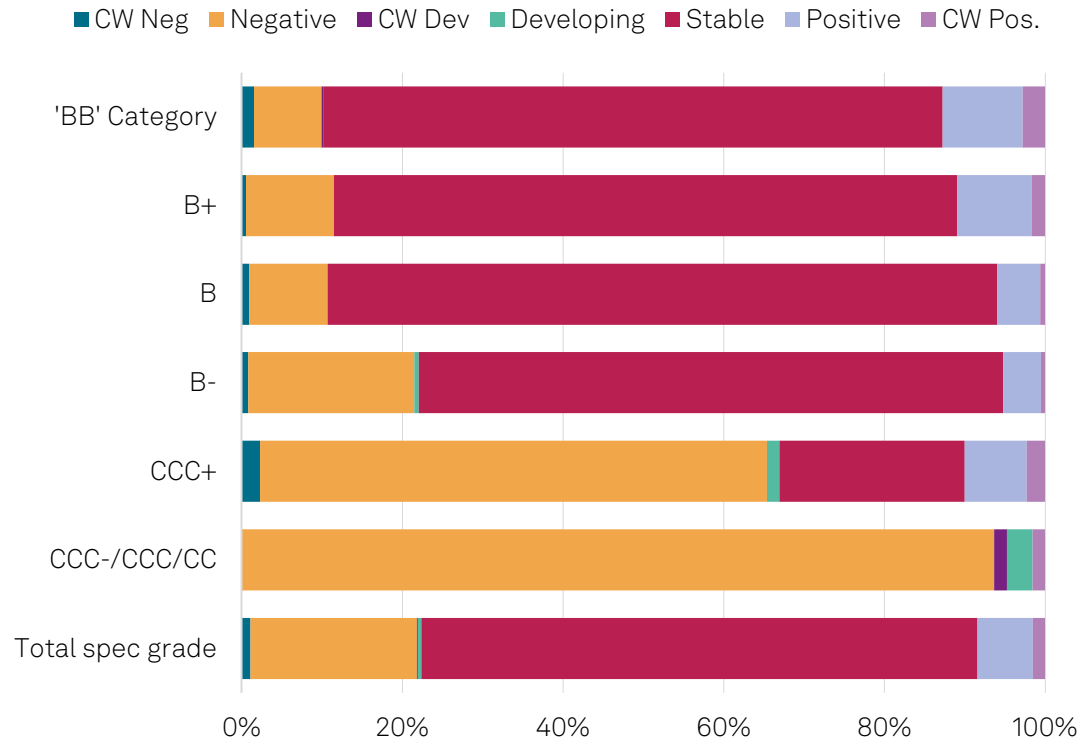


\*Excludes utilities, financial, and insurance services. FY--Fiscal year. Source: S&P Global Ratings U.S. and Canada ratings.

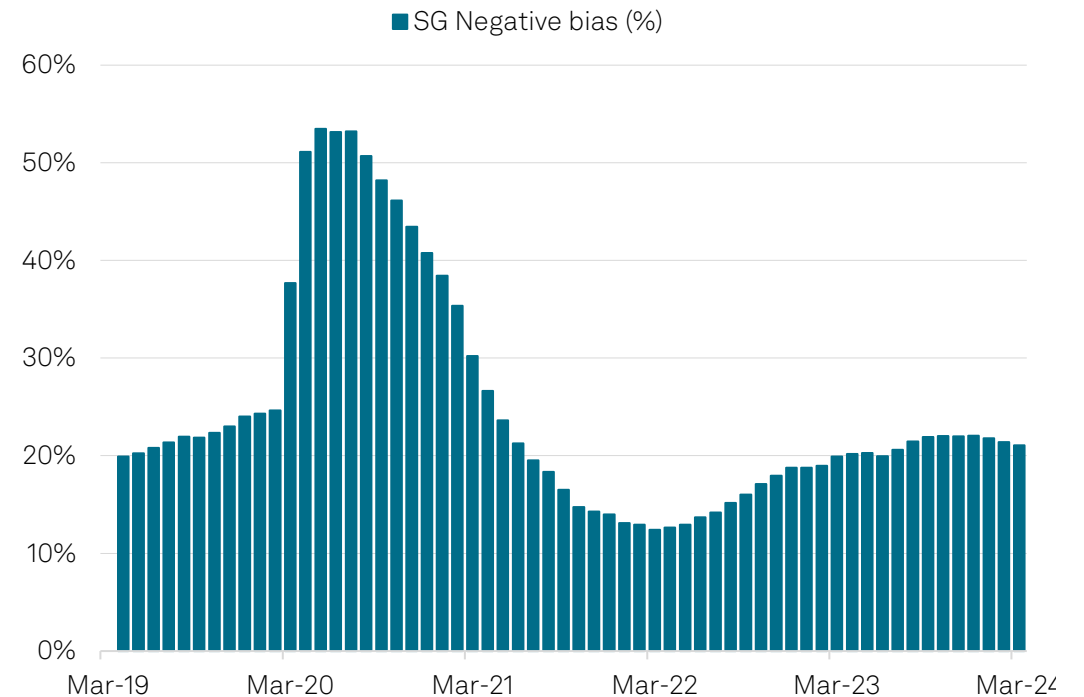


# Rating Trends | Negative Ratings Bias Is Concentrated At Lower Ratings; About 74% of 'CCC' Category Issuers Have A Negative Ratings Outlook

Speculative-grade negative ratings bias  
U.S. and Canadian nonfinancial corporates



Speculative-grade negative ratings bias over time  
U.S. and Canadian nonfinancial corporates



Data as of April 12, 2024, Source: S&P Global Ratings Credit Research & Insights.

# Rating Trends | Weaker Cash Flow, High Leverage, And Unsustainable Capital Structures Were Key Factors That Drove Rating Downgrades In 2023

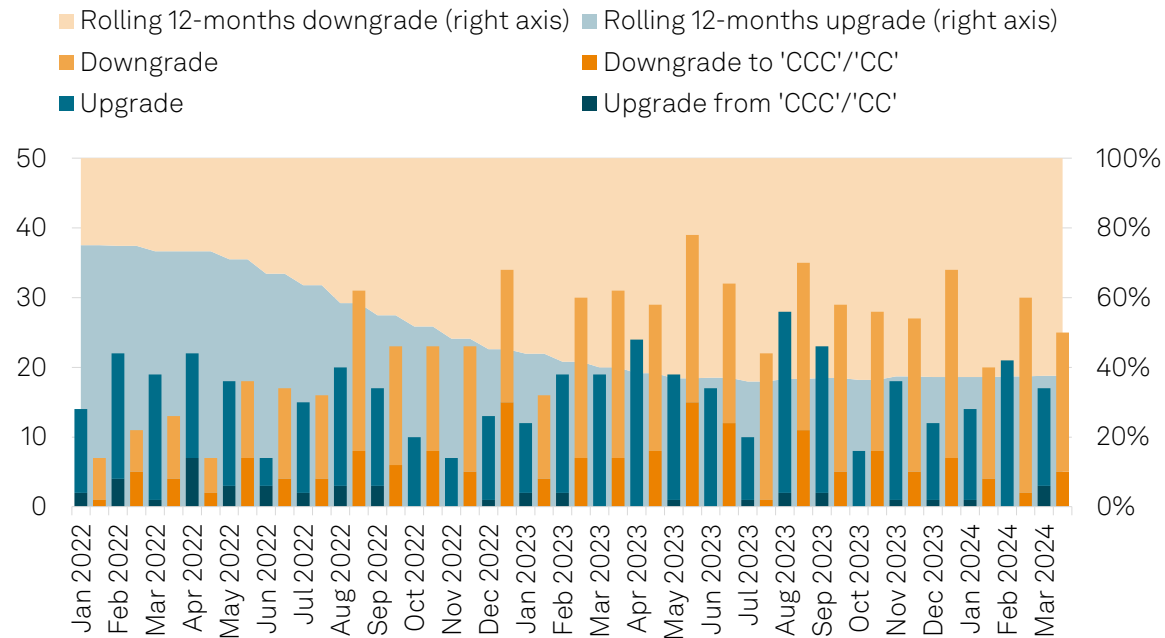
Speculative grade downgrades across U.S. BSL SLO obligors from 2023 through April 24, 2024

Key Rationale	Secondary rationale	BB' category	B' category	CCC' category	Non-perform category	Speculative-grade total
Cash flow/Leverage	Unsustainable cap structure			59		59
	LBO driven credit measure weakness		1			1
	M&A driven credit measure weakness		2			2
	Weaker than expected cash flow/leverage	17	86	8		111
Competitive position	Competition/market share losses		1			1
	Regulatory	2		1		3
	Secular pressure/industry challenges	1	1			2
Corporate governance	Ethics	1				1
	High risk tolerance			1		1
Default	Bankruptcy				26	26
	Covenant breach				2	2
	Distressed exchange				72	72
	Payment default				29	29
Liquidity	High risk of payment default (interest, principal)		2	28		30
	Near term maturity	1	12	28		41
	Persistent cash flow shortfalls		8	39		47
	Risk of covenant breach		2	3		5
Operating performance	Cost pressure/inflation		5	1		6
	Margin decline/market share loss	1	11			12
	Revenue decline	7	18	2		27
<b>Total</b>		<b>30</b>	<b>149</b>	<b>170</b>	<b>129</b>	<b>478</b>

# Rating Trends | An Increase In Upgrades Moderates The Downgrade/Upgrade Ratio; But Downgrades Of Lower-Rated Issuers Remain High

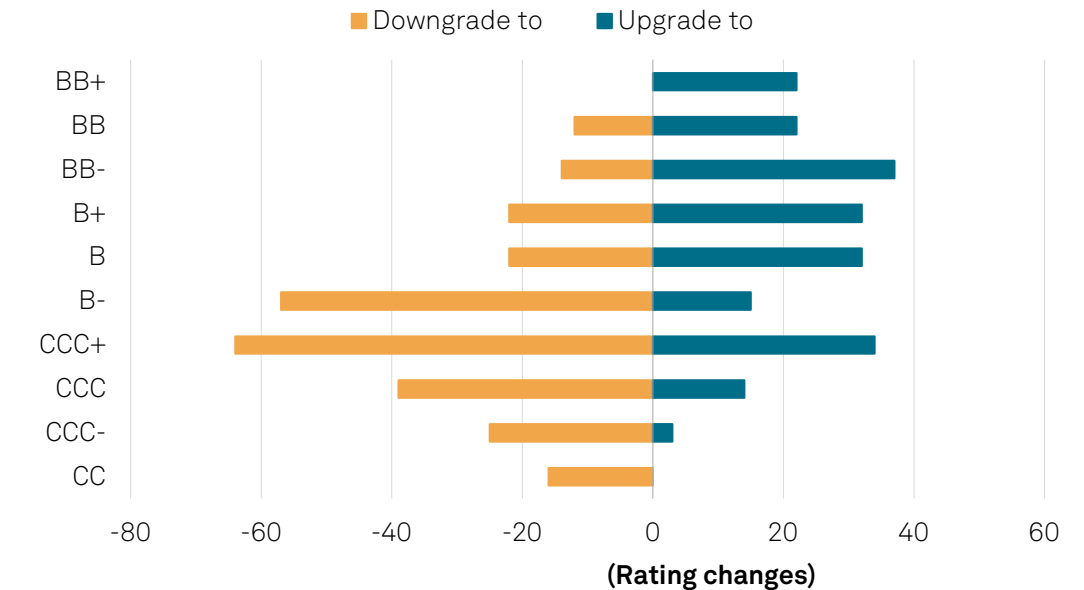
Credit statistics for entities downgraded to--or upgraded from--the 'CCC' category are starkly different than those where the issuer credit rating was unchanged.

## Speculative-grade upgrades and downgrades



Statistics in the charts above excludes entities in the infrastructure and financial and insurance services sectors. Source: S&P Global Ratings U.S. and Canada ratings.

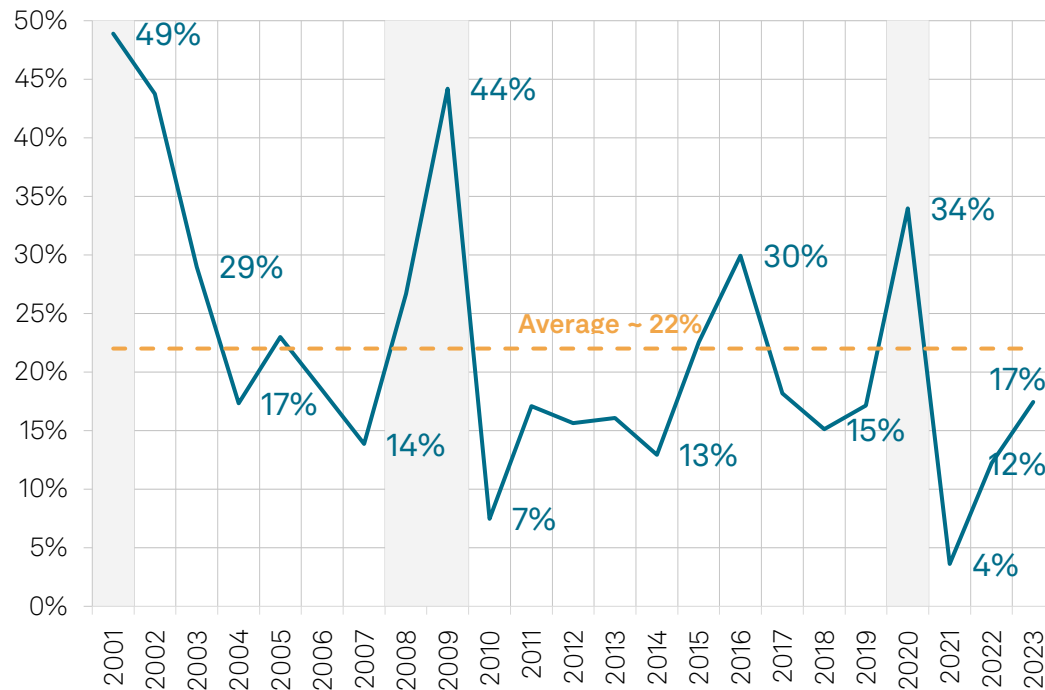
## Speculative-grade issuer credit rating changes by rating: U.S. And Canada (LTM March 2024)



Note: Downgrade and upgrade ratings actions are 'to' the current rating. We do not include ratings that were downgraded from IG to SG and vice versa. (e.g., fallen angels and from SG to IG). Source: S&P Global Ratings U.S. and Canada ratings.

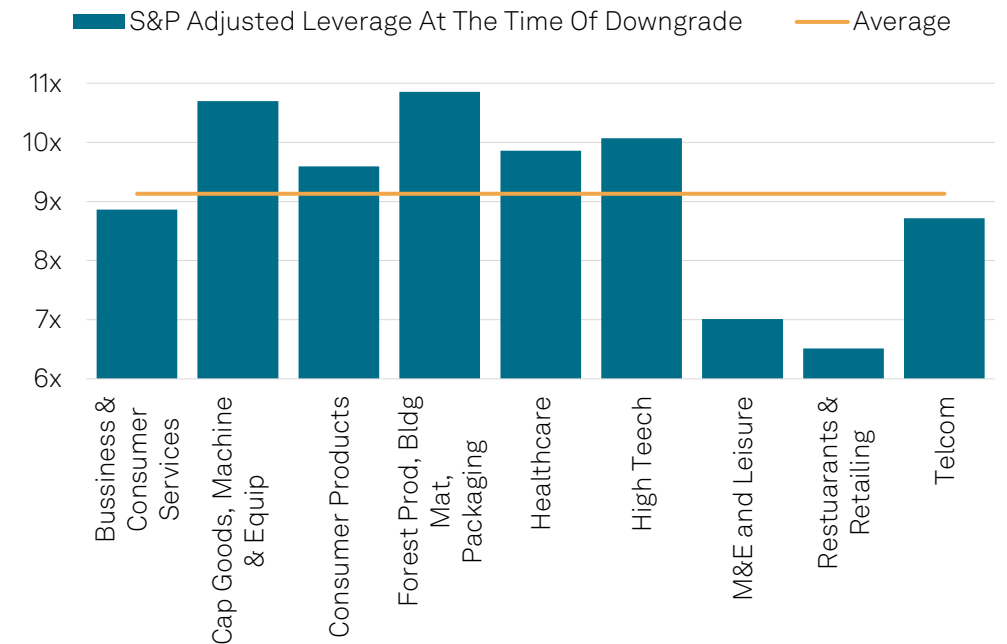
# 'B-' Credit Risk | 'B-' Downgrades Rose In 2023 And Are Likely To Stay Elevated In 2024

Percentage of 'B-' issuers downgraded from the start-to-end of the year



Source: S&P CreditPro as of Jan 20, 2024. S&P Global Ratings U.S. and Canada ratings exclude financial and insurance issuers.

Our 2023 expectations for 'B-' downgraded issuers often showed persistently high adjusted leverage and reported cash flow deficits

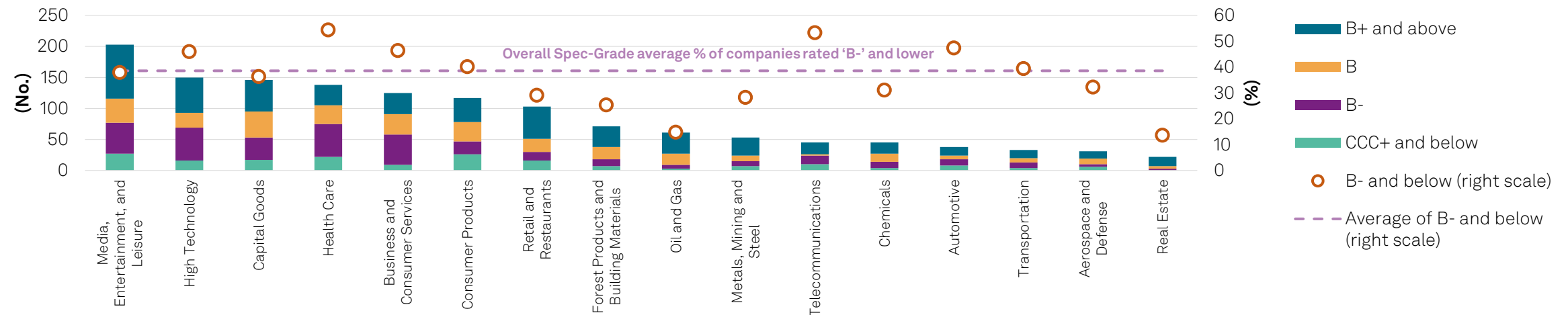


Statistics in the charts were from our 2023 forecasts at the time of downgrade. Source: S&P Global Ratings U.S. and Canada ratings.

# 'B-' Credit Risk | Credit Quality Varies By Sector, But The Largest Sectors Generally Have High Concentrations Of Firms Rated 'B-' Or Lower

- The sectors with the most speculative-grade companies tend to have high proportions of ratings of 'B' and lower, since this is where post-GFC ratings growth was concentrated.
- The sectors with the highest number of firms rated 'B-' and lower are media, entertainment, and leisure; healthcare; high technology; business and consumer services; capital goods; and consumer products.
- Of these six sectors, all but media, entertainment, and leisure and capital goods have concentrations of companies rated 'B-' or lower that are above the speculative-grade average.

## U.S. and Canada speculative-grade issuer credit rating distribution by sector

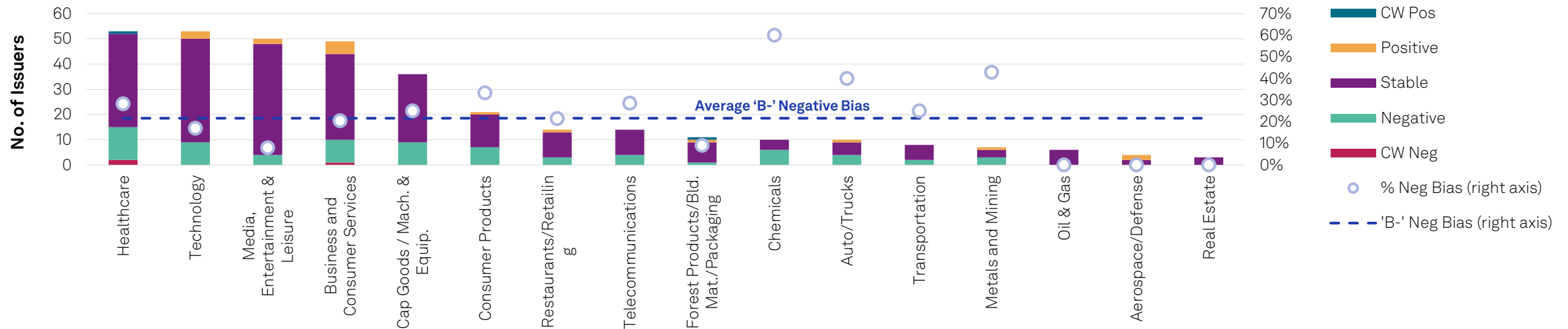


As of April 12, 2024. U.S. and Canada corporate ratings. Source: S&P Global Ratings.

# 'B-' Credit Risk | Downgrade Risk To 'CCC Category' Can Vary Widely By Sector

- On a speculative-grade corporate rating, an outlook negative is intended to signal a one-in-three chance of a downgrade within the next 12 months.
- Negative bias for companies rated 'B-' is 22 % about even with the speculative-grade average, but somewhat higher than all speculative-grade rating categories other than the 'CCC' category (see slide 6).
- Of the eight sectors with an above-average negative outlook for 'B-' companies, the chemicals, auto/trucks, and metals and mining sectors are notably higher than the average.
- Healthcare; consumer products; technology; media, entertainment and leisure; capital goods; and restaurants and retailing were the sectors that had the most downgrades to 'B-' in 2023. Business and consumer services also has a high count of 'B-' rated issuers.

## Ratings bias of companies rated 'B-' by sector U.S. and Canadian nonfinancial corporates

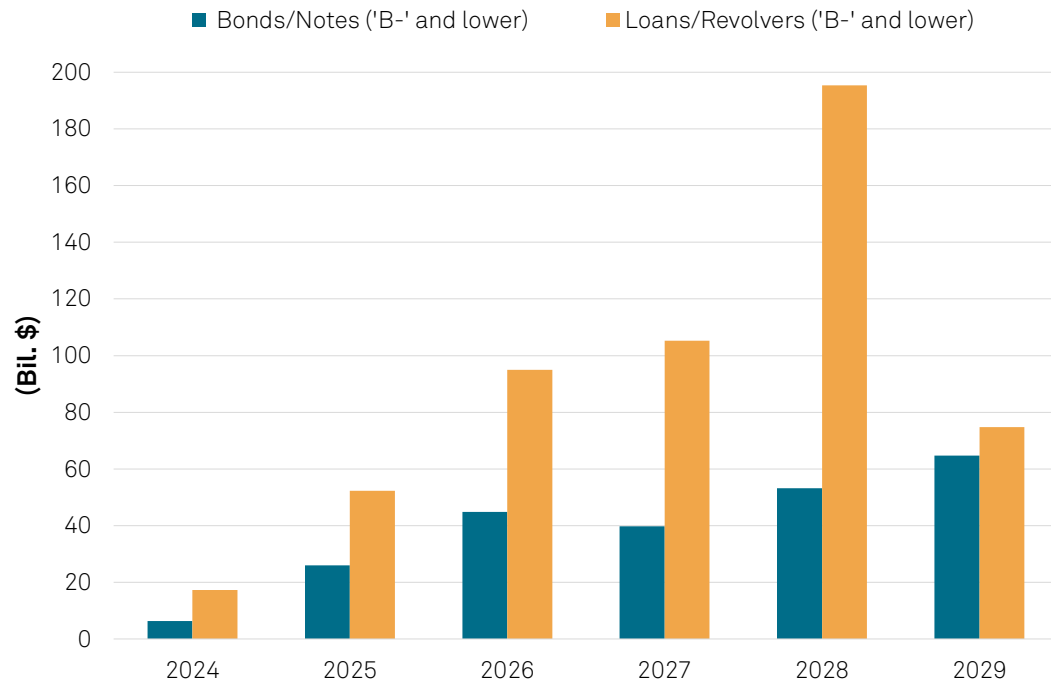


As of April 12, 2024. Source: S&P Global Ratings Credit Research & Insights.

# Maturity Wall | 'B-' And Lower Maturities To Escalate With A Focus On Healthcare

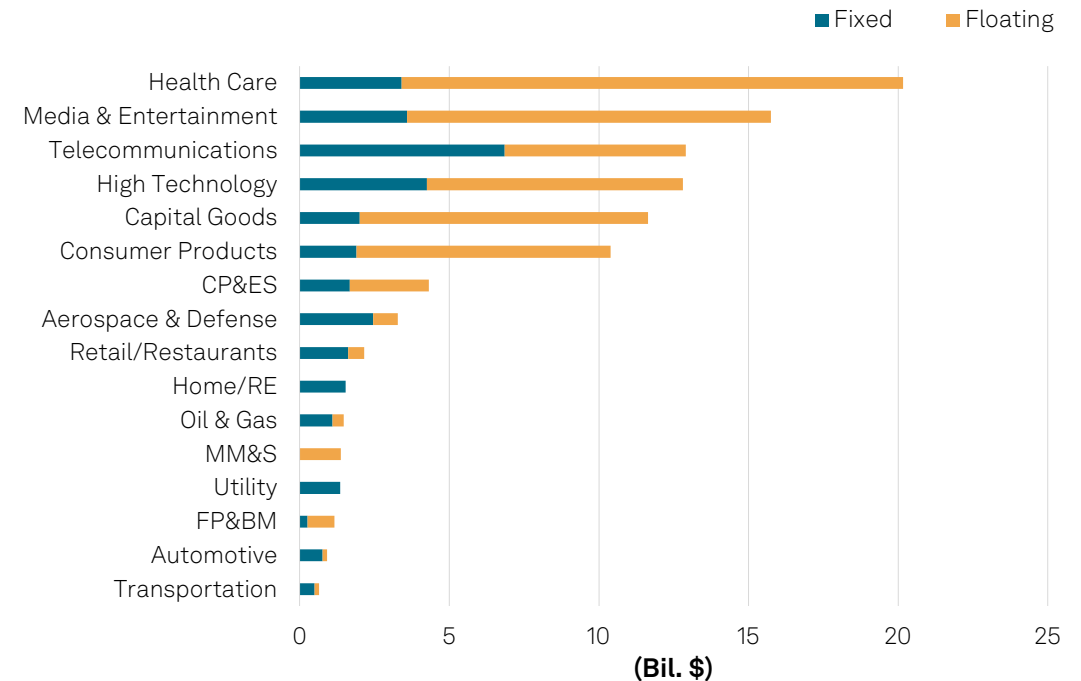
U.S. 'B-' and lower nonfinancial corporate maturities (U.S. bil. \$)

Lower-rated maturities set to rise in coming years...



'B-' and lower debt maturing through 2025 (U.S. bil. \$)

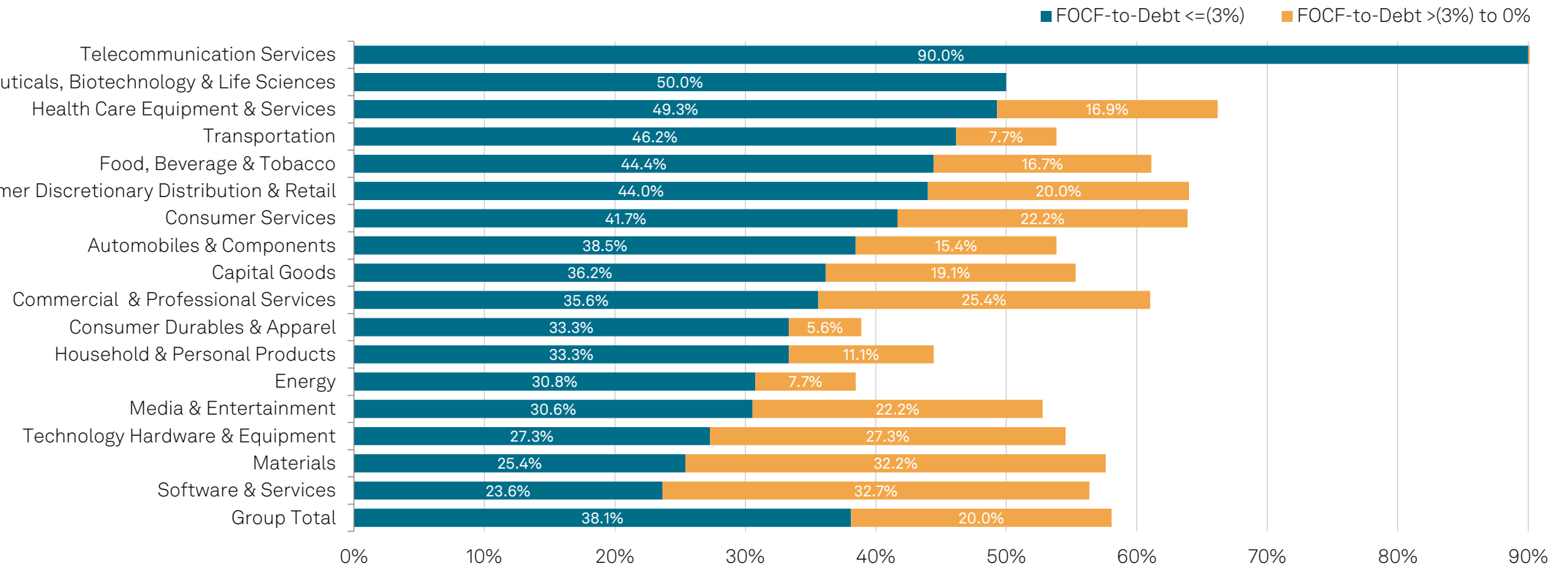
...and are led by health care and telecommunications sectors



Data as of April 1, 2024. Includes U.S. nonfinancial corporate issuers' speculative-grade bonds, loans, and revolving credit facilities that are rated 'B-' and lower by S&P Global Ratings. Chart on the right shows global speculative-grade nonfinancial corporate debt maturing April 1, 2024, through Dec. 31, 2025. Excludes debt instruments that do not have a global scale rating. Foreign currencies are converted to U.S. dollars at the exchange rate on April 1, 2024. Home/RE: Homebuilders and real estate; MM&S: metals, mining, and steel; CP&ES: chemicals, packaging, and environmental services. Source: S&P Global Ratings Credit Research & Insights.

# Credit Metrics | Cash Flow: Broad Dispersion Of Cash Flow Deficits Among Our Vulnerable Issuers; Elevated Rates May Keep FOCF Under Pressure Longer

Assessing 'B-' and 'CCC' category issuers at risk: free operating cash flow (FOCF)-to-debt (last available Q3 or Q4 2023)\*



\*Ratings exclude financial and insurance issuers. Source: S&P Global Ratings U.S. and Canada.



# Credit Metrics | Leverage Has Moderated In Recent Quarters, But Remains Higher Than 2019 Levels For Firms Rated 'B-' And Lower

Reported leverage (rolling 12 months periods)

Breakdown by rating

Issuer Credit Rating*	Entity Count	Debt/EBITDA (x)																
		2019	2020Q1 LTM	2020Q2 LTM	2020Q3 LTM	2020	2021Q1 LTM	2021Q2 LTM	2021Q3 LTM	2021	2022Q1 LTM	2022Q2 LTM	2022Q3 LTM	2022	2023Q1 LTM	2023Q2 LTM	2023Q3 LTM	2023
BB+	109	3.2	3.4	3.9	3.6	3.5	3.4	2.9	2.7	2.8	2.7	2.6	2.5	2.7	2.7	2.7	2.7	2.8
BB	120	3.4	3.6	4.0	3.7	3.6	3.7	3.1	3.1	3.0	3.3	3.0	3.3	3.4	3.1	3.2	3.3	3.2
BB-	117	4.1	4.6	4.9	5.0	4.8	4.5	3.6	3.4	3.3	3.4	3.4	3.4	3.4	3.7	3.7	3.5	3.6
B+	132	4.6	5.0	5.5	5.6	5.4	5.5	5.1	4.5	4.4	4.6	4.6	4.4	4.2	4.3	4.2	4.2	4.1
B	139	5.9	6.3	7.0	6.8	6.4	6.2	5.6	5.4	5.1	5.0	4.8	4.6	4.6	4.6	4.2	4.5	4.7
B-	139	7.1	7.8	8.1	8.2	8.6	9.1	7.4	8.3	7.8	8.2	8.2	7.9	8.0	7.9	7.8	7.7	7.7
CCC+	73	6.6	7.1	8.4	8.3	9.6	7.3	7.4	8.4	9.5	10.3	10.3	9.6	10.0	9.7	10.0	9.8	9.1
CCC	14	12.2	14.0	17.4	13.1	9.6	9.3	9.5	10.1	10.0	10.5	19.2	31.7	28.8	27.4	19.3	16.6	14.9
<b>Total</b>	<b>851</b>	<b>4.7</b>	<b>5.2</b>	<b>6.0</b>	<b>5.9</b>	<b>5.6</b>	<b>5.4</b>	<b>4.8</b>	<b>4.6</b>	<b>4.6</b>	<b>4.6</b>	<b>4.5</b>	<b>4.4</b>	<b>4.6</b>	<b>4.4</b>	<b>4.4</b>	<b>4.4</b>	<b>4.4</b>

\*Rating as of April 2, 2024.; LTM—Last 12 months. Source: S&P Global Ratings

# Credit Metrics | Interest Coverage Declines Are Mostly A Concern For Low-Rated Companies

(Rolling 12 months periods)

Change in speculative-grade reported interest coverage (U.S. and Canada)

Issuer credit rating*	Entity count (no.)	Q2 2022 (%)	Q3 2022 (%)	Q4 2022 (%)	Q1 2023 (%)	Q2 2023 (%)	Q3 2023 (%)	Q4 2023 (%)
BB+	105	9.2	9.3	9.1	8.5	7.9	7.4	6.8
BB	115	8.3	7.9	6.4	6.0	5.7	5.6	5.4
BB-	119	5.9	5.8	5.6	5.1	4.6	4.4	4.2
B+	135	4.0	4.2	4.1	3.7	3.4	3.3	3.2
B	131	3.3	3.4	3.4	3.1	2.8	2.6	2.4
B-	122	1.9	1.9	1.7	1.6	1.5	1.5	1.4
CCC+	72	1.6	1.5	1.3	1.2	1.1	1.1	1.0
CCC	11	1.2	0.4	0.5	0.7	0.6	0.7	0.5
CCC-	105	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.
<b>Total</b>	<b>817</b>	<b>4.4</b>	<b>4.3</b>	<b>4.1</b>	<b>3.8</b>	<b>3.5</b>	<b>3.3</b>	<b>3.1</b>

\*Rating as of April 2, 2024. Source: S&P Global Ratings.

# Credit Metrics | Cash Flow: Many (Mostly Lower Rated) Issuers Are Cutting CAPEX (And Working Capital) To Preserve Liquidity; Could Limit Future Growth

(Rolling 12 months periods)

Change in speculative-grade reported capital expenditures (U.S. and Canada)

Issuer credit rating*	Entity count (no.)	Q2 2022 (%)	Q3 2022 (%)	Q4 2022 (%)	Q1 2023 (%)	Q2 2023 (%)	Q3 2023 (%)	Q4 2023 (%)
BB+	105	5.8	6.8	7.9	5.7	2.9	1.6	-0.2
BB	115	4.2	3.8	5.2	3.8	3.2	1.3	-0.4
BB-	119	7.1	7.9	3.6	6.1	4.2	4.2	2.4
B+	135	6.0	6.0	4.1	3.1	4.2	1.4	1.8
B	131	7.3	6.5	5.1	2.5	3.4	-0.9	-0.1
B-	122	3.3	4.0	3.5	1.6	0.1	-1.6	-1.2
CCC+	72	4.2	-1.2	-3.4	-1.3	-4.0	-4.1	-4.2
CCC	11	5.7	3.7	3.4	-0.7	-1.1	-8.6	-13.4
CCC-	105	5.8	6.8	7.9	5.7	2.9	1.6	-0.2
<b>Total</b>	<b>817</b>	<b>5.6</b>	<b>5.8</b>	<b>4.2</b>	<b>2.9</b>	<b>2.7</b>	<b>0.6</b>	<b>-0.2</b>

\*Rating as of April 2, 2024. Source: S&P Global Ratings.

# Scenario Analysis | Lower Interest Rate And Earnings Growth Could Support A Modest Improvement Of Issuers With Interest Coverage Deficits

Percentage of speculative-grade issuers with reported EBITDA interest coverage less than 1x

		> 500 bps improvement			< 500bps Improvement		Weakening	
		Reported EBITDA margin stress						
		+15%	+10%	+5%	0%	-5%	-10%	-15%
Sample size: 1422		(17% median margin)	(16.3%)	(15.5%)	(14.8%)	(14.1%)	(13.3%)	(12.6%)
Median Debt Costs (Reported 2023Q3 or 2023Q4 Annualized Reported Interest Divided By Total Reported Debt)	7.1%	11%	12%	12%	13%	15%	17%	18%
	8.1%	13%	14%	15%	17%	18%	20%	21%
	8.6%	14%	15%	17%	18%	20%	21%	23%
	9.1% (Annualized Last Available (Q3'23 or Q4'23)	16%	17%	18%	20%	21%	23%	25%

- When annualizing reported interest expense (last available 2023Q3 or Q4), the percentage of issuers that fail to have reported EBITDA interest coverage > 1x is 20%.
- Under a scenario where annualized debt costs fall 200 bps and EBITDA remains unchanged, we could see the number of issuers with less than 1x interest coverage fall to 13% from 20% of our portfolio.
- In a scenario where annualized debt costs fall by 400 bps and EBITDA remains unchanged, the number of issuers with interest coverage deficits would remain high at 9%

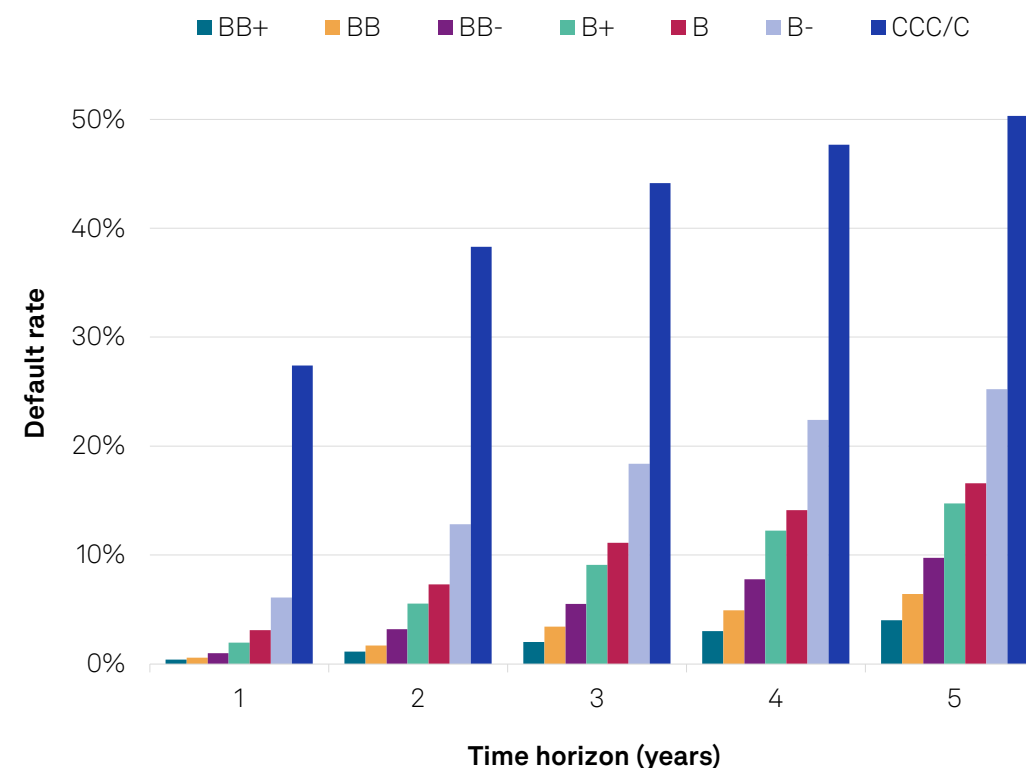
\*The hypothetical analysis using quarterly annualized interest for issuers reporting in third-quarter or fourth-quarter 2023 and measuring the impact of falling interest costs and various EBITDA growth and decline scenarios.

# Defaults | 'CCC' Rated Companies Have Higher Default Risk

- We consider companies rated 'CCC+' or lower as more likely to default than not. Avoiding a default is dependent upon favorable business, financial, and economic conditions for the obligor to meet its financial commitments.
- We view defaults for companies rated in the 'CCC' category as mostly a matter of timing. Generally, a visible default scenario would be tied to the timeframes noted below, although the timing of selective defaults (i.e. distressed exchanges) are often not predictable.
- In contrast, a company rated 'B-' is viewed as having a viable path to perform and improve its credit measures.
- Defaults and cumulative defaults are materially higher for companies with 'CCC' category ratings, even compared to 'B-' rated issuers. The cumulative default figures shown nearby do not adjust for a high level of ratings withdrawals over the time-period (more than 25%, on average, over a three-year period), as default tracking stops one year after a rating withdrawal.

Issuer credit rating	Anticipated time to default
CCC+	More than 12 months away
CCC	Within 12 months
CCC-	Within 6 months

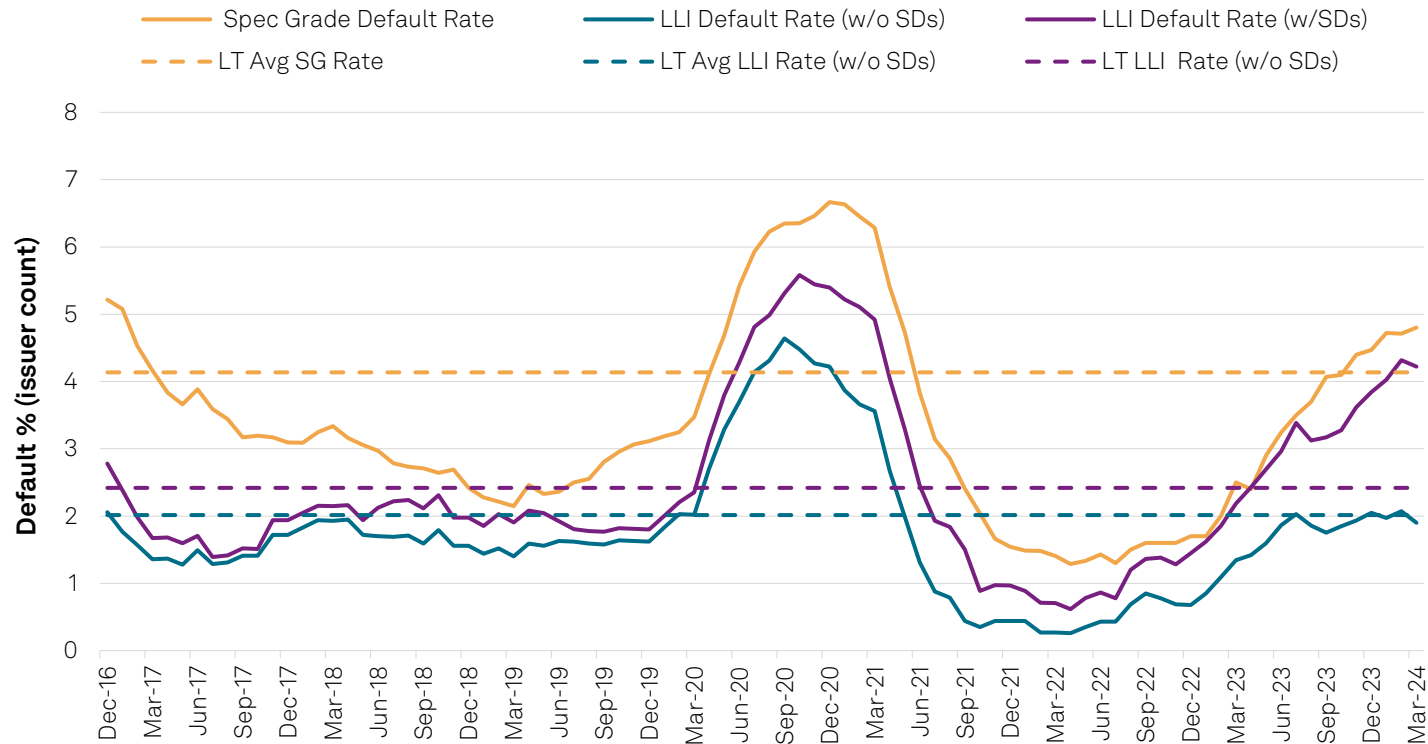
Average cumulative default rates for speculative-grade U.S. corporates by issuer rating (1981–2022)



The chart shows average U.S. Corporate Cumulative Default Rates (by Issuer Credit Ratings or ICRs) from Table 14 in the 2022 Annual U.S. Corporate Default And Rating Transition Study, published June 13, 2023.

# Defaults | Leveraged Loan Default Rates Are Much Higher When ‘SD’ Rating Actions Are Considered, Especially From 2020 Forward

U.S. speculative-grade default rates on a trailing 12-month basis through March 31, 2024

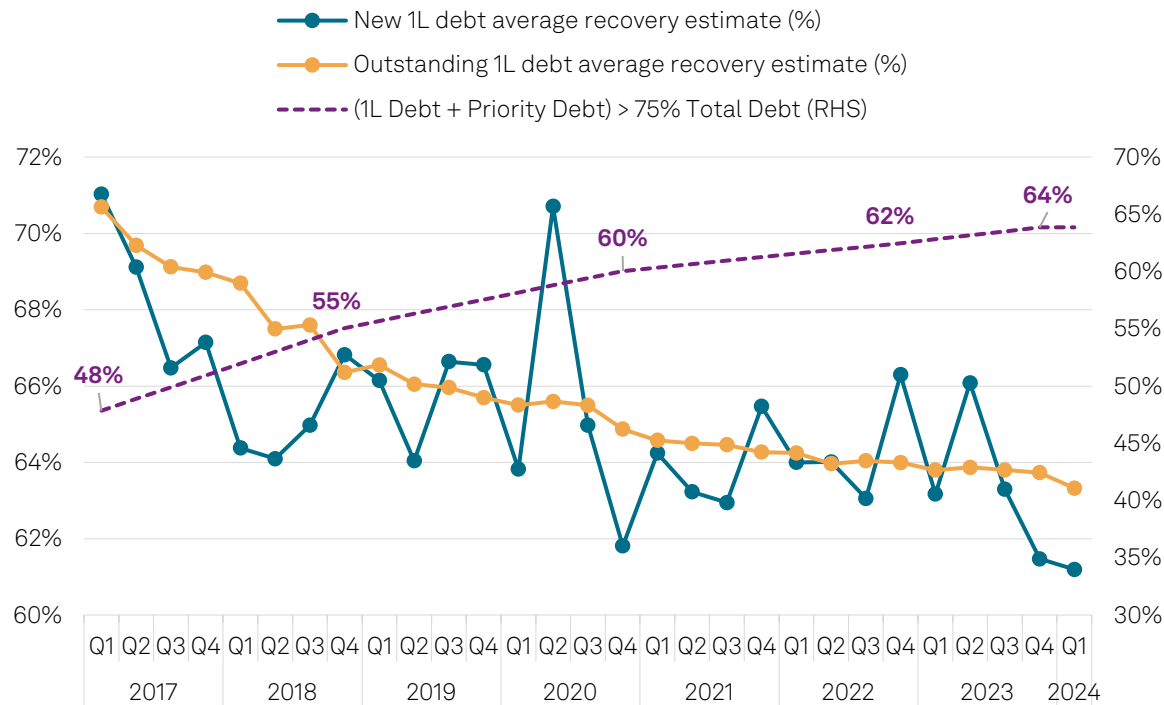


Source: S&P Global Ratings and Leveraged Commentary & Data. All default measures are shown on an issuer-count basis through March 31, 2024 (although the speculative-grade default rate is preliminary). The LLI default rate is for the Morningstar/LSTA Leveraged Loan Index and is shown without selective defaults (SDs), consistent with the default definition of the index, as well as with SDs as determined by S&P Global's rating actions.

- Leveraged Loan Index Defaults with and without SD actions are notably different.
- LCD recently began publishing a default rate for the Morningstar/LSTA Leveraged Loan Index that includes selective default (or SD) rating actions by S&P Global Ratings (from Dec. 2016 forward).
- On this basis, the default rate was meaningfully higher on March 31, 2024, at 4.22%, compared to 1.90% without SDs (both measures on an issuer-count basis).
- The gap between LL Index defaults with and without SD actions has been notably wider since 2020 and was at a peak of 232 bps on March 31, 2024.
- Since July 2020, the LL Index default rate with SDs has generally been closer to S&P Global Ratings' overall speculative-grade default rate (which also includes SDs) than to the traditional LL Index default rate.
- Given the prevalence of SD rating actions in recent years, LCD's 'dual track' LL Index default rate is a useful metric.

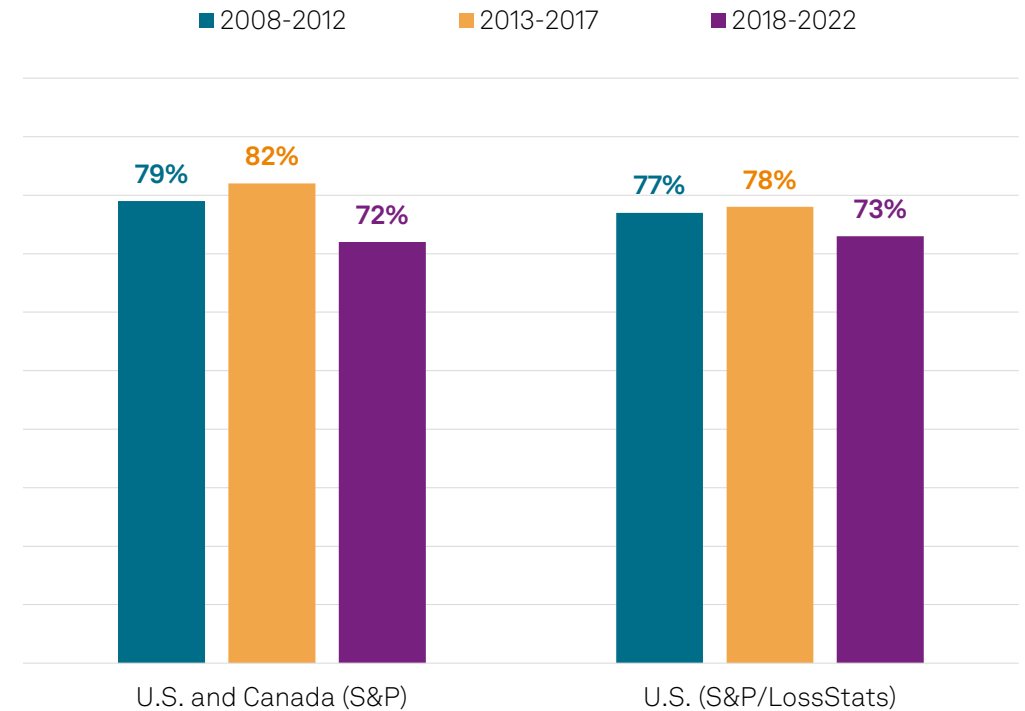
# Recoveries | Future 1L Recovery Expectations And Actual 1L Recovery Rate Estimates Have Declined As Debt Structures Have Become More Top-Heavy

Expected recovery on newly issued and outstanding 1L debt based on S&P's Recovery Ratings (U.S. and Canada)



Data through March 31, 2024, based on the rounded point-estimates included in our recovery ratings for rated nonfinancial corporate entities in the U.S. and Canada. Source: S&P Global Ratings. The data on debt structure composition is from a sample that covers large portion of the relevant rated issuers as of 1QE 2017, YE 2018, YE 2020, YE 2022, and YE 2023 (with smoothed transitions between these dates). The YE 2023 sample covers roughly 80% of the rated SG issuers in the U.S. and Canada.

Estimated actual first-lien recovery rates (% par) on a nominal basis

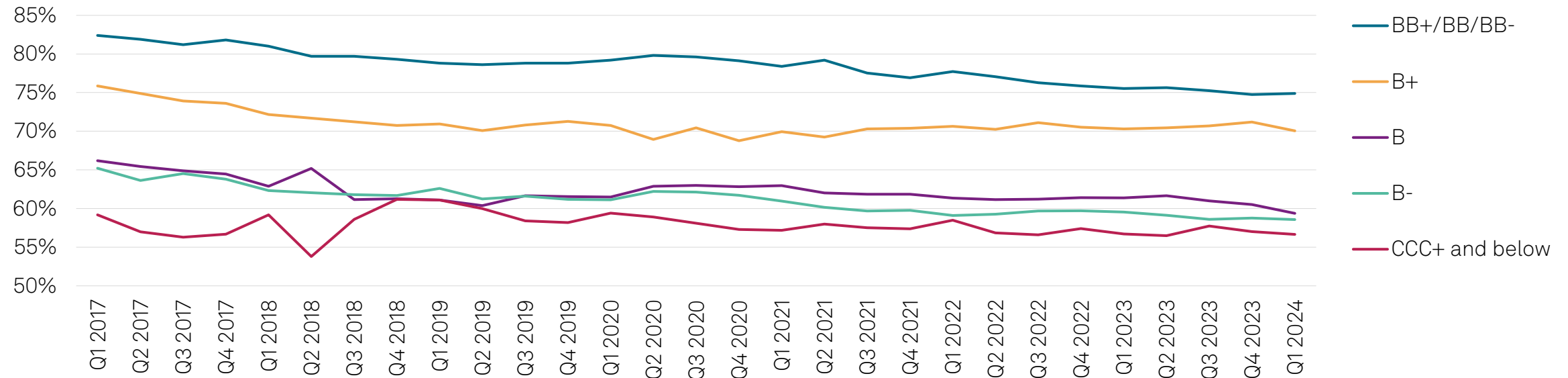


Source: S&P Global Ratings "Are Prospects For Global Debt Recoveries Bleak" Mar. 14, 2024. The actual first-lien recovery estimates are on an ultimate (at the end of the insolvency or restructuring period) and nominal basis. The S&P data represents estimated recoveries from bankruptcy documents while S&P's LossStats data is based on the best available information using one of three calculation approaches (trading prices, settlement prices or liquidity event pricing).

# Recoveries | First-Lien Recovery Expectations Vary By Rating Level

- Average recovery expectations for first-lien debt are notably lower for companies rated 'B-' and lower.
- Higher-rated issuers, which tend to be less levered and have larger junior debt cushions, tend to have higher recovery expectations.
- Average recovery expectations have generally drifted down since 2017.
- These recovery expectations do not account for 'event risk' related to future aggressive-out-of-court restructurings or liability management transactions.

## Average recovery estimate of first-lien debt: U.S. and Canada



Data through March 31, 2024, based on the rounded point-estimates included in our recovery ratings for rated nonfinancial corporate entities in the U.S. and Canada. Source: S&P Global Ratings.



# Recoveries | Aggressive Loan Restructurings Can Significantly Impair Recoveries For Non-Participating Lenders And Usually Don't Resolve Financial Problems

Comparison of expected recovery impairment for subordinated or non-participating lenders from select loan restructurings:

Collateral transfers:	Dates	RR% before	RR% after	Change 1L % par
1 J.Crew *	7/2017	40%	15%	-25%
2 PetSmart	6/2018	60%	45%	-15%
3 Neiman Marcus *	9/2019	55%	55%	0%
4 Cirque du Soleil *	3/2020	75%	75%	0%
5 Revlon *	5/2020	40%	15%	-25%
6 Party City *	7/2020	75%	45%	-30%
7 Travelport (+priming loan) **	9/2020	75%	0%	-75%
8 Envision Healthcare #1 *	4/2022	50%	30%	-20%
9 Shutterfly/Photo Holdings **	6/2023	60%	35%	-25%
10 US Renal Care #1 (transfer) **	6/2023	50%	30%	-20%

Priming loan exchanges:	Dates	RR% before	RR% after	Change 1L % par
1 Murray Energy *	6/2018	65%	0%	-65%
2 NPC International Inc. *	2/2020	55%	40%	-15%
3 Serta Simmons *	6/2020	55%	5%	-50%
4 Renfro #1	7/2020	35%	20%	-15%
5 Boardriders	8/2020	55%	5%	-50%
6 TriMark/TMK Hawk #1 **	9/2020	55%	0%	-55%
7 GTT *	12/2020	50%	40%	-10%
8 Renfro #2	2/2021	20%	10%	-10%
9 TriMark/TMK Hawk #2 **	7/2022	60%	30%	-30%
10 Medical Depot **	7/2022	15%	10%	-5%
11 Envision Healthcare #2 *	8/2022	30%	Varied	Up to -30%
12 Mitel Networks International **	11/2022	50%	5%	-45%
13 BW Homecare/Elara Caring **	12/2022	50%	20%	-30%
14 Rodan & Fields **	4/2023	55%	40%	-15%
15 RobertShaw/Range Parent (multiple) *	5/2023	50%	0%	-50%
16 Wheel Pros **	9/2023	50%	30%	-20%
17 API Holdings III Corp. **	11/2023	55%	35%	-20%
18 GoTo Group **	2/2024	50%	5%	-45%
19 Atlas Midco./Alvaria Inc. (transfer+priming)**	3/2024	65%	Varied	Up to -60%
20 PHM Netherlands/Loparex **	4/2024	60%	Varied	Up to -60%
21 Rackspace	4/2024	50%	Varied	Up to -50%
22 Digital Media Solutions Inc. (DMS) **	4/2024	40%	Varied	Up to -40%

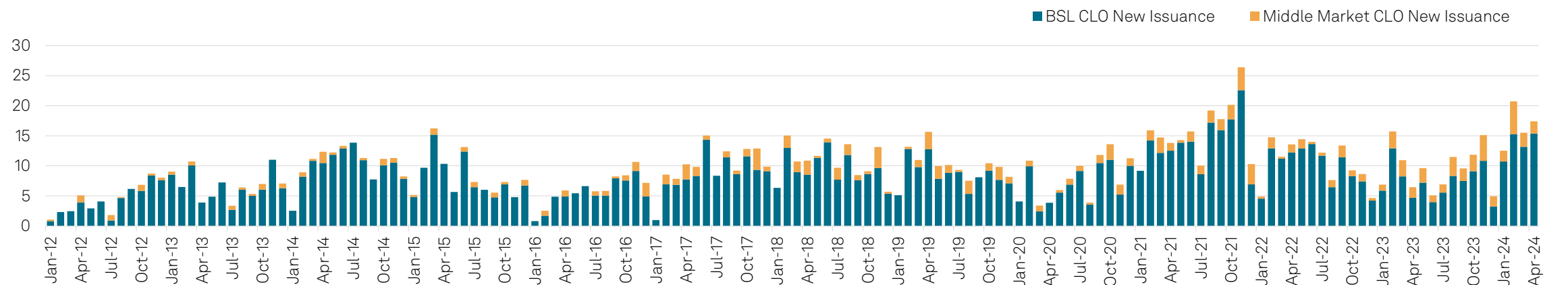
**Notes:** \* Indicates the company subsequently filed for bankruptcy. \*\* Indicates company either subsequently redefaulted and/or is rated 'CCC+' or lower. Excludes cases where all or essentially all lenders participated in the restructuring and realized the same impact. **Source:** S&P Global Ratings and company reports. Copyright © 2024 by Standard & Poor's Financial Services LLC. All rights reserved.

# Further Reading: U.S. Leveraged Finance

- [Q2 2024 Global Refinancing Update: Window Of Opportunity May Be Closing](#), published Apr. 24, 2024
- [Sixth Annual Study Of EBITDA Addbacks](#), published Mar. 27, 2024
- [Are Prospects For Global Debt Recoveries Bleak?](#), published Mar. 14, 2024
- [High Interest Rates And Massive Debt Burdens Will Pressure U.S. Telecom And Cable Speculative-Grade Ratings In 2024](#), published Feb. 26, 2024
- [U.S. Leveraged Finance Q4 2023 Update:](#) , published Feb. 23, 2024
- [PIK Refinancing: A Little Room To Breathe, Or One Step Closer To The Edge?](#), published Feb. 8, 2024
- [U.S. Speculative-Grade Media Outlook 2024: A Mixed Story](#), published Feb. 2, 2024
- [Default, Transition, and Recovery: U.S. Recovery Study: Loan Recoveries Persist Below Their Trend](#), published Dec. 15, 2023
- [North American Debt Recoveries May Trend Down For Longer](#), published Dec. 11, 2023
- [Leveraged Finance: U.S. Leveraged Finance Q3 2023 Update: The Lowdown On High Interest Rates](#), published Nov. 9, 2023
- [Scenario Analysis: Testing Private Debt's Resilience Through The Credit Estimate Lens](#), published Nov. 2, 2023
- [Leveraged Finance: Creative Structuring Helps Trinseo PLC, Comes With Lowered Recovery Prospects And Higher Costs](#), published Sept. 19, 2023
- [U.S. Leveraged Finance Q2 2023 Update: Disparities Emerge By Sector, Rating, Company Size, And Debt Cushion](#), published July 27, 2023
- [Global Leveraged Finance Handbook, 2022-2023](#), published July 17, 2023
- [Rocky Road Ahead For Recurring-Revenue Loans](#), published June 21, 2023
- [Refinancing Needs And Rate Uncertainty Drive Issuers To The High-Yield Bond Market](#), published June 1, 2023
- [Leveraged Finance: U.S. Leveraged Finance Q1 2023 Update: Ch-Ch-Ch-Changes -- Material Shifts In Key Credit Stats Drove Downgrades To 'B-' And 'CCC', And Upgrades To 'B-',](#) published May 4, 2023
- [Credit FAQ: Risks To Leveraged Loans And CLOs Amid An Increasingly Cloudy Macroeconomic Environment](#), published March 29, 2023
- [Credit FAQ: Envision Healthcare Corp.'s Two Major Restructurings In 100 Days](#), published Sept. 2, 2022
- [A Closer Look At How Uptier Priming Loan Exchanges Leave Excluded Lenders Behind](#), published June 15, 2021

# U.S. CLO Issuance | The Year Is Off To A Strong Start

U.S. CLO new issuance by month (U.S. bil. \$)



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2023 thru April	2024 thru April	Change (%)
<b>New issue (U.S. bil. \$)</b>															
BSL CLOs	50.11	78.12	117.78	93.76	64.01	103.58	112.88	103.65	82.21	164.97	116.99	88.71	31.71	54.54	72.0
MM CLOs	4.15	4.31	6.32	5.15	8.28	14.49	15.97	14.82	11.33	22.53	11.98	27.10	8.29	11.63	40.3
<b>Total new issue</b>	<b>54.26</b>	<b>82.43</b>	<b>124.10</b>	<b>98.91</b>	<b>72.30</b>	<b>118.07</b>	<b>128.86</b>	<b>118.47</b>	<b>93.54</b>	<b>187.49</b>	<b>128.97</b>	<b>115.81</b>	39.99	66.17	65.5
<b>MM CLO (%)</b>	<b>7.6</b>	<b>5.2</b>	<b>5.1</b>	<b>5.2</b>	<b>11.5</b>	<b>12.3</b>	<b>12.4</b>	<b>12.5</b>	<b>12.1</b>	<b>12.0</b>	<b>9.3</b>	<b>23.4</b>	<b>20.7%</b>	<b>17.6%</b>	
<b>Reset/refi (U.S. bil. \$)</b>															
BSL CLOs	0.00	0.00	0.00	0.00	39.73	161.53	151.97	41.33	30.39	237.61	17.35	21.55	0.00	54.93	N.A.
MM CLOs	0.00	0.00	0.00	0.00	0.00	5.48	3.92	2.46	1.09	13.70	7.42	3.05	0.41	3.03	638.0
<b>Total resets/refis</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>39.73</b>	<b>167.01</b>	<b>155.89</b>	<b>43.79</b>	<b>31.48</b>	<b>251.31</b>	<b>24.77</b>	<b>24.60</b>	<b>0.41</b>	<b>57.95</b>	<b>14,035.1</b>

BSL--Broadly syndicated loan. MM--Middle market. Source: S&P Global Ratings, Pitchbook LCD.

# CLO Metrics | 'CCC' Buckets Brush Up Against 7.5%, But Jr. O/C Test Cushions Steady For Now

- The U.S. CLO Insights Index averages CLO portfolio metrics across a large sample of reinvesting SPGR-rated U.S. broadly syndicated loan (BSL) CLOs and provides a one-year lookback at performance.
- The Index includes CLOs that have been reinvesting for the entirety of the past year and is based on a cohort of transactions with at least 11 months of processed trustee reports. Therefore, numbers from prior months can change as new CLOs are added or removed from the one-year lookback period.

As of date	'B-' (%)	'CCC' category (%)	Below 'CCC-' (%)	SPWARF	WARR (%)	Watch negative (%)	Negative outlook (%)	Weighted avg. price of portfolio (\$)	Jr. O/C cushion (%)	% of target par	'B-' on negative outlook (%)
4/30/2023*	31.20	5.15	0.53	2760	59.74	0.42	17.05	94.36	4.85	100.25	5.35
5/31/2023*	30.09	6.05	0.60	2776	59.57	0.50	16.37	93.47	4.72	100.15	4.68
6/30/2023*	29.26	6.62	0.57	2768	59.62	0.45	16.29	94.96	4.58	100.11	4.82
7/31/2023*	28.65	6.43	0.62	2757	59.52	0.32	16.92	95.46	4.50	100.06	5.41
8/31/2023*	28.51	6.83	0.54	2755	59.54	0.33	17.49	95.86	4.45	100.03	5.80
9/30/2023*	28.69	6.89	0.50	2754	59.40	0.63	17.65	95.97	4.46	100.02	6.35
10/13/2023*	27.24	7.74	0.55	2768	59.44	0.93	18.03	95.20	4.40	99.98	5.83
11/30/2023*	26.83	7.42	0.43	2741	59.32	1.01	18.42	95.81	4.32	99.90	5.98
12/31/2023*	26.40	7.33	0.54	2730	59.65	0.94	18.18	96.73	4.28	99.87	5.68
1/31/2024*	26.27	6.67	0.98	2736	59.48	0.34	18.27	96.68	4.20	99.78	5.15
2/29/2024*	26.64	6.24	1.06	2735	59.50	0.51	16.89	97.17	4.07	99.69	5.22
3/31/2024**	26.42	7.18	0.82	2737	59.07	0.65	16.44	97.32	4.04	99.66	5.13
4/22/2024***	25.93	7.27	0.91	2745	57.89	0.91	16.83	97.24	4.04	99.66	5.09

\*Index metrics based on end-of-month ratings and pricing data and as of month portfolio data available.

\*\*Index metrics based on Mar. 31, 2024, ratings and pricing data and latest portfolio data available to us.

\*\*\*Index metrics based on Apr. 22, 2024, ratings and pricing data and latest portfolio data available to us.

BSL--Broadly syndicated loan. O/C--Overcollateralization. SPWARF--S&P Global Ratings' weighted average rating factor. WARR--Weighted averaged recover rate. Source: S&P Global Ratings.

# CLO Metrics | Pre-2020 CLO Metrics Are Generally Weaker

CLO issued in Q1 2020 and before have seen more collateral stress and generally have weaker collateral metrics than CLOs issued in Q2 2020 and later, after the arrival of COVID-19 and the associated economic downturn. But given the stress on leveraged borrowers from higher rates in 2022 and 2023 and corporate rating downgrades, metrics for the pre- and post-pandemic CLOs have been converging.

## Pre-Pandemic BSL CLOs (Q1 2020 and earlier)

As of date	'B-' (%)	'CCC' category (%)	Below 'CCC-' (%)	SPWARF	WARR (%)	Jr. O/C cushion (%)	% of target par
4/30/2023*	29.91	5.96	0.87	2786	59.86	4.03	99.91
5/31/2023*	28.87	6.74	0.95	2801	59.72	3.85	99.78
6/30/2023*	28.21	7.16	0.91	2791	59.79	3.69	99.72
7/31/2023*	27.74	6.93	0.93	2778	59.71	3.61	99.66
8/31/2023*	27.66	7.38	0.81	2776	59.74	3.56	99.62
9/30/2023*	27.65	7.43	0.75	2772	59.63	3.60	99.59
10/13/2023*	26.24	8.15	0.77	2782	59.69	3.53	99.54
11/30/2023*	25.80	7.79	0.63	2754	59.61	3.42	99.43
12/31/2023*	25.35	7.72	0.77	2745	59.91	3.36	99.37
1/31/2024*	25.19	7.05	1.23	2753	59.72	3.24	99.25
2/29/2024*	25.70	6.56	1.26	2749	59.78	3.16	99.11
3/31/2024**	25.57	7.54	1.03	2752	59.37	3.16	99.08
4/22/2024***	25.14	7.68	1.04	2757	58.04	3.15	99.08

## Post-Pandemic BSL CLOs (Q2 2020 and later)

As of date	'B-' (%)	'CCC' category (%)	Below 'CCC-' (%)	SPWARF	WARR (%)	Jr. O/C cushion (%)	% of target par
4/30/2023*	31.73	4.82	0.39	2749	59.69	5.18	100.38
5/31/2023*	30.60	5.77	0.45	2765	59.51	5.07	100.30
6/30/2023*	29.69	6.40	0.43	2759	59.54	4.95	100.27
7/31/2023*	29.02	6.23	0.49	2748	59.44	4.87	100.23
8/31/2023*	28.86	6.61	0.42	2747	59.46	4.81	100.21
9/30/2023*	29.12	6.67	0.40	2747	59.31	4.81	100.20
10/13/2023*	27.66	7.57	0.45	2763	59.34	4.76	100.15
11/30/2023*	27.26	7.27	0.34	2736	59.20	4.69	100.10
12/31/2023*	26.84	7.18	0.44	2724	59.55	4.67	100.07
1/31/2024*	26.72	6.52	0.87	2728	59.39	4.60	100.00
2/29/2024*	27.03	6.11	0.98	2729	59.38	4.44	99.93
3/31/2024**	26.77	7.03	0.73	2731	58.95	4.41	99.90
4/22/2024***	26.25	7.09	0.86	2740	57.82	4.41	99.90

\*Index metrics based on end-of-month ratings and pricing data and as of month portfolio data available.

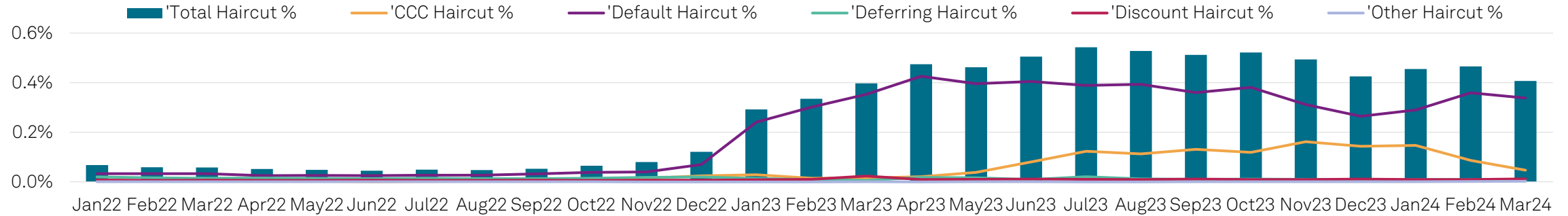
\*\*Index metrics based on Mar. 31, 2024, ratings and pricing data and latest portfolio data available to us.

\*\*\*Index metrics based on Apr. 22, 2024, ratings and pricing data and latest portfolio data available to us.

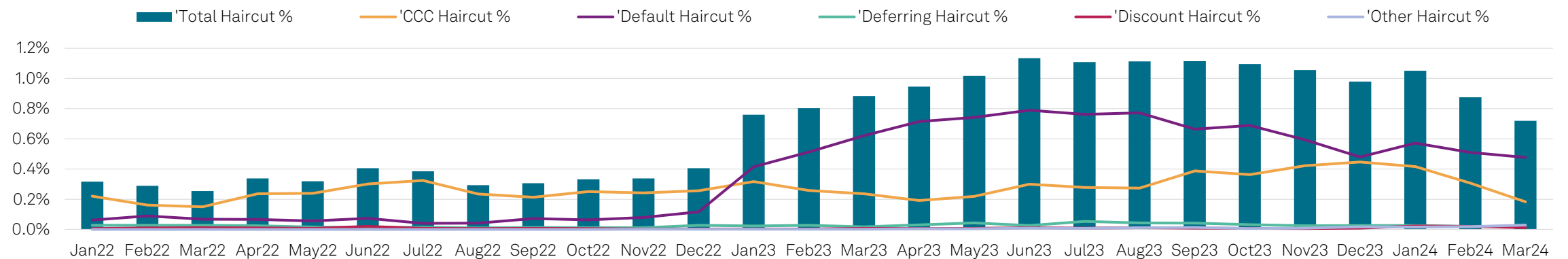
BSL--Broadly syndicated loan. O/C--Overcollateralization. SPWARF--S&P Global Ratings' weighted average rating factor. WARR--Weighted averaged recover rate. Source: S&P Global Ratings.

# CLO Metrics | O/C Haircuts Have Started To Decline Because Of Reduction In Haircuts Due To Defaults

Average O/C metrics for reinvesting U.S. BSL CLOs



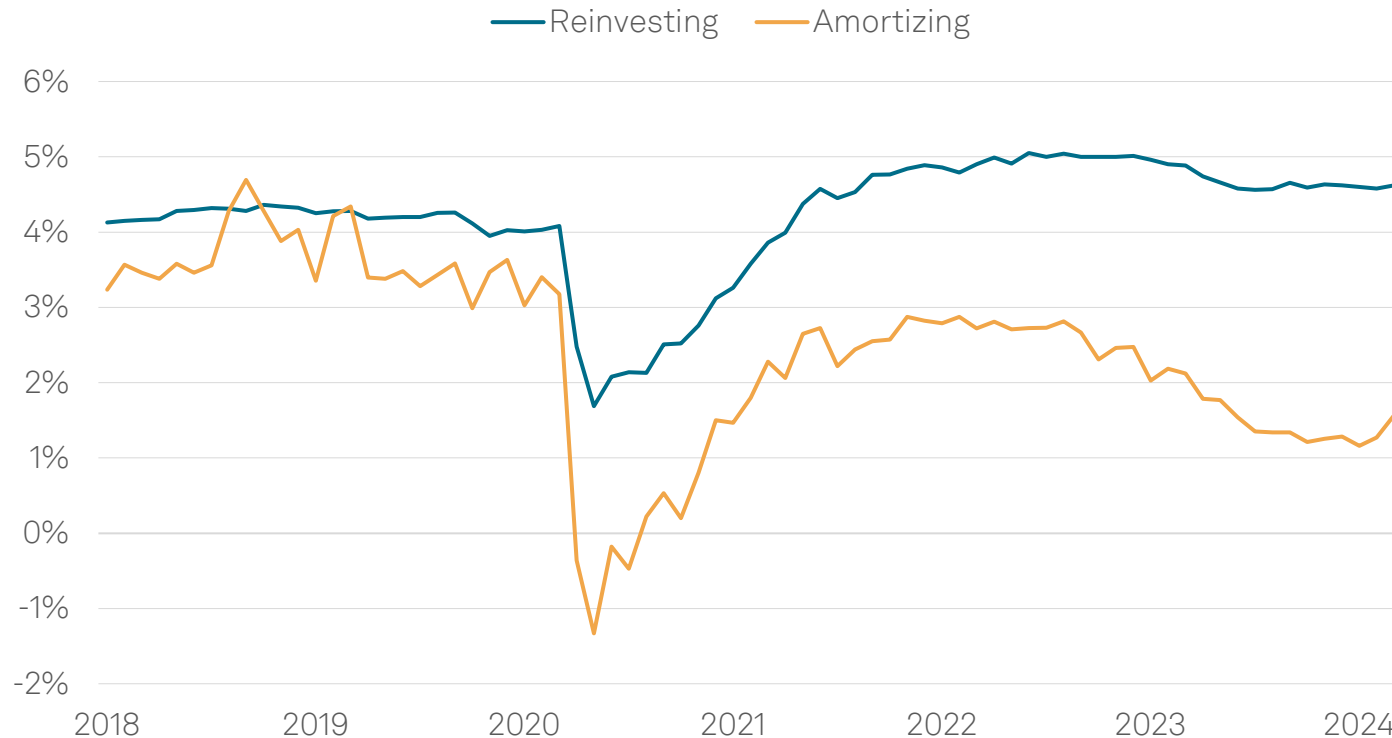
Average O/C metrics for amortizing U.S. BSL CLOs



O/C--Overcollateralization. Source: S&P Global Ratings.

# CLO Metrics | Amortizing Transactions More At Risk Of Failing Jr. O/C Test

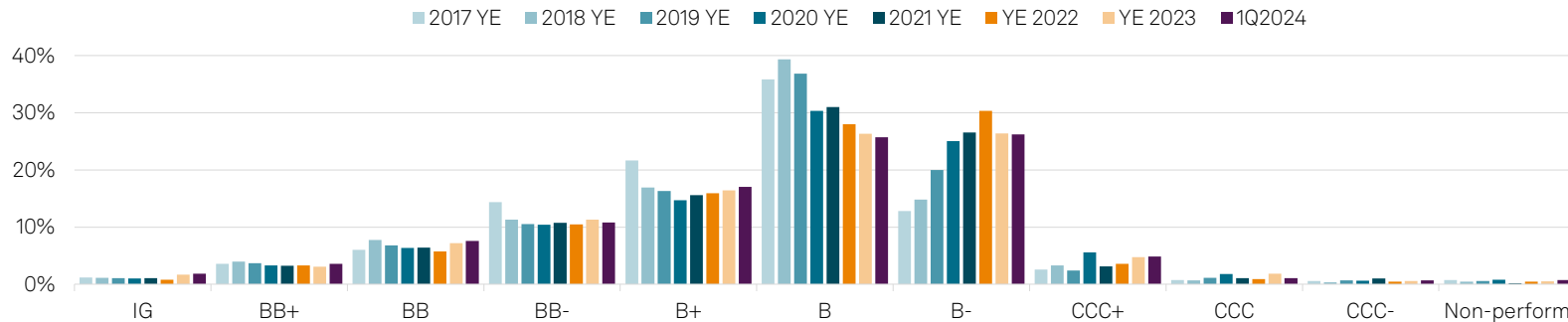
US BSL CLO - median 'BB' O/C Cushion



- Due to par loss, and OC numerator haircuts from default and excess CCC exposures, BB OC cushions have declined since the start of 2023, across both amortizing and reinvesting transactions
- As of the end of 1Q2024, median BB OC cushions for reinvesting US BSL CLOs remain well over 4% (*pre-pandemic reinvesting transactions have notably less cushion*).
- By end of 1Q2024, about 15% of amortizing transactions are failing their BB OC test.
- Given recent downgrades on a handful of widely held issuers, we expect junior OC test volatility, particularly across the amortizing transactions.

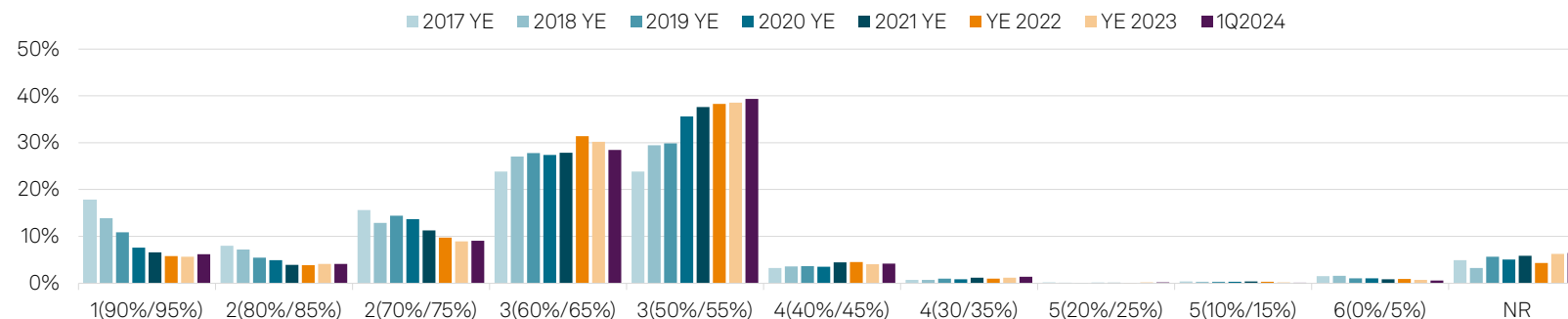
# 'B-' Assets | After Six Years Of Increases, 'B-' Assets Edge Downward

Rating distribution for assets in reinvesting U.S. BSL CLOs (2017-1Q2024)



Latest data as of Aug. 1, 2023. YE--Year end. Source: S&P Global Ratings.

Recovery ratings distribution for assets in reinvesting U.S. BSL CLOs (2017-1Q2024)



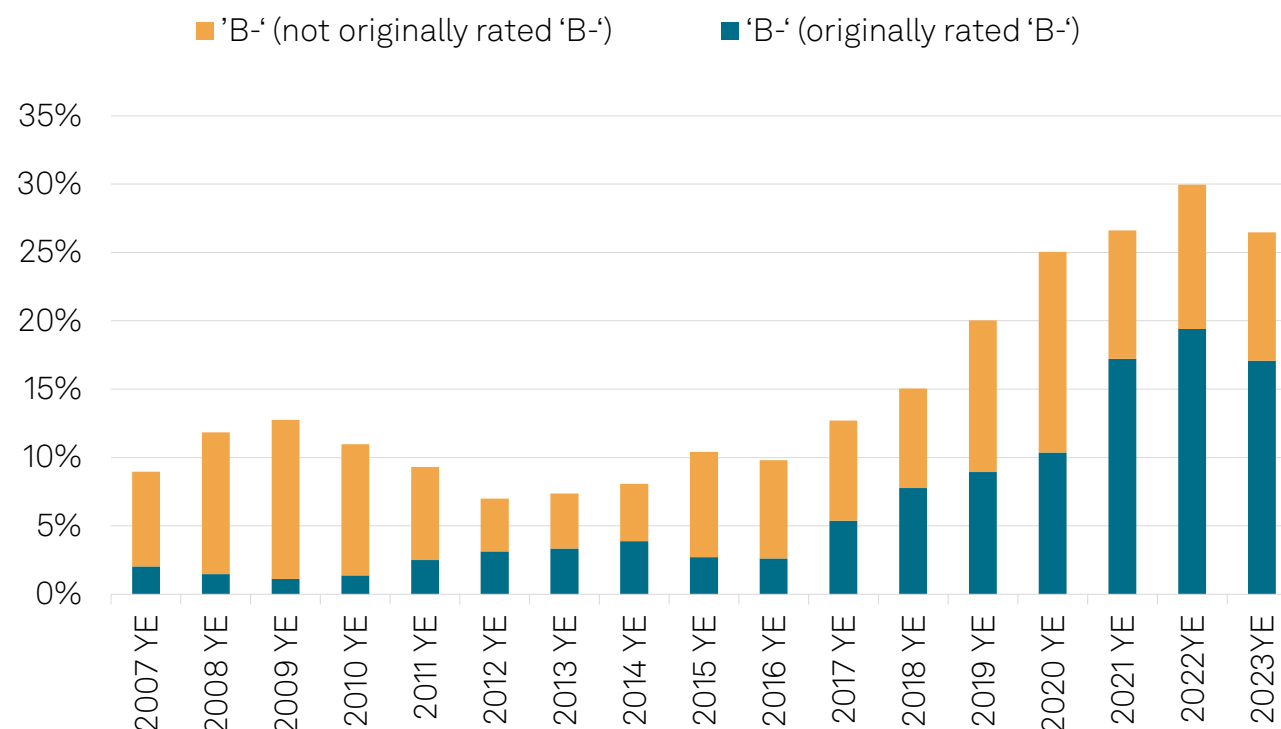
Latest data as of Apr. 1, 2024. NR--Not rated. YE--Year end. Source: S&P Global Ratings.

- Exposure to 'B-' rated issuers has declined to 26.2%, a level not seen since end of 2021. Historically, companies rated 'B-' are more likely to see a downgrade (by definition, into the 'CCC' range or lower) or default than loans from companies rated 'B' or higher, even in benign economic periods.
- Over the past several years, there has also been a significant increase in loans with a recovery rating of '3'. In particular, point estimates of either 50% or 55% (i.e., the 3L category in the chart) make up 39% of total CLO asset par, compared with about 30% prior to the COVID-19 pandemic.



# 'B-' Assets | Majority Of Current 'B-' Assets Were Born That Way

'B-' exposure across reinvesting U.S. BSL CLOs

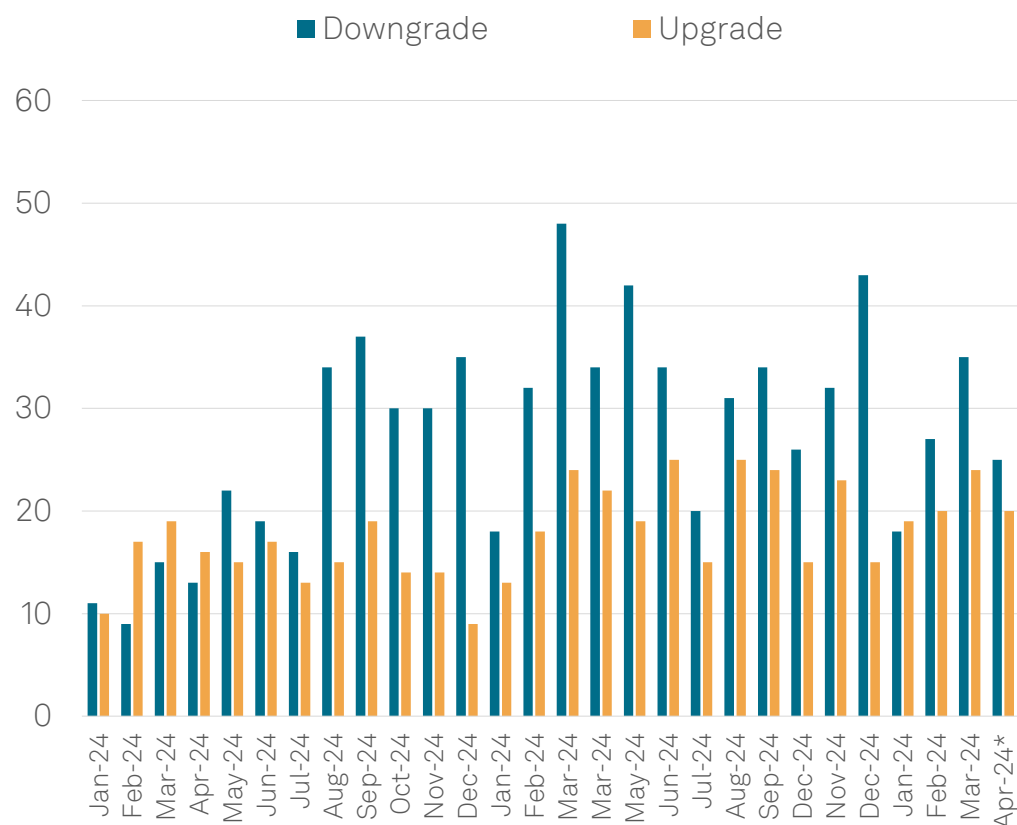


CLO--Collateralized loan obligation. AUM--Assets under management. YE--Year end. Source: S&P Global Ratings.

Outcomes for 'B-' assets in BSL CLOs during 2023

(% Of CLO assets)	% AUM at start of 2023 (a)	Downgraded in 2023 (% of AUM at start of 2023) (b)	Proportion downgraded in 2023 (b/a)
'B-' original rating at start of 2023	19.41	2.34	12.03
Not original 'B-' rating at start of 2023	10.55	2.39	22.66
Total 'B-' at start of 2023	29.96	4.73	15.78

# Asset Ratings | U.S. CLO Obligor Downgrades (2022-April 24, 2024)



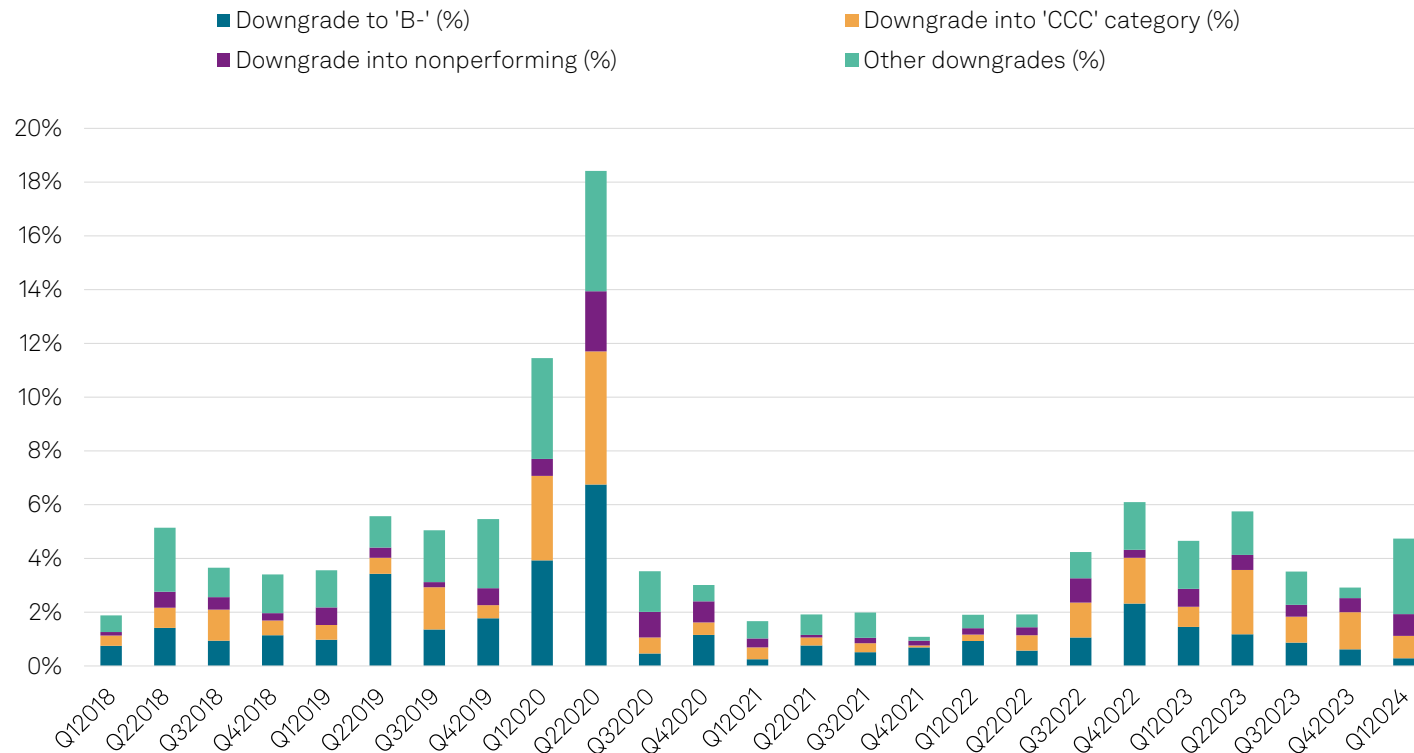
\*Thru April 24, 2024; BSL--Broadly syndicated loan. DG--Downgrade .Source: S&P Global Ratings.

## Downgrades on U.S. BSL CLO obligor ratings (2022–2024 Q2\*)

Qtr	Downgrades					Upgrades				
	Total DG	other DG	DG to 'B-' category	DG into performing 'CCC' category	DG into non-performing	Total UG	UG to 'B' or above	UG to 'B-' category	UG within 'CCC' category	UG into 'CCC' category (from non-perform)
2022Q1	35	16	9	8	2	46	37	6	1	2
2022Q2	54	16	16	12	10	48	32	13	1	2
2022Q3	87	27	31	22	7	47	33	9	2	3
2022Q4	95	33	22	30	10	37	28	4		5
2023Q1	98	39	21	18	20	55	37	2	1	15
2023Q2	110	32	17	36	25	66	49	3		14
2023Q3	85	42	13	15	15	64	42	9	2	11
2023Q4	101	36	17	26	22	53	38	2		13
2024Q1	80	38	12	9	21	63	45	6	2	10
2024Q2*	25	7	4	6	8	20	11	3	1	5
<b>Grand total</b>	<b>770</b>	<b>286</b>	<b>162</b>	<b>182</b>	<b>140</b>	<b>499</b>	<b>352</b>	<b>57</b>	<b>10</b>	<b>80</b>

# Asset Ratings | CLO Exposure To Downgrades Increases In First-Quarter 2024

Average CLO assets downgraded (% total par) by quarter

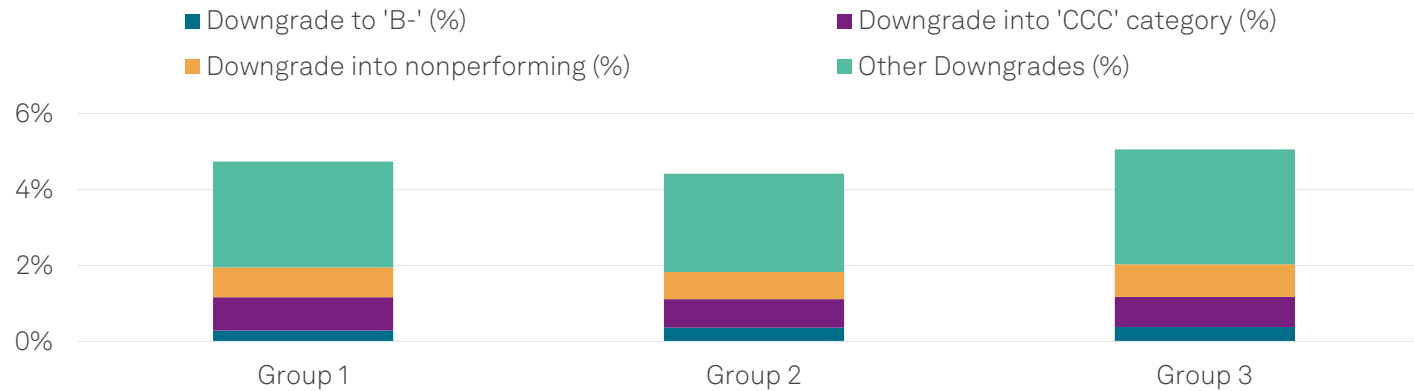


Source: S&P Global Ratings.

- After declining for several quarters, BSL CLO exposure to obligor downgrades increased in first-quarter 2024, mostly due to downgrades of obligors downgraded to levels above 'B-'.
- The impact of the rating actions since can be seen in BSL CLO collateral pools. The chart on the left shows BSL CLO collateral (by par) that has been downgraded during each quarter since 2018.
- To do this, we looked at the obligors in BSL CLO collateral pools at the start of each quarter, and then tracked which of those obligors saw ratings lowered during the quarter.

# Asset Ratings | Exposure To First-Quarter Rating Actions By Manager Cohort (By Post-Pandemic Issuance Count)

Average CLO assets downgraded  
(% total par, by CLO manager group for first-quarter 2024)



Manager at close of deal	Upgrades (%)	Downgrades (%)	Downgrade to 'B-' (%)	Downgrade into 'CCC' category (%)	Downgrade into nonperforming (%)	Other Downgrades (%)	Top 250
Group 1	3.79	4.74	0.28	0.88	0.78	2.79	53.29
Group 2	3.83	4.42	0.37	0.74	0.72	2.59	50.37
Group 3	4.14	5.06	0.38	0.80	0.85	3.03	49.94
Average Total	3.92	4.75	0.34	0.81	0.79	2.81	51.23

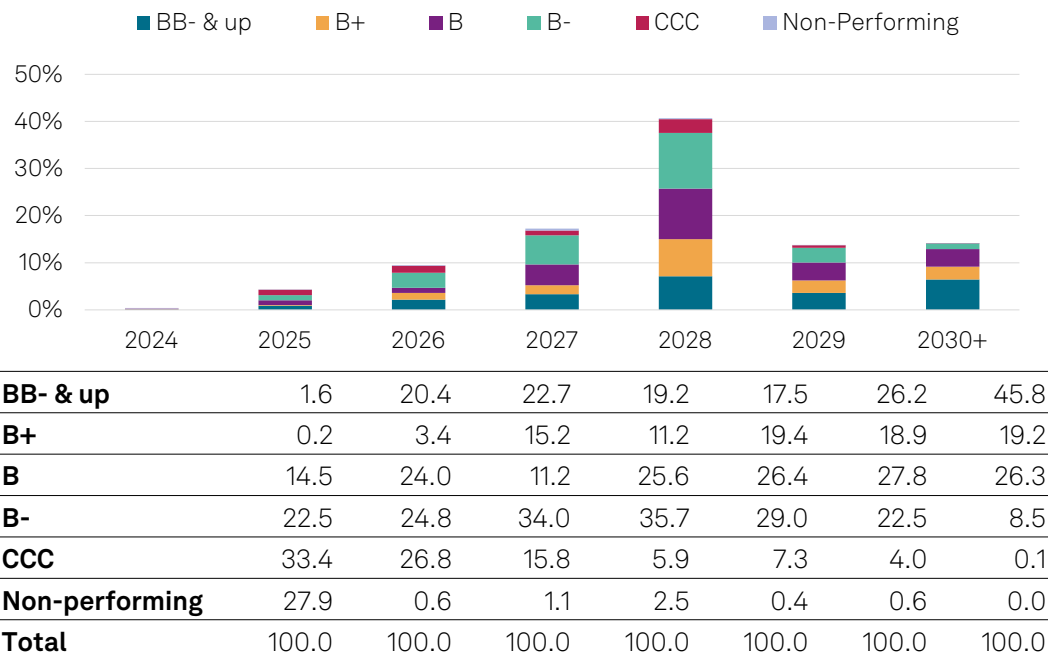
Source: S&P Global Ratings.

- U.S. BSL CLO exposures to downgrades in first-quarter 2024 increased to 4.75% from 3.92% the quarter prior.
- We bucketed our rated U.S. BSL CLO transaction data into three cohorts based on the dollar amount of U.S. BSL CLOs the manager has closed since the start of the pandemic, as detailed in the first-quarter 2024 CLO Global Databank maintained by Pitchbook:
  - Group 1: more than \$2.9 billion;
  - Group 2: between \$1.2 billion and \$2.9 billion; and
  - Group 3: less than \$1.2 billion.
- Relative to groups 2 and 3, CLOs issued by group 1 managers had more exposure to corporate ratings that experienced a downgrade in first-quarter 2024.
- Group 1 CLO managers tend to have higher exposure to the widely held names (top 250). These larger issuers tend to have more rating stability during periods of stress.

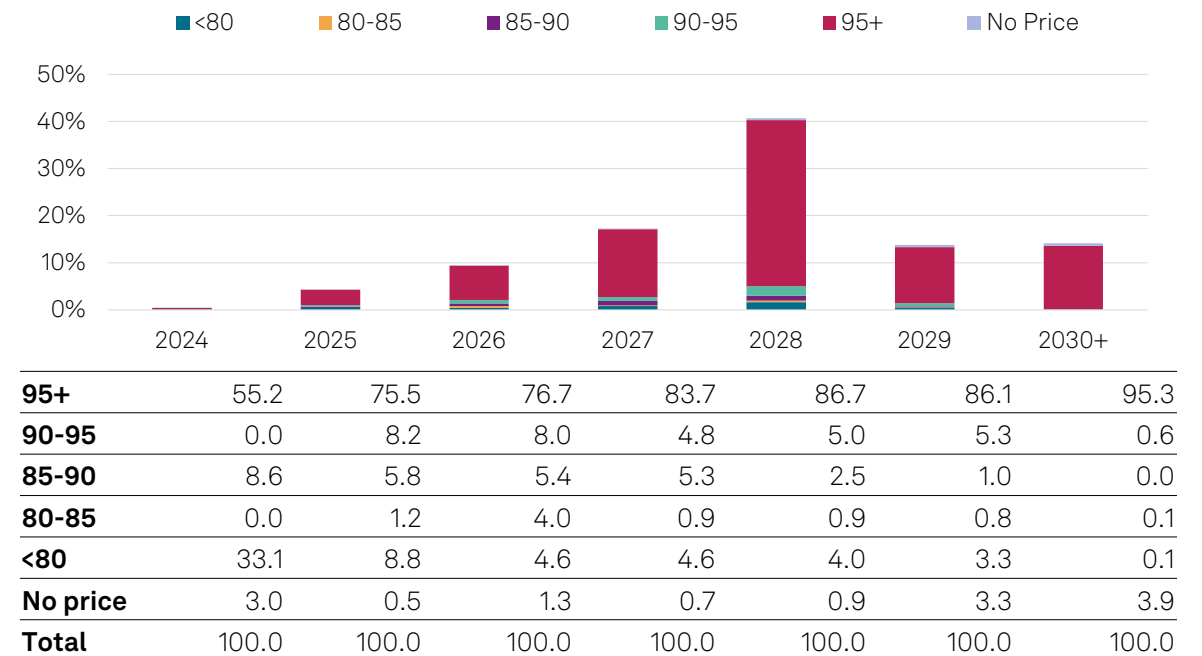
# Maturity Wall | Loan Maturity Wall Within CLO Collateral Pools

- Refinancing activity have picked up across the corporate loan market in early 2024.
- 2030 and later maturities have increased to over 14% from just under 10% as of the start of 2024.
- Some loan issuers have done amend-to-extends, and others have refinanced into the high-yield bond and private credit markets.

## Maturity wall by obligor rating (second-quarter 2024)



## Maturity wall by loan price (second-quarter 2024)



Source: S&P Global Ratings, LoanX.

# Purchases & Sales | Managers Continue To ‘De-Risk’ CLO Portfolios

Quarter	Purchases			Sales		
	WARF	Avg. price	Avg. target par %	WARF	Avg. price	Avg target par %
Q1 2022	2802	98.96	10.48%	2660	99.00	5.99%
Q2 2022	2693	96.69	8.37%	2788	96.57	5.98%
Q3 2022	2699	94.14	6.17%	2847	93.87	4.37%
Q4 2022	2509	95.20	6.85%	2892	93.27	4.03%
Q1 2023	2580	97.08	8.07%	3114	93.07	4.64%
Q2 2023	2493	96.97	7.78%	3031	93.16	5.04%
Q3 2023	2459	97.52	7.09%	3000	95.08	4.44%
Q4 2023	2311	98.11	8.79%	2989	95.01	4.71%
Q1 2024	2450	98.84	8.45%	3042	94.56	4.71%

## BSL CLO asset trades by company rating (first-quarter 2024)

Rating category	Purchase (% of trades)	Avg purchase price	Sales (% of trades)	Avg sale price
Investment grade	1.84%	97.10	1.94%	99.29
‘BB’ category	25.20%	99.36	20.13%	99.43
‘B+’	20.01%	99.17	17.59%	99.03
‘B’	31.73%	99.02	21.77%	98.95
‘B-’	19.04%	98.32	24.07%	97.60
‘CCC’ category	1.92%	92.39	10.32%	83.25
Nonperforming	0.27%	98.52	4.19%	37.95

WARF--Weighted average rating factor. Source: S&P Global Ratings.

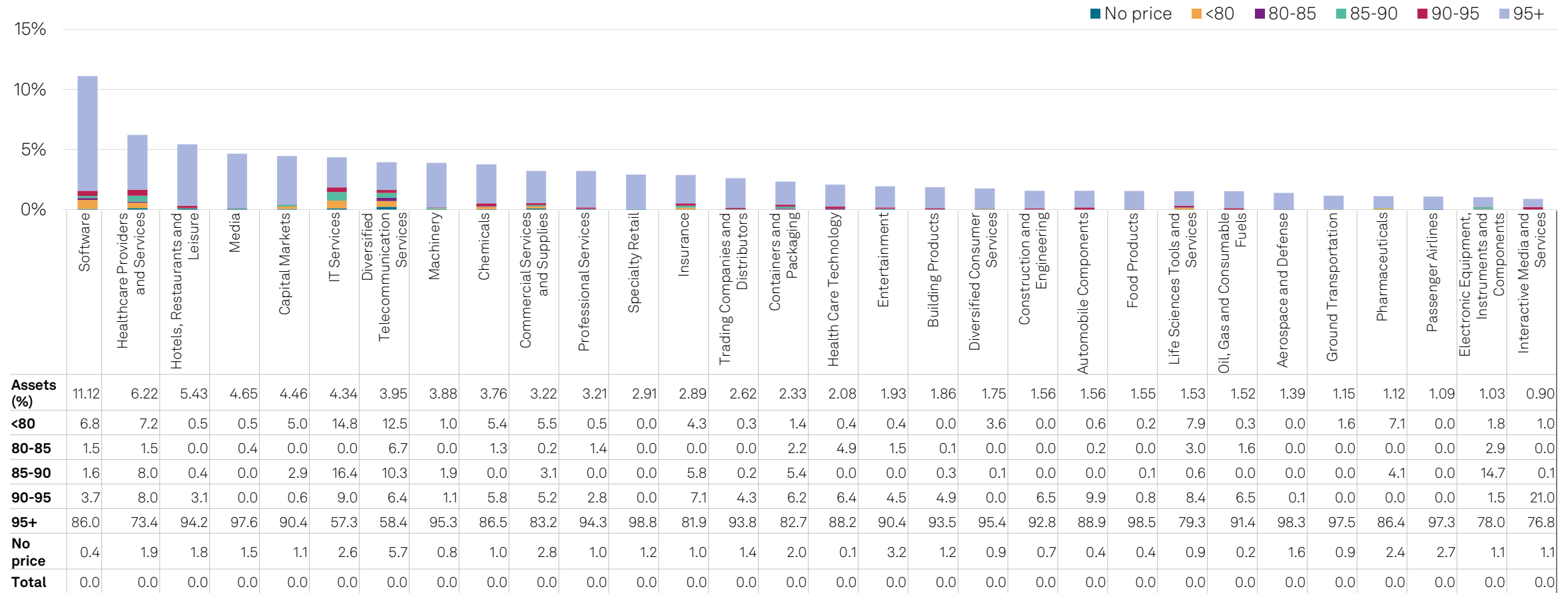
- Since the start of 2023, the credit quality of the assets purchased tend to be higher (lower S&P Global Ratings’ weighted average rating factor [SPWARF]) than the credit quality of the assets sold, evidence of CLO manager efforts at de-risking.
- During the second half of 2023, average prices of both purchase and sales have increased slightly.
- The average prices of the purchases are higher than the prices of the sales, resulting in slight par loss across several transactions.
- The proportion of sales of ‘B-’, ‘CCC’ category, and nonperforming assets are greater than the proportion of purchases from these rating categories, further evidence of managers’ attempts at de-risking.

# Industry Categories | Credit Metrics Across Top 30 GIC Industry Exposures



Source: "U.S. BSL CLO Top Obligors And Industries Report: Fourth-Quarter 2023," published Jan. 9, 2024

# Industry Categories | Loan Price Distribution Across Top 30 GIC Industry Categories



Loan prices as of Jan. 1, 2024. Source: S&P Global Ratings, LoanX.



# CLO Research | EBITDA, Revenue And Interest Coverage By CLO Manager Size

- Wide range in leverage, interest coverage and company sizes across the U.S. BSL CLO portfolios, representing the different areas of focus across the CLO managers.
- There are a handful of Group 1 managers that have larger exposures to smaller issuers leading to lower average median revenue values (group 1).
- The average weighted average revenue of the group 1 managers are higher, indicating these larger managers also have notable exposure to very large companies (top 250).

## Average of median and weighted average portfolio values

	Exposure matched to corporate metrics	Median debt to EBITDA	Median EBITDA interest coverage	Median revenues (mil. \$)	Weighted average revenues (mil. \$)	Median EBITDA (mil. \$)	Weighted average EBITDA (mil. \$)
<b>Group 1</b>	79.40%	5.98	2.51	2,009	4,660	368.81	781.68
<b>Group 2</b>	80.19%	5.86	2.59	2,167	4,418	406.59	750.81
<b>Group 3</b>	79.38%	5.91	2.57	2,187	4,616	399.49	803.36
<b>Overall</b>	79.56%	5.95	2.53	2,061	4,604	380.00	777.27

Median and weighted average corporate metrics based off latest CLO portfolios available to us as of Jan. 1, 2024 which are matched to latest corporate financial data available to us; 80% match across the CLO portfolios.  
Source: S&P Global Ratings.

	Proportion of manager exposures matched to corporate metrics	Median debt to EBITDA	Median EBITDA interest coverage	Median revenues (mil. \$)	Weighted average revenues (mil. \$)	Median EBITDA (mil. \$)	Weighted average EBITDA (mil. \$)
<b>Blackstone</b>	80.13%	6.06	2.38	2,253	5,571	370.62	1,106
<b>Credit Suisse</b>	78.22%	5.97	2.66	1,632	3,568	263.60	648
<b>Ares</b>	80.52%	6.03	2.53	2,073	5,090	340.53	1,050
<b>Carlyle</b>	74.69%	5.73	2.61	2,210	5,210	364.78	987
<b>Neuberger Berman</b>	75.49%	5.77	2.75	2,364	5,231	370.62	969
<b>Octagon</b>	79.67%	5.74	2.53	2,413	5,487	362.96	1,163
<b>PGIM</b>	80.16%	5.08	2.91	2,432	5,873	389.30	1,111
<b>Oak Hill</b>	84.83%	5.66	2.85	1,694	3,256	285.90	742
<b>Sound Point</b>	80.19%	5.91	2.59	2,201	4,667	328.16	934
<b>CIFC</b>	77.21%	6.11	2.42	2,179	4,594	324.78	939
<b>Voya</b>	78.62%	5.74	2.74	2,144	4,682	340.53	923
<b>Benefit Street</b>	74.77%	5.66	2.67	2,256	5,049	354.19	1,020
<b>Onex</b>	81.36%	5.85	2.60	2,301	4,572	366.19	920
<b>Elmwood</b>	81.80%	5.17	2.87	2,030	3,774	292.42	757
<b>Bain</b>	80.08%	5.83	2.62	1,661	3,463	274.16	736
<b>LCM</b>	84.11%	5.96	2.48	1,920	4,688	281.99	924
<b>CVC</b>	77.56%	5.62	2.81	2,525	5,090	412.21	998
<b>HPS</b>	74.98%	6.10	2.34	2,226	5,119	342.86	957
<b>BlackRock</b>	84.88%	5.74	2.77	2,370	4,944	412.97	928
<b>Crescent</b>	77.56%	6.22	2.42	2,782	4,959	422.30	1,036
<b>GoldenTree</b>	78.92%	5.40	2.83	2,591	5,005	435.41	1,019
<b>Oaktree</b>	75.58%	5.47	2.80	2,481	5,395	397.45	953
<b>Aegon</b>	84.26%	5.78	2.75	2,740	4,567	474.00	947
<b>Fortress</b>	72.01%	6.40	2.22	1,214	3,818	144.06	541
<b>Barings</b>	81.28%	5.60	2.77	2,421	4,822	351.00	1,001
<b>KKR</b>	86.70%	5.90	2.41	2,028	4,475	274.16	833
<b>Marathon</b>	77.23%	5.56	2.65	2,107	3,778	287.42	755
<b>Palmer Square</b>	72.71%	5.60	2.79	2,066	4,249	363.44	858
<b>Symphony</b>	81.13%	6.09	2.61	2,417	4,752	373.03	916

# CLO Research | The Value Of Active Management (2022 Through Third-Quarter 2023)

- Turnover of assets in BSL CLO collateral pools in 2022 was just under 50% during the seven quarters between first-quarter 2022 and third-quarter 2023, meaning almost half of the loans that had been in CLO collateral pools at the start of 2022 were no longer in the collateral pools by the end of third-quarter 2023.
- To examine the impact that portfolio turnover had on CLO credit metrics, we looked at the actual change in BSL CLO credit metrics seven quarters after the start of 2022, including portfolio turnover (table 1); metrics from the same BSL CLO collateral pools while assuming they were static CLOs with no trading or asset turnover (table 2); and the difference between the actual CLO portfolios and hypothetical static CLO portfolios (table 3).
- On average, the trades increased the proportion of loans from 'B-' companies, because, when a company saw its rating lowered to the 'CCC' range, a manager would often sell loans from that company and purchase loans from a 'B-' rated company.
- On average, all other CLO credit metrics benefitted from the trading activity: exposure to 'CCC' assets and defaulted assets was lowered, the SPWARF was lower (indicating higher average portfolio ratings), and the junior O/C test cushion was greater.

**Table 1 - Actual BSL CLO Performance (Q1 2022-Q3 2023)**

Metric	1/1/22	9/30/23	Change
Portfolio turnover (%)	N/A	48.13	48.13
Exposure to 'B-' assets (%)	26.58	28.44	1.86
Exposure to 'CCC' assets (%)	4.50	7.32	2.82
Exposure to defaulted assets (%)	0.13	0.60	0.47
SPWARF	2692	2769	76
Portfolio % of target par (%)	99.91	99.82	-0.09
Junior O/C test cushion (%)	4.72	3.93	-0.80

**Table 2 - Hypothetical Static Pool BSL CLO Performance (Q1 2022-Q3 2023)**

Metric	1/1/22	9/30/23	Change
Portfolio turnover (%)	N/A	0.00	0.00
Exposure to 'B-' assets (%)	26.58	27.26	0.68
Exposure to 'CCC' assets (%)	4.50	10.05	5.56
Exposure to defaulted assets (%)	0.13	1.28	1.15
SPWARF	2692	2888	195
Portfolio % of target par	99.91	99.91	0.00
Junior O/C test cushion (%)	4.72	3.02	-1.70

**Table 3 - Manager Impact On CLO Metrics**

Metric	Year-end results: managed vs. hypothetical	
Portfolio turnover	48.13% higher	↑
Exposure to 'B-' assets	1.18% higher	↑
Exposure to 'CCC' assets	2.74% lower	↓
Exposure to defaulted assets	0.67% lower	↓
SPWARF	119 lower	↓
Portfolio % of target par	0.09% lower	↓
Junior O/C test cushion	0.90% higher	↑

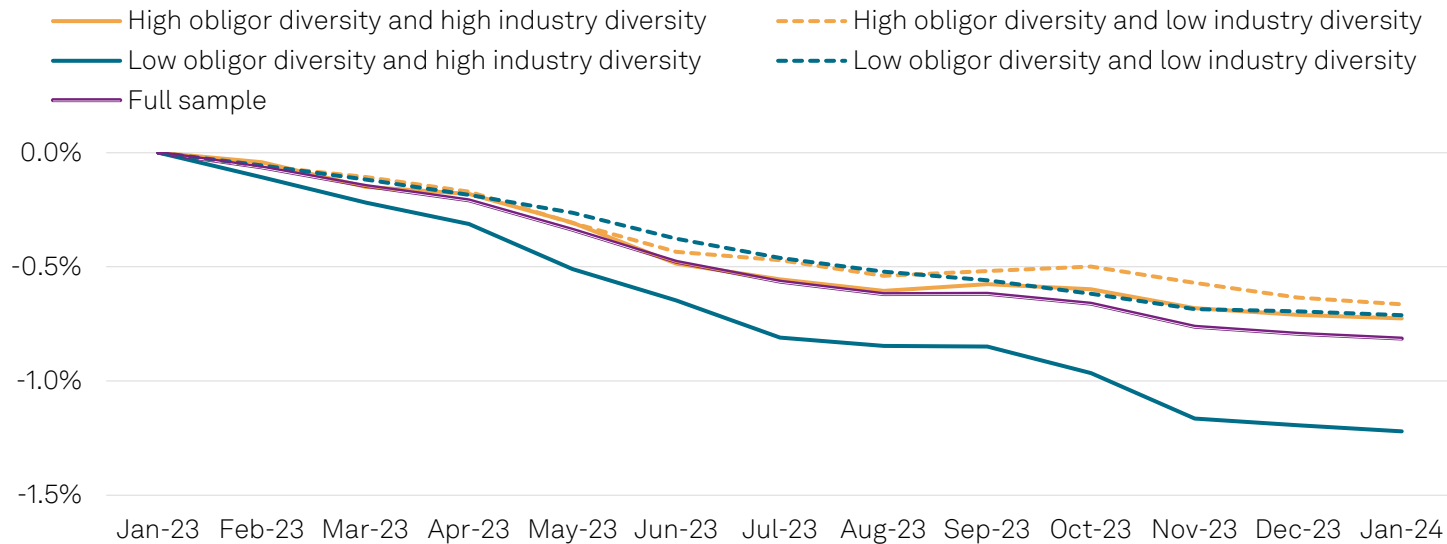
N/A--Not applicable. O/C--Overcollateralization. SPWARF--S&P Global Ratings' weighted average rating factor.  
Source: Managers Matter: Active Management Of U.S. BSL CLOs During Uncertain Times Shows Its Value, published Nov. 30<sup>th</sup>, 2023

# CLO Research | Assessing The Impact Of CLO Diversity

We broke our index of 492 reinvesting U.S. BSL CLOs into **four cohorts**:

- High obligor diversity and high industry diversity (141 transactions): solid yellow
- High obligor diversity and low industry diversity (105 transactions): dotted yellow
- Low obligor diversity and high industry diversity (105 transactions): solid blue
- Low obligor diversity and low industry diversity (141 transactions): dotted blue

## Change in junior O/C cushion

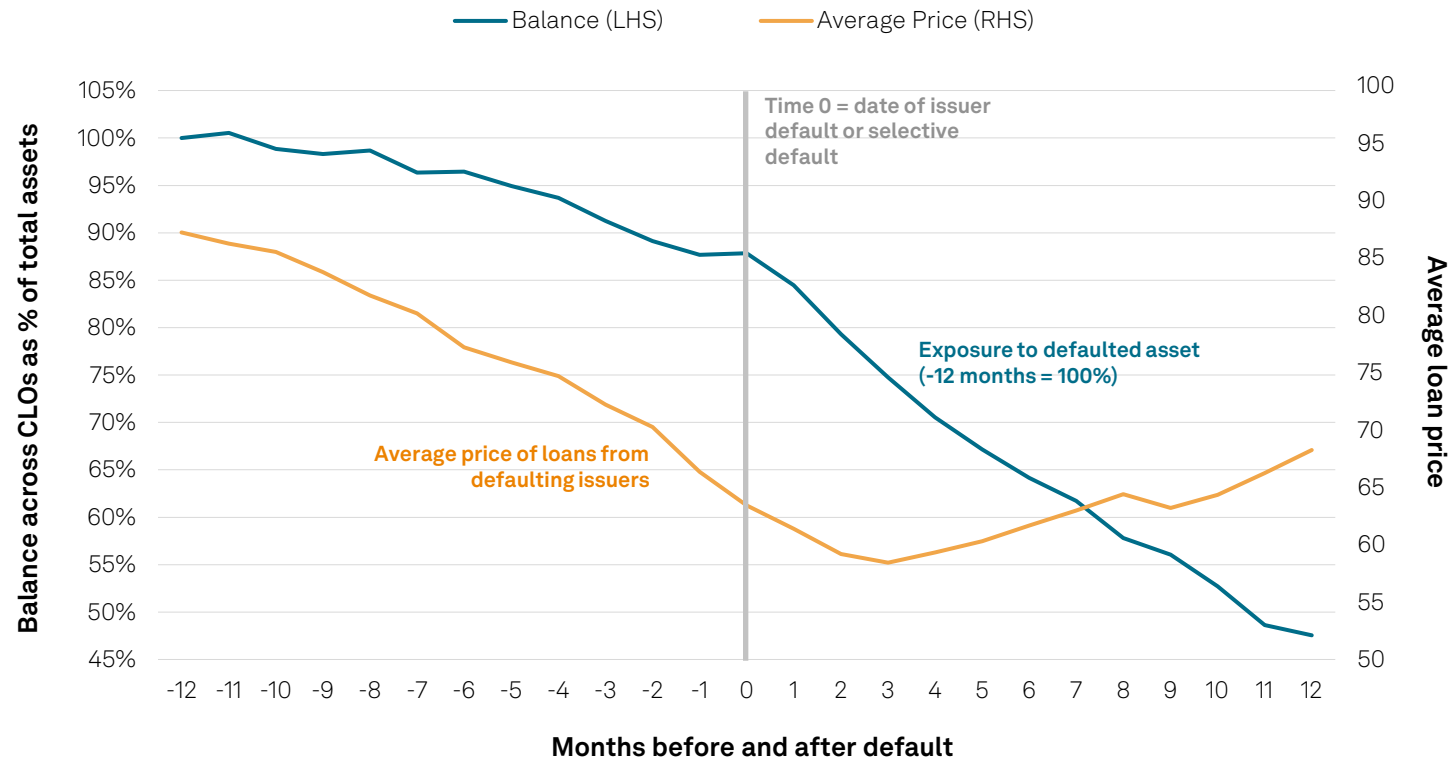


O/C--Overcollateralization. Source: The Impact Of Asset Diversification On CLO Performance, published March 26th, 2024.

- In our prior study on CLO portfolio diversity (see "Can Too Much Diversity Have Negative Effects On CLO Portfolios?" published April 23, 2018), we found that CLO portfolios with low obligor diversity and high industry diversity experienced a higher level of credit deterioration during the GFC as well as the energy slowdown in 2016.
- We found that transactions with low obligor diversity and high industry diversity were more likely to have material exposure to the next industry that would experience stress (for example, energy and retail during the 2016 slowdown).
- We see pressure across several industries (e.g., healthcare, consumer-related, telecom, chemicals, etc.), likely resulting in an outsized negative impact to some CLO portfolios last year.
- In 2023, we find deals with low obligor diversity and high industry diversity experienced notably larger average declines in junior O/C cushions:
- This cohort of transactions experienced above average levels of par loss and default exposure in 2023.

# CLO Research | When Do Managers Sell Defaulted Assets?

Average U.S. BSL CLO exposures and prices one year before and after default



Source: S&P Global Ratings.

- Average U.S. BSL CLO exposures to about 100 issuers that saw their ratings lowered to a nonperforming rating between Jan. 2020 and March 2023.
- Over the 12-month period prior to default, U.S. BSL CLOs, on average, reduced their exposures to 88% by the month of the default.
- Over the 12-month period after the default, U.S. BSL CLOs experienced a sharper decline in exposures, on average, reducing by just over half (48%).
- Average loan prices one year prior to default was about 87; many sellers before the default were able to recover at higher prices while sellers that sold around the time of default experienced lower recoveries.

# CLO Rating Actions | No U.S. CLO ‘AAA’ Tranche Ratings Lowered Since 2012

- No ‘AAA’ rated U.S. CLO tranche has been downgraded since 2012, and that was for a CLO 1.0 transaction. No CLO ‘AAA’ tranche has ever defaulted.
- Despite the steady corporate rating downgrades, our outlook for CLO ratings remains stable, especially for more senior, higher-rated CLO tranches, given the structural protections built into CLOs and rating cushions for most tranches.
- We do expect some CLO tranche rating downgrades, but these should mostly be from subordinate tranches of amortizing CLOs originated prior to the 2020 pandemic.

## U.S. BSL & MM CLO rating upgrades and downgrades (2020-Q1 2024)

U.S. BSL CLO UG							U.S. MM CLO UG						
Orig. rating category	2020	2021	2022	2023	2024Q1	Total (since 2020)	Orig. rating category	2020	2021	2022	2023	2024Q1	Total (since 2020)
AAA						0	AAA						0
AA	5	39	14	29	5	92	AA		3	3		7	13
A	6	47	18	30	5	106	A		5	4	2	8	19
BBB	1	46	20	18	5	90	BBB		4	3	3	2	12
BB		73	24	7		104	BB		3	2	2		7
B	1	45	5	1		52	B						0
Grand total	13	250	81	85	15	444	Grand total	0	15	12	7	17	51
US BSL CLO DG							U.S. MM CLO DG						
Orig. rating category	2020	2021	2022	2023	2024Q1	Total (since 2020)	Orig. rating category	2020	2021	2022	2023	2024Q1	Total (since 2020)
AAA						0	AAA						0
AA	3					3	AA						0
A	11					11	A	1					2
BBB	91	5		2		98	BBB						0
BB	282	7	5	31	5	330	BB	5				1	6
B	105	5	5	15	2	132	B	1					1
Grand total	492	17	10	48	7	574	Grand total	7	0	0	0	1	9

BSL--Broadly syndicated loan. MM--Middle market. UG--Upgrade. DG--Downgrade. Source: S&P Global Ratings.

# CLO Rating Actions | **Thirty Years And 60 CLO Tranche Defaults**

- S&P Global Ratings has rated **more than** 18,000 U.S. CLO tranches since our first CLOs in the mid-1990s. Our CLO ratings history **spans three recessionary periods**: the dot.com bust of 2000-2001, the global financial crisis in 2008-2009, and the recent COVID-19-driven downturn in 2020.
- Over that period, a total of 60 U.S. CLO tranches **have defaulted**: 40 U.S. CLO tranches from CLO 1.0 transactions originated in 2009 or before, and another 20 U.S. CLO 2.0 tranches.
- Across eight other CLO 2.0s, there are two tranches rated ‘CC (sf)’ that are **likely to default** in the future for similar reasons and another six tranches rated ‘CCC- (sf)’ that may default.

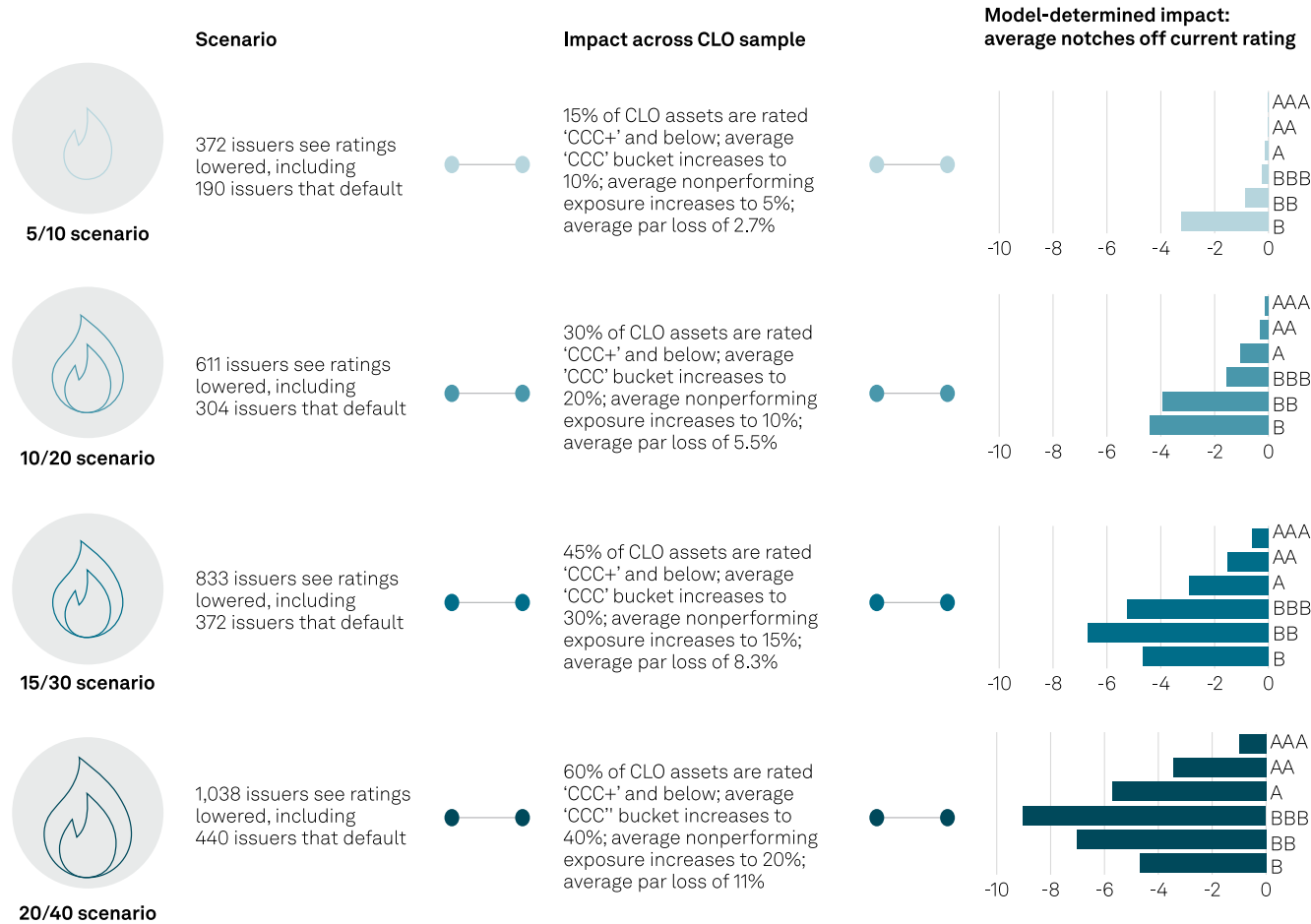
## U.S. BSL and middle-market CLO 1.0 and 2.0 default summary by original rating (no.)

	CLO 1.0 transactions (2009 and prior)			CLO 2.0 transactions (2010 and later)		
	Original ratings(i)	Defaults(ii)	Currently rated	Original ratings(i)	Defaults(ii)	Currently rated
AAA (sf)	1,540	0	0	3,840	0	1,753
AA (sf)	616	1	0	3,112	0	1,498
A (sf)	790	5	0	2,582	0	1,290
BBB (sf)	783	9	0	2,355	0	1,273
BB (sf)	565	22	0	1,919	9	1,043
B (sf)	28	3	0	396	11	182
<b>Total</b>	<b>4,322</b>	<b>40</b>	<b>0</b>	<b>14,204</b>	<b>20</b>	<b>7,039</b>

(i)Original rating counts as of December 31, 2023. (ii)CLO tranche default counts as of April 1, 2024.

Source: [Thirty Years Strong: U.S. CLO Tranche Defaults From 1994 Through First-Quarter 2024](#), published April 2<sup>nd</sup>, 2024

# Scenario Analysis | Rating Stress Scenarios (May 2023 Update)



- These four rating stress scenarios are identical to ones we applied for our scenario analyses published in April 2020, June 2021, and August 2022.
- They 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.
- To achieve the target 'CCC' and default exposures for each of the scenarios, we adjusted the ratings on as many obligors as needed, starting with the weakest (based on rating and then loan price), on average, across our sample of CLOs.
- Note that 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, and others less, but the average ends up at about 5% across the sample).
- Finally, we assume a 45% recovery rate (or par loss given default of 55%) for the purposes of these four stresses.

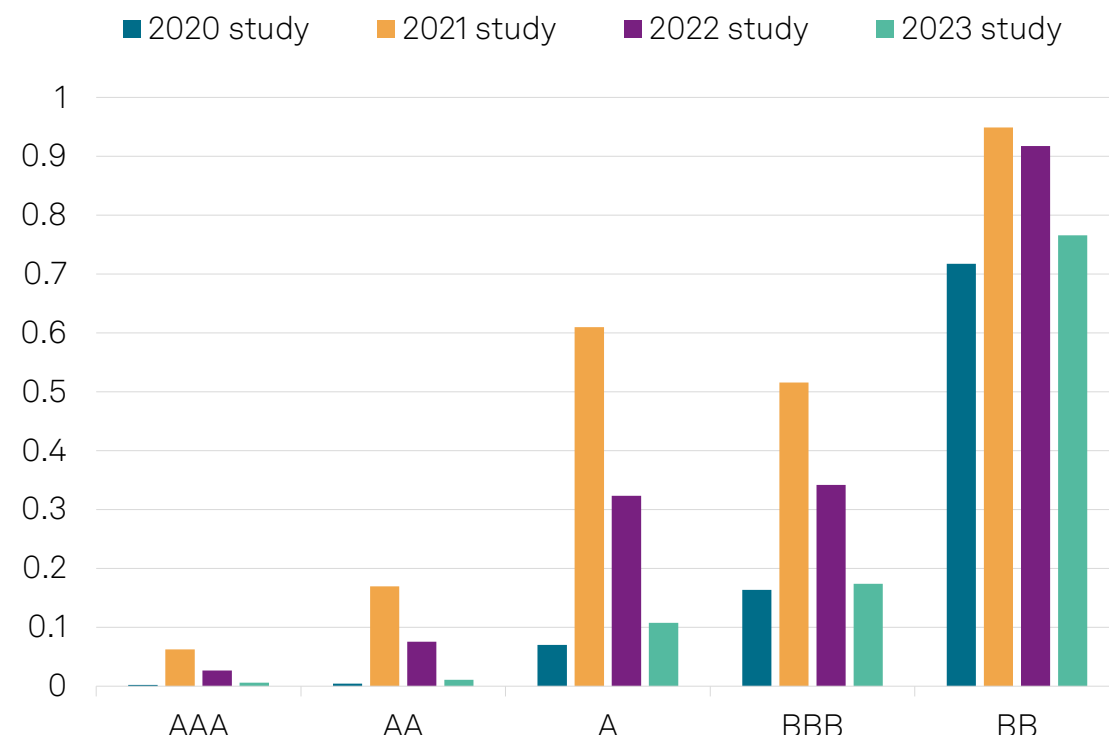
Source: Scenario Analysis: U.S. BSL CLO Rating Performance Under Four Hypothetical Stress Scenarios (2023 Update), published July 18, 2023

# Scenario Analysis | Rating Stress Scenarios (2023 Update)

Current rating category	0 (%)	-1 (%)	-2 (%)	-3 (%)	-4 (%)	-5 (%)	-6 (%)	≥-7 (%)	Avg. Notches	IG (%)	SG (%)	'CCC' (%)	Default (%)
<b>Cash flow results under "5-10" scenario (2023)</b>													
'AAA'	99.3	0.7							(0.0)	100.0			
'AA'	98.9	1.0	0.1						(0.0)	100.0			
'A'	90.9	6.4	2.6		0.1				(0.1)	100.0			
'BBB'	80.4	17.4	1.8	0.1	0.1	0.1		0.1	(0.2)	83.2	16.8	0.1	
'BB'	49.2	33.2	8.6	4.5	2.1	0.9	0.3	1.2	(0.9)		100.0	3.2	1.2
<b>Cash flow results under "10-20" scenario (2023)</b>													
'AAA'	87.0	13.0							(0.1)	100.0			
'AA'	76.5	17.4	5.8		0.1	0.1			(0.3)	100.0			
'A'	39.6	23.7	33.1	1.4	1.5	0.5		0.1	(1.0)	99.4	0.6		
'BBB'	20.1	48.9	10.8	8.7	6.5	1.5	1.3	2.2	(1.6)	22.2	77.8	1.6	0.6
'BB'	6.9	13.9	12.8	12.8	11.3	11.0	5.0	26.2	(3.9)		100.0	27.3	25.6
<b>Cash flow results under "15-30" scenario (2023)</b>													
'AAA'	38.7	61.2	0.1						(0.6)	100.0			
'AA'	22.6	20.3	47.3	4.1	3.3	2.1		0.3	(1.5)	99.8	0.2		
'A'	5.7	4.4	45.3	8.3	17.3	15.2	1.6	2.1	(2.9)	80.8	19.2	0.6	0.1
'BBB'	0.8	10.2	8.9	13.0	15.7	11.0	6.8	33.5	(5.2)	1.9	98.1	16.5	15.7
'BB'	0.6	0.6	0.2	2.4	2.3	3.3	3.9	86.7	(6.7)		100.0	9.8	86.4
<b>Cash flow results under "20-40" scenario (2023)</b>													
'AAA'	11.1	82.3	4.0	1.2	1.3				(1.0)	100.0			
'AA'	6.2	2.9	31.9	7.3	14.2	31.7	1.8	3.9	(3.4)	98.7	1.3	0.1	
'A'	2.0	0.7	6.8	3.3	11.2	38.7	8.4	28.9	(5.7)	25.0	75.0	3.7	1.9
'BBB'	0.4	0.1	0.8	1.8	3.2	2.8	4.5	86.5	(9.0)	0.6	99.4	15.6	70.3
'BB'	0.5		0.2			0.2	0.2	99.1	(7.0)		100.0	0.2	99.1

## Comparison of BSL CLO rating stress test results over the past four years

Average notch downgrade under "5-10" scenario



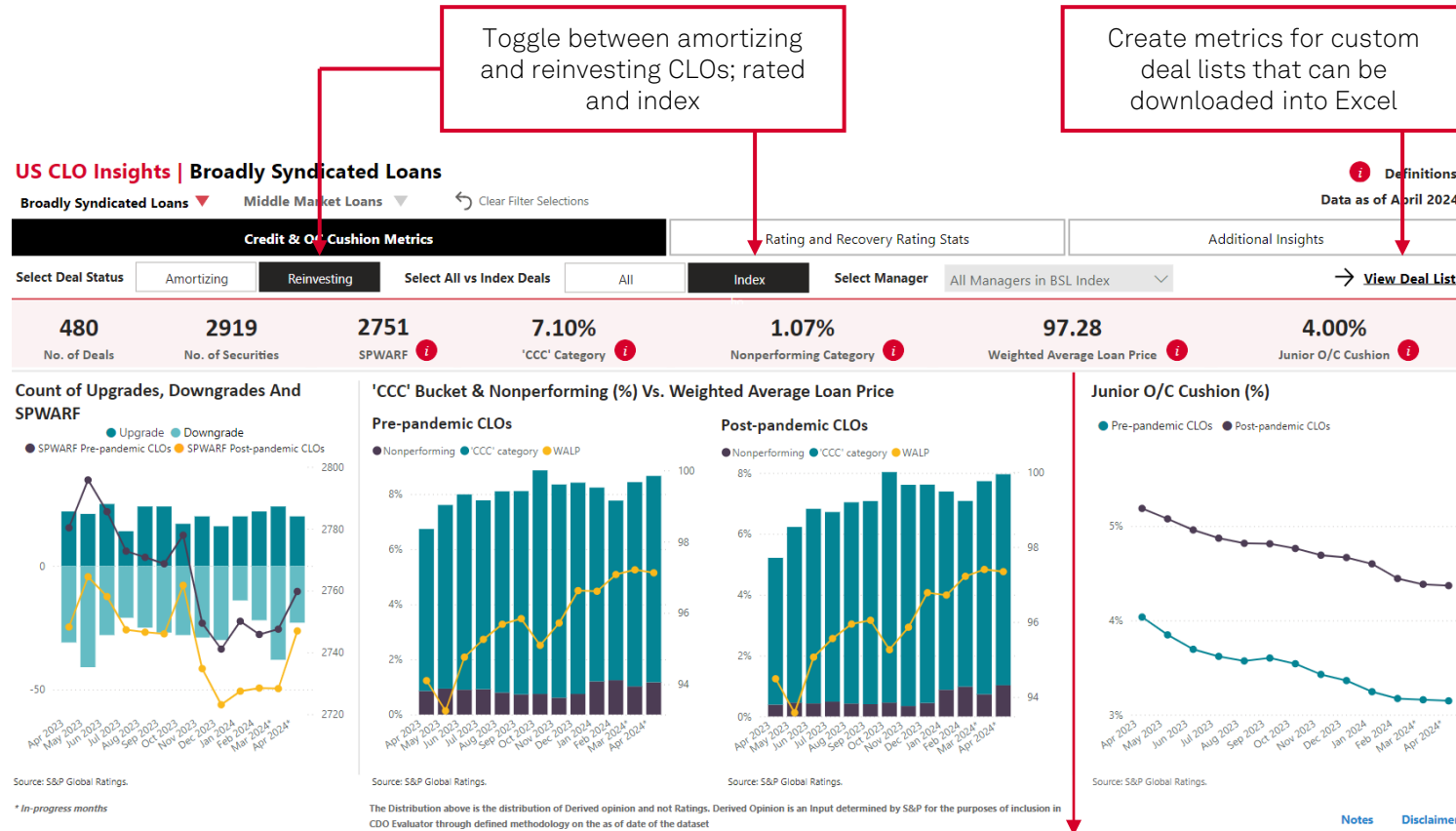
Source: Scenario Analysis: U.S. BSL CLO Rating Performance Under Four Hypothetical Stress Scenarios (2023 Update), published July 18, 2023



## Further Reading | Collateralized Loan Obligations

- [CLO Insights 2024 U.S. BSL Index: 'CCC' Buckets Brush Up Against 7.5% Threshold After Altice France Downgrade](#), published April 29th, 2024
- [SLIDES: Private Credit And Middle-Market CLO Quarterly: Not A Sunset, Just An Eclipse \(Q2 2024\)](#), published April 24th, 2024
- [U.S. BSL CLO Obligors: Corporate Rating Actions Tracker 2024 \(As Of April 12\)](#), published April 18th, 2024
- [U.S. BSL CLO Top Obligors And Industries Report: First-Quarter 2024](#), published April 11th, 2024
- [Thirty Years Strong: U.S. CLO Tranche Defaults From 1994 Through First-Quarter 2024](#), published April 2nd, 2024
- [The Impact Of Asset Diversification On CLO Performance](#), published March 26th, 2024
- [Full-Year 2023 U.S. Corporate Rating Actions Tracker](#), published Jan. 3rd, 2024
- [Managers Matter: Active Management Of U.S. BSL CLOs During Uncertain Times Shows Its Value](#), published Nov. 30th, 2023
- [Scenario Analysis: How Resilient Are Middle-Market CLO Ratings \(2023 Update\)?](#), published Oct. 16, 2023
- [U.S. And European CLOs: A Comparative Overview](#), published Aug. 31, 2023
- [A Closer Look At Uptier Priming And Asset Drop-Down Provisions In U.S. CLOs](#), published July 26, 2023
- [Scenario Analysis: U.S. BSL CLO Rating Performance Under Four Hypothetical Stress Scenarios \(2023 Update\)](#), published July 18, 2023
- [Default, Transition, and Recovery: 2022 Annual Global Leveraged Loan CLO Default And Rating Transition Study](#), published May 26, 2023
- [Good Intentions, Limited Impact: ESG-Excluded Sectors Proliferate In U.S. CLO Indentures](#), published May 16, 2022

# New Dashboard Available On R360!



Source: S&P Global Ratings.

Login today or register for [Ratings360](#) to access the dashboard. Toggle to the Market Insights menu item and select Sector Intelligence

- Interactive dashboard for both US BSL CLOs and US MM CLOs; which can both be filtered by manager.
- Provides a snapshot of key performance metrics for both asset CLO types; compare averaged aggregate metrics with the CLO metrics of a selected manager

New features:

- Toggle between amortizing and reinvesting cohorts;
- Toggle between full rated list and the index from published CLO metrics
- View Deal List function enables creation of custom deal lists which can be downloaded into Excel or PowerPoint.

# Primary Contacts



**Steve Anderberg**

Sector Lead, U.S. CLOs

[stephen.anderberg@spglobal.com](mailto:stephen.anderberg@spglobal.com)



**Daniel Hu**

Director, U.S. CLOs

[daniel.hu@spglobal.com](mailto:daniel.hu@spglobal.com)



**Minesh Patel**

Sector Lead, Leveraged Finance

[minesh.patel@spglobal.com](mailto:minesh.patel@spglobal.com)



**Steve Wilkinson**

Sector Lead, Leveraged Finance & Recoveries

[stephen.wilkinson@spglobal.com](mailto:stephen.wilkinson@spglobal.com)

# Analytical Managers



**Belinda Ghetti**

Analytical Manager U.S. CLOs

[belinda.ghetti@spglobal.com](mailto:belinda.ghetti@spglobal.com)



**Jimmy Kobylinski**

Analytical Manager U.S. CLOs

[jimmy.kobylinski@spglobal.com](mailto:jimmy.kobylinski@spglobal.com)



**Ramki Muthukrishnan**

Analytical Manager U.S. Leveraged Finance

[ramki.muthukrishnan@spglobal.com](mailto:ramki.muthukrishnan@spglobal.com)



## **Market Outreach**

**Rob Jacques**

Director, Market Outreach Americas  
Structured Finance (CLOs & RMBS)

[robert.jacques@spglobal.com](mailto:robert.jacques@spglobal.com)

# Contributors

## Bryan Ayala

Senior Analyst

Leveraged Finance

[bryan.ayala@spglobal.com](mailto:bryan.ayala@spglobal.com)

## Rachel Miles

Ratings Analyst

U.S. CLOs

[rachel.miles@spglobal.com](mailto:rachel.miles@spglobal.com)

## Omkar Athalekar

Senior Analyst

Leveraged Finance

[omkar.athalekar@spglobal.com](mailto:omkar.athalekar@spglobal.com)

## Ian Chandler

Data Manager

Data & Content Management

[ian.chandler@spglobal.com](mailto:ian.chandler@spglobal.com)

## Vijesh MV

Lead Analyst

GAC U.S. CLOs

[Vijesh.MV@spglobal.com](mailto:Vijesh.MV@spglobal.com)

## Hanna Zhang

Director

Leveraged Finance & Recoveries

[hanna.zhang@spglobal.com](mailto:hanna.zhang@spglobal.com)

## Ashish Indapure

Senior Analyst

U.S. CLOs

[ashish.indapure@spglobal.com](mailto:ashish.indapure@spglobal.com)

## Evangelos Savaides

Senior Analyst

Leveraged Finance

[evangelos.savaides@spglobal.com](mailto:evangelos.savaides@spglobal.com)

Copyright © 2024 by Standard & Poor's Financial Services LLC. All rights reserved.

No content (including ratings, credit-related analyses and data, valuations, model, software or other application or output therefrom) or any part thereof (Content) may be modified, reverse engineered, reproduced or distributed in any form by any means, or stored in a database or retrieval system, without the prior written permission of Standard & Poor's Financial Services LLC or its affiliates (collectively, S&P). The Content shall not be used for any unlawful or unauthorized purposes. S&P and any third-party providers, as well as their directors, officers, shareholders, employees or agents (collectively S&P Parties) do not guarantee the accuracy, completeness, timeliness or availability of the Content. S&P Parties are not responsible for any errors or omissions (negligent or otherwise), regardless of the cause, for the results obtained from the use of the Content, or for the security or maintenance of any data input by the user. The Content is provided on an "as is" basis. S&P PARTIES DISCLAIM ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED, OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Parties be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs or losses caused by negligence) in connection with any use of the Content even if advised of the possibility of such damages.

Credit-related and other analyses, including ratings, and statements in the Content are statements of opinion as of the date they are expressed and not statements of fact. S&P's opinions, analyses, and rating acknowledgment decisions (described below) are not recommendations to purchase, hold, or sell any securities or to make any investment decisions, and do not address the suitability of any security. S&P assumes no obligation to update the Content following publication in any form or format. The Content should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. S&P does not act as a fiduciary or an investment advisor except where registered as such. While S&P has obtained information from sources it believes to be reliable, S&P does not perform an audit and undertakes no duty of due diligence or independent verification of any information it receives. Rating-related publications may be published for a variety of reasons that are not necessarily dependent on action by rating committees, including, but not limited to, the publication of a periodic update on a credit rating and related analyses.

To the extent that regulatory authorities allow a rating agency to acknowledge in one jurisdiction a rating issued in another jurisdiction for certain regulatory purposes, S&P reserves the right to assign, withdraw, or suspend such acknowledgement at any time and in its sole discretion. S&P Parties disclaim any duty whatsoever arising out of the assignment, withdrawal, or suspension of an acknowledgment as well as any liability for any damage alleged to have been suffered on account thereof.

S&P keeps certain activities of its business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain business units of S&P may have information that is not available to other S&P business units. S&P has established policies and procedures to maintain the confidentiality of certain nonpublic information received in connection with each analytical process.

S&P may receive compensation for its ratings and certain analyses, normally from issuers or underwriters of securities or from obligors. S&P reserves the right to disseminate its opinions and analyses. S&P's public ratings and analyses are made available on its Web sites, [www.spglobal.com/ratings](http://www.spglobal.com/ratings) (free of charge) and [www.ratingsdirect.com](http://www.ratingsdirect.com) (subscription) and may be distributed through other means, including via S&P publications and third-party redistributors. Additional information about our ratings fees is available at [www.spglobal.com/ratings/usratingsfees](http://www.spglobal.com/ratings/usratingsfees).

Australia: S&P Global Ratings Australia Pty Ltd holds Australian financial services license number 337565 under the Corporations Act 2001. S&P Global Ratings' credit ratings and related research are not intended for and must not be distributed to any person in Australia other than a wholesale client (as defined in Chapter 7 of the Corporations Act).

STANDARD & POOR'S, S&P and RATINGSDIRECT are registered trademarks of Standard & Poor's Financial Services LLC.

## **spglobal.com/ratings**

---

**S&P Global**  
Ratings