S&P Global
Ratings

U.S. BSL CLO And Leveraged Finance Quarterly:
Is Winter Coming?

Q4 2022

Stephen Anderberg

Daniel Hu

Minesh Patel

Steve Wilkinson

Nov. 4, 2022

This report does not constitute a rating action

U.S. Leveraged Finance | Key Takeaways

- Operating and market conditions will likely remain under stress and worsen further amid our call for a shallow economic recession in early 2023. We expect heightened credit stress in late 2022 - early 2023. Risks remain firmly weighted to the downside.
- Downgrades have modestly outpaced upgrades since May for North American leveraged finance credits, with the consumer products sector leading the downturn. Resilient operating performance through the second quarter has softened the ratings impact thus far.
- Cash flow deficits are our most significant concern for issuers rated 'B' and lower. As of June 30, 2022, the median free operating cash flow (FOCF)-to-debt for ‘B-’ issuers was -1.2%. Earnings shortfalls or downward forecast revisions will ratchet up the proportion of downgrades and negative outlook revisions.
- U.S. corporate debt maturities pose a seemingly little problem in the next 12-18 months. However, ratings pressure for highly leveraged issuers will increase 12 months before a debt maturity date if financing conditions remain challenging.
- We expect the trailing-12-month speculative-grade and Leveraged Loan Index default rates to more than double, to 3.5% and 2.0% by June 2023, respectively, but remain below the historical averages of 4.1% and 2.5%.

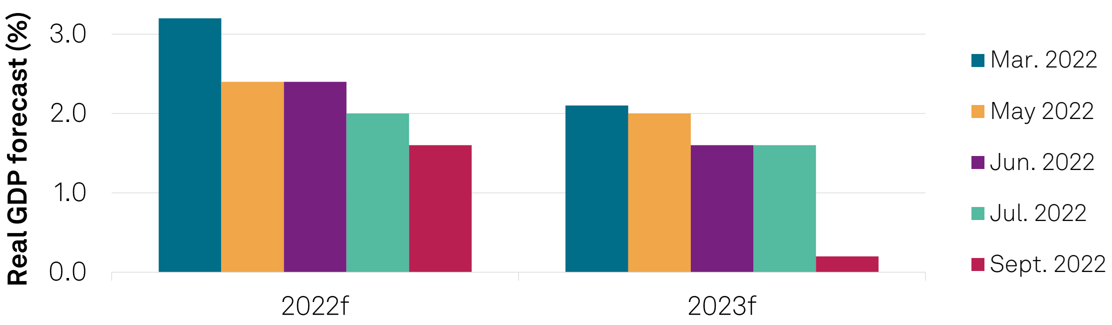
U.S. Leveraged Finance | Key Risks

- A prolonged period of low economic growth results in liquidity shortfalls: High interest rates, combined with inflationary pressure and a prolonged period of weak growth or negative cash flow generation will be challenging for highly indebted borrowers.
- Aggressive debt exchanges become common: Weak credit documentation, low debt trading prices, falling business valuations, and evolving market practices for out-of-court restructurings could incentivize financial sponsors to utilize broad debt agreement flexibility to protect their investments, to the detriment of existing lenders.
- Cost inflation, supply issues, and labor constraints become embedded: Inflation has proven persistent amid various disruptions and operating challenges (Russia-Ukraine, high energy and labor prices, geopolitical tensions, redesigned supply chains, COVID-driven shutdowns).

U.S. Leveraged Finance | What Are We Watching In Fourth Quarter?

1. The Level And Persistence Of The Slowdown

Declining U.S. GDP Expectations



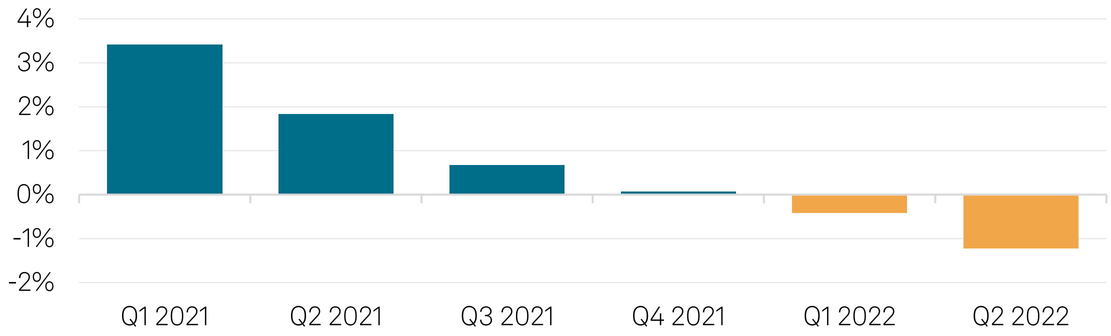
2. Consumer Spending And Earnings Growth

Issuer Credit Rating*	Entity count (No.)	Median EBITDA growth Q/Q (%), reported last 12 months					
		Mar. 31, 2021	Jun. 30, 2021	Sep. 30, 2021	Dec. 31, 2021	Mar. 31, 2022	Jun. 30, 2022
BB+	117	5.1%	11.0%	4.5%	5.0%	3.4%	2.5%
BB	115	4.5%	10.6%	4.4%	1.8%	1.8%	2.3%
BB-	102	6.9%	15.4%	4.8%	4.9%	2.9%	0.1%
B+	157	7.8%	15.0%	7.3%	5.7%	4.1%	1.8%
B	206	5.0%	11.3%	6.8%	4.5%	3.7%	5.3%
B-	266	5.0%	7.2%	3.4%	2.8%	1.5%	1.6%
CCC+	74	-5.5%	6.6%	1.2%	-1.5%	-1.3%	6.6%
CCC	26	2.1%	11.5%	-9.7%	-2.1%	-5.1%	-2.0%
CCC-	6	4.5%	14.0%	-8.0%	-12.1%	-1.3%	-34.7%
CC	2	5.4%	-3.7%	1.4%	-5.1%	-10.2%	-1.8%
Total	**1,071**	**5.0%**	**10.9%**	**4.5%**	**3.9%**	**2.8%**	**2.3%**

Median EBITDA growth 12-month ended.

3. 'B-' Issuer Downgrade Risk

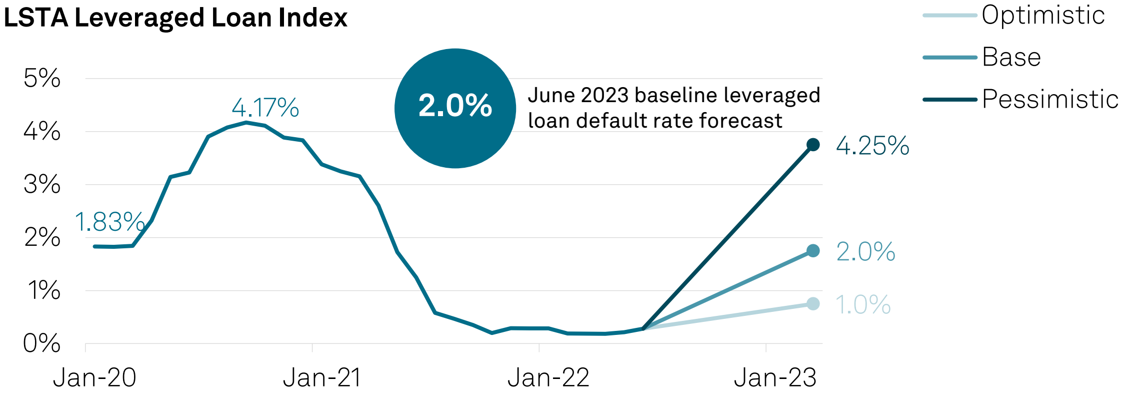
Median Free Operating Cash Flow (FOCF)-To-Debt for 'B-' Issuers



f-forecast. Source: S&P Global Ratings.

4. Leveraged Loan Default Forecast (June 2023)

LSTA Leveraged Loan Index

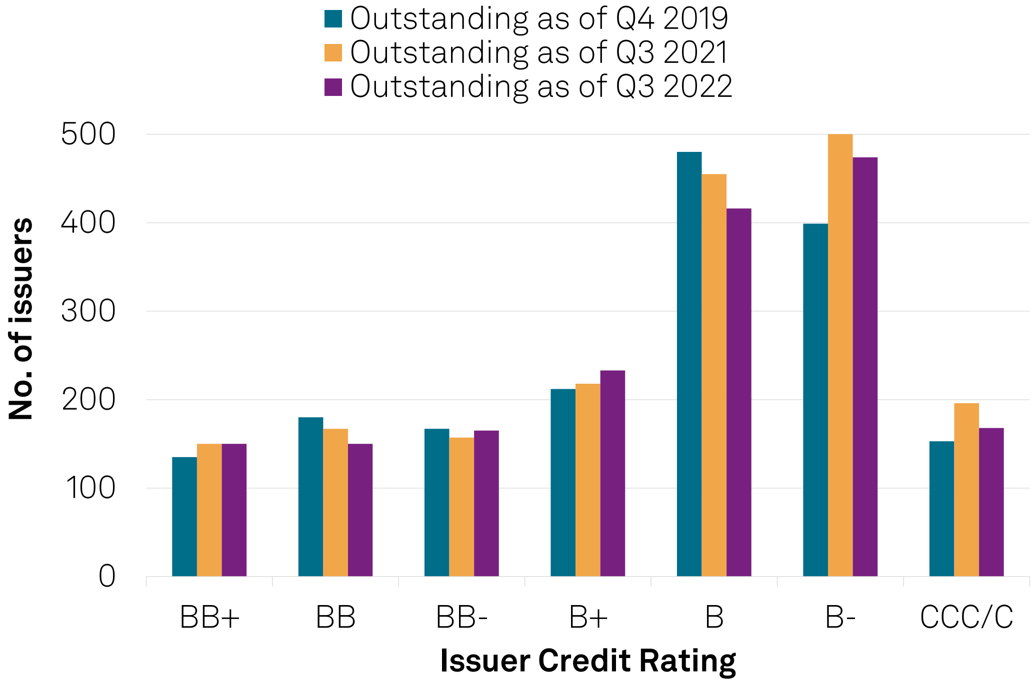


2.0% June 2023 baseline leveraged loan default rate forecast

S&P Global Ratings

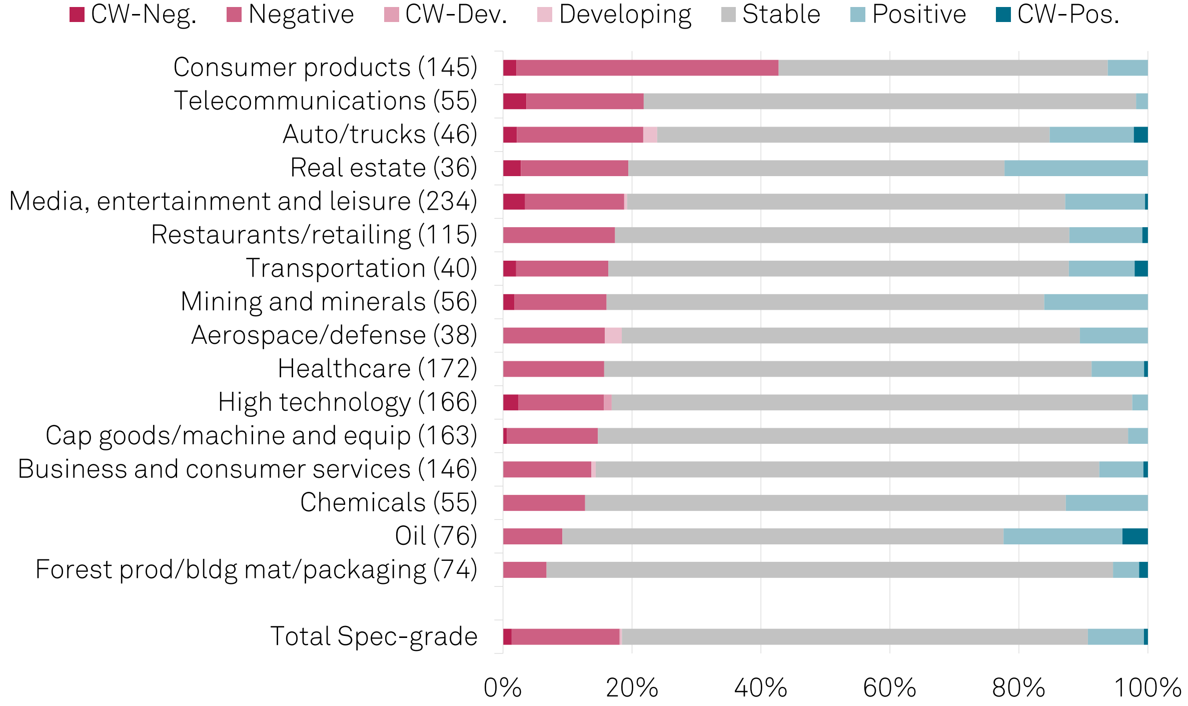
Ratings Mix | Rating Mix Remains Concentrated At Low Levels; Negative Outlooks Increasing But Remain Below Historical Averages

Spec-Grade Ratings Distribution By Issuer Credit Rating (ICR): U.S. And Canada



Note: U.S. and Canada corporate ratings. Source: S&P Global Ratings U.S. and Canada ratings.

Spec-Grade Rating Outlook By Sector: U.S. And Canada

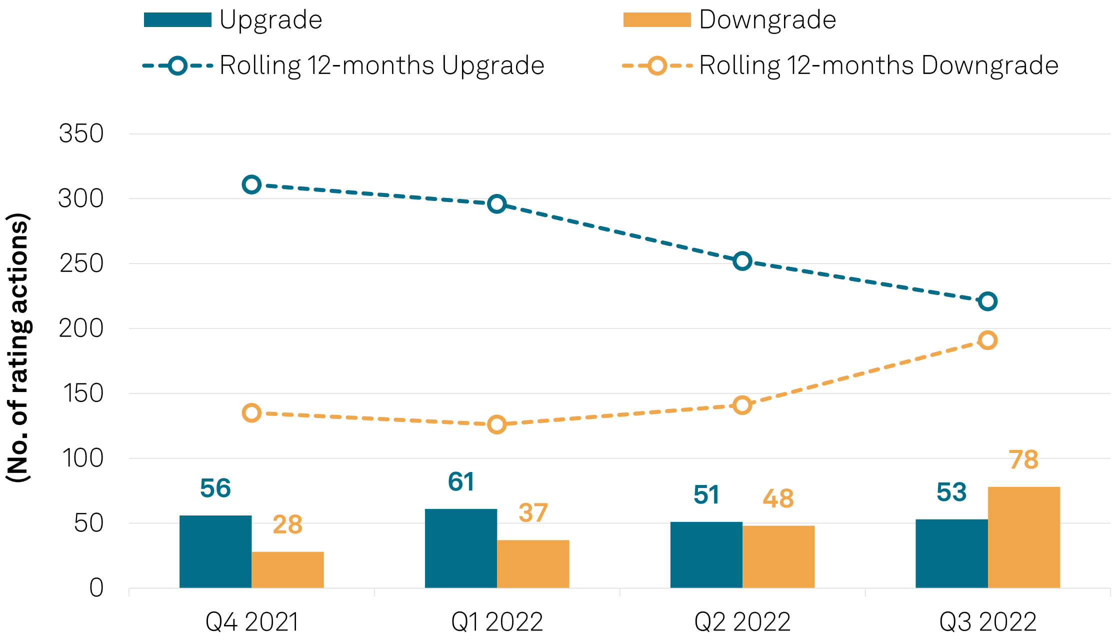


Data as of Oct 22, 2022. The numbers within parentheses represents the total number of issuers within the sector. CW--CreditWatch. Source: S&P Global Ratings U.S. and Canada ratings.

Ratings Mix | Credit Trends Turn Negative As Economic Tailwinds Flag And Headwinds Mount

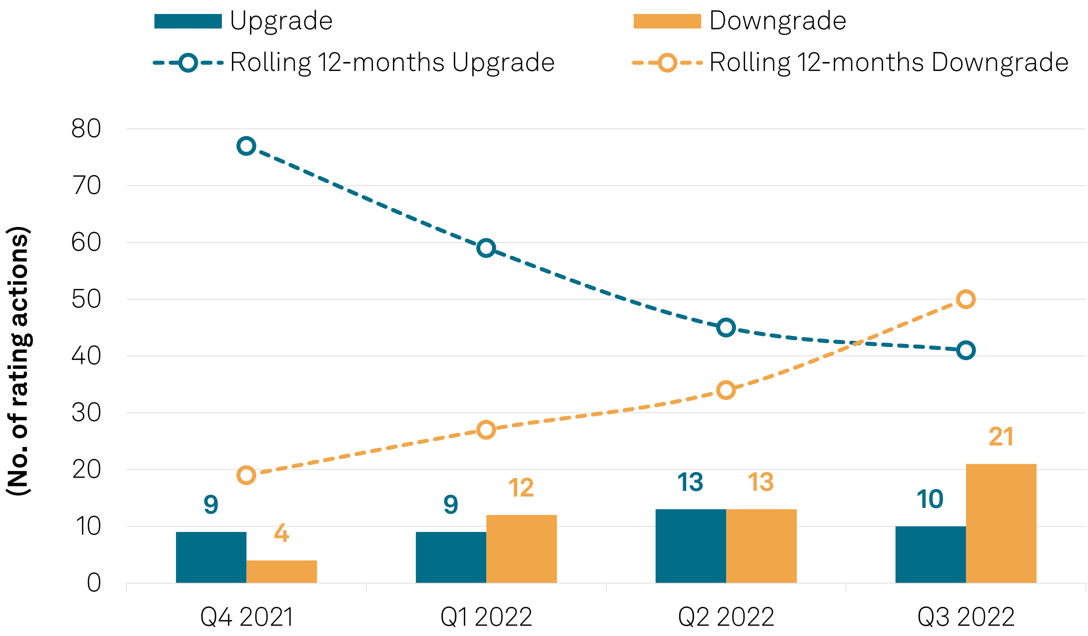
Economic growth and supportive capital markets have boosted speculative-grade issuer ratings (U.S. and Canadian nonfinancial corporates) in 2021, but the positive net rating momentum stalled in May 2022.

Speculative-Grade Upgrades And Downgrades



Source: S&P Global Ratings U.S. and Canada ratings.

Ratings Coming Into/Out Of 'CCC'/'CC' Categories



Source: S&P Global Ratings U.S. and Canada ratings.

S&P Global
Ratings

Credit Trends | Earnings Growth Slows, Cash Flow Generation Falls

Speculative-Grade Earnings Growth (U.S. And Canada)

		Median EBITDA growth (%), reported last 12 months					
Industry	**Entity count (no.)**	**Q1 2021**	**Q2 2021**	**Q3 2021**	**Q4 2021**	**Q1 2022**	**Q2 2022**
Aerospace/defense	27	-0.4	1.9	3.6	4.4	-0.4	-0.3
Auto/trucks	34	15.3	32.7	3.3	4.4	1.1	4.3
Business and consumer services	92	3.0	5.9	3.5	3.9	2.7	3.5
Cap goods/machine and equipment	115	3.6	5.0	1.8	1.4	3.4	5.1
Chemicals	33	5.8	12.1	7.5	2.8	2.3	2.9
Consumer products	98	7.4	8.1	1.5	0.9	-1.2	-0.5
Forest prod/building material/packaging	44	7.9	11.2	1.3	1.0	7.9	10.2
Health care	94	8.9	8.7	3.3	0.2	-0.4	-2.0
Media, entertainment, and leisure	148	2.8	26.3	9.4	5.5	4.7	2.8
Mining and minerals	46	7.0	22.0	14.3	11.2	10.1	7.1
Oil and gas	68	1.4	37.5	25.3	35.4	18.0	27.8
Restaurants/retailing	86	9.4	28.9	1.7	4.5	0.7	-1.3
Real estate	20	2.5	6.8	4.6	5.2	3.6	5.0
Technology	95	6.6	5.4	4.6	4.7	2.6	0.2
Telecommunications	45	3.2	2.9	1.2	-0.7	-1.4	-2.8
Transportation	26	-1.8	22.3	12.2	10.6	1.3	3.7
Total	**1,071**	**5.0**	**10.9**	**4.5**	**3.9**	**2.8**	**2.3**

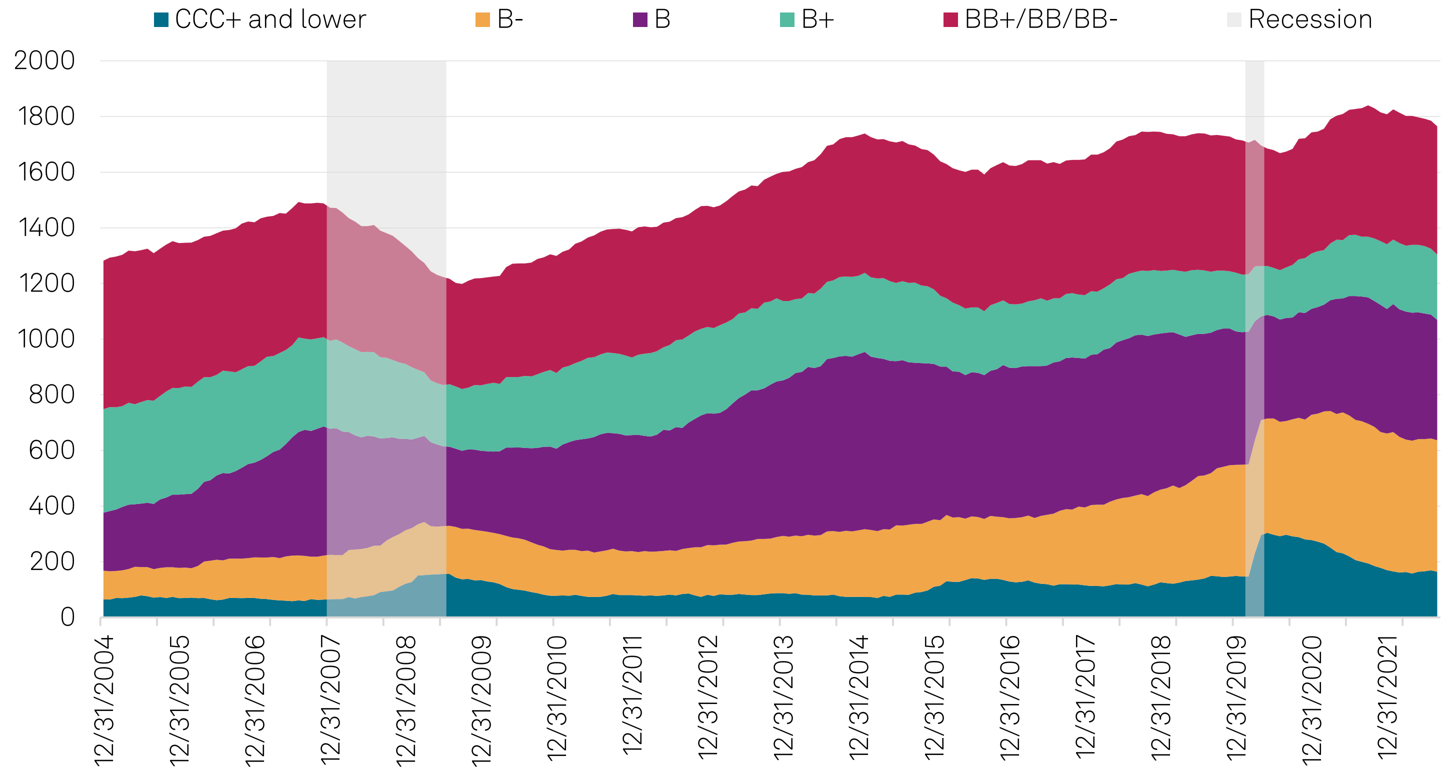
Speculative-Grade Reported FOCF-to-Debt (U.S. And Canada)

		Median free operating cash flow to debt (%), reported last 12 months							
Industry	**Entity count (no.)**	**2019**	**2020**	**Q1 2021**	**Q2 2021**	**Q3 2021**	**Q4 2021**	**Q1 2022**	**Q2 2022**
Aerospace/defense	27	6.1	4.8	7.0	8.8	4.0	5.7	4.1	6.7
Auto/trucks	34	7.3	8.8	8.7	11.8	2.1	-0.4	-2.7	-1.2
Business and consumer services	92	5.0	6.1	7.7	6.2	4.4	3.3	2.7	2.0
Cap goods/machine and equipment	115	3.1	8.3	8.6	5.7	2.8	0.8	0.0	-0.2
Chemicals	33	3.9	2.8	4.9	4.6	2.8	4.9	2.6	0.5
Consumer products	98	6.2	9.1	8.4	6.5	4.1	2.6	1.1	1.0
Forest product/building material/packaging	44	9.4	14.4	15.2	10.7	4.9	3.0	0.8	1.2
Health care	94	1.6	4.9	7.2	4.2	2.9	1.9	1.3	0.2
Media, entertainment, and leisure	148	6.6	4.4	4.8	7.3	5.4	4.2	4.4	5.2
Mining and minerals	46	6.5	6.5	8.2	6.1	6.1	10.1	10.2	11.9
Oil and gas	68	0.7	2.7	4.5	4.9	6.3	10.5	13.1	22.8
Restaurants/retailing	86	4.4	13.4	14.0	14.3	11.2	9.2	5.8	2.6
Real estate	20	5.8	6.8	10.7	6.9	3.4	-1.0	-0.3	2.0
Technology	95	3.9	7.0	8.9	9.5	9.1	7.5	6.8	6.0
Telecommunications	45	2.1	4.1	6.4	4.6	3.8	3.8	3.0	2.4
Transportation	26	1.7	-1.8	-1.2	1.3	0.7	3.4	3.3	1.0
Total	**1,071**	**4.4**	**6.7**	**7.2**	**6.5**	**5.2**	**4.3**	**3.2**	**2.4**

Covers U.S. and Canadian nonfinancial corporate ratings. Rating as of Sep. 22, 2022; 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. FOCF--Free operating cash flow. LTM--Last 12 months. Source: S&P Global Ratings U.S. and Canada ratings.

Ratings Mix | Expansion Of Rated Universe At Bottom Rungs Is A Long-Term Trend

U.S. And Canada Nonfinancial Corporate Issuer Count By Spec-Grade Rating Category (Through Aug. 31, 2022)



Data as of Aug. 31, 2022. Source: S&P Global Ratings.

- **Speculative-grade ratings are skewed to ‘B’ and ‘B-’,** which now account for about 52% of the portfolio, up 4.4% from Dec. 2020.
- **Issuers rated ‘CCC+’ and below have declined to about 9% from about 16% in Dec. 2020.** The median proportion of this population over the 17-year time series is 6%.
- **More than half of current ‘B-’ issuers had a ‘B-’ initial rating,** highlighting increasing accommodating financing conditions and higher debt leverage in recent years.

Impact Of Rising Costs | Ability To Pass Through Costs And EBITDA Margin Impact Vary By Sector For U.S. And Canadian Issuers

Average EBITDA Margins In 2022 Vs. 2021

Question: Reflecting your assumptions for costs, product mix, and any other relevant factors, how do you expect average EBITDA margins to develop for 2022 versus 2021?

Cost pass-through ability

Question: How easy is it to pass on cost increases?

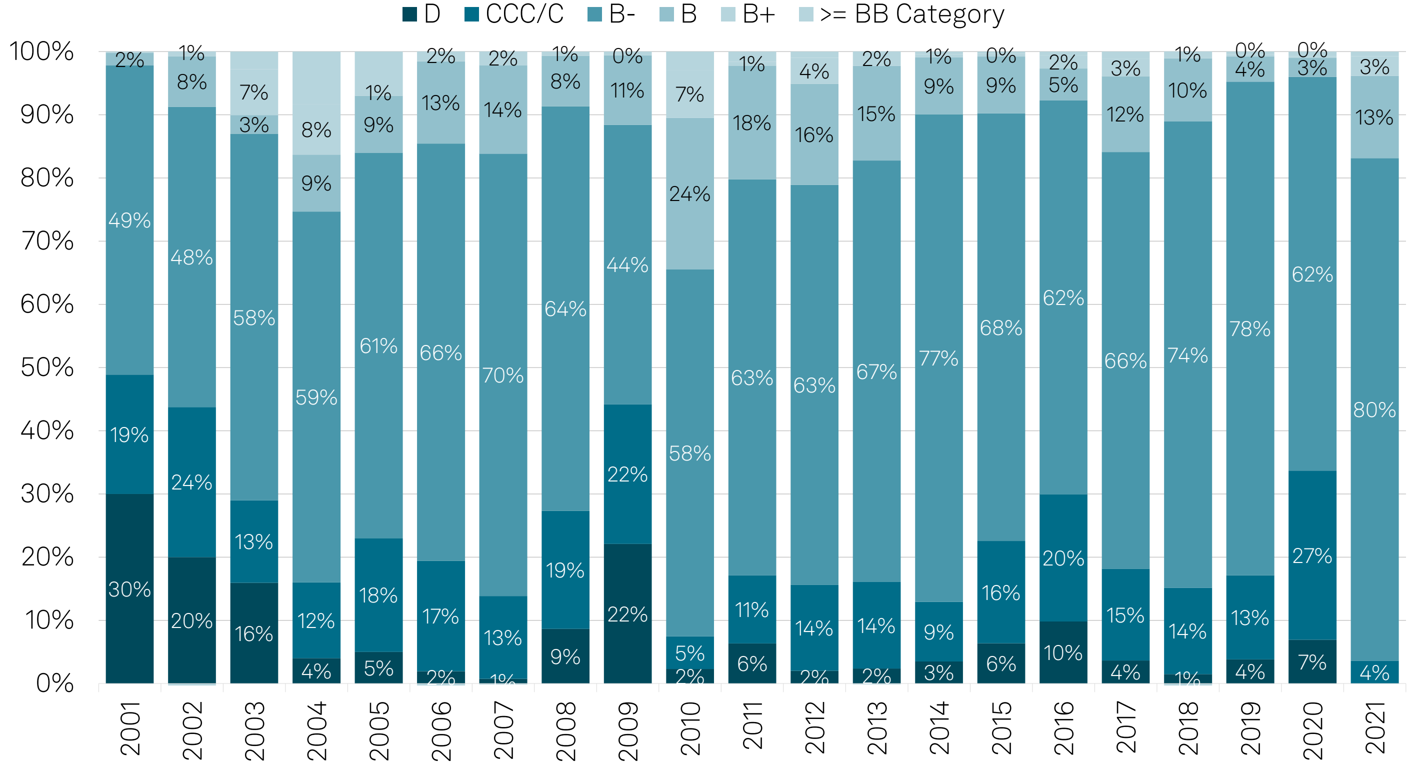
	Rise a lot	Rise moderately	Rise a little	Fall a little	Fall moderately	Fall a lot
Very easy		– Out-of-home entertainment		– Metals and mining – Regulated utilities		
Somewhat easy	– Airlines – Cruise – Lodging	– Aerospace and defense – Unregulated power	– Containers and packaging – Leisure manufacturing – Pharma – Technology	– Autos – Building materials – Capital goods – Chemicals – Engineering & construction – Freight transportation – Gaming – Homebuilders – REITs – Telecom		
Impossible to generalize	– Oil and gas – Oil refineries			– Business & technology services – Midstream energy		
Somewhat difficult				– Health care services	– Film and TV programming production – Homebuilders	– Retail and restaurants
Very difficult				Sectors most at risk represent -19% of assets in BSL CLOs		– Consumer products

Source: S&P Global Ratings' corporate sector analysts' assessment as of Sept. 20, 2022. See "Credit Conditions North America Q4 2022 Credit Strains Tighten" published Sept. 27, 2022.

- Earnings in most corporate sectors have returned to (or exceed) pre-pandemic levels, with some exceptions including the leisure and airline sectors.
- High levels of refinancings in 2021 resulted in improved liquidity, lower corporate debt costs, and an extended maturity wall.
- Nevertheless, weakening demand remains a key risk we're monitoring. The number of companies issuing negative earnings guidance is rising, and many are revising guidance downward or are temporarily suspending it.
- The wealth effect that is supporting spending in the face of inflation may be fading.

Ratings Transitions | In Recessionary Periods ‘B-’ Issuer Downgrades Can Spike Well Above 30%

U.S & Canadian Corporate Speculative-Grade ‘B-’ One Year Ratings Transitions (Static Portfolio)

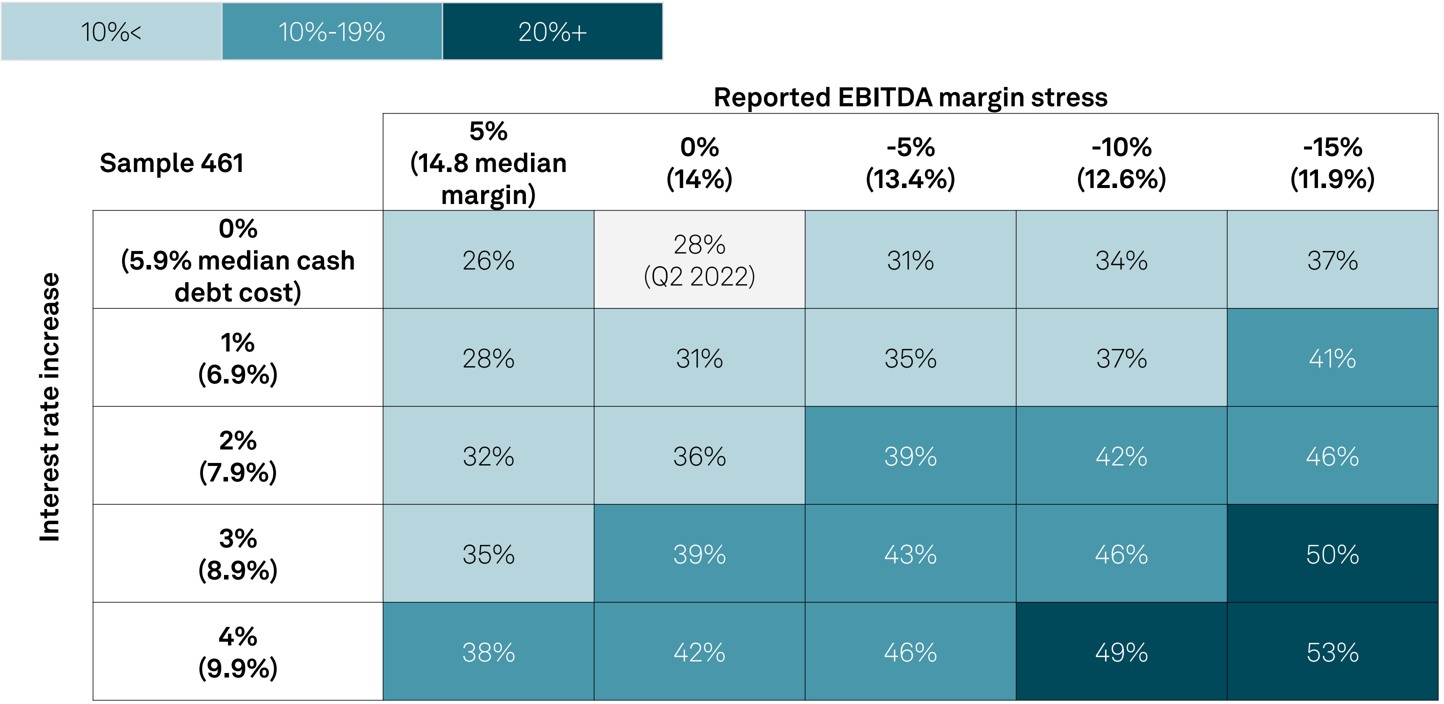


Data as of December 2021. Source: S&P Global Ratings CreditPro. Reflects a static portfolio and one year rating transitions. Excludes Financial and Insurance Services.

- **The worst year for ‘B-’ issuer downgrades was 2001 when 49% of ‘B-’ issuers were lowered.** In the 2009 and 2020 recessionary time periods, the percentage downgraded was 44% and 34%, respectively (compared to 2001-2021 median/average of about 18%/23%).
- **Issuers upgraded out of the ‘CCC’ category normally increases in the year following the recessionary period.** In 2010 and 2021, approximately 32% and 31% were upgraded (compared to 2001-2021 median/average of about 13%/14%)

Issuer Stress Testing | Increase In ‘B-’ Issuers “At Risk” Of A Downgrade Under Downside Scenarios

Assessing “At Risk” Credits in the Aggregate ‘B-’ Issuer Portfolio



Color Key: Increase in the percentage of ‘B-’ issuers “at risk”

10%<	10%-19%	20%+

Interest rate increase	Reported EBITDA margin stress				
Sample 461	**5% (14.8 median margin)**	**0% (14%)**	**-5% (13.4%)**	**-10% (12.6%)**	**-15% (11.9%)**
0% (5.9% median cash debt cost)	26%	28% (Q2 2022)	31%	34%	37%
1% (6.9%)	28%	31%	35%	37%	41%
2% (7.9%)	32%	36%	39%	42%	46%
3% (8.9%)	35%	39%	43%	46%	50%
4% (9.9%)	38%	42%	46%	49%	53%

Last 12-month data reflect the last available financials as of Oct 22, 2022. For this study, we define “at risk” if an issuer meets three of the following four credit factors under alternative stress scenarios: (1) reported free operating cash flow (FOCF) deficits * -2 < current cash balances; (2) reported leverage >= 8.5x; (3) reported cash interest coverage <= 1.1x; and (4) reported FOCF-to-debt <= (3%). Data as of June 30th, 2022. Source: S&P Global Ratings.

Currently, about 28% of our ‘B-’ issuers are at risk of a rating downgrade based on last-12-month credit measures. Their credit measures met at least three of the following four metrics:

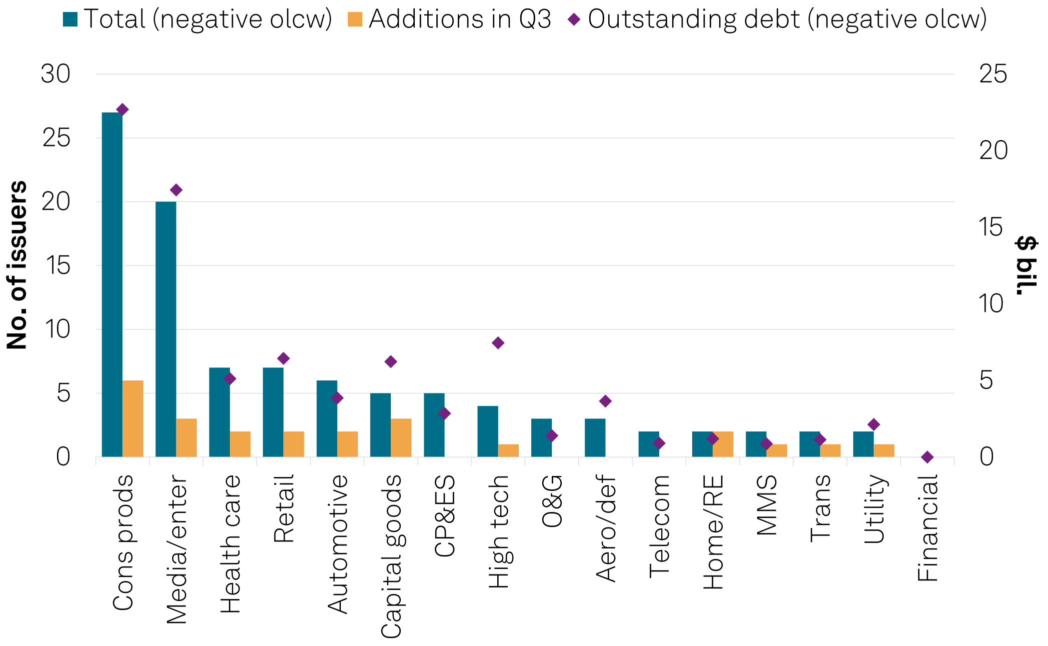
- Reported FOCF deficits * -2 > current cash balances;
- Reported leverage > 8.5x;
- Reported cash interest coverage < 1.1x; and
- Reported FOCF-to-debt < (3%).

If credit measures do not improve as expected, possibly due to a protracted recession, the population of highly vulnerable issuers will sharply increase over the next 12 months.

‘CCC’ Category | ‘CCC’ Issuers Account For About 9% Of U.S. Ratings

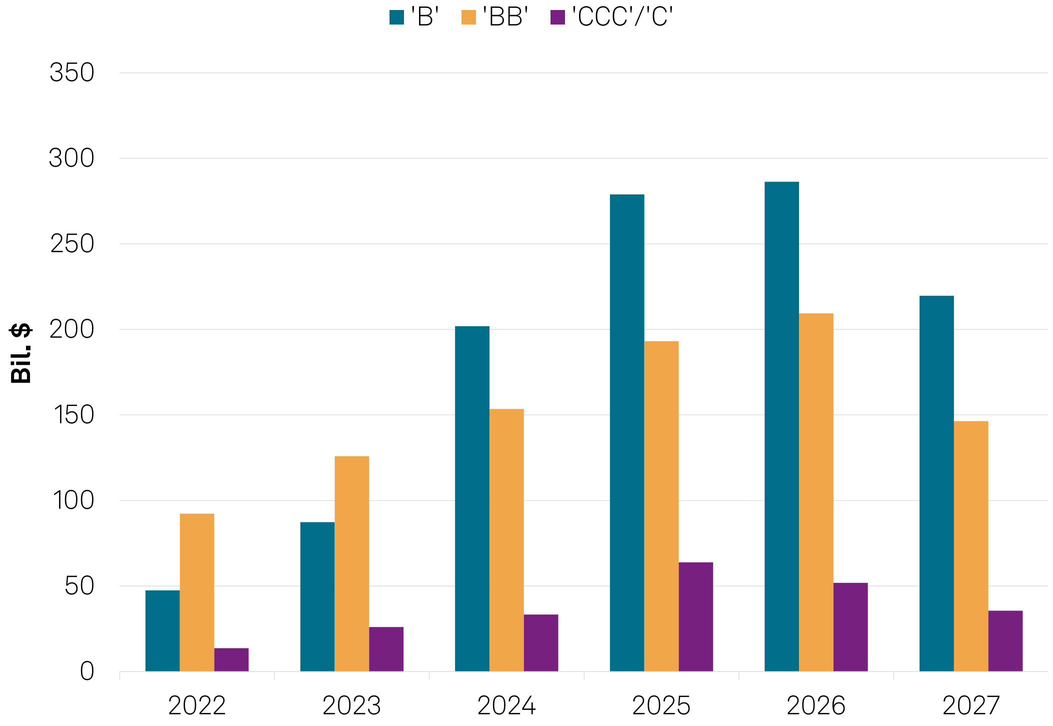
The Consumer Products Sector Is Most Exposed To The Operating Environment

Consumer Sector At Risk Due To Recession Fear And Inflation
'CCC/C' rated issuers



Data as of Sept. 30, 2022. Count and debt are based on issuer with negative outlook or CreditWatch status (olcw).
Source: S&P Global Ratings Research.

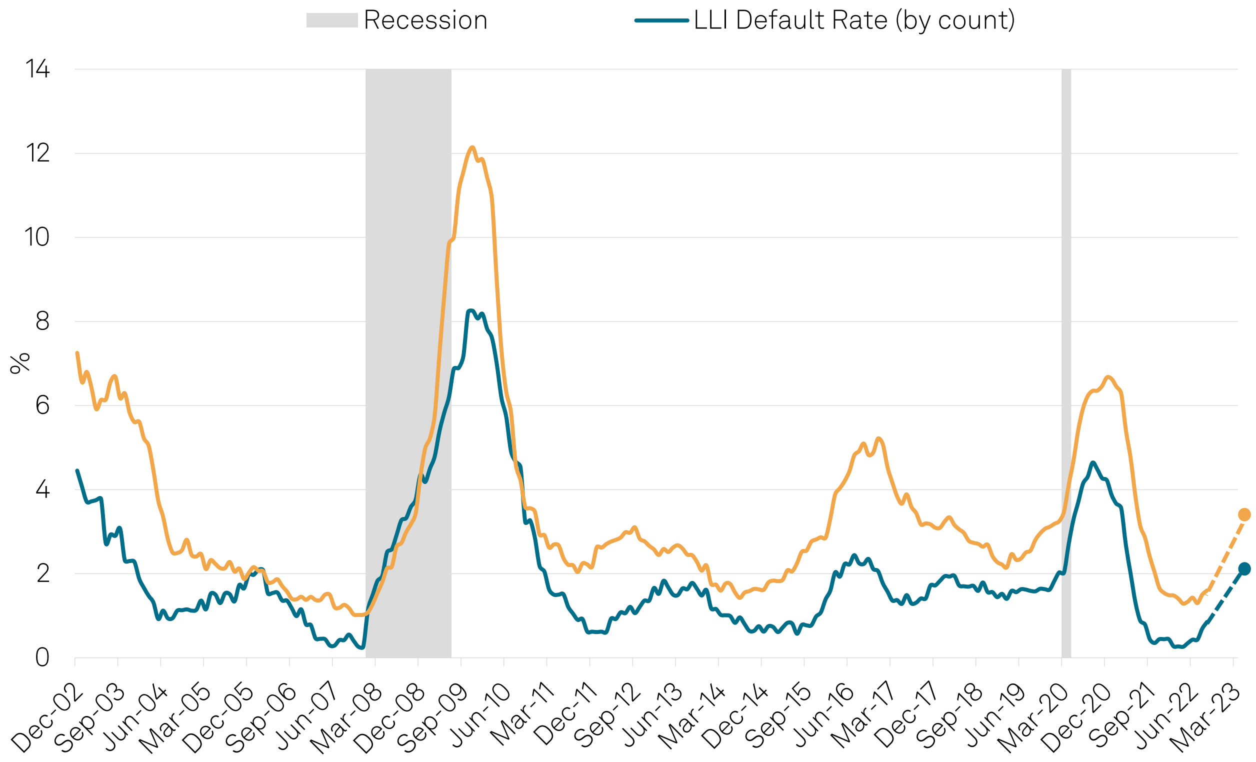
The North American 'CCC+' And Below Maturity Wall Remains Largely Manageable



Data as of Dec. 31, 2021. Sources: S&P Global Ratings Research and Thomson Reuters.

U.S. Default Rates | Expected To Double By Q2 2023, But Remain Below Historical Averages (4.1% For Spec-Grade Overall, 2.5% For LLI)

LTM Default Rates (Including Estimates Through 9/30/2022, In %, By Issuer Count)



S&P Global Ratings' forecast of 3.5% spec-grade default rate for June 2023

S&P Global Ratings' forecast of 2.0% LSTA Leveraged Loan Index default rate for June 2023

Measures of LLI defaults exclude nonloan defaults and selective defaults. LTM--Last 12 months. Sources: Default, Transition, and Recovery: Global Corporate Default articles. https://www.capitaliq.com/CIQDotNet/CreditResearch/SPResearch.aspx?DocumentId=51666471&From=SNP_CRS.

Two Default Rate Forecasts:

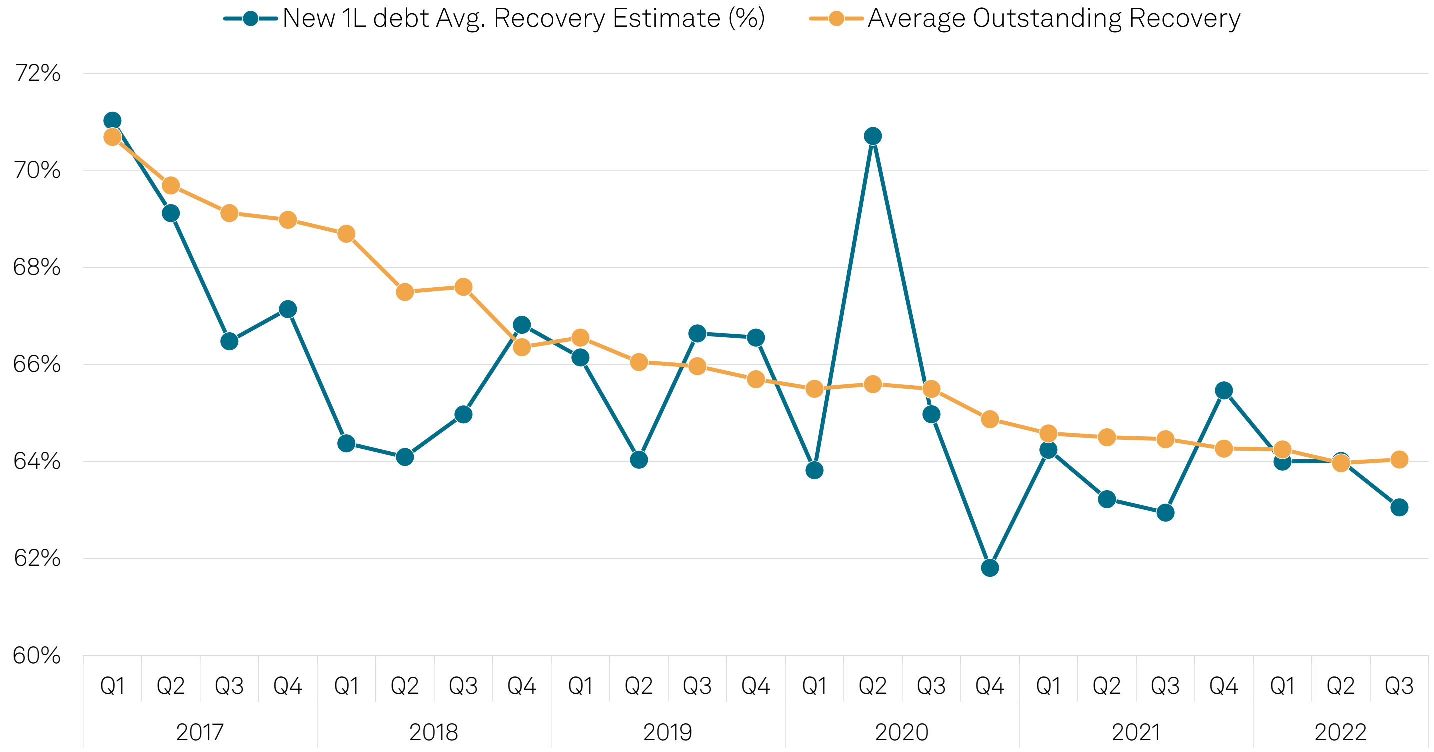
- Our overall spec-grade default rate is calculated on an issuer count basis for all bond and loan defaults, **including** selective defaults.
- Default rates for the LSTA US Leveraged Loan Index (LLI) **exclude** bond defaults and selective defaults.
- Selective defaults are significant, representing -47% of all spec-grade defaults in 2020 and -69% in 2021.
- After spiking in late 2020, default rates declined rapidly, but began to increase in Q2 2022. As of September, the leveraged loan and spec-grade default rates were 0.85% and 1.6%, respectively.

Forward-view: Default risks are increasing

- For the U.S., our spec-grade default forecast (issuer count) for June 2023 is 3.5% (base case; range 1.75%-6.00%).
- For the LSTA Leveraged Loan Index, our default rate forecast (issuer count) for June 2023 is 2.0% (base case; range 1.00%-4.25%).

Recovery Rates | First-Lien Recovery Expectations Are Now Well Below Historical Averages

Expected Recovery On Newly Issued And Outstanding First-Lien Debt (U.S. And Canada)

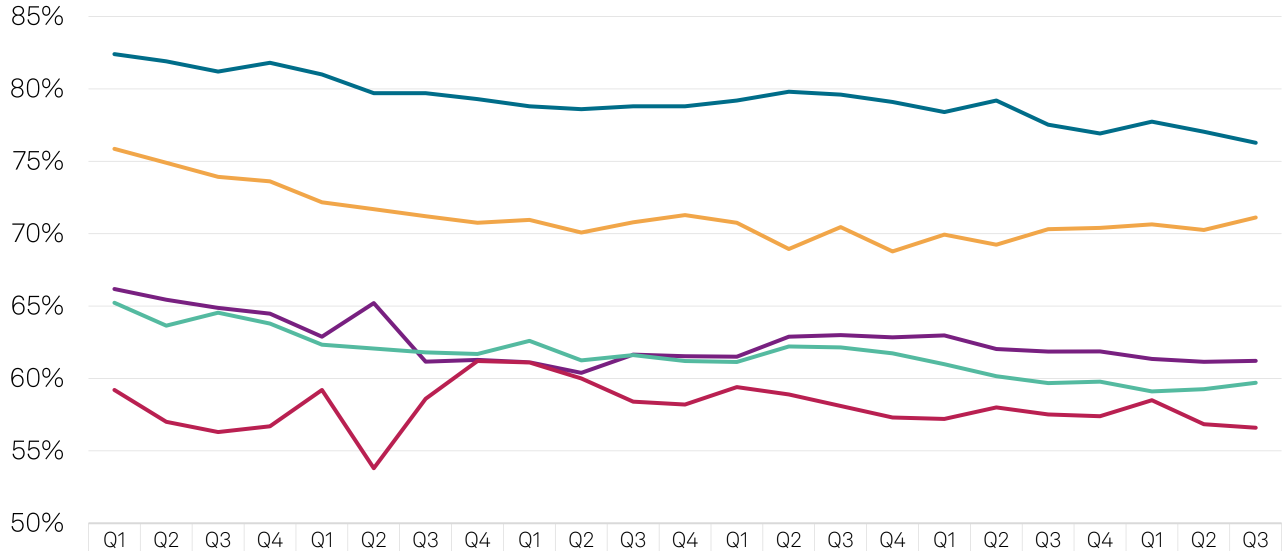


Data through Sept, 30, 2022, based on the rounded point-estimates included in our recovery ratings for rated nonfinancial corporate entities in the U.S. and Canada.
Source: S&P Global Ratings.

- Estimated recoveries on first lien debt have declined gradually.
- **Average expected recoveries are materially lower than long-term U.S.** historical averages for first-lien debt of 75%-80% (past 35 years).
- Additionally, average actual first-lien recovery rates in recent years have been lower, with significant variability.
- **Higher total debt leverage, higher first-lien debt leverage, and reduced junior debt cushions** are fundamental drivers of the decline.
- Covenant-lite term loans also contribute to lower recovery expectations, although it's a secondary factor.

Recovery Rates | First-Lien Recovery Expectations Vary By Rating Level

Average Recovery Estimate Of First-Lien Debt: U.S. And Canada



	Q1 2017	Q2 2017	Q3 2017	Q4 2017	Q1 2018	Q2 2018	Q3 2018	Q4 2018	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022
BB+/BB/BB-	82.4	81.9	81.2	81.8	81.0	79.7	79.7	79.3	78.8	78.6	78.8	78.8	79.2	79.8	79.6	79.1	78.4	79.2	77.5	76.9	77.7	77.0	76.3
B+	75.9	74.9	73.9	73.6	72.2	71.7	71.2	70.8	71.0	70.1	70.8	71.3	70.8	68.9	70.5	68.8	69.9	69.2	70.3	70.4	70.6	70.3	71.1
B	66.2	65.4	64.9	64.5	62.9	65.2	61.2	61.3	61.1	60.4	61.7	61.5	61.5	62.9	63.0	62.8	63.0	62.0	61.9	61.9	61.3	61.1	61.2
B-	65.2	63.6	64.5	63.8	62.3	62.1	61.8	61.7	62.6	61.3	61.6	61.2	61.1	62.2	62.1	61.7	61.0	60.2	59.7	59.8	59.1	59.3	59.7
CCC+ and below	59.2	57.0	56.3	56.7	59.2	53.8	58.6	61.2	61.1	60.0	58.4	58.2	59.4	58.9	58.1	57.3	57.2	58.0	57.5	57.4	58.5	56.8	56.6

Data through Sept. 30, 2022, 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.

- Average recovery expectations for first-lien debt vary by issuer rating.
- Higher-rated issuers, which tend to be less levered with larger junior debt cushions, tend to have higher recoveries.
- **Average recovery expectations have drifted down since 2017.**
- Overall average first-lien recoveries (prior slide) also reflect **a higher concentration of lower-rated entities (‘B’ and ‘B-’).**

Downside Risk | Aggressive Loan Restructurings Impair Recoveries

Collateral transfers and priming loan exchanges

Comparison of the Expected Recovery Impairment From Select Loan Restructurings

	Collateral transfers:	**Dates**	**RR% before**	**RR% after**	**Change 1L % par**		**Priming Loan Exchanges:**	**Dates**	**RR% before**	**RR% after**	**Change 1L % par**
1	J.Crew	7/2017	40%	15%	**-25%**	**1**	Murray Energy	6/2018	65%	0%	**-65%**
2	PetSmart	6/2018	60%	45%	**-15%**	**2**	Serta Simmons	6/2020	55%	5%	**-50%**
3	Neiman Marcus	9/2018	55%	55%	**0%**	**3**	Renfro #1	7/2020	35%	20%	**-15%**
4	Cirque du Soleil	3/2020	75%	75%	**0%**	**4**	Boardriders	8/2020	55%	5%	**-50%**
5	Revlon	5/2020	40%	15%	**-25%**	**5**	TriMark/TMK Hawk #1	9/2020	55%	0%	**-55%**
6	Party City	7/2020	75%	45%	**-30%**	**6**	GTT	12/2020	50%	40%	**-10%**
7	Travelport	9/2020	75%	0%	**-75%**	**7**	Renfro #2	2/2021	20%	10%	**-10%**
8	Envision Healthcare	4/2022	50%	30%	**-20%**	**8**	TriMark/TMK Hawk #2	7/2022	60%	30%	**-30%**

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.

The Big Picture | CLO Key Insights

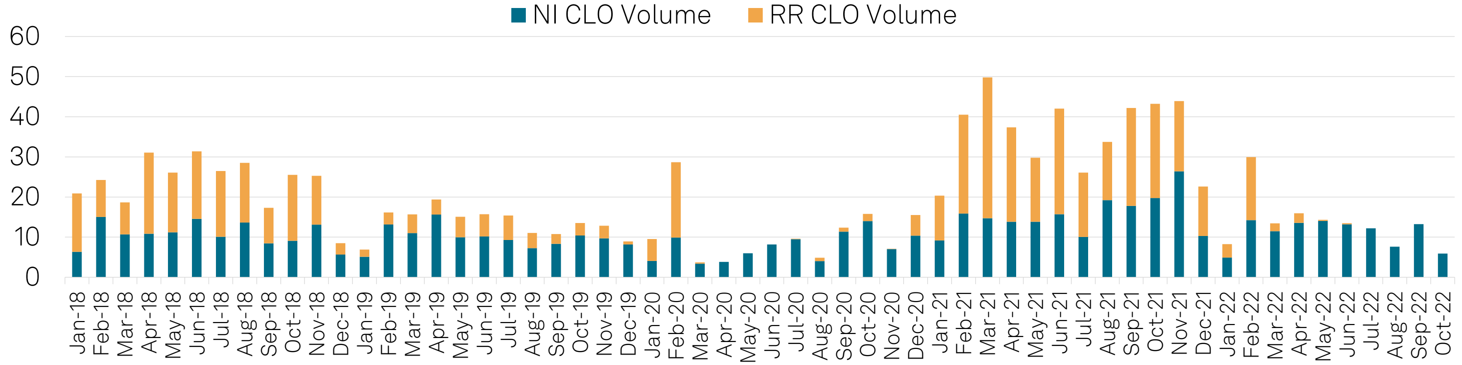
- With headwinds increasing, **BSL CLO credit metrics have hit an inflection point, but so far shown only modest deterioration.** The average BSL CLO 'CCC' asset basket crossed the 5% threshold in October and is now slightly higher than it was at the start of the year (5.02% now, from 4.94% in January) and the SPWARF has deteriorated slightly (2,754 now versus 2,700 in January).
- **The average junior overcollateralization (O/C) test cushion has remained stable so far,** increasing slightly since the middle of the year (4.47% in November versus 4.3% as of May 1), in part due to some managers gaining par by purchasing assets at a discount. It may be the junior O/C test cushions peaked in September and October at 4.50%, but we don't expect them to decline significantly until the average 'CCC' basket exceeds 7.5% or collateral defaults pick up. For now, a large majority of CLOs have ample cushion to withstand moderate collateral stress without failing.
- **Obligors in BSL CLO collateral pools with a negative rating outlook continue to creep upward and have increased to 14.46% from a low of 9.83% in May.** This points to a potential shift in leveraged credit since the middle of the year. We view rating outlooks as an important forward-looking credit indicator of potential shifts in CLO collateral credit quality.
- **We're keeping an eye out for changes that could signal a near-term weakening of collateral credit quality,** like a large increase in corporate ratings on CreditWatch negative or being lowered into the 'CCC' rating category. The average BSL CLO has just over 5% of its assets in its 'CCC' basket, but there is a significant difference between CLOs originated before and after the outset of the pandemic in early 2020. The average pre-COVID-19 CLO has a 'CCC' basket of about 5.8% and a few handfuls are already exceeding their 7.5% 'CCC' asset threshold.
- **CLO issuance is down, with new-issue CLO origination volume down** more than 23% compared to this point in 2021 (which, to be fair, was an all-time record year for CLO issuance). Issuance appears to be slowing further; during Q3 2022, average CLO new issuance was $11.03 billion per month compared with $13.6 billion per month in Q2 (and a blistering $18.81 billion per month during Q3 2021).
- **Volatile loan prices and turbulent credit conditions continue to make this a credit picker's market.** Collateral managers are reviewing sectors and companies that may be most affected by a rising rate, slowing growth environment, and, in some cases, reconfiguring their portfolios. Year-to-date portfolio turnover stands at about 27.05%, down from 44.55% this time last year. We have noticed some sectoral rebalancing of CLO collateral out of industries thought to be more vulnerable to current and future expected economic conditions.

U.S. CLO New Issuance Slows; Refis And Resets Grind To A Halt

U.S. CLO Issuance By Year (2018-Oct. 31, 2022) And 2022 Forecast

	New issue CLOs		CLO resets and refinancings	
Year	**(Bil. $)**	**CLO count (no.)**	**(bil. $)**	**CLO count (no.)**
2018	$128.86	241	$155.89	316
2019	$118.47	247	$43.79	94
2020	$93.54	219	$31.28	105
2021	$187.06	379	$250.88	551
2021 (through Oct. 31)	$149.06	302	$219.45	480
2022 (through Oct. 31)	$113.32	244	$24.34	46
2022 S&P forecast	$130.00	-	$25.00	-

U.S. CLO Issuance By Month (2018-Oct. 31, 2022)

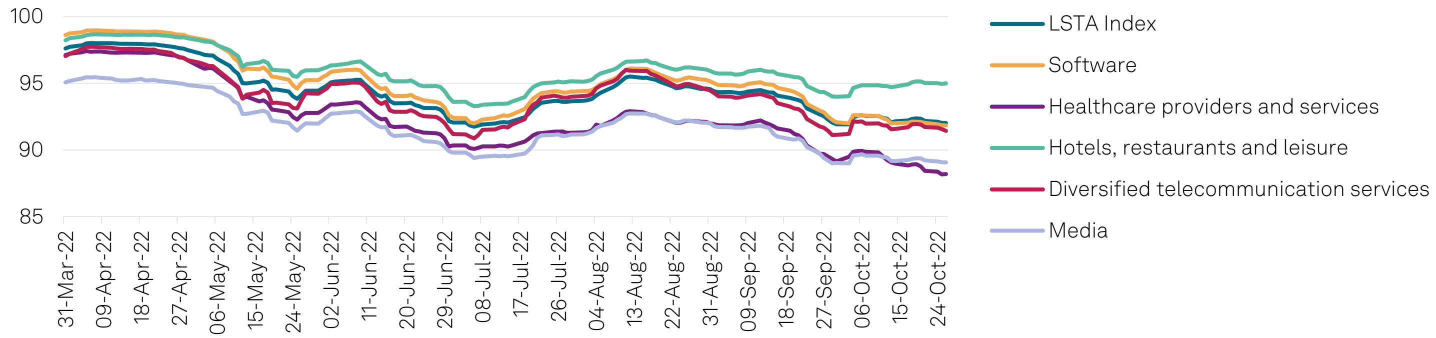


Source: S&P Global Ratings and LCD.

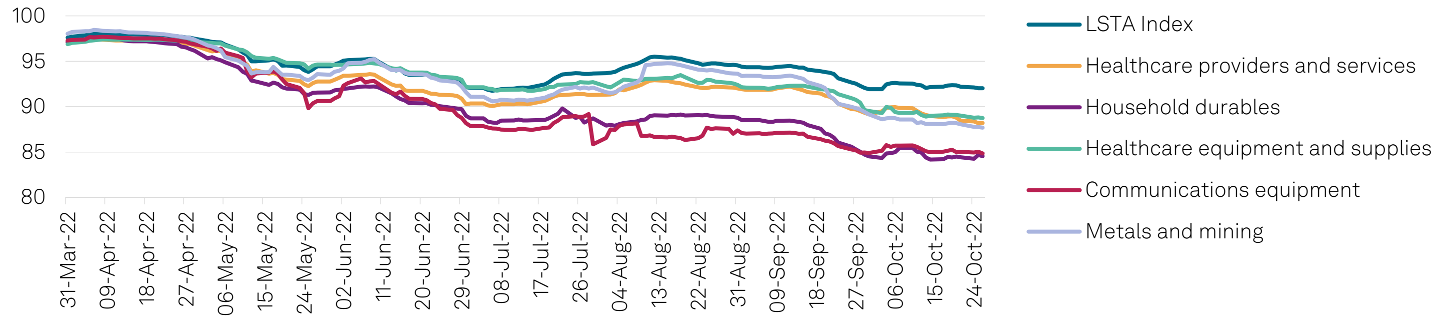
- By historical standards, U.S. CLO new issuance in 2022 has been fairly robust and could still be the second highest issuance year on record, but it has fallen in recent months. We forecast $130 billion in new issuance for the year, down from our prior forecast of $160 billion.
- Our CLO issuance expectations have tempered as market conditions (including investor concerns over inflation, rising interest rates, supply chain issues, and a likely recession) have slowed loan issuance and driven CLO tranche spreads dramatically wider.
- CLO refinancing and reset issuance shattered records in 2021 ($250 billion) as CLO spreads tightened and were “in the money” for a large number of tranches, including CLOs issued in 2020 with a short non-call period.
- This year, issuance of CLO refinancings and resets has ground to a halt given wider spreads, and not a single CLO refi or reset has occurred since June. We forecast $25 billion in CLO resets and refis for the year, down from our prior forecast of $75 billion.

U.S. BSL CLOs | Loan Prices In CLOs Up Then Down In Q3 2022

Five Largest GIC Industry Exposures Across US BSL Portfolios



GIC Industry Exposures Across US BSL Portfolios With Notable Declines In Loan Price



Source: S&P Global Ratings and LCD.

- After rebounding somewhat in late July and August, the average price of the LSTA Index have fallen sharply and are approaching the lows of the year from early-July.
- The five largest industry categories in BSL CLO collateral pools (top chart) make up about one third of the assets in U.S. BSL CLO portfolios by AUM.
- Prices of hotels/restaurants/leisure issuer loans are now higher than software, while loans from healthcare providers & services issuers now trade notably below the loan index.
- The five industries with notable declines in loan prices on the bottom chart make up about 10% of the assets in U.S. BSL CLO portfolios.

U.S. BSL CLOs | CLO Metrics Hit An Inflection Point, Deteriorate Moderately

- The CLO Insights 2022 Index U.S. BSL Index (2022 Index) is an index of about 600 S&P Global Ratings-rated U.S. broadly syndicated loan (BSL) collateralized loan obligations issued across 121 different CLO managers.
- Credit metrics across the Index deteriorated slightly in Q3 2022, exposure to obligors with ‘CCC’ ratings or ratings with a negative outlook continued their trend of edging slightly upward to new highs for the year. The SPWARF also edged upward in September and October, reflecting recent corporate rating downgrades. The average October junior O/C cushions across the index have dipped slightly for the first time this year.
- After rallying in August and September, weighted average loan prices have fallen to 92.12, back to levels seen at the start of July.
- Average year to date portfolio turnover across the BSL CLOs in the index was 27%, with some managers accumulating cash in recent months.
- IC ratio test cushions have fallen dramatically as rates have increased this year. Average junior IC test cushions have declined from 120%+ at the start of the year to about 40% by the end of Q3 2022. Most CLO I/C tests are still a long way off from failing.

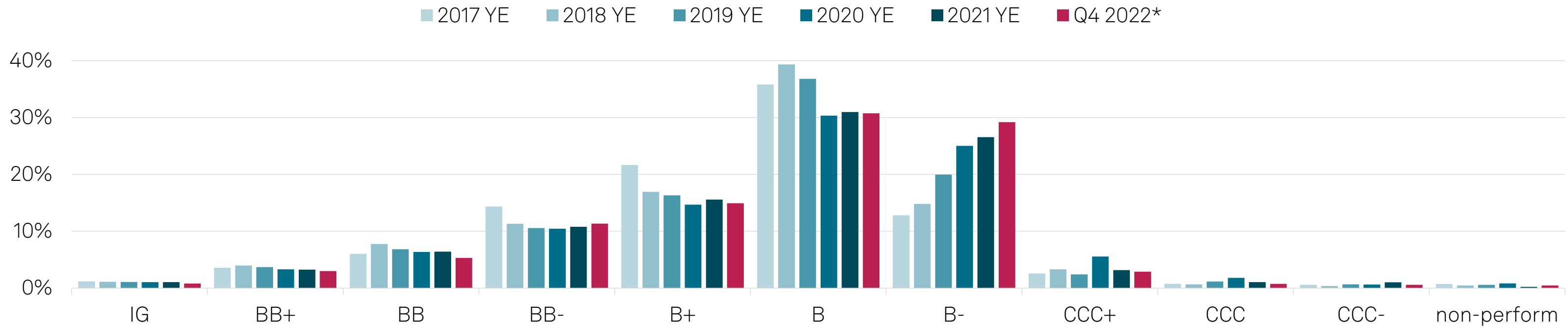
CLO BSL Index Metrics (CLO Insights 2022 U.S. BSL Index)

As of date	'B-' (%)	'CCC' category (%)	Nonperforming category (%)	SPWARF	WARR (%)	Watch Neg (%)	Negative outlook (%)	Weighted avg. price of portfolio ($)	Jr. O/C cushion (%)	% of target par	Turnover (%)
Jan. 1, 2022	26.41	4.94	0.17	2700	60.44	0.88	12.33	98.79	4.37	99.68	0.00
Feb. 1, 2022	27.16	4.27	0.37	2708	60.43	0.28	11.94	98.83	4.41	99.68	5.68
Mar. 1, 2022	27.09	4.26	0.39	2708	60.41	0.11	11.35	98.02	4.40	99.68	8.15
Apr. 1, 2022	27.44	4.17	0.13	2690	60.45	1.06	10.86	97.88	4.31	99.69	11.35
May 1, 2022	27.76	4.26	0.14	2700	60.45	1.20	9.83	97.57	4.30	99.70	14.46
June 1, 2022	27.70	4.14	0.20	2706	60.48	1.27	10.46	94.60	4.39	99.71	16.66
July 1, 2022	28.59	4.01	0.35	2720	60.27	1.35	11.08	92.19	4.45	99.74	19.55
Aug. 1, 2022	28.70	4.00	0.34	2726	60.32	1.46	11.53	93.81	4.47	99.78	21.86
Sept. 1, 2022	29.00	4.21	0.59	2754	60.24	1.03	12.20	94.85	4.50	99.81	23.61
Oct. 1, 2022	28.85	4.40	0.50	2751	60.16	1.16	13.36	92.12	4.50	99.82	25.58
Nov. 1, 2022	28.85	5.02	0.40	2754	60.13	0.59	14.46	92.40	4.47	99.84	27.05

(i)Based off trustee reports dated within one month prior to being available to us at the start of each month. This index includes only 2021 vintage and prior transactions that have closed with CLO liabilities indexed to LIBOR (excludes 2022 vintage CLOs that would be indexed to SOFR). BSL CLO--Broadly syndicated loan collateralized loan obligation. SPWARF--S&P Global Ratings' weighted average rating factor. WARR--Weighted average recovery rate. O/C--Overcollateralization. SOFR--Secured Overnight Financing Rate.

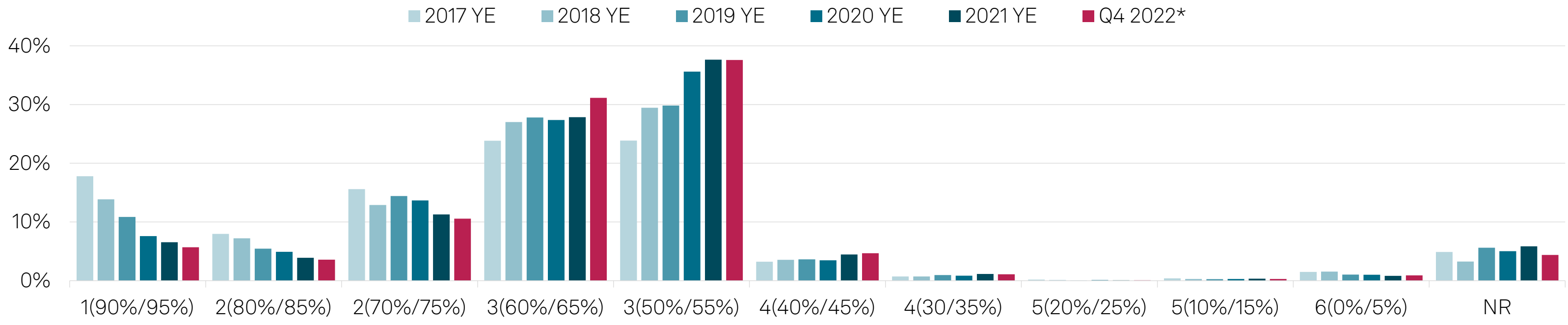
U.S. BSL CLOs | Ratings Mix Shows Increase In Loans From ‘B-’ Rated Companies And Loans With Lower Recovery Ratings

Rating Distribution For Assets In Reinvesting U.S. BSL CLOs (2017-Q3 2022)



*Latest data as of Q4 2022. (i)NR not included. NR--Not rated. YE—Year end. Source: S&P Global Ratings.

Recovery Ratings Distribution For Assets In Reinvesting U.S. BSL CLOs (2017–Q3 2022)*

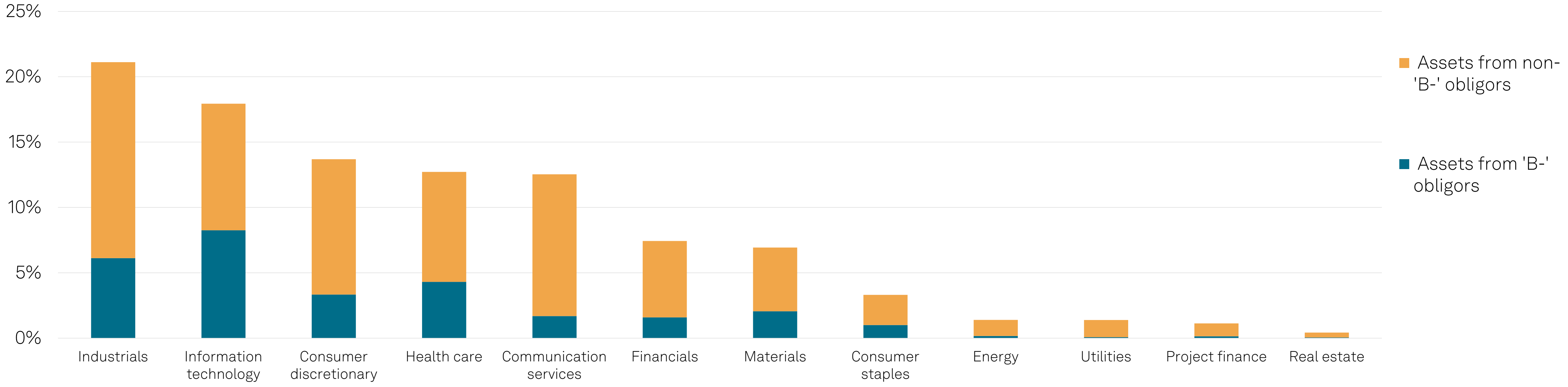


*Latest data as of Q4 2022. *NR not included. NR--Not rated. YE—Year end. Source: S&P Global Ratings.

- Loans from issuers rated ‘B-’ now comprise about 29% of CLO portfolios, more than double the proportion they were four years ago.
- 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’ and point estimates of either 50% or 55% (i.e., the 3L category in the chart).
- These currently make up about 37% of total CLO asset par, compared with about 30% prior to the COVID-19 pandemic.

U.S. BSL CLOs | Q4 Exposure To Assets From 'B-' Issuers By Sector

- Across the GIC sector exposures across US BSL CLOs, information technology exposure makes up the largest proportion of 'B-' exposures, followed by the industrials and health care sectors.
- The 'B-' exposures across the information technology sector are primarily made up of issuers within the software industry.
- The 'B-' exposures across the industrials sector are primarily made up of issuers within the machinery, trading companies/distributors, professional services and commercial services/supplies industries.
- The 'B-' exposures across the health care sector are primarily made up of issuers within the health care provides/services and health care technology industries.

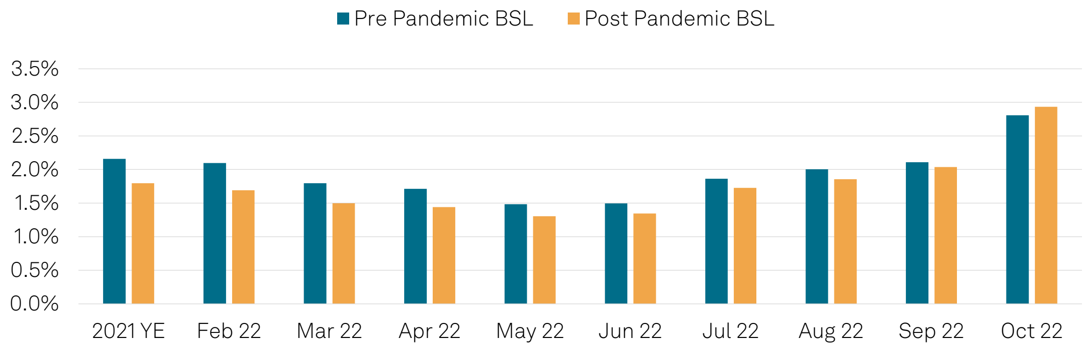


Source: S&P Global Ratings.

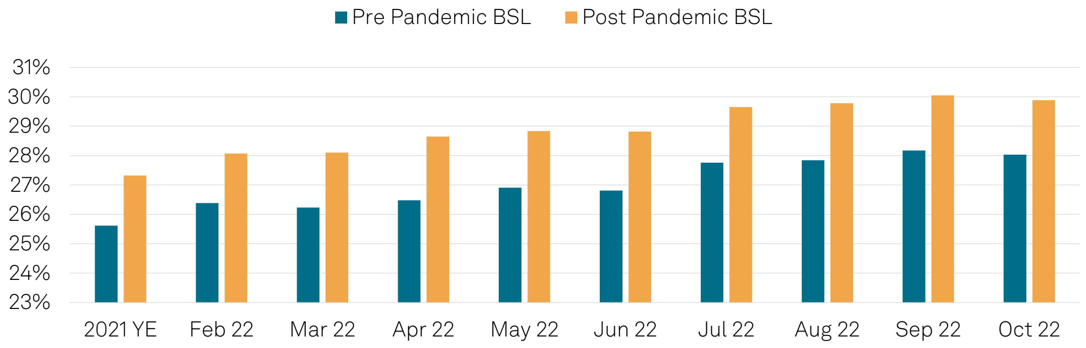
U.S. BSL CLOs | ‘B-’ Outlook Negative Assets Double Since June

- In Q3 2022, 31 CLO obligors were downgraded to ‘B-’, while 15 ‘B-’ issuers had their rating outlook revised to negative (17 were downgraded to ‘CCC+’ or below from ‘B-’).
- Relative to pre-pandemic BSL CLOs, post-pandemic BSL CLOs (issued after the pandemic), have higher ‘B-’ exposure; by October, post-pandemic deals also have slightly more exposure to ‘B-’ with a negative outlook.
- Since June 2022, exposure to ‘B-’ issuers with a negative outlook have doubled to 2.9% at start of October from 1.43% in June.
- ‘CCC’ buckets of pre-pandemic CLOs average around 5% as of October, while post-pandemic CLOs average around 3.5%.
- Junior O/C cushions of pre-pandemic CLOs average around 3.8% as of October while post-pandemic CLOs average around 5.4%.

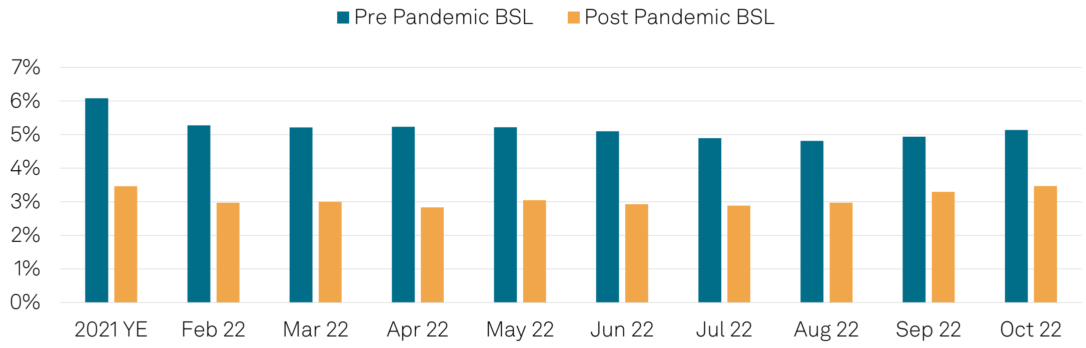
Exposure To Companies Rated B-/Negative Across Reinvesting U.S. BSL CLOs



Exposure To All Companies Rated ‘B-’ Across Reinvesting U.S. BSL CLOs



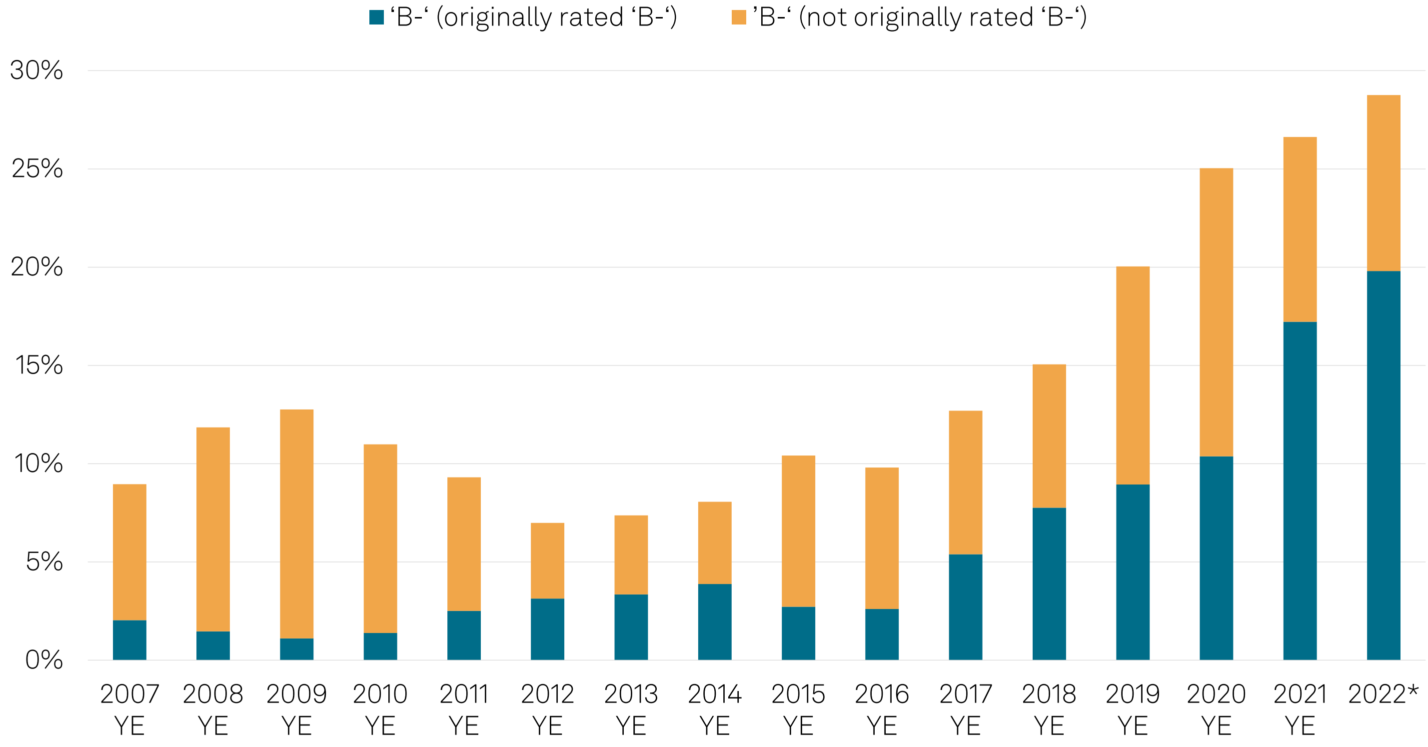
Exposure To ‘CCC’ Category Companies Across Reinvesting U.S. BSL CLOs



Source: S&P Global Ratings.

U.S. BSL CLOs | Majority Of Current ‘B-’ Assets Were Born That Way

'B-' Exposure Across Reinvesting U.S. BSL CLOs

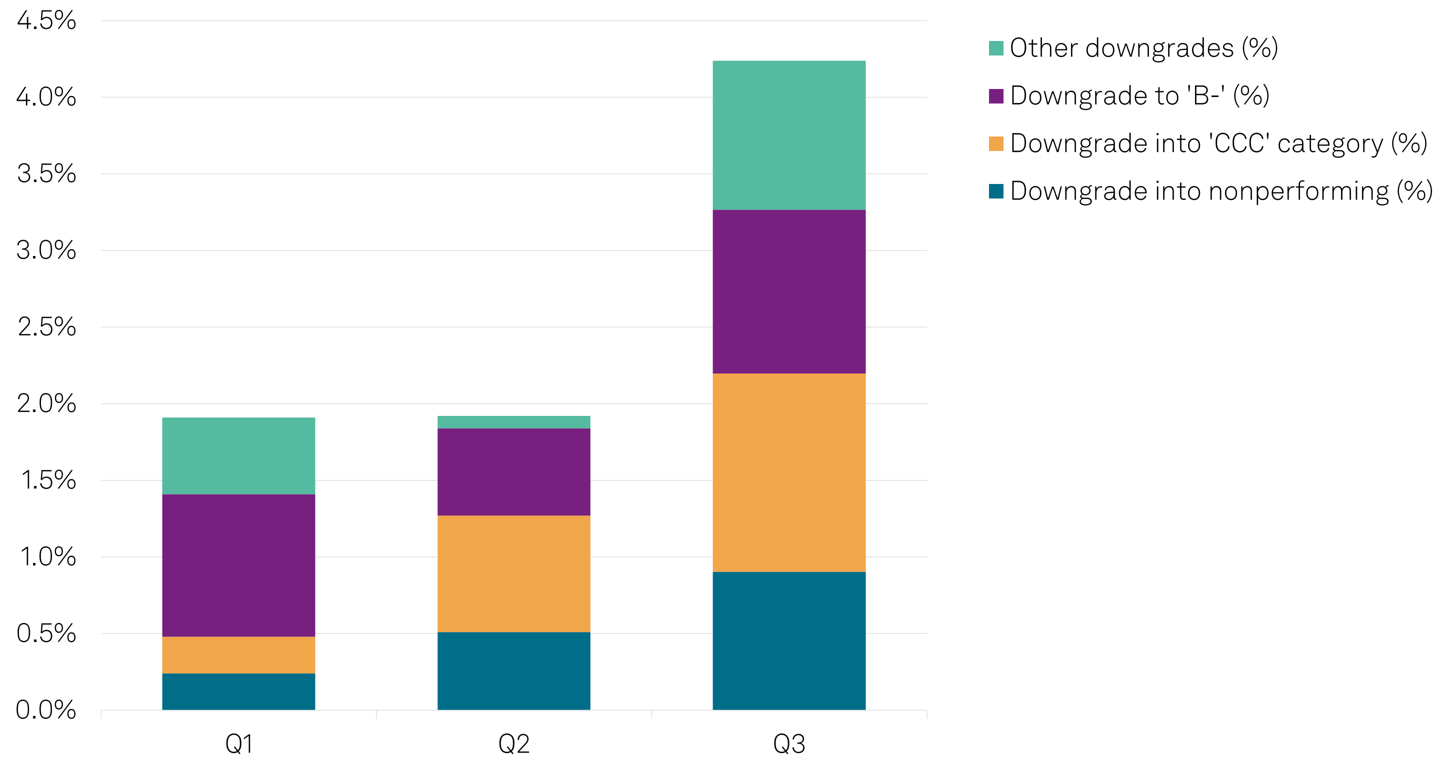


*Latest data as of Q4 2022. YE—Year end. Source: S&P Global Ratings.

- ‘B-’ exposure across reinvesting U.S. BSL CLOs are at record levels, approaching 30%.
- Historically, ‘B-’ exposure across U.S. BSL CLOs was much smaller, and was typically made up of issuers that were downgraded to ‘B-’ from a higher rating .
- During periods of stress, ‘B-’ exposure increased (as well as ‘CCC’ category exposure) as issuers experienced downgrades to ‘B-’ (see growth in yellow bar during stress periods 2008-2010, 2015-2017, and 2020-2021)
- Since 2017, there has been significant growth in issuers originally rated ‘B-’ (blue bar).
- As of Q4 2022, a large majority (68%) of the current ‘B-’ exposures are from issuers that were originally rated ‘B-’ (fairly recently) and have not experience rating actions yet.

BSL CLO Assets | Breaking Out CLO Exposure To Downgraded Companies

Average CLO Exposure To Corporate Rating Actions Per 2022 Quarter



Source: S&P Global Ratings.

- In August and September, corporate downgrades across U.S. BSL CLO obligors have outpaced upgrades by about 2:1
- Average manager exposure to Q3 corporate downgrades have doubled to over 4%, up from less than 2% exposure to downgrades in Q2 and Q1 this year.
- Over half of exposures downgraded in Q3 2022 were downgraded into the ‘CCC’ and nonperforming categories--over 2% exposure on average.
- When tiered by new issuance count since the pandemic, the tier 1 managers across our sample had less exposure to Q3 2022 corporate downgrades.
- Tier 1 managers across our sample, on average, had more exposure to the larger widely held issuers (the top 250), which historically experienced more rating stability as a cohort.
- We note exposure to issuers downgraded to ‘B-’ in Q3 increased broadly across several managers during the quarter, while exposure to issuers downgraded into the ‘CCC’ and nonperforming categories have both declined broadly.

BSL CLO Assets | Top 25 Companies Purchased And Sold In Q3 2022

Purchases

Company	Rating as of Oct. 1	% of Q3 asset purchases	Wtd. avg. price
CDK GLOBAL INC.	B+	3.71	96.98
IRIS HOLDING INC.	B	1.54	92.95
CORPORATION SERVICE COMPANY	BB-	1.46	97.13
MAXAR TECHNOLOGIES INC.	B	1.42	95.48
CHARLOTTE BUYER, INC.	B	1.39	93.38
ASURION LLC	B+	1.37	94.21
BROWN GROUP HOLDING LLC	B+	1.35	97.64
DISCOVERY PURCHASER CORPORATION	B-	1.30	92.05
BURGESS POINT PURCHASER CORP.	B-	1.27	90.06
PATAGONIA HOLDCO LLC	B+	1.11	82.02
PROJECT CASTLE, INC.	B-	1.06	89.55
DAVE & BUSTER'S INC.	B	0.88	95.13
UNIVISION COMMUNICATIONS INC.	B+	0.77	97.10
ENTEGRIS, INC.	BB+	0.76	98.82
PROJECT LEOPARD HOLDINGS, INC.	B	0.74	92.14
FIRST STUDENT BIDCO INC.	B+	0.73	92.12
ENVISION HEALTHCARE CORP.	CCC	0.71	93.03
SABRE GLBL INC.	B	0.71	95.18
II-VI INC.	BB-	0.64	98.52
CREATIVE ARTISTS AGENCY, LLC	B	0.57	96.42
MEDLINE BORROWER LP	B+	0.56	95.30
M6 ETX HOLDINGS II MIDCO LLC	B+	0.56	97.77
888 ACQUISITIONS LTD	B	0.55	85.00
MKS INSTRUMENTS INC.	BB	0.53	97.86
CITADEL SECURITIES LP	BBB-	0.51	98.07

Source: S&P Global Ratings.

Sales

Company	Rating as of Oct. 1	% of Q3 asset sales	Wtd. avg. price
ASURION LLC	B+	0.76	95.27
DELTA 2 (LUX) S.A.R.L.	BB-	0.75	98.23
TRANSDIGM INC.	B+	0.68	97.62
U.S. RENAL CARE INC.	CCC+	0.67	71.30
CROWN FINANCE US, INC	D	0.67	73.89
AMERICAN AIRLINES INC.	B-	0.62	94.98
AVAYA INC.	CCC-	0.60	54.67
BAUSCH + LOMB CORPORATION	CCC+	0.59	93.75
ENVISION HEALTHCARE CORP.	CCC	0.55	79.09
PRA HEALTH SCIENCES INC.	BB+	0.55	97.62
ENDO LUXEMBOURG FINANCE CO.	D	0.54	79.27
MEDLINE BORROWER LP	B+	0.52	96.04
BRAND INDUSTRIAL SERVICES, INC.	CCC+	0.51	89.83
UNIVISION COMMUNICATIONS INC.	B+	0.50	98.10
APPLOVIN CORPORATION	BB-	0.50	96.58
BAUSCH HEALTH COMPANIES INC.	SD	0.48	83.35
ENTEGRIS, INC.	BB+	0.47	98.46
RED VENTURES, LLC	BB-	0.44	98.01
ALLIANT HOLDINGS INTERMEDIATE	B	0.43	96.60
TRANSUNION LLC	BB+	0.42	97.29
LUCID ENERGY GROUP II BORROWER	NR	0.42	98.66
PLANTRONICS, INC.	B	0.41	98.91
ATHENAHEALTH GROUP INC.	B-	0.40	95.60
HUB INTERNATIONAL LTD.	B	0.40	98.22
FRONERI INTERNATIONAL LTD.	B+	0.38	94.95

- Popular names purchased in Q3 include ‘B-’ rated companies and other issuers trading at lower prices, offering par pickup for CLOs; none of the top 10 purchases were ‘CCC’ rated).
- Popular names sold in Q3 include issuers with higher ratings and prices closer to par; sales of these names to generate cash can give managers flexibility.
- Half of the top 10 names sold in Q3 include issuers rated ‘CCC+’ and lower; likely resulted in par loss for the CLO, but can reduce ‘CCC’ buckets and market value haircuts (for issuers with nonperforming ratings).

BSL CLO Assets | Exposure To Q3 Rating Actions By CLO Manager

CLO manager	Rated reinvesting deals in sample*	Upgrades (%)	Downgrades (%)	Downgrade to 'B-' (%)	Downgrade into 'CCC' category (%)	Downgrade below 'CCC-' (%)	% portfolio in top 250
Credit Suisse Alternative Capital LLC	25	1.71	3.12	0.36	1.19	1.37	48.72
Neuberger Berman Inc.	25	2.04	2.15	0.08	0.53	0.74	57.00
Octagon Credit Investors, LLC	24	2.02	4.52	1.00	1.23	0.76	58.07
Ares CLO Management LLC	24	2.84	2.53	0.94	1.12	0.06	54.69
Voya Alternative Asset Management LLC	22	2.35	4.41	0.58	1.28	1.46	57.22
Carlyle Investment Management LLC	22	1.65	4.12	0.79	1.38	0.77	59.26
Oak Hill Advisors LP	21	3.02	3.80	0.36	2.52	1.05	52.41
BlueMountain Capital Management L.P.	20	2.56	4.12	1.36	1.23	0.88	49.13
Commercial Industrial Finance Corp.	19	1.84	4.26	1.33	1.17	0.92	57.05
PGIM Inc.	17	1.74	5.41	1.02	2.31	0.93	53.77
GSO Capital Partners, L.P.	17	2.89	4.50	1.11	0.09	1.50	63.59
Bain Capital Credit L.P.	14	1.95	4.73	0.80	1.98	1.39	43.79
Benefit Street Partners LLC	13	2.22	3.47	0.29	1.19	0.71	56.25
CVC Credit Partners LLC	13	1.40	3.32	0.41	1.59	0.23	53.03
GoldenTree Asset Management LP	12	1.99	5.13	0.78	2.04	2.55	55.06
Onex Credit Partners LLC	12	1.44	3.76	0.80	1.43	0.75	55.48
HPS Investment Partners, LLC	11	2.47	5.24	1.88	1.92	0.89	47.71
LCM Asset Management LLC	10	3.08	6.31	1.90	1.64	1.05	47.85
AEGON USA Investment Management LLC	10	0.89	6.01	1.79	2.52	1.03	49.06
Blackstone/GSO Debt Funds Europe Ltd.	10	1.82	3.09	1.22	0.28	0.47	58.18
KKR Financial Advisors	10	4.22	2.10	1.07	0.29	0.00	41.33
Elmwood Asset Management LLC	10	1.95	1.82	0.67	0.45	0.30	46.12
Fortress Investment Group LLC	10	1.66	1.46	0.28	0.46	0.00	27.97
Crescent Capital Group LP	9	2.21	6.91	1.01	2.58	1.30	53.58
Barings LLC	9	3.77	5.2	2.30	0.94	1.18	47.41
BlackRock Financial Management Inc.	9	2.51	4.18	1.22	1.02	1.28	65.06
Oaktree Capital Management L.P.	8	1.96	3.96	0.67	1.33	0.69	46.74
Symphony Asset Management LLC	7	1.52	5.84	1.66	1.61	1.15	59.12
TCW Asset Management Co. LLC	7	1.73	5.82	2.07	2.08	0.97	44.55
Apollo Management International LLP	7	2.65	5.44	0.79	0.61	2.17	61.17
Redding Ridge Asset Management (UK) LLP	7	2.23	4.91	0.88	0.57	1.37	64.14
THL Credit Senior Loan Strategies LLC	7	2.19	4.72	1.11	0.89	1.45	54.29
Anchorage Capital Group LLC	7	1.60	4.26	2.27	1.17	0.82	35.11
Canyon Capital Advisors LLC	7	1.27	3.74	1.38	1.43	0.65	49.37
Allstate Investment Management Co.	7	2.15	3.25	0.82	0.69	0.65	60.86

*Table includes managers with seven or more S&P Global Ratings-rated CLOs within their reinvestment period. Source: S&P Global Ratings.

BSL CLO Assets | Purchases And Sales In 2022

	Purchases			Sales		
Quarter	**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%

S&P BSL CLO Asset Trades by Company Rating In Q3 2022

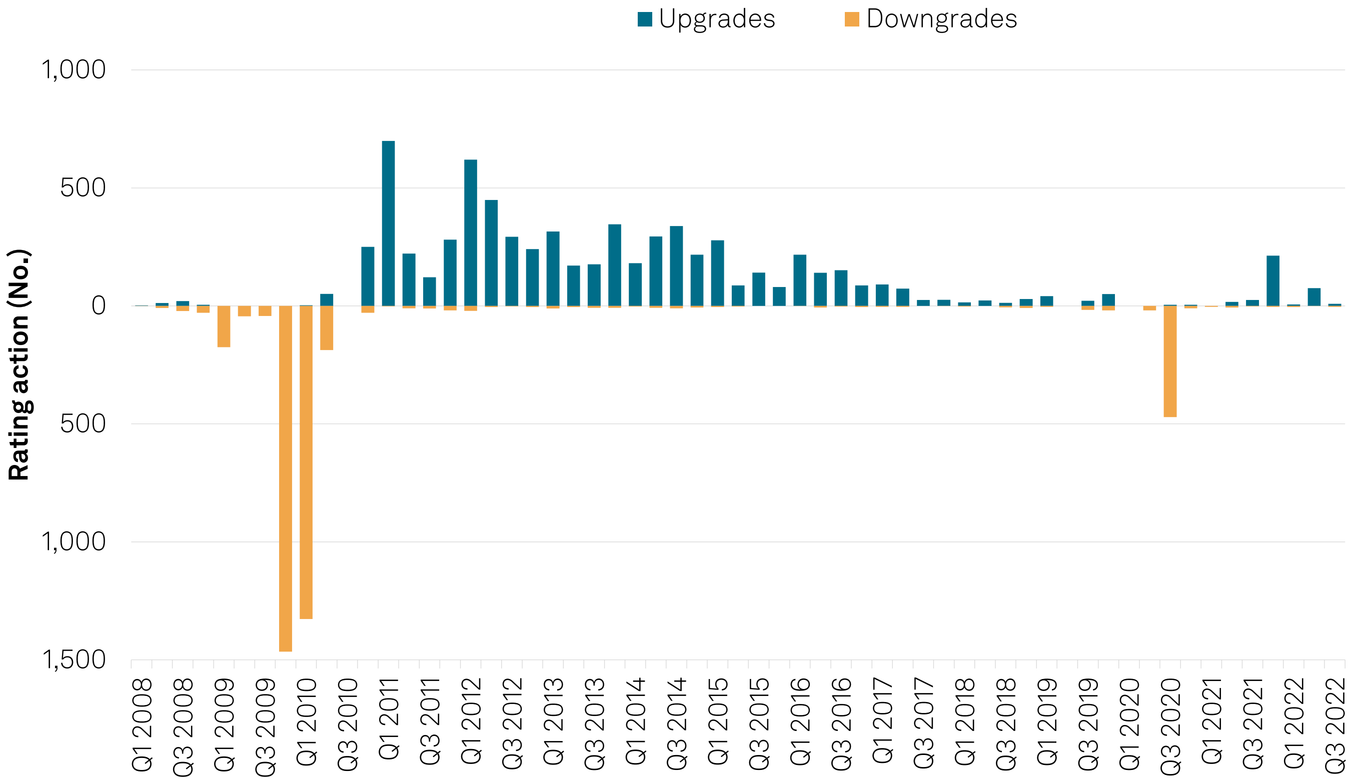
Rating category	Purchase (% of trades)	Avg purchase price	Sales (% of trades)	Avg sale price
Investment grade	1.03	96.04	2.19	98.27
BB category	17.25	95.83	22.89	96.81
B+	21.52	95.14	14.15	96.00
B	29.37	94.40	24.46	95.25
B-	26.28	93.40	25.05	93.80
CCC category	4.06	88.50	9.16	84.10
Nonperform	0.48	57.82	2.10	69.92

Source: S&P Global Ratings.

- In 2022, the credit quality of the assets (SPWARF) purchased tend to be higher than the credit quality of the assets sold, evidence of CLO manager efforts at de-risking.
- As noted in prior slides, loan prices have declined sharply during the year, reflected in the lower average prices of purchases and sales in Q3. The average proportion (avg % of target par) of trades per deal have also declined notably in Q3.
- The prices of the sales in Q3 are lower than the purchases (resulting in par loss from these sales); however, the proportion of purchases are greater than sales, helping to offset some of the par loss from sales.
- The proportion of sales of 'CCC' category and nonperforming assets are greater than the proportion of purchases from these rating categories, evidence of managers attempts at de-risking.
- The proportion of 'BB' category sales are greater than the purchases, while the proportion of 'B' category purchases are greater, evidence of managers attempts to build par.

U.S. CLO Ratings | No CLO 'AAA' Tranche Ratings Lowered Since 2011

U.S. CLO Rating Upgrades And Downgrades (2008-Q3 2022)

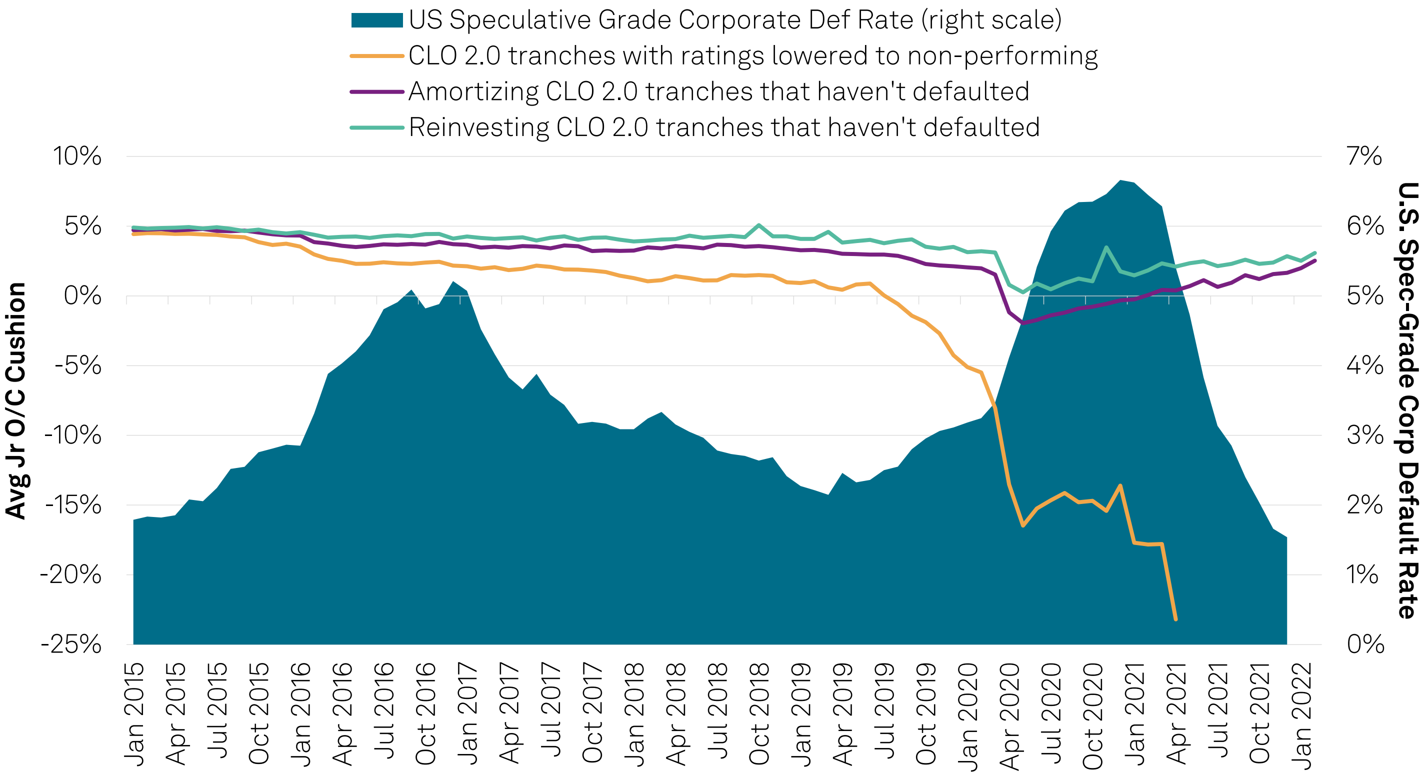


Source: S&P Global Ratings.

- Downgrades to U.S. CLO 1.0 ratings in 2009 and 2010 were mostly driven by the effects of Great Financial Crisis (GFC), as well as our CLO criteria change.
- Upgrades to U.S. CLO 1.0 and U.S. CLO 2.0 ratings after the GFC were mostly driven by improvement in corporate credit and CLO tranche amortization.
- U.S. CLO reset activity reduced the volume of U.S. CLO 2.0 amortization from 2017, leading to a reduction in volume of upgrades.
- No 'AAA' rated CLO tranche has been downgraded since 2011.
- In Q3 2022, we lowered our ratings on four classes of junior CLO notes that had already been previously downgraded into the 'CCC' category (one rating was lowered to 'D (sf)'), we raised our ratings on nine classes of mezzanine/senior CLO notes due to amortization, we placed our ratings on nine classes of CLO notes on CreditWatch positive and five classes on CreditWatch negative, and we withdrew ratings on 32 classes of CLO notes.

The Dirty (Almost) Dozen: What Separates Defaulting U.S. CLO 2.0 Tranches From The Rest

Avg Jr. O/C Cushions For O/S And Defaulted Pre-2015 Vintage CLO 2.0s



Source: CLO Spotlight: The Dirty (Almost) Dozen: What Separates Defaulting U.S. CLO 2.0 Tranches From The Rest, published July 7, 2022).

- Pre-2015 vintage CLO 2.0s had notable exposure to energy- and retail-related issuers during their reinvestment periods.
- Most have since paid off through optional redemptions.
- Some have been reset and are still reinvesting today.
- Some are still amortizing today.
- Most of the U.S. CLO tranches currently rated within the ‘CCC’ category are from CLO 2.0s that originally closed before 2015.
- A small subset have seen their junior ratings lowered multiple times to a non-performing rating.

U.S. CLO Tranche Defaults | As Of Q3 2022

U.S. CLO 1.0 And 2.0 Default Summary By Original Rating

	CLO 1.0 Transactions (2009 and prior)			CLO 2.0 Transactions (2010 and later)		
	Original rating(i)	**Defaults(ii)**	**Currently rated(i)**	**Original rating(i)**	**Defaults(ii)**	**Currently rated(i)**
AAA (sf)	1,540	0	0	3,463	0	1,508
AA (sf)	616	1	0	2,773	0	1,224
A (sf)	790	5	0	2,315	0	1,088
BBB (sf)	783	9	0	2,101	0	1,070
BB (sf)	565	22	0	1,710	3	879
B (sf)	28	3	0	378	8	180
Total	4,322	40	0	12,740	11	5,949

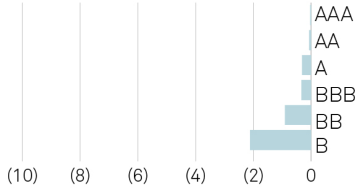
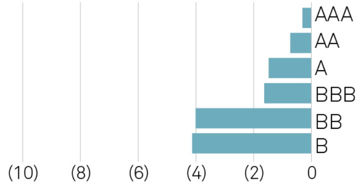
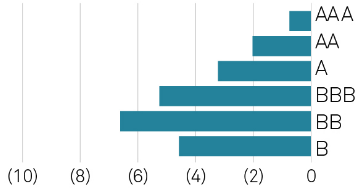
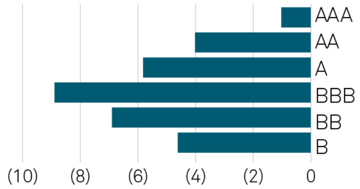
Likely Future Defaults: U.S. CLO Tranches Currently Rated 'CCC-' Or 'CC'

Transaction	Tranche	Year originated	Original rating	Current rating
Mountain View CLO 2014-1 Ltd.	F	2014	B- (sf)	CCC- (sf)
Catamaran CLO 2014-2 Ltd.	E	2014	B (sf)	CCC- (sf)
Halcyon Loan Advisors Funding 2012-1 Ltd.	D	2012	BB (sf)	CC (sf)
Halcyon Loan Advisors Funding 2013-1 Ltd.	D	2013	BB (sf)	CC (sf)
Hull Street CLO Ltd.	E	2014	BB (sf)	CC (sf)
Hull Street CLO Ltd.	F	2014	B (sf)	CC (sf)

(i)As of end second-quarter 2022. (ii)As of Aug. 15, 2022. Source: U.S. CLO Defaults As Of August 15, 2022, published Sept. 7, 2022.

- S&P Global Ratings has rated **more than** 16,000 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 51 U.S. CLO tranches **have defaulted:** 40 U.S. CLO tranches from CLO 1.0 transactions originated in 2009 or before, and another 11 U.S. CLO 2.0 tranches.
- On the date these 11 U.S. CLO 2.0 tranches were lowered to 'D (sf)', the reported outstanding tranche balance ranged from 2.5% to just over 100% (due to payment-in-kind of their original issuance amount); tranches originally rated within the 'BB (sf)' category averaged 34%, while tranches originally rated within the 'B (sf)' category averaged 59%.
- Across five other CLO 2.0s, there are four tranches rated 'CC (sf)' that are **likely to default** in the future for similar reasons and another two tranches rated 'CCC- (sf)'. Additionally, there are 23 additional tranches currently rated 'CCC+ (sf)' and four tranches rated 'CCC (sf)' that are potential defaults based on the ratings assigned.

BSL CLO Rating Stresses | Scenarios 1 - 4 (Default And 'CCC' Stresses)

	Scenario	Impact across CLO sample	Model-determined impact: average notches off current rating
5/10 scenario	526 issuers see ratings lowered, including 267 issuers that default	15% of CLO assets experience downgrades; average 'CCC' bucket increases to 10.2%; average nonperforming exposure increases to 4.6%; average par loss of 2.5%	
10/20 scenario	747 issuers see ratings lowered, including 342 issuers that default	30% of CLO assets experience downgrades; average 'CCC' bucket increases to 20.1%; average nonperforming exposure increases to 9.9%; average par loss of 5.4%	
15/30 scenario	1,029 issuers see ratings lowered, including 526 issuers that default	45% of CLO assets experience downgrades; average 'CCC' bucket increases to 30.4%; average nonperforming exposure increases to 14.8%; average par loss of 8.1%	
20/40 scenario	1,222 issuers see ratings lowered, including 589 issuers that default	60% of CLO assets experience downgrades; average 'CCC' bucket increases to 40.6%; average nonperforming exposure increases to 19.7%; average par loss of 10.8%	

- These four rating stress scenarios are identical to ones we applied for our scenario analyses published in April 2020 and June 2021.
- They have the benefit of being transparent and simple, and 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: How The Next Downturn Could Affect U.S. BSL CLO Ratings (2022 Update), published Aug. 4, 2022

BSL CLO Rating Stresses | Scenarios 1 - 4 (Default And 'CCC' Stresses)

Source: Scenario Analysis: How The Next Downturn Could Affect U.S. BSL CLO Ratings (2022 Update), published Aug. 4, 2022.

5/10 scenario

Cash Flow Results Under "5-10" Scenario (2022)

Current rating category	0 (%)	-1 (%)	-2 (%)	-3 (%)	-4 (%)	-5 (%)	-6 (%)	≥ -7 (%)	Avg notches	Investment grade (%)	Speculative grade (%)	'CCC' (%)	Non-performing (%)
'AAA'	97.37	2.63							-0.03	100.00			
'AA'	93.02	6.44	0.54						-0.08	100.00			
'A'	74.74	18.20	7.07						-0.32	100.00			
'BBB'	68.07	30.43	0.75	0.75					-0.34	71.21	28.79		
'BB'	40.61	41.95	8.43	5.56	1.92	0.96	0.19	0.38	-0.92		100.00	2.87	0.38
'B'	28.96	11.48	14.75	8.74	31.69	3.28	1.09		-2.17		100.00	31.15	30.05

10/20 scenario

Cash Flow Results Under "10-20" Scenario (2022)

Current rating category	0 (%)	-1 (%)	-2 (%)	-3 (%)	-4 (%)	-5 (%)	-6 (%)	≥ -7 (%)	Avg notches	Investment grade (%)	Speculative grade (%)	'CCC' (%)	Non-performing (%)
'AAA'	70.59	29.41							-0.29	100.00			
'AA'	49.80	27.79	22.01	0.13	0.13	0.13			-0.73	100.00			
'A'	19.25	21.35	53.68	2.56	2.41	0.75			-1.50	99.10	0.90		
'BBB'	13.64	52.77	11.99	9.45	6.45	2.55	1.50	1.65	-1.66	15.29	84.71	0.90	0.30
'BB'	3.26	12.26	15.13	12.07	14.56	11.11	7.09	24.52	-4.07		100.00	31.80	24.52
'B'	2.73	3.28	2.19	6.01	53.55	9.29	22.95		-4.24		100.00	19.13	77.05

15/30 scenario

Cash Flow Results Under "15-30" Scenario (2022)

Current rating category	0 (%)	-1 (%)	-2 (%)	-3 (%)	-4 (%)	-5 (%)	-6 (%)	≥ -7 (%)	Avg notches	Investment grade (%)	Speculative grade (%)	'CCC' (%)	Non-performing (%)
'AAA'	25.91	73.84	0.25						-0.74	100.00			
'AA'	9.80	10.74	62.95	3.22	7.52	5.50		0.27	-2.06	99.73	0.27		
'A'	1.50	2.86	39.25	10.23	22.41	20.00	1.80	1.95	-3.28	76.24	23.76	0.15	
'BBB'	0.45	7.80	8.70	9.00	20.84	11.24	9.90	32.08	-5.35	0.60	99.40	16.49	14.99
'BB'	0.19	0.38	1.15	0.77	2.49	2.49	3.64	88.89	-6.75		100.00	8.43	88.70
'B'		1.09			59.02	6.01	33.88		-4.70		100.00	1.09	98.91

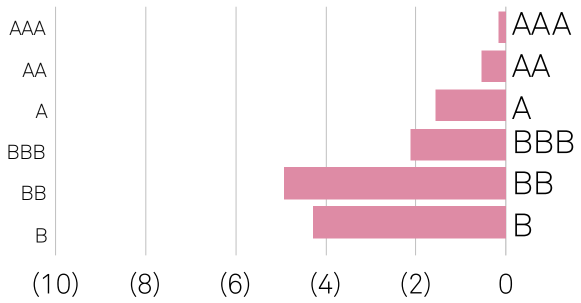
20/40 scenario

Cash Flow Results Under "20-40" Scenario (2022)

Current rating category	0 (%)	-1 (%)	-2 (%)	-3 (%)	-4 (%)	-5 (%)	-6 (%)	≥ -7 (%)	Avg notches	Investment grade (%)	Speculative grade (%)	'CCC' (%)	Non-performing (%)
'AAA'	7.01	86.36	3.75	2.00	0.75	0.13			-1.04	100.00			
'AA'	1.48	2.15	20.67	6.85	13.96	47.79	1.61	5.50	-4.10	97.58	2.42		
'A'			4.96	2.71	9.32	42.56	9.17	31.28	-5.93	16.99	83.01	3.76	1.35
'BBB'		0.15	0.45	1.20	2.40	3.45	5.70	86.66	-9.06		100.00	15.29	70.61
'BB'						0.19		99.81	-7.04		100.00	0.19	99.81
'B'					60.11	6.01	33.88		-4.74		100.00		100.00

BSL CLO Rating Stresses | Scenarios 5 - 6 (Recession Scenarios)

	Scenario	**Impact across CLO sample**	**Model-determined impact: average notches off current rating**
GFC scenario	Current CLO assets experience rating transitions like those seen during the GFC in 2008-2009; 815 issuers see ratings lowered, including 348 issuers that default, and 419 issuers see ratings raised	55% of CLO assets experience rating actions (42.2% downgraded, 12.7% upgraded); average 'CCC' bucket increases to 13.5%; average nonperforming exosure increases to 16.3%; average par loss of 6.0%	see chart



Cash Flow Results Under GFC Scenario (2022)

Current rating category	0 (%)	-1 (%)	-2 (%)	-3 (%)	-4 (%)	-5 (%)	-6 (%)	≥ -7 (%)	Avg notches	Investment grade (%)	Speculative grade (%)	'CCC' (%)	Non-performing (%)
'AAA'	85.86	14.14							-0.14	100.00			
'AA'	60.27	25.77	13.02	0.40	0.40	0.13			-0.55	100.00			
'A'	18.50	20.45	54.14	1.65	3.46	1.05		0.75	-1.58	98.05	1.95		
'BBB'	6.30	47.98	13.34	13.64	9.75	3.15	2.10	3.75	-2.16	8.25	91.75	1.20	2.10
'BB'	3.45	8.05	5.56	9.20	11.88	8.81	9.96	43.10	-5.01		100.00	30.08	43.10
'B'	2.19	2.19	2.19	4.37	54.10	6.56	28.42		-4.39		100.00	9.84	86.89

Source: Scenario Analysis: How The Next Downturn Could Affect U.S. BSL CLO Ratings (2022 Update), published Aug. 4, 2022.

BSL CLO Rating Stresses | Scenarios 5 - 6 (Recession Scenarios) (continued)

Scenario

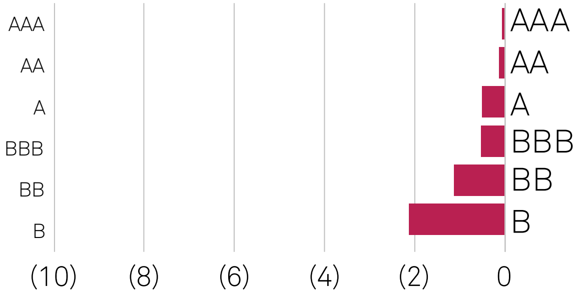
Pandemic scenario

Current US BSL CLO assets experience rating transitions like those seen during the 2020 Pandemic; 754 issuers see ratings lowered, including 190 issuers that default, and 224 issuers see ratings raised

Impact across CLO sample

41.2% of CLO exposures experience rating actions (36.2% downgraded, 5.0% upgraded); average 'CCC' bucket increases to 12.7%; average nonperforming exposure increases to 5.4%; average par loss of 1.5%

Model-determined impact: average notches off current rating



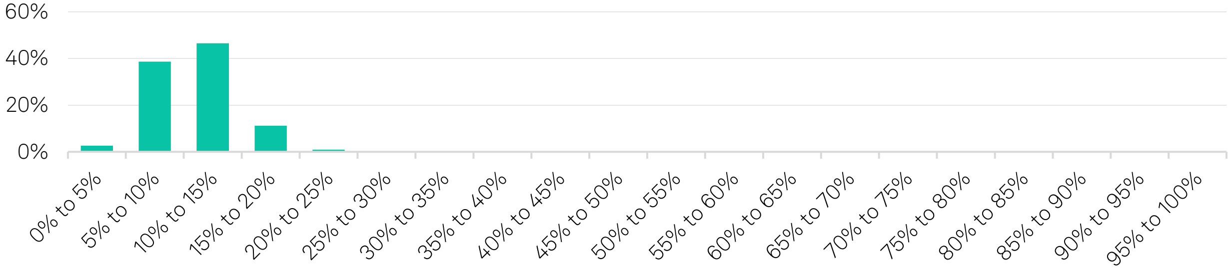
Cash Flow Results Under GFC Scenario (2022)

Current rating category	0 (%)	-1 (%)	-2 (%)	-3 (%)	-4 (%)	-5 (%)	-6 (%)	≥ -7 (%)	Avg notches	Investment grade (%)	Speculative grade (%)	'CCC' (%)	Non-performing (%)
'AAA'	94.99	5.01							-0.05	100.00			
'AA'	89.53	9.66	0.81						-0.11	100.00			
'A'	59.25	31.58	9.17						-0.50	100.00			
'BBB'	51.12	46.48	2.25	0.15					-0.51	55.47	44.53		
'BB'	22.22	54.21	15.71	4.98	1.72	0.57	0.38	0.19	-1.14		100.00	2.68	0.19
'B'	24.04	14.21	21.31	8.74	27.32	2.73	1.64		-2.16		100.00	30.60	27.87

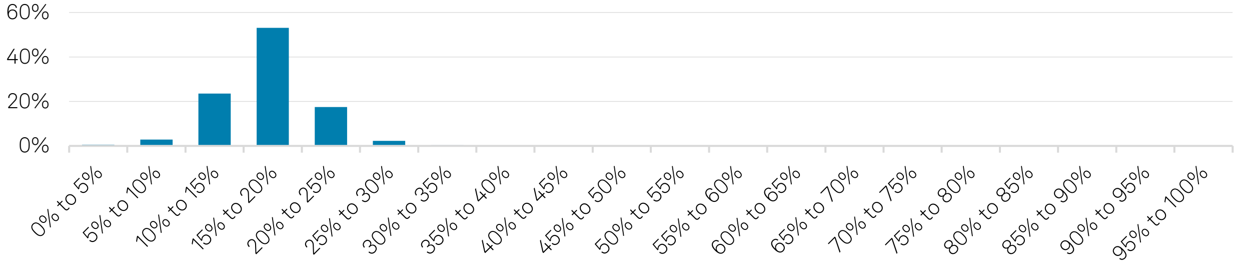
Source: Scenario Analysis: How The Next Downturn Could Affect U.S. BSL CLO Ratings (2022 Update), published Aug. 4, 2022.

BSL CLOs | Exposure To Companies With Low ESG Credit Indicators

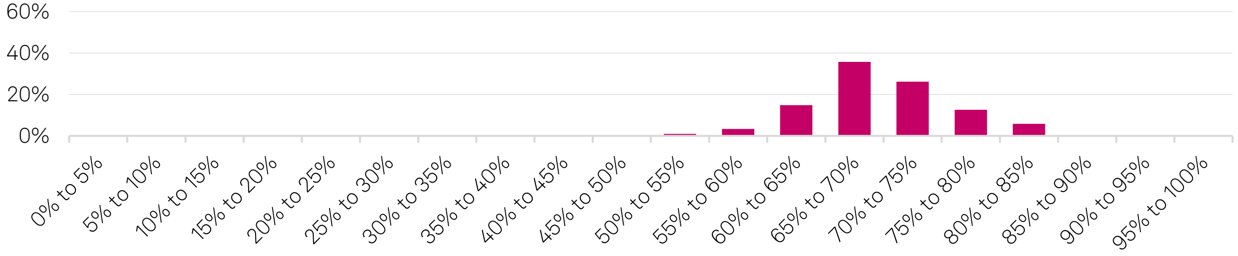
Environment Credit Indicators



Social Credit Indicators



Governance Credit Indicators



Source: The Influence Of Corporate ESG Factors In Our Credit Rating Analysis Of U.S. BSL CLO Obligors, published May 19, 2022.

- A large majority of CLO exposures that have a negative Environmental (E3 to E-5) credit indicator are due to climate transition risk factors; about 12% of rated U.S. BSL CLOs have greater than 15% portfolio exposure to issuers with a negative E credit indicator.
- The majority of CLO exposures that have a negative Social (S3 to S5) credit indicator are due to health and safety and social capital factors; about 20% of rated U.S. BSL CLOs have greater than 20% portfolio exposure to issuers with a negative S credit indicator.
- The large majority of CLO exposure that have a negative Governance (G3 to G5) credit indicator are due to governance structure factors; roughly 20% of rated U.S. BSL CLOs have greater than 75% portfolio exposure to issuers with a negative G credit indicator.
- Many BSL issuers have a negative G credit indicator due to governance structure factors because they are financial sponsor controlled (about 90% of 'B-' rated issuers held within U.S. BSL CLOs have a negative Governance credit indicator).
- About 81% of U.S. BSL CLO portfolio exposures have a negative E, S, or G credit indicator.

Analytical Contacts

Steve Anderberg

Sector Lead, U.S. CLOs

stephen.anderberg@spglobal.com

Daniel Hu

Director, U.S. CLOs

daniel.hu@spglobal.com

Minesh Patel

Sector Lead, Leveraged Finance

minesh.patel@spglobal.com

Steve Wilkinson

Sector Lead, Leveraged Finance
& Recoveries

stephen.wilkinson@spglobal.com

Analytical Managers

Belinda Ghetti

Analytical Manager U.S. CLOs

belinda.ghetti@spglobal.com

Jimmy Kobylinski

Analytical Manager U.S. CLOs

jimmy.kobylinski@spglobal.com

Ramki Muthukrishnan

Analytical Manager U.S. Leveraged Finance

ramki.muthukrishnan@spglobal.com

Market Outreach

Rob Jacques

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

robert.jacques@spglobal.com

Copyright © 2022 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 (free of charge) and 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.

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