

CLO Snapshot

Performance Summary Covering Morningstar-Rated CLOs

Third Quarter 2018

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Overview

This is the inaugural issue of Morningstar's CLO Snapshot, a quarterly report of key trends and metrics across collateralized loan obligations that Morningstar publicly rates for which at least one month's performance data is available. The report gives market participants summarized asset-level information and deal statistics on such CLO transactions.

Deal Performance

Most transactions in our publicly rated CLO portfolio experienced an increase in over-collateralization, or OC, quarter over quarter. Generally, a higher OC level gives the transaction more cushion to absorb potential losses. Six CLO transactions (Bain Capital Credit CLO 2017-1, Benefit Street Partners CLO XI, Dryden 47 Senior Loan Fund, KKR CLO 21, Race Point X CLO, and THL Credit Wind River 2016-2 CLO), however, were the exception, where OC declined quarter over quarter, albeit in small increments ranging from 6 to 33 basis points. The drop in OC was mainly driven by management trading across five of the six transactions, while a defaulted asset was behind Dryden 47 Senior Loan Fund's lower OC level.

Similarly, most transactions also experienced an increase in interest coverage, or IC, tests over the same period. The interest coverage ratio represents the interest collected from the assets relative to the interest due on the respective corresponding tranche of notes and all the tranches senior to it. Like OC, a higher IC generally provides more protection in the transaction, particularly for the senior notes. While, seven transactions (Auburn CLO, Bain Capital Credit CLO 2017-1, CBAM 2017-1, Hempstead II CLO, ICG US CLO 2017-2, Jamestown CLO X, and THL Credit Wind River 2017-2 CLO) saw IC decline, they still maintained sufficient coverage test

thresholds. Actual IC levels for those seven transactions were relatively healthy, ranging from 114 to 161. The drop in the IC ratio ranged from 1.76% to 4.41%, with declines widely distributed across Morningstar's publicly rated CLO universe.

All transactions satisfied the applicable OC tests, IC tests, and interest diversion tests for September 2018. Collateral quality tests passed for all but three transactions (ICG US CLO 2017-2, THL Credit Wind River 2016-2 CLO, and Voya CLO 2016-4). The diversity test was breached for ICG US CLO 2017-2. For THL Credit Wind River 2016-2 CLO, the weighted average rating factor, or WARF, test has not been passing for the past year. Similarly, for Voya 2016-4, the WARF test and weighted average spread, or WAS, test (other than in December 2017) have also not been passing for about one year.

The percentage of second-lien loans in the collateral pool remained low for most of the transactions, with only two of them (CBAM 2018-5 and CBAM 2018-6) having a composition greater than 4% of the current pool balance as of the end of September, unchanged from June. While the percentage of covenant-lite loans in the collateral pool for many transactions has been increasing, we have yet to see a meaningful increase in defaults. The underlying collateral in the Dryden 47 Senior Loan Fund deal had the highest covenant-lite loan percentage in our sample, with 86.3%, followed by Ares XLVI CLO at 80.3% and Ares XXXIR CLO with 77.1%. These percentages were materially higher than covenant-lite representation in other CLOs in the sample, with the next highest being approximately 57.4% and the median at 18.2%. Morningstar will continue to monitor the trend of increasing covenant-lite loan proportions, especially as less creditworthy borrowers gain access to the market, with potentially corresponding lower recoveries. All the transactions are currently in the reinvestment phase, during which the portfolio manager reinvests principal proceeds in additional collateral on behalf of the CLO.

Obligor Defaults and CCC Obligations

Three transactions (Dryden 47 Senior Loan Fund, KKR CLO 9, and KKR CLO 11) experienced obligor default rates of 0.10%, 0.18%, and 0.18%, respectively, in the third quarter. Leveraged loans from Nine West Holdings, Inc., a consumer nondurable goods company, and American Tire Distributors, Inc., a major independent supplier of tires in the replacement tire market, were part of portfolio manager holdings contributing to obligor default rates. The total defaulted value for the Morningstar sample declined to \$2.6 million in September, compared with \$5.0 million in June. The decline in defaulted value is primarily attributed to deals being in their reinvestment phase, where defaulted assets were traded out or exchanged for non-defaulted securities. Five transactions have outsize CCC buckets greater than 5%, with the highest figure recorded at 6.4% for KKR CLO 9 in September. However, the CCC bucket for all five transactions still fell well below the trigger value of 7.5%.



Collateral Quality, Adjustment, and Break-Even CDR Analysis

Deal Name	WARF	WARF Adj.	Diversity	Diversity Adj.	Manager Adj.	Additional Adj. ¹	Adjusted Target BE CDR (AAA) ²	Class A BE CDR ³
Allegro CLO V	2974	1.09	67	1.05	1.00	1.00	18.29	22.08
Ares XXXIR CLO	2915	1.07	87	0.98	0.95	1.00	15.95	26.16
Ares XLVI CLO	2912	1.07	81	1.00	0.95	1.00	16.22	27.45
Auburn CLO	2763	1.02	60	1.07	1.00	1.00	17.46	20.82
Bain Capital Credit CLO 2017-1	2874	1.06	77	1.01	1.00	1.00	17.07	21.98
Bain Capital Credit CLO 2018-2	2843	1.05	81	1.00	1.00	1.00	16.67	23.31
Benefit Street Partners CLO XI	2730	1.00	87	0.98	1.00	1.00	15.73	20.47
CBAM 2017-1	2666	0.98	71	1.03	1.00	1.00	16.16	25.01
CBAM 2017-2	2721	1.00	72	1.03	1.00	1.00	16.43	20.83
CBAM 2018-5	2680	0.99	70	1.03	1.00	1.00	16.30	20.02
CBAM 2018-6	2656	0.98	73	1.02	1.00	1.00	15.99	19.87
CBAM 2018-7	2613	0.96	54	1.10	1.00	1.00	16.96	19.54
Dryden 47 Senior Loan Fund	2808	1.03	97	0.95	0.95	1.00	14.95	23.85
Galaxy XX CLO	2719	1.00	85	0.98	1.00	1.00	15.75	20.23
Hayfin Kingsland VIII	2905	1.07	68	1.04	1.00	1.00	17.80	22.50
Hempstead II CLO	3014	1.11	70	1.03	1.00	1.00	18.33	23.34
ICG US CLO 2017-2	2839	1.04	70	1.03	1.00	1.00	17.27	20.87
Jamestown CLO VI-R	2807	1.03	86	0.98	1.00	1.05	17.03	22.50
Jamestown CLO X	2703	0.99	82	0.99	1.00	1.00	15.80	20.18
KKR CLO 9	3090	1.14	76	1.01	1.00	1.00	18.41	22.06
KKR CLO 11	2964	1.09	77	1.01	1.00	1.00	17.60	21.21
KKR CLO 19	2947	1.08	69	1.04	1.00	1.00	17.99	20.66
KKR CLO 21	2950	1.08	69	1.04	1.00	1.00	18.01	20.10
Mariner CLO 6	2629	0.97	73	1.02	1.00	1.00	15.82	22.08
Mercer Field II CLO	3022	1.11	67	1.05	1.00	1.00	18.58	23.38
Race Point X CLO	2859	1.05	73	1.02	1.00	1.00	17.21	23.28
SBF 2016-2 (Salem Fields CLO)	2849	1.05	64	1.06	1.00	1.00	17.72	20.87
THL Credit Wind River 2016-2 CLO	2784	1.02	78	1.01	1.00	1.00	16.48	21.39
THL Credit Wind River 2017-2 CLO	2882	1.06	75	1.02	1.00	1.00	17.23	20.40
Voya CLO 2016-4	2783	1.02	93	0.96	0.95	1.00	14.98	21.06
Voya CLO 2017-4	2610	0.96	88	0.98	0.95	1.00	14.24	23.90

Additional adjustments are made to account for unknown portfolio or structure characteristics, assuming worse-than-average portfolio characteristics



²Adjusted Target Break-Even CDR = Base-Case Target CDR*WARF Adjustment*Diversity Adjustment*Manager Adjustment*Additional Adjustment

³ Calculation based on a AAA stressed forward high interest rate curve, with a base case CDR of 16.00 multiplied by all adjustments Note: Results are based on Intex CDI/CDU files with interest rates as of October 22, 2018.

Leveraged Loan Default Holdings – As of September 30, 2018*

Nine West Holdings Inc. (Industry: Consumer Goods – Nondurable)

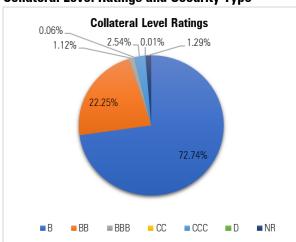
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Deal Name	Month	Balance (\$)						
KKR CLO 9	July 2018	921,936.96						
	August 2018	921,936.96						
	September 2018	921,936.96						
KKR CLO 11	July 2018	1,007,455.10						
	August 2018	1,007,455.10						
	September 2018	1,007,455.10						

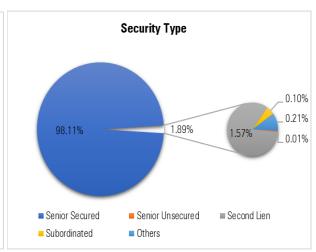
American Tire Distributors Inc. (Industry: Automotive)

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Deal Name	Month	Balance (\$)						
Dryden 47	September 2018	670,702.17						

^{*}Washington Inventory Services filed for chapter 11 in July but was not included in any portfolios of Morningstar-rated CLOs.

Collateral Level Ratings and Security Type





Note: Numbers may not add to 100% due to rounding.

Obligations rated CCC and below, which can often be a precursor to defaults, constituted around 2.6% of the total collateral across our deal sample at the end of September, up slightly from approximately 2.1% at the end of June. However, Morningstar does not foresee a large proportion of collateral going into default because of the significant share (96.1%) of assets rated B- and above at the end of the third quarter, an improvement from 90.6% at the end of the prior guarter.



Industry Distribution

The underlying collateral in our rated CLO universe was spread across a variety of sectors. High tech industries, healthcare and pharmaceuticals, and business services once again represented the top three sectors, with each accounting for 9% to 12% in September, unchanged from the top three sectors in June.

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