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Loan Downgrades on the Rise: Implications for CLOs

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Since year-end 2017, S&P and Moody's have increasingly been downgrading loans in both the US and Europe as the macro picture continues to grow more uncertain and more companies disappoint on revenue and EBITDA growth expectations. While both rating agencies have been active in downgrading loans this year, Moody's has been even more aggressive in placing loans on negative outlook.

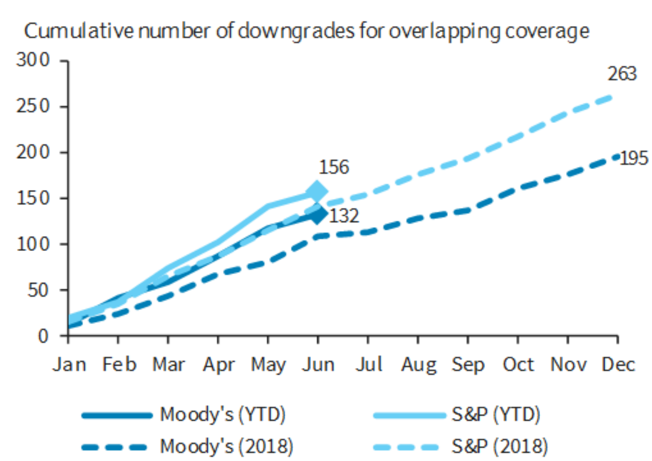
Global Loan Downgrades

The US loan market is more pressured by ratings agency action than it was last year. While CLOs often use corporate family ratings in Weighted Average Rating Factor (WARF) analysis, Moody's facility rating and S&P's issuer rating are typically used in CCC/Caa excess calculations; thus, we evaluate issuer-level rating migration in the loan market first.

In Figure 1 we plot the cadence of downgrades by each agency for loans in the US S&P LSTA Leveraged Loan Index thus far in 2019 relative to 2018 and find that the number is outpacing their 2018 rates. Even when we adjust for the growth of the index, the downgrade rates for both agencies this year is still well ahead of their respective levels at this point last year. Conversely, the number of upgrades is tracking well below last year's rate for both rating agencies (Figure 2).

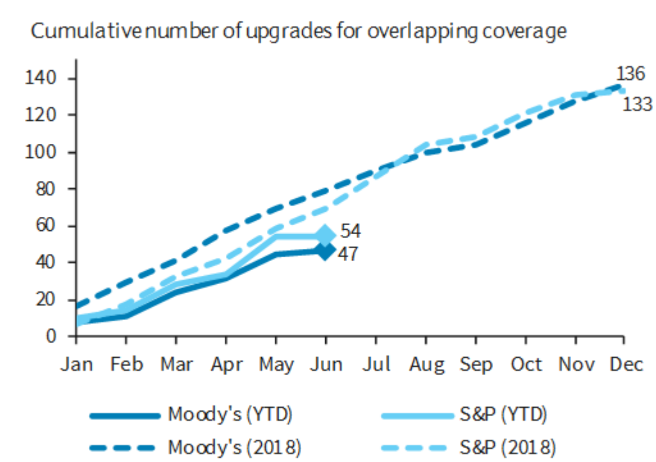
On a ratings-level specific basis, we find that over the past 12 months S&P has been slightly more punitive to single-B loans. Specifically, S&P has downgraded 6% of single-B loans to CCC over the past 12 months, slightly higher than Moody's rate of 4% over the same period. Conversely, Moody's upgraded 2% of CCC loans to single-B over the past year, versus 1% for S&P.

FIGURE 1
Downgrade Rates for US Loans This Year Are Outpacing 2018's Cadence for Both S&P and Moody's…



Source: S&P LCD, Bloomberg

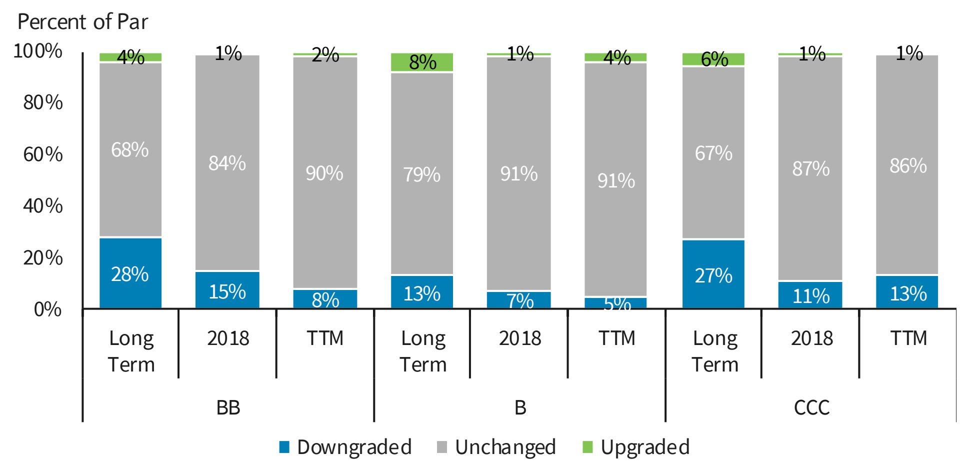
FIGURE 2
…While Upgrade Rates Are Trailing Last Year for Both Agencies



Source: S&P LCD, Bloomberg

FIGURE 3

S&P Full Cohort Migration Rates for US Loans



Source: S&P LCD, Bloomberg

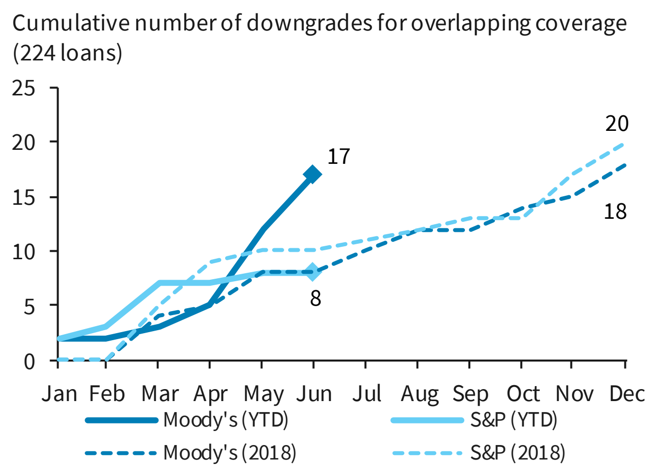
Given this finding, we evaluate S&P's recent ratings action relative to long-term rates. Figure 3 shows the full-cohort ratings migration rates for S&P over the long term (1998-present), the full year 2018, and the trailing 12 months. Generally, S&P's downgrade rate for full cohorts has declined with CCC downgrade rates being the exception. Specifically, the agency has on average downgraded roughly 13% of single-B loans to CCC in a given year against a current rate of just 5%. Conversely, the agency has also been less likely to upgrade loans by a full-cohort over the past 12 months than it has over the long term.

While the TTM downgrade rate data in Figure 3 may seem to contradict the data provided in Figure 1, we note that the increased downgrades in 2019 have been within a specific ratings cohort (from B+ to B or from B to B-, for example), which is included in the Figure 1 data and not Figure 3. The rate of full-cohort downgrades (B- to CCC+, for example) has been lower, especially in the second half of 2018 which is included in our TTM data in Figure 3.

In contrast to the US, Moody's has been more active in downgrading EU loans year-to-date compared with S&P (Figure 4), as discussed in *European loans: tracking downgrades* (June 14, 2019). Moody's has also upgraded no loans YTD, compared with six by S&P YTD (Figure 5).

FIGURE 4

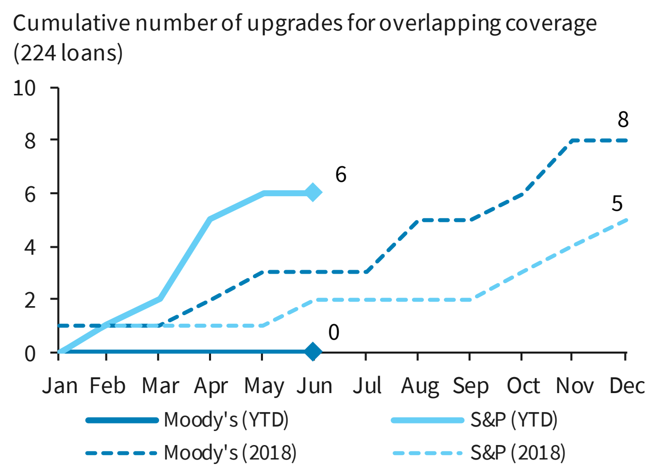
Moody's Downgrades of EU Loans Has Picked up Year-to-Date…



Source: S&P LCD, Bloomberg, Barclays Research

FIGURE 5

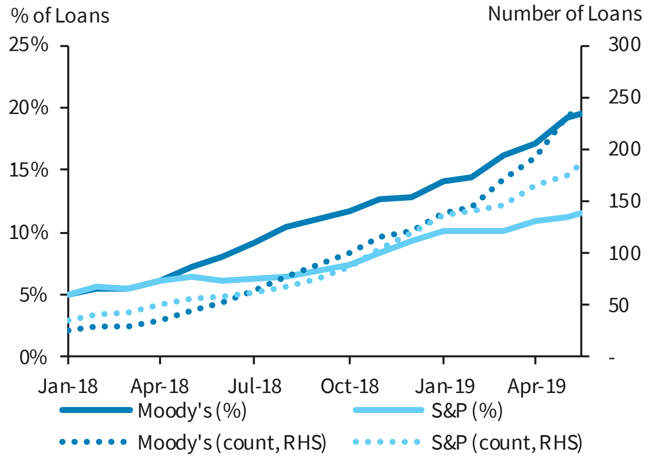
…With No Upgrades So Far This Year, Compared with Six by S&P



Source: S&P LCD, Bloomberg, Barclays Research

FIGURE 6

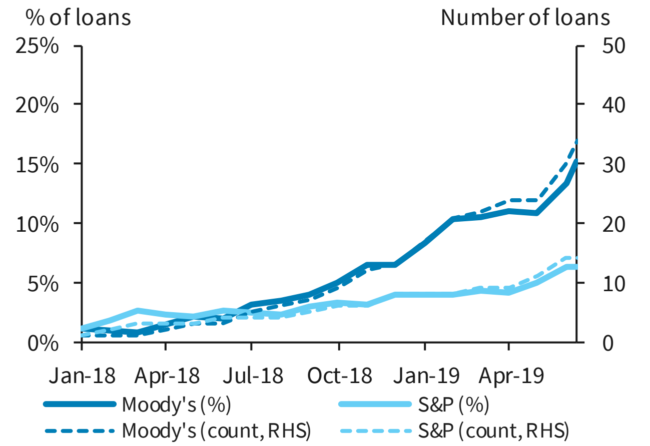
Number of Loans on Negative Outlook Has Increased in US…



Source: S&P LCD, Bloomberg, Barclays Research

FIGURE 7

…As Well as in Europe



Source: S&P LCD, Bloomberg, Barclays Research

Of the EU loan downgrades this year, about 40% were effectively Moody's "catching up" with S&P, while c.60% resulted in the current rating by Moody's being more conservative than that of S&P. Almost a third of the downgrades by Moody's were from a B1 rating to lower, another third from a B2 rating to lower and 21% of downgrades were from a B3 rating to lower. We note that the B1, B2, and B3 rating buckets currently make up 20%, 45%, and 11% of the S&P ELLI, respectively.

As loan downgrades have increased, so too have the number of loans placed on negative outlook in both the US and Europe. As Figures 6 and 7 show, both Moody's and S&P have increased the percentage and absolute number of loans with negative outlook, pointing to a potential increase in downgrade rates,

Notably, Moody's has increasingly put more loans on negative outlook, outpacing S&P, with more than twice the number of loans placed on negative outlook by Moody's than S&P in Europe.

Based on Moody's guide,[1] historical observations suggest that although the time between assignment of a new rating outlook and subsequent rating action has varied widely, about a third of issuers have been downgraded within 18 months of assignment of a negative rating outlook. These observations suggest there could be more downgrades to come if the operating environment does not improve and/or companies do not rein in leverage.

Drivers of Downgrades

When we look at the rating agency's transcripts regarding the rating changes (specific commentary highlighted for EU loans in *European loans: tracking downgrades*, June 14, 2019), we find no particular pattern that explains why loans were downgraded except that those companies had elevated debt levels (often from undertaking acquisitions) and/or had failed to de-lever to levels consistent with ratings prior to downgrade.

In the US, select names (such as Talen) were downgraded as a result of capital structures becoming increasingly secured, especially given the increasing level of loan-only capital structures and secured bond financing (see *Scoping for Security*, February 15, 2019). Macroeconomic factors also pressured downgrade rates. For example, Moody's cited "elevated raw material cost pressure" in their May downgrade of Goodyear.

[1] *Moody's: Rating Symbols and Definitions, February 2019.*

Reasons for elevated debt levels vary from declining and disappointing revenue and EBITDA (Moody's standard of not allowing many one-off adjustments contributed to the worsening EBITDA for some, but not all, names), exposure to volatile and/or cyclical end-markets to aggressive financial policies and acquisitive business models. For some, Moody's stated that further downgrades could be possible if leverage is not reduced in the next 6-18 months.

One factor that could explain the higher number of downgrades is the increasingly gloomy and uncertain macro outlook.[2] Recently, Moody's lowered GDP growth forecasts for Europe and a number of emerging markets, which, in combination with increasing uncertainties due to geopolitical risks and trade wars, make it ever more difficult for analysts to justify more optimistic projections to support leverage ratios and other financial metrics. While this is the case for both US and European companies, the growth outlook is relatively worse for Europe compared to the US, with the latter already coming from a lower base.

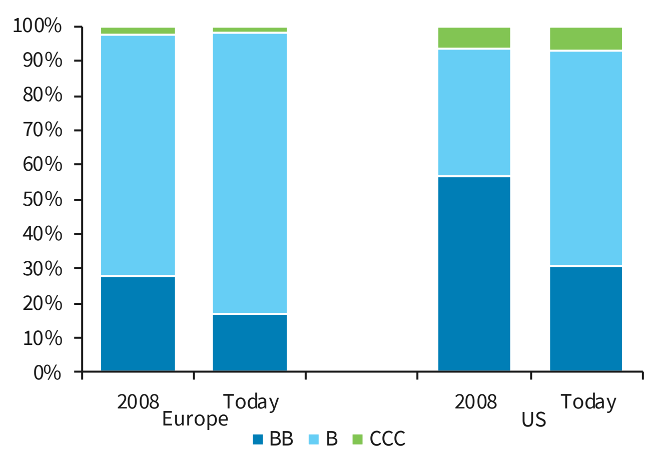
In addition to individual loan downgrades, analysts at Moody's have also downgraded a large number of sectors outlooks. This year, the outlook for European sectors such as automotive, retail, gaming and steel were downgraded from stable to negative, while Global/US outlooks for sectors such steel, railroads and manufacturing were downgraded from positive to stable between November 2018 to April this year. While overall liquidity for speculative-grade issuers in EMEA remains solid, Moody's noted increasing variation between sectors and that some pockets of stress are forming.[3]

As noted in *Rumble in the CLO Jungle: US vs. Europe* (May 17, 2019), while the percentage of CCC loans in the US is somewhat higher in the US than in Europe (which we think in part explains the lower (currently zero) trailing default rate in Europe versus the US), loans in Europe have a higher proportion (by c.15%) of single-B names than in the US (Figure 8), where most of the downgrades in Europe have come from. Additionally, as shown in Figure 9, new issue leverage in Europe, particularly for first lien, is higher than in the US.

While credit-specific downgrades will remain idiosyncratic in nature, we believe the above observations not only help explain some of the reasons behind the recent rise in downgrades and issuers put on negative outlook, but also, the higher rate of downgrades in Europe compared to the US.

FIGURE 8

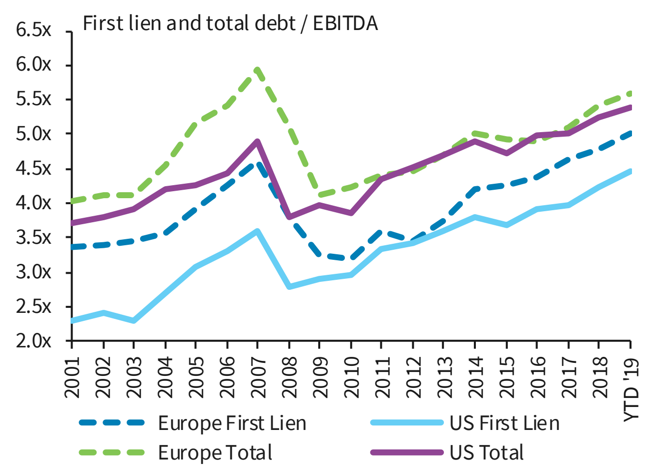
Both Regions Have Become More Single-B Heavy over Time, but Europe Is More So



Source: S&P LCD, Barclays Research

FIGURE 9

Total and First-Lien New Issue Leverage Are Higher in Europe Than in the US



Source: S&P LCD, Barclays Research

[2] *Global Macro Outlook 2019-20 (June 2019 Update): Global growth prospects at risk from increasingly uncertain US trade policy*, June 6, 2019.

[3] *EMEA: Overall liquidity remains very solid, with some pockets of stress*, June 12, 2019.

Loan Downgrade Effects on CLOs

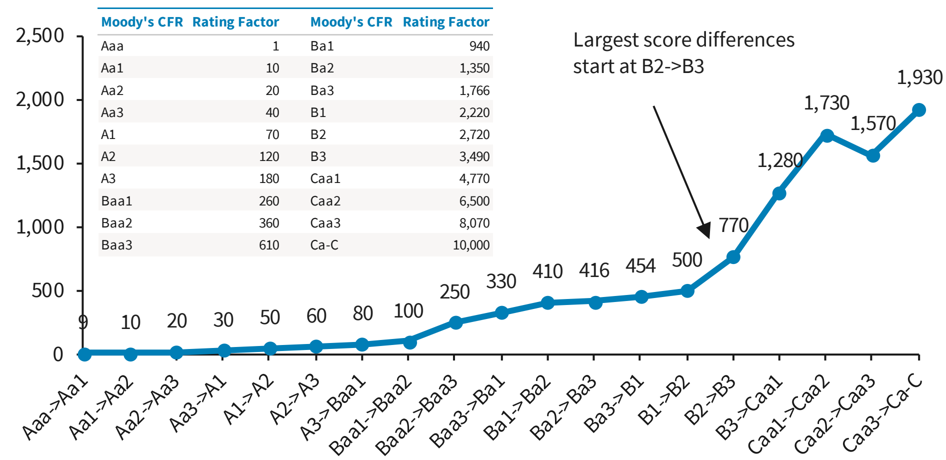
While CLOs are generally not forced sellers of loans when they are downgraded, even to CCC (*CLO Mythbusters: Fact-Checking the Headlines*, February 15, 2019), there are ratings based tests to ensure CLO assets do not become too risky as downgrades increase and spreads remain tight. Besides limits on CCC or lower rated assets, CLOs also have a rating metric called Weighted Average Rating Factor (WARF). Most CLOs in the US and Europe have migrated to using the Moody's-based WARF calculation, likely due to Moody's rating a larger percentage of the underlying credits found in CLOs. Some CLOs in Europe will also utilise a Fitch WARF, as Moody's and Fitch rate a majority of EU CLOs. Since a majority of US and EU CLOs utilise the Moody's WARF score, we will focus on that version of the metric.

The Moody's WARF measures the underlying assets' default probability ratings, based on Moody's corporate family rating (CFR). While we only analysed issuer-based ratings above, first lien assets usually have a rating one notch higher than the CFR. Thus, as more issuer ratings move lower, we would also expect CFRs to decline, thereby increasing WARF scores.

Asset ratings are assigned factors based on the Moody's 10-year idealized default rate, multiplied by 10,000. For example, an asset with a B2 CFR would be assigned a Moody's rating factor of 2,720, where an asset with an B3 CFR would have a 3,490 factor (Figure 10). Thus, an "issuer-rating" based WARF would actually be lower than actual WARF levels (post-crisis median of 2,819 for US BSL CLOs and 2,857 for European CLOs currently).

FIGURE 10

Moody's Rating Factor Scale Steps



Moody's CFR	Rating Factor	Moody's CFR	Rating Factor
Aaa	1	Ba1	940
Aa1	10	Ba2	1,350
Aa2	20	Ba3	1,766
Aa3	40	B1	2,220
A1	70	B2	2,720
A2	120	B3	3,490
A3	180	Caa1	4,770
Baa1	260	Caa2	6,500
Baa2	360	Caa3	8,070
Baa3	610	Ca-C	10,000

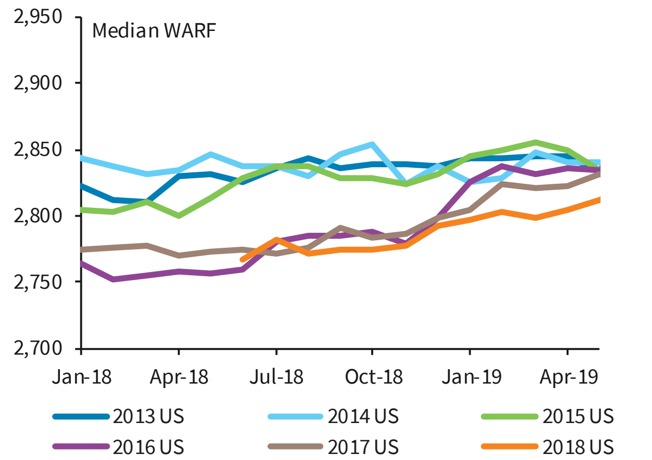
Source: Moody's, Barclays Research

For assets placed on *negative outlook* by Moody's, the rating is typically adjusted downward one notch for WARF calculations, and two notches for assets placed on *negative watch*. Assets placed on review for *positive watch*, though, are typically adjusted upward one notch. Defaulted assets are typically excluded in the WARF calculation, which can then help the WARF, but still penalises the overcollaterisation (OC) cushion through a lower par value (defaults have to be held at the lower of recovery value or market value).

For assets (or related obligor securities) that do not have a Moody's rating, deal documents typically state that a two-notch penalty of the S&P issuer rating can be used. Thus, if more of the underlying assets were S&P-rated only and S&P downgrades relatively more loans (or places them on negative outlook), WARF scores could increase more than Moody's simply downgrading the same asset.

FIGURE 11

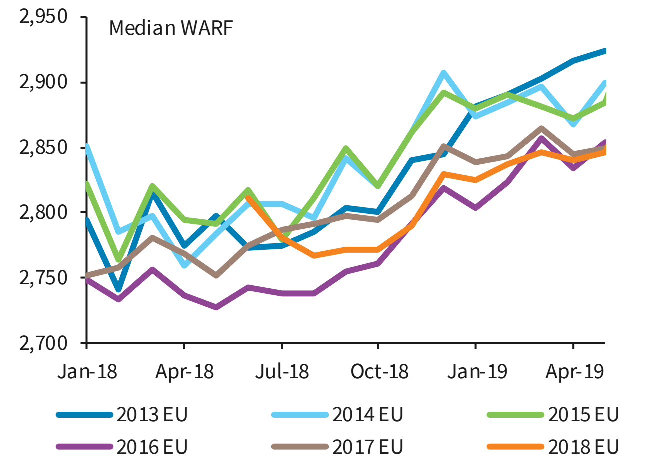
WARFs for US CLOs Are Flat to Slightly Higher since YE17…



Source: Kanerai, Intex, Barclays Research

FIGURE 12

…While EU CLO WARFs Have Climbed Steadily since 2H18



Source: Kanerai, Intex, Barclays Research

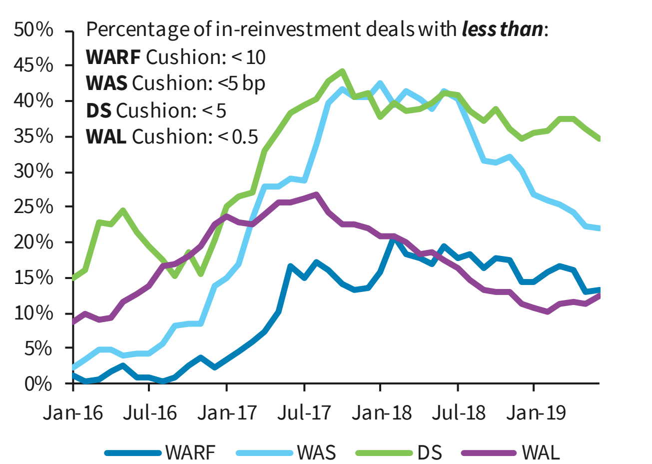
As asset rating downgrades have picked up, more loans have been placed on negative outlook, and issuance of single-B loans remains high, WARFs have also increased in the US (Figure 11) and EU (Figure 12), though more so in Europe. Over the past 12 months, EU CLO WARFs have increased 35 points (2018 vintage median) to 150 points (2013 vintage median). As a result, the median post-crisis EU CLO WARF cushion (difference between current and maximum WARF) has decreased c.23 points over the same period, to c.145.

As discussed in *A CLOser Look inside the Matrix* (March 15, 2019), Collateral Quality Tests (CQTs), such as maximum WARF, minimum Weighted Average Spread (WAS), and minimum Diversity Score (DS), are moving targets based on a combination grid, though WARFs tend to also have a ceiling at 3,200-3,500. When a CQT fails, no cash flows are diverted and the deal does not begin amortising. Instead, most CLO documents require the CLO manager to "maintain or improve" the failing test when making new trades.

As such, a manager has the flexibility to carefully adjust their portfolio over time to adjust to changes in the underlying collateral pools. Figure 13 shows that post-2017, US CLO managers have carefully re-positioned portfolios to remain or get back on-sides of CQTs.

FIGURE 13

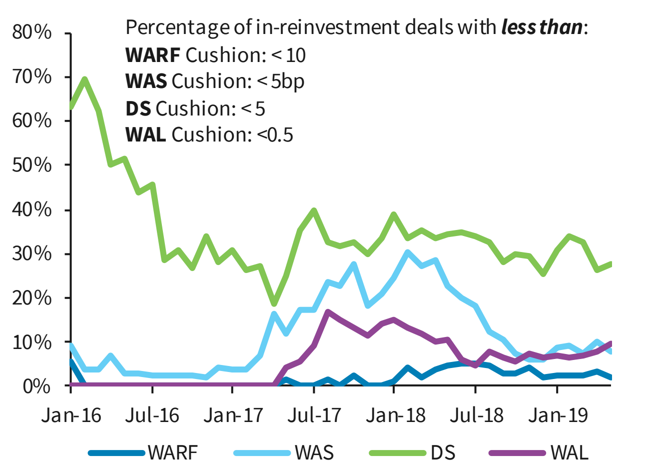
Most US BSL CLO CQT Cushions Have Improved…



Source: Kanerai, Intex, Barclays Research

FIGURE 14

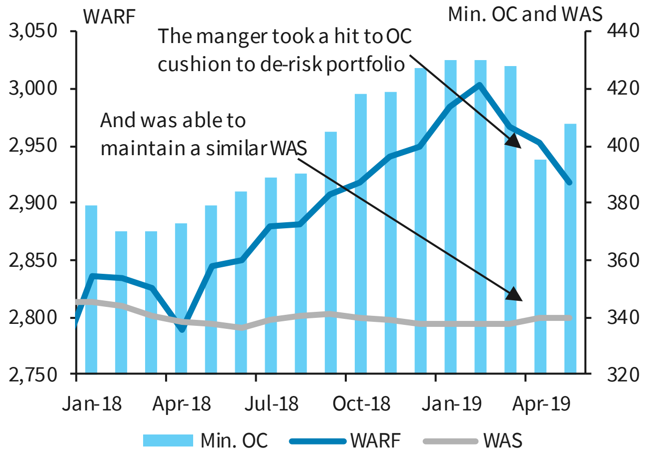
…While EU CLO CQT Cushions Remain High



Source: Kanerai, Intex, Barclays Research

FIGURE 15

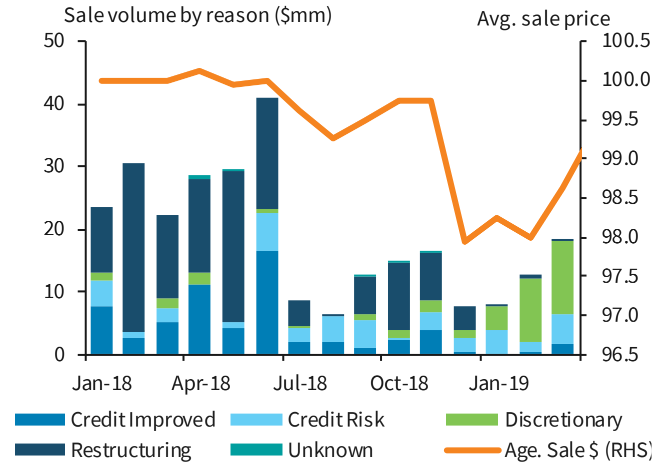
Example of US CLO Manager De-Risking the Portfolio…



Source: Kanerai, Intex, Barclays Research

FIGURE 16

…By Actively Selling Lower-Priced, Lower-Rated Assets Recently



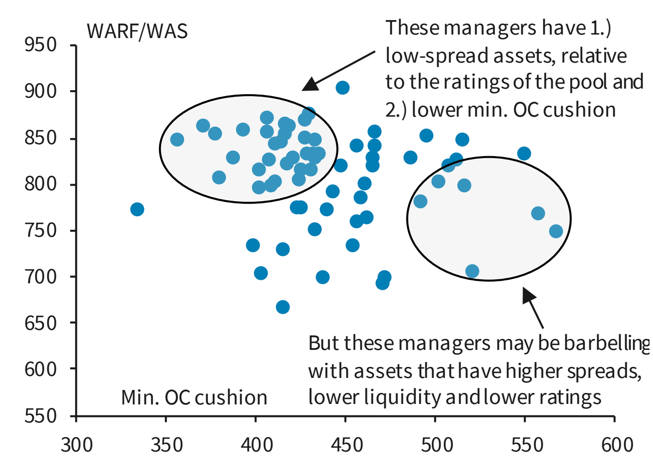
Source: Kanerai, Intex, Barclays Research

How a manager actually manages that shift in underlying asset ratings or spreads depends on the manager's skill and market conditions. Figure 15 shows one example of a US CLO manager that saw their WARF increase by almost 200 points in 2018. Despite room on the maximum WARF test (c.200 points of cushion in early 2019), the manager used the market volatility in 4Q18 to actively de-risk the portfolio (Figure 16). While approximately 20bp of min. OC cushion were burned in the process (part of which was due to a loan default), the WARF of the portfolio decreased nearly 90 points from the peak, without sacrificing WAS.

Despite the positive outcome for this CLO manager, though, managers that have a mix of less room on CQTs and riskier assets that could get downgraded at an increasing rate could find themselves in a worse position, especially as a reset or refi (where matricies could be more easily adjusted) remains uneconomical for most deals. As such, a manager has to carefully balance WARF and WAS to ensure CQTs are managed, and thus a headline high WARF or low WAS should always be considered in respect to how the rest of the portfolio is positioned. To account for this, we analyse the combination metric of WARF divided by WAS (or gross asset coupon in Europe) to better understand this balance.

FIGURE 17

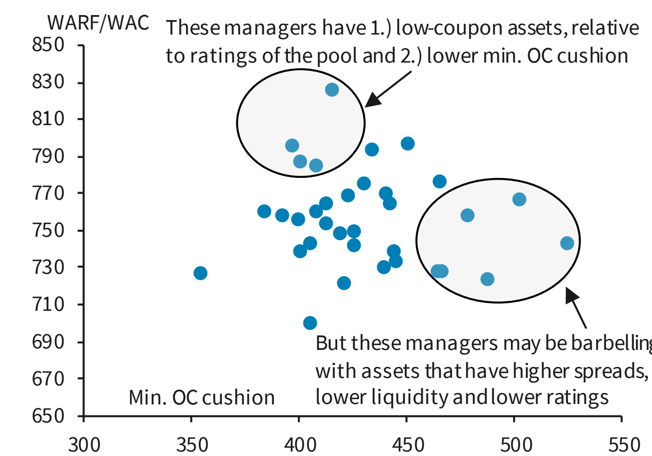
Managers Are Dealing with Higher WARFs in Different Ways



Note: At least four in-reinvestment deals with more than two years left in reinvestment Source: Kanerai, Intex, Barclays Research

FIGURE 18

Similar for European CLO Managers



Note: At least two in-reinvestment deals with more than two years left in reinvestment Source: Kanerai, Intex, Barclays Research

As shown in Figure 17 (US CLO managers) and Figure 18 (EU CLO managers), manager positioning for this metric (versus median min. OC cushion) differs greatly. Ideally, a CLO tranche investor would prefer a manager with a low metric value (low WARF and high WAS). However, for those managers in the bottom-right section of each figure (low WARF/WAS(WAC) and high min. OC cushion), other parts of the portfolio have been adjusted to get there (eg. barbelling), including a higher allocation to higher spread assets, more second liens, and lower liquidity.

Managers in the top left section of each figure have higher WARF/WAS(WAC) metrics, meaning those managers are receiving less spread versus the average rating of the pool. Additionally, the min. OC cushion for these managers is relatively lower (albeit, still high on an actual basis), so those managers will be more susceptible to tripping OC test triggers should losses need to be taken to reposition the portfolio.

As a result, we prefer those managers who position their portfolios to fall between both of these strategies, though we warn there are many data points to analyse on the underlying portfolios and these are just a small sample of available metrics. In addition, what may be a positive attribute in a portfolio for an equity investor, may not benefit a debt investor.

CCC/Caa Buckets

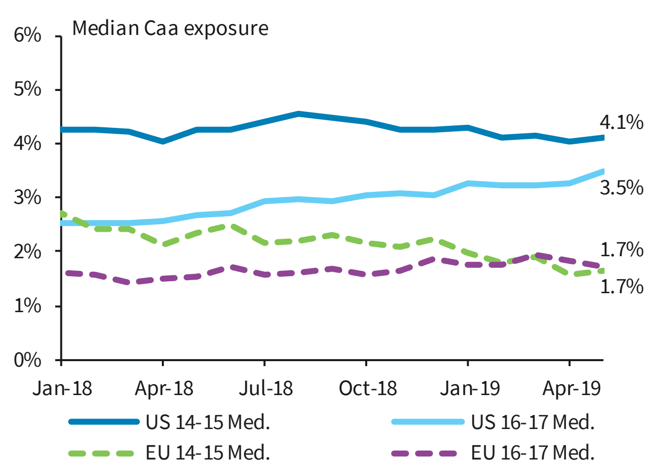
Besides WARF tests, CLOs also have CCC/Caa tests to ensure this rating cohort does not become over-concentrated. In contrast to the WARF calculation, however, Caa excess tests usually use the Moody's facility rating instead of the CFR, where CCC tests use S&P's issuer rating. Only when S&P issuer ratings are placed on credit watch status could they effect CCC excess (eg, a B3 held as a CCC), though watch status is less common than outlook.

Additionally, CCC/Caa excess amounts tend to be calculated in two forms. The first is equal the greater of the excess of 1) CCC assets over 7.5%; and 2) Caa assets over 7.5% (most regular-way deals in US and EU have the 7.5% limit). Thus, a situation where the aggregate CCC/Caa exposure in the pool increases up to 15% before OC gets haircut. However, as we noted above, most loans have overlapping S&P and Moody's rating coverage so that scenario is remote, in our view. The second situation is an aggregate of the CCC/Caa exposure to avoid any issues with overlapping coverage.

Despite the increase in downgrades recently, we still see that exposure to CCC and Caa assets in both the US and Europe as low and manageable (Figures 19 and 20).

FIGURE 19

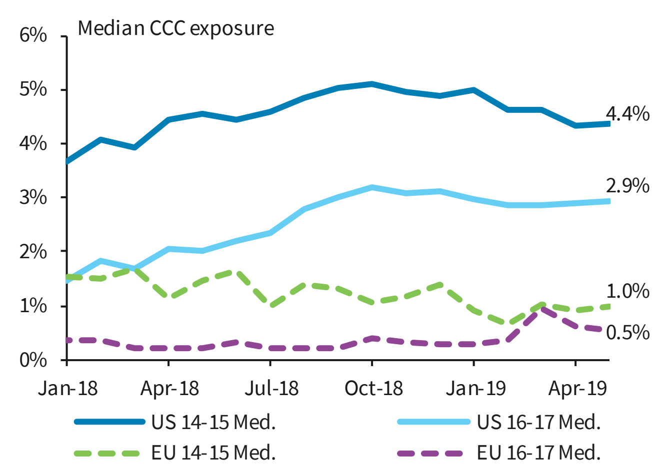
Caa Buckets Are Higher in the US Than in EU…



Source: Kanerai, Intex, Barclays Research

FIGURE 20

…Similar for CCC Buckets



Source: Kanerai, Intex, Barclays Research

CLO Takeways

As we expect the recent trend of more loans placed on negative outlook and ultimately downgraded to continue, we think:

- As more CLOs become constrained on CQTs over time, lower single-B rated loans will increasingly become difficult for CLOs to buy, especially if spreads on these loans do not help compensate for the lower rating. This constraint should reduce demand for these loans and could lead to an eventual decompression within the loan market.
- More CLO managers will try to use periods of volatility as an opportunity to clean up their CLO portfolios. However, as more managers end up in the same predicament on tighter CQT cushions, fewer managers will be able to achieve this goal, especially as the ability to fix the asset quality matrix in a refi or reset remains difficult.
- As CLO managers find themselves getting squeezed on higher WARFs and sometimes having to take hits to par in order to switch into higher rated assets, more CLO mezz rated tranches could be downgraded. Moody's and S&P have been active in downgrading BB and single-B tranches from CLOs that have lost par, seeing a decline in excess spread (WAS minus CLO liabilities) and an increase in WARF.
- While CCC/Caa buckets are still relatively low in CLOs (post-crisis average Caa is 3.3% in US BSL CLOs and 1.7% in EU CLOs), the current outsized amount of single-B credits, specifically those rated B3/B-, could make it increasingly difficult to manage a growing loan downgrade wave, as discussed in *A Look at the Future of CCC Buckets in CLOs* (September 14, 2018). As min. OC cushions are high today, though, we do not expect OC tests to begin tripping until CCC buckets surpass c.15%, based on median post-crisis stats.
- We encourage CLO mezz and equity investors to spend more time analysing the underlying credit quality of the collateral pools (B3 and CCC/Caa exposure), and how managers are currently positioning for future downgrades. Our preference is for CLO managers who:
  - Balance CLO WARF with WAS/WAC (lower WARF/WAS(WAC) score)
  - Do not overtly increase tail risk (second lien, lower liquid and higher spread assets)
  - Have high enough OC cushions to sell lower priced, lower rated credits when necessary
  - Have proven themselves to be able to pro-actively re-position the portfolio's average rating, while maintaining spread, in periods of volatility
- To assist investors in assessing some of the metrics, we provide updated CLO manager stats for both US BSL and European CLO managers in Appendix I and II.

Appendix I: US BSL CLO Managers

FIGURE 21

Median US BSL CLOs Manager Stats (Two Years or *Less* Left in Reinvestment Period)

Current Manager	Deals	WAS	Spread >4.5%	Bid Depth	Facil. <250mm	2nd lien	WARF	CCC/Caa*	WARF/ WAS	Diversity Score	Min. OC Cushion	Eq. NAV	<90% Assets	O&G Exposure	Retail Exposure	WAS Cushion	WARF Cushion	Div. Cushion	WAL Cushion
Alcentra	3	340	10.7%	5.2	2.2%	1.6%	2,927	3.9%	856	79	402	37.1%	7.8%	2.6%	3.7%	9	321	17	0.8
American Money Mgr Corp	3	332	16.2%	4.6	5.4%	0.4%	2,845	5.0%	856	98	426	48.6%	6.3%	3.4%	2.4%	70	333	8	1.2
Anchorage Capital Group	4	371	19.3%	4.8	3.1%	1.2%	3,113	5.9%	865	61	420	58.5%	5.4%	1.1%	1.9%	1	29	0	1.0
Apex Credit Partners	3	393	28.2%	4.2	3.2%	2.2%	2,898	6.7%	741	79	412	37.6%	11.1%	3.5%	7.5%	40	77	3	0.3
Apollo Capital Management	8	355	14.2%	5.5	3.3%	2.0%	3,076	5.8%	856	62	396	37.1%	6.9%	0.7%	5.6%	15	99	4	1.4
AXA Investment Managers	3	365	14.7%	5.0	4.1%	1.7%	2,987	4.0%	827	73	401	35.4%	6.5%	1.6%	3.1%	5	-1	6	0.8
Bain Capital Credit	3	345	13.0%	5.1	3.3%	1.9%	2,811	3.9%	815	89	400	43.4%	5.9%	2.1%	2.5%	-2	35	10	0.9
Benefit Street Partners	3	338	13.3%	5.2	1.4%	0.4%	2,822	3.3%	836	89	421	55.0%	6.0%	2.5%	3.0%	28	353	14	0.8
BlueMountain Capital Mgt	4	332	15.0%	5.5	1.5%	0.2%	2,913	3.3%	875	77	237	35.5%	8.6%	0.0%	3.1%	17	288	7	0.7
Carlyle Investment Mgt	4	345	18.5%	5.3	3.0%	2.3%	2,902	5.3%	843	82	394	51.0%	6.8%	2.5%	3.4%	6	314	19	1.3
CIFC Asset Mgt	6	350	16.3%	5.2	2.0%	1.4%	2,923	3.8%	834	85	486	57.1%	4.7%	0.4%	3.9%	29	57	2	1.0
Credit Suisse Asset Mgt	5	353	14.2%	4.4	8.0%	3.6%	2,945	6.0%	832	78	505	46.8%	6.2%	4.2%	0.9%	61	292	3	1.1
CVC Credit Partners	4	331	8.5%	5.4	1.9%	2.1%	2,788	3.4%	842	89	467	47.5%	5.2%	4.2%	4.8%	15	-1	5	0.6
GSO/Blackstone Debt Funds	6	341	9.9%	5.4	2.3%	2.7%	2,907	4.2%	851	81	492	35.4%	6.0%	1.3%	2.4%	13	131	5	1.1
Guggenheim Investment Mgt	5	339	17.2%	4.6	6.8%	0.6%	2,963	5.6%	871	72	359	50.6%	12.0%	2.8%	3.9%	1	0	0	0.7
ICG Debt Advisors	3	367	17.5%	4.5	5.8%	1.8%	2,921	5.8%	792	72	439	55.7%	7.9%	1.3%	3.8%	37	94	2	0.9
Investcorp	4	336	11.0%	5.2	1.8%	2.1%	2,781	3.6%	829	81	300	38.7%	9.0%	2.3%	2.3%	1	205	4	0.1
KKR Financial Advisors	3	340	17.2%	5.2	1.7%	1.8%	2,959	5.2%	875	75	418	51.3%	6.9%	2.7%	2.7%	4	-4	5	0.8
LCM Asset Mgt	3	316	10.4%	5.5	2.5%	0.6%	2,672	3.0%	833	104	373	47.5%	8.3%	2.6%	4.9%	11	528	48	0.6
Marathon Asset Management	3	394	30.3%	4.1	8.2%	0.1%	2,890	3.9%	731	74	222	10.1%	8.8%	1.2%	2.9%	49	310	18	0.8
MJX Asset Management	7	387	26.1%	4.3	5.8%	2.7%	2,764	5.6%	718	112	367	25.3%	10.3%	2.9%	4.5%	17	119	25	0.4
Regatta Loan Management	3	328	10.7%	4.8	1.8%	1.1%	2,791	1.9%	851	90	411	58.7%	4.9%	1.0%	2.9%	18	170	1	1.1
Neuberger Berman	4	314	5.7%	6.3	1.2%	1.9%	2,788	3.8%	888	74	384	41.9%	5.2%	2.8%	4.2%	5	158	12	0.3
Oaktree Capital Management	4	339	14.8%	5.4	2.3%	0.5%	2,927	5.1%	864	83	541	72.6%	5.7%	5.5%	4.5%	30	128	11	0.8
Och-Ziff Loan Management	5	341	13.8%	5.5	3.9%	3.1%	2,765	4.1%	811	83	410	41.2%	9.6%	1.9%	5.2%	9	45	8	0.7
Onex Credit Partners	4	326	12.4%	5.8	1.1%	0.4%	2,796	4.0%	862	79	312	45.7%	4.9%	2.2%	3.1%	11	488	9	0.5
Pretium Credit Management	3	348	19.9%	5.2	3.5%	1.2%	2,775	2.9%	775	68	370	36.9%	8.6%	4.8%	3.5%	16	549	0	0.2
PGIM	5	326	8.2%	5.4	2.5%	1.2%	2,795	4.4%	857	97	409	30.9%	7.0%	1.6%	5.8%	52	386	21	0.8
Sound Point Capital Mgt	7	370	24.2%	4.9	0.9%	0.7%	2,604	2.5%	708	68	492	54.5%	7.0%	3.3%	1.7%	8	87	4	0.7
Symphony Asset Management	3	327	10.3%	6.4	1.5%	3.2%	2,713	4.8%	830	74	453	56.8%	7.5%	1.7%	3.6%	13	328	16	0.4
THL Credit Advisors	6	343	12.7%	5.5	2.3%	1.7%	2,781	4.7%	824	77	452	37.6%	7.4%	2.7%	3.9%	3	84	6	0.7
TICP CLO Management	5	337	10.0%	5.2	1.6%	0.4%	3,009	6.5%	905	83	388	20.7%	9.4%	0.3%	4.2%	14	82	7	0.3
Voya Alternative Asset Mgt	4	328	9.6%	5.7	2.0%	2.5%	2,837	4.0%	869	95	378	42.0%	7.7%	2.0%	4.8%	20	38	14	1.0
Wellfleet Credit Partners	3	371	23.5%	4.7	6.6%	1.9%	2,945	4.6%	796	81	396	45.8%	12.2%	0.0%	3.9%	6	92	7	1.0
ZAIS Leveraged Loan Manager	3	413	34.3%	4.0	7.6%	3.4%	2,885	7.2%	699	90	455	33.4%	13.3%	3.8%	7.9%	33	114	22	0.4
Median		**344**	**14.3%**	**5.2**	**2.6%**	**1.7%**	**2,835**	**4.2%**	**831**	**78**	**412**	**44.2%**	**7.1%**	**2.1%**	**3.8%**	**12**	**117**	**6**	**0.7**
25th Pctle		332	10.5%	4.8	1.7%	0.7%	2,759	3.3%	790	73	362	29.4%	5.6%	1.2%	2.9%	5	36	3	0.2
75th Pctle		361	19.1%	5.5	4.5%	2.2%	2,922	5.6%	858	84	469	53.9%	9.0%	3.2%	4.9%	25	293	11	1.1

Note: At least three in-reinvestment deals with two years or less left in reinvestment. Data based on latest Intex update as of June 19, 2019. Deals issued in 2019 excluded.
*Reported max CCC/Caa exposure
Source: Kanerai, Intex, Markit, Barclays Research

FIGURE 22

Median US BSL CLO Manager Stats (Two Years or *More* Left in Reinvestment Period) – Part 1

Current Manager	Deals	WAS	Spread >4.5%	Bid Depth	Facil. <250mm	2nd lien	WARF	CCC/Caa*	WARF/ WAS	Diversity Score	Min. OC Cushion	Eq. NAV	<90% Assets	O&G Exposure	Retail Exposure	WAS Cushion	WARF Cushion	Div. Cushion	WAL Cushion
40 86 Advisors	4	323	8.8%	4.6	5.0%	0.9%	2,776	2.7%	858	95	405	51.0%	4.3%	1.1%	1.6%	9	47	5	2.6
AEGON USA Investment	6	333	10.7%	4.8	2.9%	0.2%	2,865	3.9%	858	81	466	58.9%	3.5%	3.1%	4.1%	20	221	10	2.8
Alcentra	7	343	11.2%	5.2	2.2%	1.7%	2,931	3.8%	854	78	495	38.8%	8.6%	2.7%	4.3%	16	73	5	3.1
American Money Mgr Corp	8	337	16.8%	4.4	6.7%	0.3%	2,791	4.2%	808	94	380	39.9%	6.0%	3.6%	1.9%	32	176	9	3.0
Anchorage Capital Group	6	373	19.7%	4.8	3.2%	1.0%	3,200	5.4%	857	62	416	58.2%	5.6%	1.1%	1.9%	172	31	0	2.6
Angelo, Gordon & Co	6	386	29.6%	4.1	6.1%	3.1%	2,754	4.7%	705	67	403	48.1%	7.2%	1.1%	1.9%	8	175	3	3.2
Apex Credit Partners	4	372	21.2%	4.4	2.5%	2.5%	2,738	4.3%	737	81	454	41.7%	9.3%	4.4%	3.9%	21	26	4	2.2
Apollo Capital Management	8	351	14.7%	5.5	3.3%	1.9%	2,985	5.4%	845	63	410	61.5%	6.8%	0.9%	4.2%	72	164	7	3.0
Ares CLO Management	19	344	9.6%	5.7	1.8%	2.2%	2,992	4.2%	867	81	416	54.2%	5.9%	3.7%	4.7%	9	97	3	2.9
ArrowMark	7	360	13.3%	4.9	4.7%	4.2%	2,812	3.5%	783	81	492	37.4%	6.9%	0.8%	2.1%	7	89	6	2.5
AXA Investment Managers	5	361	13.8%	4.9	3.4%	0.7%	2,958	1.6%	818	73	430	56.9%	5.3%	1.7%	2.3%	17	6	7	3.1
Bain Capital Credit	7	359	13.7%	4.8	3.9%	1.9%	2,882	3.8%	801	91	408	42.7%	5.5%	2.1%	2.0%	52	356	41	2.4
Bardin Hill	4	400	24.2%	5.2	2.9%	3.2%	2,657	2.7%	668	80	415	51.3%	6.2%	1.7%	3.8%	42	207	8	2.1
Barings	9	336	10.2%	5.1	5.1%	3.2%	2,811	4.4%	829	77	407	35.0%	6.1%	1.2%	4.5%	12	118	7	2.7
Benefit Street Partners	11	339	13.9%	5.0	1.0%	0.5%	2,812	3.1%	830	90	486	56.9%	5.8%	2.8%	3.0%	27	194	14	2.8
BlackRock Financial Mgt	8	328	9.3%	5.8	1.0%	2.1%	2,779	3.0%	844	82	466	51.9%	3.3%	3.1%	2.7%	30	133	8	2.5
BlueMountain Capital Mgt	14	341	15.2%	5.3	1.8%	0.3%	2,898	2.9%	850	74	356	46.9%	7.0%	0.0%	3.1%	20	280	8	2.9
Brigade Capital Management	4	362	22.1%	5.4	3.6%	1.0%	2,786	4.0%	769	71	557	58.0%	5.5%	4.3%	4.3%	28	279	9	2.5
Canyon CLO Advisors	6	365	19.7%	5.4	1.1%	1.9%	2,835	6.0%	776	71	423	52.4%	5.5%	2.5%	5.2%	27	92	6	3.0
Carlson Capital	5	344	12.9%	5.1	1.3%	1.2%	2,984	5.8%	866	65	371	50.2%	6.5%	2.7%	5.9%	15	285	4	1.6
Carlyle Investment Mgt	24	347	17.2%	5.2	3.6%	2.0%	2,903	5.0%	830	82	387	50.0%	6.8%	2.0%	2.8%	12	77	11	3.3
CBAM CLO Management	7	355	14.8%	4.8	5.8%	4.0%	2,773	2.2%	774	69	439	65.5%	5.6%	1.5%	0.0%	3	19	5	1.9
CIFC Asset Mgt	19	351	14.9%	5.2	2.4%	1.6%	2,895	3.5%	822	83	507	41.2%	4.6%	0.1%	4.1%	27	48	3	2.9
Credit Suisse Asset Mgt	18	353	12.9%	4.3	7.8%	3.4%	2,861	4.9%	819	77	425	56.7%	5.6%	3.9%	1.1%	139	295	5	2.6
Crescent Capital Group	6	360	15.7%	5.2	1.4%	2.4%	2,839	4.5%	788	75	458	35.2%	10.1%	2.3%	4.4%	108	335	15	2.9
CVC Credit Partners	11	333	8.5%	5.3	1.9%	2.0%	2,825	3.1%	836	90	432	56.5%	4.9%	4.2%	4.0%	11	339	11	3.1
Denali Capital	5	355	17.9%	3.9	8.4%	0.0%	2,861	1.4%	799	86	402	49.4%	5.2%	0.4%	3.3%	13	100	3	3.0
DFG Investment Advisers	7	352	17.5%	4.6	2.9%	0.5%	2,587	1.2%	732	76	414	49.7%	8.2%	0.5%	1.7%	10	242	5	2.7
Eaton Vance Management	4	330	9.0%	5.2	3.3%	0.4%	2,875	3.7%	866	81	418	45.7%	5.1%	2.5%	3.2%	20	176	2	3.1
GoldenTree Asset Management	7	340	13.7%	5.5	0.7%	0.2%	2,712	3.2%	805	60	501	52.5%	4.8%	4.3%	6.5%	19	537	15	3.0
Golub Capital	6	360	17.0%	4.1	8.7%	0.9%	2,990	3.1%	831	74	465	56.4%	7.3%	0.7%	4.6%	3	44	4	2.8
Greywolf Loan Management	4	352	14.2%	6.4	0.4%	1.9%	2,938	4.3%	836	60	549	65.3%	7.2%	3.9%	5.0%	27	278	15	2.7
GSO/Blackstone Debt Funds	19	343	9.2%	5.2	2.6%	3.0%	2,893	4.1%	843	80	456	52.9%	5.2%	1.6%	1.5%	5	78	2	2.7
Guggenheim Investment Mgt	4	341	14.9%	4.6	6.6%	1.0%	2,926	6.6%	873	76	406	59.6%	7.7%	3.4%	4.6%	1	73	2	2.7
Median	**345**	**13.6%**	**5.1**	**2.5%**	**1.7%**	**2,819**	**3.5%**	**826**	**79**	**431**	**51.5%**	**6.0%**	**2.2%**	**3.5%**	**17**	**123**	**7**	**2.8**	
25th Pctle		334	9.6%	4.7	1.7%	0.9%	2,753	2.3%	784	73	403	38.7%	4.6%	1.4%	2.2%	8	48	3	2.2
75th Pctle		359	17.1%	5.4	4.2%	2.6%	2,895	4.7%	851	85	485	58.9%	7.5%	3.2%	4.6%	29	301	15	3.2

Note: At least four in-reinvestment deals with more than two years left in reinvestment. Data based on latest Intex update as of June 19, 2019. Deals issued in 2019 excluded.

*Reported max CCC/Caa exposure

Source: Kanerai, Intex, Markit, Barclays Research

FIGURE 23

Median US BSL CLO Manager Stats (Two Years or *More* Left in Reinvestment Period) – Part 2

Current Manager	Deals	WAS	Spread >4.5%	Bid Depth	Facil. <250mm	2nd lien	WARF	CCC/Caa*	WARF/ WAS	Diversity Score	Min. OC Cushion	Eq. NAV	<90% Assets	O&G Exposure	Retail Exposure	WAS Cushion	WARF Cushion	Div. Cushion	WAL Cushion
HPS Investment Partners	11	335	8.9%	5.3	1.4%	2.6%	2,771	4.2%	830	73	420	46.4%	6.1%	3.7%	4.8%	98	279	19	2.8
ICG Debt Advisors	8	366	15.5%	4.5	5.9%	1.9%	2,885	4.4%	777	71	425	57.5%	6.9%	1.4%	4.0%	25	101	2	2.9
Invesco	6	332	8.2%	5.8	2.1%	2.0%	2,729	3.3%	825	87	417	56.4%	4.2%	2.4%	0.9%	25	181	5	3.1
KKR Financial Advisors	13	339	15.6%	5.3	1.9%	1.9%	2,969	5.1%	879	74	429	46.9%	6.3%	3.1%	2.9%	8	42	4	2.7
LCM Asset Mgt	14	324	11.5%	5.3	2.4%	0.6%	2,694	2.7%	834	100	435	37.7%	7.9%	2.5%	5.3%	7	488	16	3.2
Marathon Asset Management	4	389	26.2%	4.2	7.1%	0.3%	2,876	4.4%	735	76	399	46.9%	9.4%	1.6%	3.1%	20	322	15	3.0
Mariner Investment Group	4	324	7.0%	5.5	1.3%	1.8%	2,691	2.3%	829	72	512	60.8%	3.8%	2.0%	2.2%	n/a	648	0	2.2
MidOcean Credit Fund	5	353	17.0%	4.7	2.6%	0.0%	2,829	4.7%	806	70	424	43.5%	5.7%	1.3%	0.0%	17	416	15	2.3
MJX Asset Management	16	391	24.4%	4.2	6.0%	2.5%	2,762	3.9%	701	111	437	50.5%	6.6%	2.6%	3.6%	28	164	23	2.4
MP CLO Management	6	348	9.6%	4.7	3.8%	2.5%	2,952	6.5%	850	72	515	44.3%	10.3%	1.5%	7.5%	13	-22	4	2.8
Regatta Loan Management	7	330	10.3%	4.7	1.8%	0.9%	2,796	1.2%	850	90	432	60.7%	4.4%	1.1%	2.8%	19	45	5	3.0
NCC CLO Manager	4	403	34.5%	3.7	5.3%	0.0%	2,825	1.3%	707	84	520	49.3%	8.2%	4.7%	5.5%	42	100	16	2.1
Neuberger Berman	12	318	5.9%	6.2	1.3%	1.8%	2,754	2.9%	872	75	428	48.5%	4.7%	3.0%	4.5%	10	417	14	2.7
Oak Hill Advisors	11	343	10.2%	5.3	4.5%	3.2%	2,864	4.8%	835	70	428	61.2%	4.1%	3.4%	1.1%	141	403	21	3.1
Och-Ziff Loan Management	15	346	13.5%	5.3	3.9%	3.4%	2,816	5.3%	818	81	402	29.2%	9.1%	2.0%	5.0%	14	75	8	2.5
Octagon Credit Investors	23	362	17.1%	5.0	2.3%	3.4%	2,719	2.4%	753	84	433	49.7%	5.8%	2.7%	1.8%	32	156	11	2.7
Onex Credit Partners	7	333	13.0%	5.8	1.3%	0.5%	2,842	3.9%	856	80	377	60.4%	6.3%	2.1%	3.0%	21	194	14	2.5
Palmer Square Capital Mgt	5	332	9.4%	5.9	1.4%	2.4%	2,653	2.3%	800	75	516	59.2%	4.4%	2.5%	1.9%	129	566	25	2.7
PineBridge Investments	9	314	7.2%	6.0	1.9%	1.2%	2,845	3.1%	906	80	448	31.4%	6.5%	1.9%	4.2%	14	95	3	2.8
PGIM	23	326	8.1%	5.3	2.3%	1.2%	2,764	3.1%	853	96	427	50.6%	6.6%	1.7%	4.9%	22	90	11	3.0
Rockford Tower Capital Mgt	4	355	14.4%	5.2	2.5%	2.3%	2,687	2.7%	751	72	567	68.4%	5.3%	3.9%	1.7%	43	152	12	2.4
Saranac CLO Management	4	377	22.7%	4.7	3.3%	0.7%	2,911	2.9%	775	85	334	11.3%	13.8%	2.1%	5.5%	5	97	3	2.5
Seix Advisors	4	353	22.5%	5.2	3.0%	1.1%	2,691	3.4%	761	77	456	39.3%	7.4%	3.5%	2.8%	5	221	6	2.6
Shenkman Capital	4	334	8.4%	5.3	2.1%	2.0%	2,867	2.8%	861	85	393	42.9%	5.8%	0.7%	3.5%	9	55	8	3.1
Sound Point Capital Mgt	11	370	23.0%	4.6	2.0%	0.5%	2,605	2.0%	702	68	471	52.7%	6.5%	2.6%	2.0%	14	142	11	2.7
Steele Creek Investment Mgt	5	359	21.8%	4.6	3.9%	0.5%	2,726	3.6%	766	76	462	43.5%	10.7%	5.4%	2.8%	20	110	6	3.0
Symphony Asset Management	6	330	10.5%	6.1	1.9%	3.6%	2,740	5.0%	831	75	433	46.8%	7.2%	1.4%	4.5%	7	57	1	3.0
THL Credit Advisors	14	345	16.2%	5.3	4.8%	1.9%	2,850	4.0%	822	76	465	45.7%	7.7%	2.8%	3.7%	13	77	5	3.0
TICP CLO Management	7	332	4.9%	5.1	1.0%	1.2%	2,832	1.4%	849	80	414	63.7%	2.6%	0.3%	3.2%	22	108	6	2.6
Trinitas Capital Management	5	364	17.3%	4.9	2.3%	2.6%	2,894	3.9%	802	79	460	50.5%	6.3%	1.1%	4.2%	6	123	2	2.9
Voya Alternative Asset Mgt	17	327	9.1%	5.7	1.8%	2.1%	2,692	3.7%	823	93	447	48.5%	7.1%	1.8%	4.8%	27	608	39	2.8
Wellfleet Credit Partners	6	351	14.8%	4.5	5.3%	1.4%	2,796	1.5%	806	75	410	53.5%	6.0%	0.0%	0.7%	16	50	5	0.8
York CLO Managed Holdings	5	354	18.6%	4.8	4.0%	2.5%	2,799	3.9%	794	79	443	52.2%	6.0%	1.3%	4.8%	24	99	4	2.2
ZAIS Leveraged Loan Manager	5	415	33.8%	4.0	7.6%	3.0%	2,886	6.7%	696	93	470	42.5%	12.8%	4.3%	6.7%	25	58	9	3.0
Median		**345**	**13.6%**	**5.1**	**2.5%**	**1.7%**	**2,819**	**3.5%**	**826**	**79**	**431**	**51.5%**	**6.0%**	**2.2%**	**3.5%**	**17**	**123**	**7**	**2.8**
25th Pctle		334	9.6%	4.7	1.7%	0.9%	2,753	2.3%	784	73	403	38.7%	4.6%	1.4%	2.2%	8	48	3	2.2
75th Pctle		359	17.1%	5.4	4.2%	2.6%	2,895	4.7%	851	85	485	58.9%	7.5%	3.2%	4.6%	29	301	15	3.2

Note: At least four in-reinvestment deals with more than two years left in reinvestment. Data based on latest Intex update as of June 19, 2019. Deals issued in 2019 excluded.

*Reported max CCC/Caa exposure

Source: Kanerai, Intex, Markit, Barclays Research

Appendix II: European CLO Managers

FIGURE 24

Median European CLO Manager Stats (Two Years or *Less* Left in Reinvestment Period)

Current Manager	Deals	WAS	Gross Cpn.	% Bond	% Fixed	Spread >4.5%	Facil. <250mm	2nd lien	WARF	CCC/Caa*	WARF/ WAC	Diversity Score	Min. OC Cushion	Eq. NAV	<90 Assets	Telecom. Exposure	Retail Exposure	WAS Cushion	WARF Cushion	Div. Cushion	WAL Cushion
Alcentra	4	391	375	6.1%	1.3%	9.7%	10.8%	0.4%	2,870	1.7%	768	50	195	39.3%	8.8%	6.6%	5.4%	29	201	9	1.0
Apollo Credit Management	2	369	371	7.4%	0.6%	9.9%	11.3%	0.8%	2,841	1.7%	767	46	474	72.8%	1.2%	3.5%	9.0%	14	187	4	0.6
Ares Management	2	381	372	7.9%	4.2%	8.3%	8.0%	0.0%	2,934	0.3%	788	52	471	54.0%	2.8%	9.6%	1.0%	19	41	2	1.1
Barings	3	406	414	22.0%	12.9%	17.0%	13.3%	0.6%	2,992	4.6%	722	57	445	51.6%	12.0%	3.2%	8.5%	39	292	7	1.4
BlackRock Investment Mgt	2	381	385	14.2%	3.8%	12.1%	7.9%	1.1%	2,826	1.7%	734	57	464	58.0%	3.7%	8.0%	3.9%	11	157	7	0.7
Cairn Loan Investments	4	379	377	7.9%	1.2%	14.4%	8.3%	1.8%	2,923	2.9%	773	42	467	52.2%	6.2%	3.8%	0.9%	12	61	4	0.8
CELF Investment Advisors	3	386	386	12.7%	4.3%	12.3%	9.4%	0.0%	2,972	0.3%	770	56	370	45.0%	6.6%	7.1%	3.3%	12	95	6	0.5
Chenavari Credit Partners	2	403	406	19.2%	7.4%	13.4%	10.9%	0.7%	2,926	3.3%	720	48	448	49.2%	7.6%	4.2%	4.2%	18	85	5	0.9
CVC Credit Partners Group	2	399	389	14.2%	4.4%	12.0%	8.6%	1.1%	2,835	3.0%	729	48	477	54.8%	6.9%	6.1%	6.8%	9	165	9	1.4
GSO/Blackstone Debt Funds	5	392	377	11.8%	4.6%	11.2%	5.3%	0.2%	2,819	1.7%	748	51	479	53.9%	4.5%	7.4%	3.8%	24	344	9	0.7
Intermediate Capital Group	3	384	392	11.3%	5.7%	13.8%	6.7%	0.2%	3,006	2.6%	771	54	439	52.9%	6.6%	5.6%	1.3%	14	65	3	0.6
Investcorp Credit Mgt	3	388	394	10.5%	3.6%	14.3%	11.0%	1.9%	2,897	2.3%	740	57	433	56.4%	3.4%	7.1%	2.4%	8	26	3	0.7
KKR Credit Advisors	3	361	364	6.5%	1.5%	4.4%	7.6%	1.5%	2,810	1.4%	781	51	450	55.2%	2.2%	6.5%	4.8%	7	134	5	0.6
Oaktree Capital Management	3	359	364	16.3%	11.5%	5.1%	5.0%	0.0%	2,789	2.2%	767	51	409	58.0%	2.1%	7.8%	6.0%	19	193	11	0.7
PineBridge Investments	2	368	376	8.8%	4.4%	11.8%	7.8%	1.1%	2,927	2.3%	786	55	431	54.9%	5.8%	2.1%	3.6%	8	-8	2	0.6
PGIM	4	420	398	21.4%	14.5%	10.9%	5.0%	0.9%	2,910	3.6%	729	54	448	52.0%	6.8%	4.2%	8.0%	39	83	3	0.5
Spire Partners	2	404	386	15.4%	6.7%	13.1%	10.4%	1.2%	2,737	2.1%	709	56	417	57.5%	4.1%	3.8%	6.1%	27	184	4	0.8
Tikehau Capital	2	387	383	19.1%	6.7%	10.9%	5.5%	0.5%	2,843	2.0%	742	53	454	49.2%	6.6%	1.3%	6.3%	17	211	6	0.5
Median		**391**	**385**	**11.8%**	**5.0%**	**11.7%**	**8.3%**	**0.8%**	**2,868**	**2.0%**	**750**	**52**	**445**	**52.9%**	**6.2%**	**5.5%**	**4.2%**	**19**	**116**	**6**	**0.7**
25th Pctle		374	374	7.8%	2.0%	9.9%	6.1%	0.4%	2,826	1.4%	663	50	415	49.0%	3.8%	3.8%	3.0%	9	53	3	0.5
75th Pctle		403	393	15.2%	7.0%	13.7%	10.9%	1.3%	2,943	2.7%	663	55	476	57.8%	7.8%	7.2%	6.4%	31	228	9	0.9

Note: At least two in-reinvestment deals with two years or less left in reinvestment. Data based on latest Intex update as of June 19,2019. Deals issued in 2019 excluded.

*Reported max CCC/Caa exposure

Source: Kanerai, Intex, Markit, Barclays Research

FIGURE 25

Median European CLO Manager Stats (Two Years or *More* Left in Reinvestment Period)

Current Manager	Deals	WAS	Gross Cpn.	% Bond	% Fixed	Spread >4.5%	Facil. <250mm	2nd lien	WARF	CCC/Caa*	WARF/ WAC	Diversity Score	Min. OC Cushion	Eq. NAV	<90 Assets	Telecom. Exposure	Retail Exposure	WAS Cushion	WARF Cushion	Div. Cushion	WAL Cushion
Accunia Credit Management	2	368	371	12.6%	7.2%	9.3%	8.3%	0.0%	2,705	0.2%	728	49	355	48.0%	5.4%	11.0%	1.5%	16	313	1	1.7
Alcentra	6	380	379	6.5%	1.3%	9.5%	10.5%	1.1%	2,894	3.2%	766	51	412	47.8%	9.7%	7.5%	4.2%	17	161	9	2.4
Anchorage Capital Group	3	354	371	12.8%	11.0%	7.1%	4.7%	0.3%	2,740	1.7%	739	41	400	71.5%	3.2%	6.2%	3.3%	0	374	0	2.4
Apollo Credit Management	2	372	374	7.2%	0.7%	11.9%	12.3%	0.9%	2,806	1.3%	750	47	425	64.1%	1.2%	3.7%	8.9%	22	269	6	2.2
Ares Management	3	369	377	5.7%	3.0%	10.2%	6.6%	0.0%	2,915	0.0%	777	51	465	56.6%	1.5%	13.2%	3.4%	19	67	3	2.1
AXA Investment Managers	3	364	365	3.1%	0.6%	5.8%	8.5%	0.3%	2,866	0.0%	789	48	400	53.8%	4.8%	8.7%	5.0%	64	117	5	2.5
Bain Capital Credit	5	367	375	12.0%	5.4%	10.1%	8.2%	0.8%	2,845	1.7%	761	56	408	45.4%	8.3%	5.1%	4.3%	12	121	15	1.9
Bardin Hill	4	391	399	13.3%	7.1%	15.8%	8.3%	2.1%	2,804	2.3%	701	58	405	42.8%	8.9%	2.8%	10.1%	23	159	11	2.1
Barings	5	400	410	20.6%	12.2%	16.7%	11.4%	0.5%	2,959	4.2%	725	54	487	52.1%	11.7%	3.0%	8.6%	34	242	5	2.6
BlackRock Investment Mgt	5	409	383	13.3%	3.7%	10.4%	8.3%	0.8%	2,795	1.6%	731	57	439	62.3%	3.3%	8.0%	3.9%	45	283	9	2.3
BlueMountain Fuji Mgt	3	370	379	13.5%	4.8%	7.5%	4.9%	0.0%	2,817	0.7%	744	56	405	65.9%	1.9%	8.1%	2.7%	22	176	16	1.7
BNP Paribas	3	374	373	0.0%	0.0%	12.4%	7.9%	0.0%	2,845	0.7%	769	49	423	59.0%	5.5%	2.7%	4.6%	24	194	11	2.4
Brigade Capital Management	3	364	369	5.2%	3.2%	10.7%	4.3%	0.0%	2,825	0.0%	765	49	442	66.3%	2.4%	3.7%	2.6%	13	119	9	1.9
Cairn Loan Investments	4	378	380	9.9%	1.4%	12.1%	10.9%	1.5%	2,964	2.0%	776	44	430	50.0%	6.4%	3.5%	0.4%	12	52	2	2.0
CELF Investment Advisors	10	385	389	17.1%	8.3%	12.0%	9.5%	0.0%	2,920	0.7%	749	59	419	52.1%	6.1%	7.3%	3.3%	23	141	9	2.2
Chenavari Credit Partners	2	406	404	20.9%	8.1%	10.3%	7.2%	1.0%	2,948	3.7%	729	48	466	55.2%	6.9%	4.1%	4.7%	26	33	5	1.5
Credit Suisse Asset Mgt	7	391	390	14.8%	6.4%	11.2%	10.8%	2.2%	2,892	3.4%	744	61	524	55.7%	7.6%	7.1%	1.1%	16	120	12	2.0
CVC Credit Partners Group	8	390	389	15.3%	6.3%	10.2%	5.9%	1.1%	2,871	3.3%	743	48	426	52.1%	6.5%	6.8%	5.2%	20	97	5	2.6
Five Arrows Managers	4	363	378	8.4%	5.6%	7.6%	8.5%	1.1%	2,778	3.1%	739	53	444	61.8%	3.5%	3.7%	6.1%	19	88	10	1.7
GLG Partners	4	379	387	12.2%	5.2%	12.7%	5.5%	0.0%	2,925	0.8%	757	52	399	38.9%	12.3%	4.6%	4.4%	10	194	8	2.1
GoldenTree Asset Management	3	387	382	12.0%	5.0%	10.2%	9.9%	0.0%	2,888	2.0%	759	50	478	61.9%	9.3%	1.8%	8.1%	41	144	12	2.8
GSO/Blackstone Debt Funds	8	366	368	11.1%	4.7%	8.3%	6.2%	0.6%	2,822	1.7%	768	51	503	51.7%	5.1%	7.3%	3.4%	29	135	7	2.1
HPS Investment Partners	2	344	344	4.5%	1.1%	3.8%	6.9%	0.5%	2,844	0.5%	827	50	416	62.8%	1.4%	6.4%	5.2%	14	114	6	1.1
Intermediate Capital Group	5	387	388	12.3%	5.8%	14.7%	7.8%	0.6%	3,009	2.5%	755	53	412	54.7%	6.5%	3.8%	1.5%	16	130	7	1.8
Investcorp Credit Mgt	9	375	385	8.3%	3.0%	14.4%	10.0%	1.3%	2,904	2.2%	759	56	392	50.0%	3.5%	8.4%	2.4%	18	63	5	2.2
KKR Credit Advisors	7	355	356	6.9%	2.2%	4.7%	5.2%	1.0%	2,867	1.6%	798	52	450	55.9%	1.8%	6.0%	4.7%	15	162	5	2.2
Oak Hill Advisors	3	384	391	10.6%	7.4%	14.1%	9.7%	1.6%	2,967	2.2%	762	50	384	43.4%	5.8%	11.7%	5.8%	14	119	10	1.9
Och-Ziff Loan Management	4	390	381	15.0%	5.3%	10.8%	7.9%	1.0%	2,795	2.1%	734	60	445	58.2%	3.3%	4.7%	3.3%	37	228	8	2.1
Onex Credit Partners	2	348	351	10.2%	5.7%	5.5%	4.3%	0.0%	2,794	0.8%	797	49	397	59.2%	3.2%	2.8%	1.8%	33	80	12	1.0
Partners Group Mgt	3	367	363	4.8%	0.0%	8.1%	9.0%	1.8%	2,854	1.9%	786	51	408	51.5%	2.0%	7.2%	4.1%	12	195	9	2.1
Permira	2	381	386	13.5%	6.4%	7.1%	7.9%	1.8%	2,787	4.0%	722	50	421	62.0%	1.6%	9.8%	4.9%	21	214	8	2.1
PineBridge Investments	2	363	370	8.5%	4.0%	9.8%	7.1%	0.7%	2,939	3.1%	794	55	434	54.0%	5.4%	4.0%	7.3%	13	117	13	1.7
PGIM	9	383	399	21.6%	14.7%	10.4%	5.2%	1.1%	2,921	1.1%	729	54	464	54.7%	6.9%	4.6%	6.6%	31	112	3	1.6
Tikehau Capital	2	367	371	14.6%	4.6%	7.4%	6.8%	0.2%	2,857	0.9%	771	53	440	56.8%	2.9%	0.8%	5.4%	17	116	4	2.2
Median		**378**	**381**	**11.8%**	**5.0%**	**10.4%**	**8.0%**	**0.8%**	**2,867**	**1.7%**	**753**	**52**	**431**	**54.6%**	**5.0%**	**5.9%**	**4.0%**	**20**	**141**	**7**	**2.1**
25th Pctle		367	370	7.5%	2.7%	8.4%	6.0%	0.3%	2,814	0.7%	734	49	405	49.1%	2.7%	4.2%	3.0%	13	86	4	1.6
75th Pctle		390	391	14.8%	7.1%	12.3%	9.8%	1.3%	2,919	2.6%	770	56	464	61.9%	7.2%	7.6%	5.6%	28	218	10	2.5

Note: At least two in-reinvestment deals with more than two years left in reinvestment. Data based on latest Intex update as of June 19, 2019. Deals issued in 2019 excluded.

*Reported max CCC/Caa exposure

Source: Kanerai, Intex, Markit, Barclays Research

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