CLO Weekly

Who are the investors in US CLOs?

Bank of America Merrill Lynch

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Securitized Products Strategy
Global

Table of Contents

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Link to Common acronyms

Key takeaways

- Data indicates that the majority of US CLO holdings are in the hands of longer-term/real-money investors.
- We look at some factors including leverage, redemption needs and capital charges to gauge potential selling in a downturn.
- It may take some time for the renewed interests in mezz US CLOs to result in tighter spreads given the YTD lag of the market.

Who are the investors in US CLOs?

There's a growing sense among CLO market participants that these investment vehicles are funded by steadier capital compared to before the crisis, especially following the risk-retention phase of the US 2.0 market. We start off this week by using various public sources including data provided by the Fed, SNL, NAIC as well as Bloomberg to gauge what the current investor base of the US CLO market looks like. Based on the holdings data provided by the Fed, the 24%, 18% and 11% held respectively by US insurance companies, depository institutions and pension funds add up to just over 50% of the 88% of all US CLOs estimated to be held by US investors. Combining this with certain news reports we have come across in the past indicating that the CLO holdings by the top Japanese banks amount to over ¥9tn, which would imply that perhaps close to100% of the 12% of all US CLOs held by foreign investors are in the hands of Japanese banks, it does appear to us that the majority of US CLO holdings are in the hands of longer-term and real-money investors.

Potential selling during market downturns?

The historical performance of leveraged loans/CLOs and the strong structural protections provided for debt tranches help make a strong case that investors would be handsomely rewarded by CLOs' attractive spread compensations provided that they have the ability to hold their positions through downturns. Of course, capital is patient until it isn't, especially if a downturn turns out to be way worse than anticipated and if redemptions greatly exceed those anticipated by portfolio managers. We point to some qualitative factors which might be considered by different investors in a risk-off scenario in determining whether or not they would need to sell their CLO positions, including leverage, redemption needs and capital charges.

Market Recap

We saw $338mn in CLO bonds in for the bid this week, mostly in AAAs, As, BBs and equity. While IG-rated CLO notes have maintained investor interests throughout the summer, real money interests have only started to return to the lower part of the CLO debt stack. However, we expect it might take some time for the renewed interests to materialize in tighter mezzanine spreads, if at all, given the lagging fashion CLOs have tracked broader risk assets into any rally YTD. A lot of the equity bonds in for the bid this week also ended up not trading as bid/ask spread materially widened. Generic secondary spreads remained unchanged across the CLO capital stack.

Who are the investors in US CLOs?

There's a growing sense among CLO market participants that these investment vehicles are funded by steadier capital compared to before the crisis, especially following the risk-retention phase of the US 2.0 market. We start off this week by using data provided by the Fed, SNL, NAIC as well as Bloomberg to gauge what the current investor base of the US CLO market looks like. The data we obtain from these sources, together with the anecdotal color we get that leverage still doesn't seem to be widely used in the space, leads us to believe that the majority of US CLOs are indeed in the hands of longer-term and real-money investors.

The historical performance of leveraged loans/CLOs and the strong structural protections provided for debt tranches help make a strong case that investors would be handsomely rewarded by CLOs' attractive spread compensations provided that they have the ability to hold their positions through downturns.

Of course, capital is patient until it isn't, especially if a downturn turns out to be way worse than anticipated and if redemptions greatly exceed those anticipated by portfolio managers. We finish our discussion by pointing to some qualitative factors which might be considered by different investors in a risk-off scenario in determining whether or not they would need to sell their CLO positions.

Investor data for the US CLO market

The Financial Stability Board (FSB)'s launched a global examination earlier this year[1] into the holders of CLOs around the world. After that, the Federal Reserve published an article in July providing what might be the first somewhat-granular breakdown of the investor base of US CLOs by location and type[2].

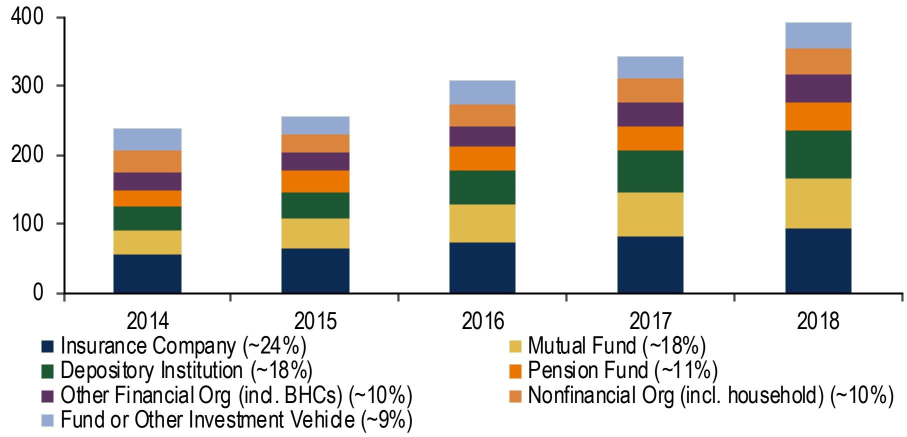
The findings in this research are based on data coming from the Treasury International Capital (TIC) system as well as SIFMA. This transparency into the market has been made possible as a result of US CLOs being primarily domiciled in the Cayman Islands and the Fed's collection of US investors' foreign holdings data through their annual claims surveys. TIC data also tracks foreigners' holdings of domestically-issued (US-issued) US CLOs.

Altogether, the Fed estimates that 88% of the approximately $616bn US CLO market were held by US investors as of 2018YE while the rest were held by foreign investors. The US investors' foreign holdings data also allows the Fed to determine the composition of the investor base which are shown below in Chart 1. Note that the 2018 percentages were not available in the study and were simply extrapolated from 2017. In aggregate, we find these data to be reasonably consistent with what we obtained from other sources.

[1] See CLO Weekly : Thoughts from Asia – a global perspective on CLOs 15 March 2019.

[2] See "Who Owns US CLO Securities?", Emily Liu and Tim Schmidt-Eisenlohr, FEDS Notes, July 19, 2019, https://www.federalreserve.gov/econres/notes/feds-notes/who-owns-us-clo-securities-20190719.htm,

Chart 1: US holdings ($bn) of US CLOs domiciled in the Cayman Islands, by investor type (excludes US CLOs domiciled in the US)



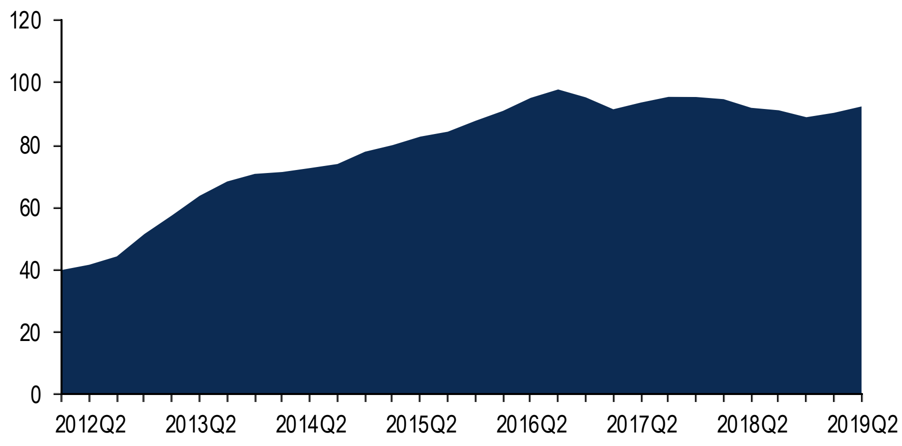
Source: Treasury International Capital

*Note that the 2018 percentages were not available in the study and were simply extrapolated from 2017.

For example, based on the data provided by SNL, US banks held about $89bn worth of CLOs (which could include foreign CLOs) as of 2018YE. The TIC data referenced in the Fed's report calls for an estimated total of about $109bn if we extrapolate the percentages for domestically-issued US CLOs (as shown in Chart 1) to the entire US CLO market.

According to the data provided by SNL, as of 2Q19, the total amount of CLOs (based on the SNL field called "Str Fin Prd: Corporate and Similar Loans") held by banks amounted to $92.4bn, which represents about 4.6% of the total securities reported by these banks with CLOs. Including the other banks without CLO holdings, the total CLO holdings represent about 2.4% of all the reported securities for these banks which summed up to about $3.9tn.

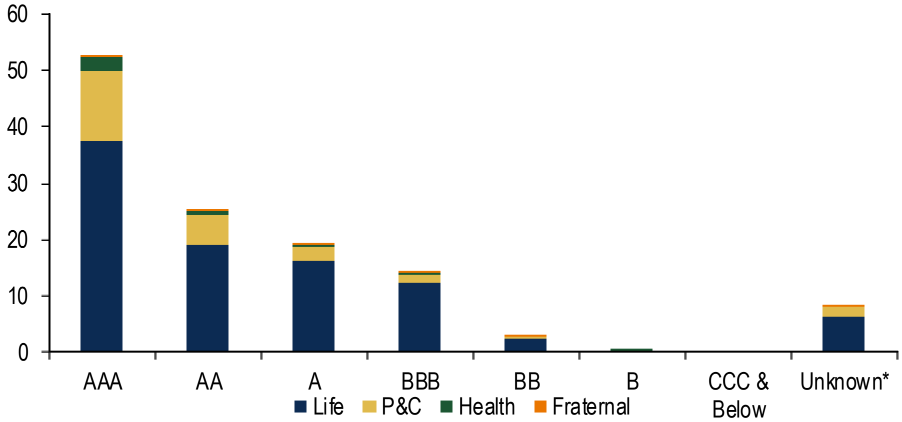
Chart 2: US banks' quarterly CLO holdings data ($bn)



Source: BofA Merrill Lynch Global Research, SNL

The National Association of Insurance Commissioners (NAIC) provides another set of data detailing CLO holdings by US insurance companies which we can compare with those provided by TIC. Plotted below in Chart 3 are the 2018YE CLO holdings by US insurance companies, broken out by rating and by company type. The total exposure of $122bn compared with the extrapolated total of $148bn based on TIC's data.

Chart 3: US insurance companies' exposure to CLOs as of 2018YE by rating and company type ($bn)



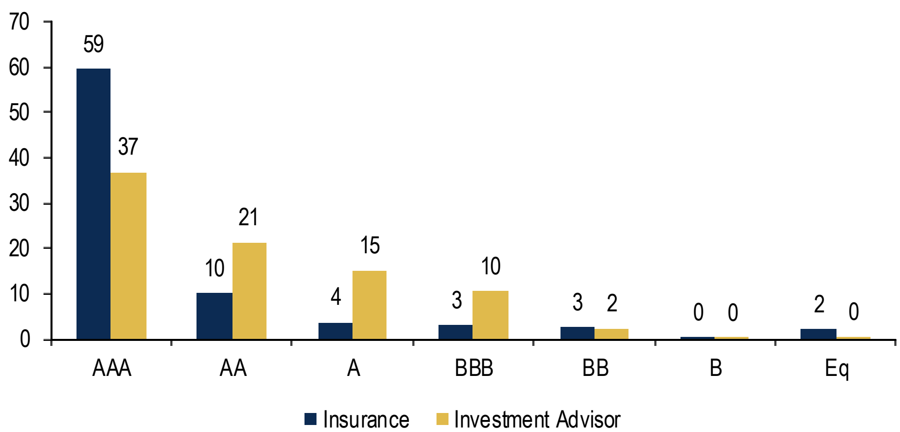
Source: NAIC

Note that these data are obtained by NAIC primarily using insurance companies' Scheduled Ds included in their annual statements. Because of a change in methodology in 2018, the 2018 figures reported above became non-comparable with those from earlier years.

An additional set of data we looked at in compiling this report came from Bloomberg. Starting with the set of US CLO tranche cusips which haven't paid off, we used the "All Holders Public Filings" field in Bloomberg to obtain all their publicly filed positions.

Doing so allowed us to map approximately $176bn of cusips to specific investors, the majority of which fall into the "insurance" or "investment advisor" categories. (To ensure that these data are somewhat up to date, we included only data where the filing date was on or after 2018YE.)

Chart 4: Insurance companies' and investment advisors' US CLO holdings data ($bn)



Source: BofA Merrill Lynch Global Research, Intex, Bloomberg

About $87bn worth of holdings determined using Bloomberg can be mapped to insurance companies and about $81bn can be mapped to investment advisors. The numbers mapped to insurance companies on the whole still seem consistent with those obtained from NAIC and the Fed's report.

Based on the holdings data provided by the Fed, the 24%, 18% and 11% held respectively by US insurance companies, depository institutions and pension funds add up to just over 50% of the 88% of all US CLOs estimated to be held by US investors.

Certain news reports we have come across in the past indicate that the global CLO holdings by the top Japanese banks amount to over about ¥9tn[3]. Considering the relative sizes of the US and European CLO markets, that would imply that close to100% of the 12% of all US CLOs held by foreign investors are in the hands of Japanese banks. As such, it does appear to us that the majority of US CLO holdings are in the hands of longer-term and real-money investors.

What might investors consider in a market downturn to determine if they would shed their CLO positions?

The historical performance of leveraged loans/CLOs and the strong structural protections provided for debt tranches help make a strong case that investors would be handsomely rewarded by CLOs' attractive spread compensations provided that they have the ability to hold their positions through downturns.

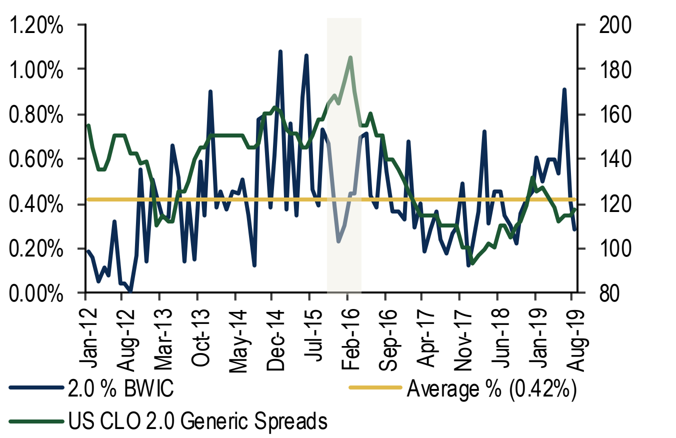
Given that the majority of US CLOs are in the hands of longer-term and real-money investors, it would appear that the pressure to sell from mark-to-market losses during downturns should be manageable.

That being said, capital is patient until it isn't. In this section, we point to some qualitative factors which might be considered by investors as they decide on whether to shed their CLO positions should they begin to accumulate mark-to-market losses during market downturns. We acknowledge there are many moving parts involved in such decisions and a lot will also depend on the nature and severity of the downturn as well as the path there so this discussion is by no means meant to be exhaustive.

Levered positions

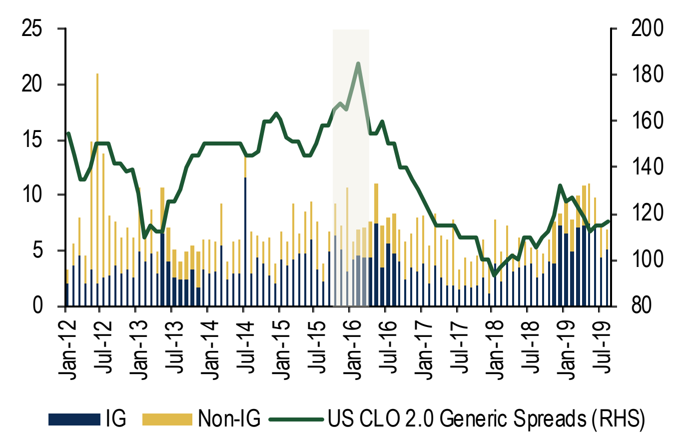
Levered CLO positions are perhaps the most susceptible to forced selling during market downturns. While leverage is certainly still being offered and employed in pockets of the US CLO market, we do not have the sense that it is very pervasive, particularly following the energy rout in late 2015 and early 2016 which saw many of these trades forcibly unwound at losses. Even during the late-2015 to early-2016 episode, the amount of selling as a portion of the entire market didn't seem to be out of the ordinary.

Chart 5: Monthly US BSL CLO debt BWIC volume expressed as percentages of total US BSL CLO liabilities outstanding



Source: BofA Merrill Lynch Global Research, Intex

Chart 6: Monthly combined US CLO/CDO TRACE volume ($bn)



Source: BofA Merrill Lynch Global Research, TRACE

Plotted above in Chart 5 are monthly US BSL CLO debt BWIC volume expressed as percentages of the estimated amount of outstanding US BSL CLO liabilities. From 4Q15

[3] See for example the Bloomberg story published at https://www.bloomberg.com/news/articles/2019-02-28/clo-market-s-japanese-whale-faces-increased-regulatory-scrutiny

to 1Q16, none of the monthly percentages exceeded one standard deviation above the average for all months since the beginning of 2012 except for October 2015.

Capturing trades which might have happened away from BWICs using monthly combined CLO/CDO TRACE volume also illustrates that there wasn't a spike in secondary activity from 4Q15 to 1Q16 (Chart 6). We believe the data from this period gives us a sense of the kind of forced selling from levered positions we might see during another major downturn. While bid levels certainly took a hit during the energy rout, there was simply not a whole lot of selling happening judging by the data we have.

Mutual funds, separately-managed accounts and redemptions

The other group of investors which could be susceptible to forced selling during market downturns are mutual funds as well as separate accounts managed by asset managers. Depending on how these accounts are already positioned heading into the downturn and how much cash they have, they might have to sell some of their assets to meet redemption needs.

There are likely as many strategies out there as there are funds available which invest in CLOs. When faced with redemptions, there obviously could also be a choice in terms of which assets to get rid of first depending on the mix of assets in these funds. To the extent that better bids might be obtained for assets which have better secondary market liquidity, they might become the first choice of portfolio managers.

As discussed earlier, the nature and severity of the downturn as well as the path there also play an important role. Different extents of price movements among different asset classes could give rise to investment opportunities leading some portfolio managers to shed their CLO positions by choice to make room for even more attractively-valued assets and that is also something we have seen in the past.

Insurance companies

Next, we consider regulated investors which are subject to capital charges such as insurance companies. For non-modeled structured securities such as CLOs, the NAIC designations associated with CLO investments are determined by their external ratings (see Table 1). If a CLO bond is rated A- or above, it receives an NAIC designation of 1, which receives the most favorable risk-based capital (RBC) treatment.

Table 1: NAIC designations for CLO bonds based on external ratings

Designation	External Rating	Investment RBC Charges		
		AVR (pre-tax)	AVR (post-tax)	Non-AVR
NAIC 1	**AAA to A-**	0.40%	0.30%	0.30%
NAIC 2	**BBB+ to BBB-**	1.30%	0.96%	1.00%
NAIC 3	**BB+ to BB-**	4.60%	3.39%	2.00%
NAIC 4	**B+ to B-**	10.00%	7.38%	4.50%
NAIC 5	**CCC+ to CCC-**	23.00%	16.96%	10.00%
NAIC 6	**CC to D**	30.00%	19.50%	30.00%

Source: NAIC

Note that the investment RBC (risk-based capital) charges are dependent on if an insurance company maintains an AVR (asset valuation reserve), and whether any tax adjustments are applied (Statutory Accounting Principles)

Note that until the end of 2018, US insurers could modify the external ratings of CLO bonds depending on their book/adjusted carrying value (BACVs) through a process called the "Modified Filing Exempt". Bonds with lower BACVs which are otherwise given the same external ratings could have their NAIC designations changed to more favorable categories beyond specific BACV thresholds. This process will no longer be valid by 2019YE so the capital charge considerations are expected to be based just on the external ratings of bonds.

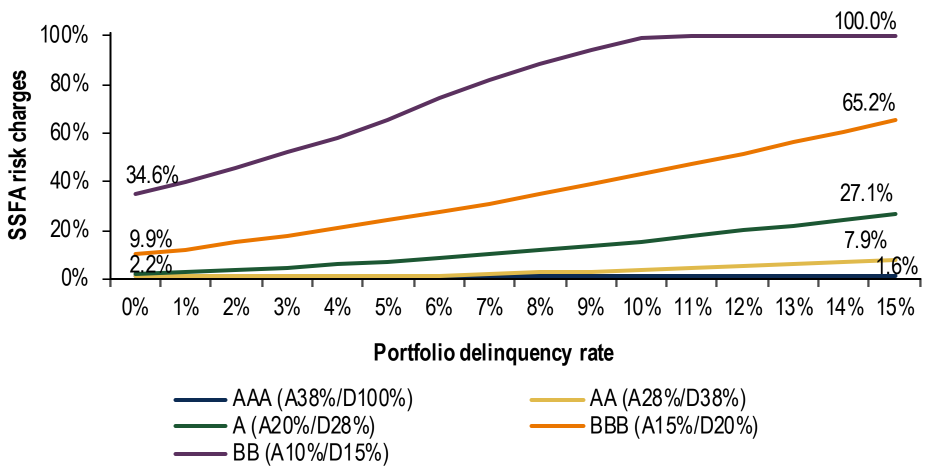
To the extent that bonds are downgraded through the rating categories bordering the different NAIC designations, risk-based capital charges would see an increase and could be deemed by insurers to no longer be sensible. That said, the charges do not increase to 10% and above until the rating is downgraded to CCC+ or below. Furthermore, as we discussed in [CLO Weekly: Next tranche downgrade wave likely less pronounced than 1.0 experience 26 April 2019](), we believe the next tranche downgrade wave for US CLOs would be less pronounced than the 1.0 experience. With 90+% of the bonds held by US insurers being investment grade, we do not see a high risk of them becoming a community of forced-sellers during a downturn.

Banks

Another group of investor subject to regulatory charges are banks. For US banks, the capital-charge framework currently in place disallows the use of external ratings and is based on the SSFA formula[4] which takes into account the attachment and detachment points of a tranche as well as the delinquency rate of the portfolio.

Plotted below are the capital charges associated with CLO investments of different initial ratings based on their typical attachment and their detachment ratings (the charges do not explicitly reference their external ratings).

Chart 7: SSFA charges associated with CLO tranches with different attachment/detachment (A/D) points as delinquency rates pick up (assuming a base capital of 8%)



Source: BofA Merrill Lynch Global Research, Federal Reserve

Chart 7 above shows how these charges increase as delinquency rates pick up in the portfolio. Interestingly, for investments in the senior-most CLO tranches where the attachment points are typically around 38%, the capital charge does not show any increase even as delinquency of the portfolio picks up to 15%. At the "AA" level where the attachment/detachments are at 28%/38%, the capital charge increases to 2.0% starting at a delinquency rate of about 7% and increases to 7.9% at 15% delinquency. Based on these calculations, we also do not believe US banks would become forced sellers of CLO bonds during a downturn based on capital charges alone.

For foreign banks including European and Japanese banks incorporating the new Basel securitization framework which allows for the use of external ratings and where CLOs do not qualify for STS (simple, transparent and standardized) treatments from a capital standpoint (see our previous publication here), AA tranches shift from a starting indicative capital charge that is the same as AAA tranches to ~4-5 times higher. This implies a potentially bigger impact from a capital charge stand point should there be downgrades for foreign banks.

Beyond that, there could also be banks which only obtained approvals for investments in AAA tranches from their risk teams initially. We do not think this is a norm but there could certainly be circumstances pressuring specific accounts should there be a downturn.

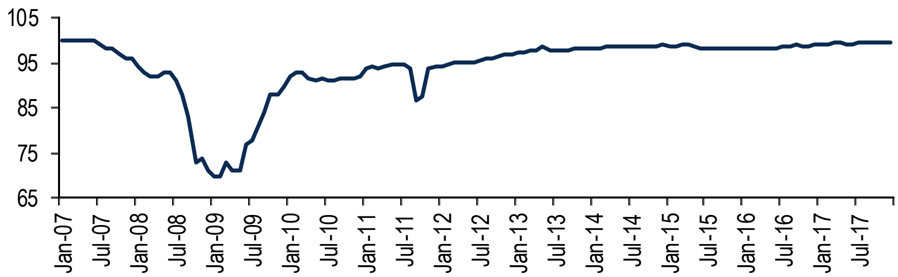
[4] See Securitized Products Alert: FRTB rules finalized for securitized products 03 March 2016. This piece is about the FRTB rules but we also discuss the SSFA framework currently in place.

On top of that, in the case of Japan, the JFSA (Japanese Financial Services Agency) also scrutinizes the Japanese banks' investments in CLOs. To the extent that their view on the investments changes, there could also be some negative impact.

It is important to note once again that such a negative scenario is not our base case. With many accounts seemingly having the intention to keep these bonds till maturity, some of these investments could also be held as HTM (hold-to-maturity) securities right now, further minimizing paper losses and selling pressure during a downturn.

Anecdotally, conversations with our Japanese colleagues also make us believe that a fire sale scenario won't be easily triggered. Case in point, even during the previous crisis when 1.0 AAA CLO tranches were receiving bids in the 70s at their worst (Chart 8), US CLOs were not sold indiscriminately alongside subprime-mortgage CDOs and other second-order and derivative structured products.

Chart 8: Indicative secondary price levels for US BSL CLO 1.0 tranches



Source: BofA Merrill Lynch Global Research, BofAML PriceServe
*Prices for February 2010 and before are generic desk prices not based on BofAML PriceServe's data.

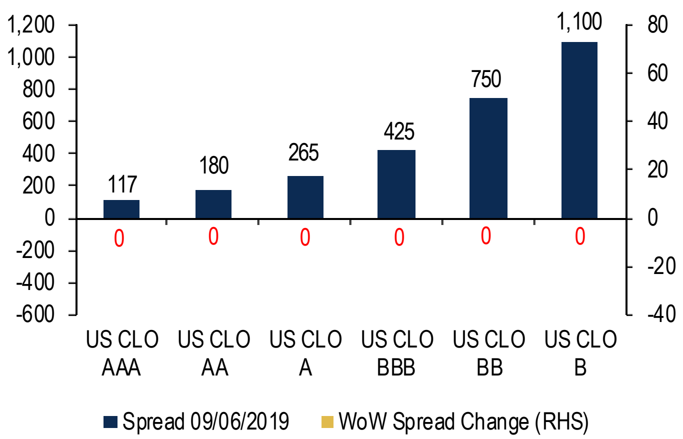
Given how sophisticated the Japanese investor base is and the level of due diligence they have done to get into their CLO positions, barring unforeseen regulatory pressure, we believe they are also not likely to be forced sellers during a downturn.

Market Recap

The first week after Labor Day saw $338mn in CLO bonds in for the bid, mostly in AAAs, As, BBs and equity. While IG-rated CLO notes have maintained investor interests throughout the summer, real money interests have only started to return to the lower part of the CLO debt stack in a week where US equity rallied and long-end rates sold off on the back of potential resumption of trade talks.

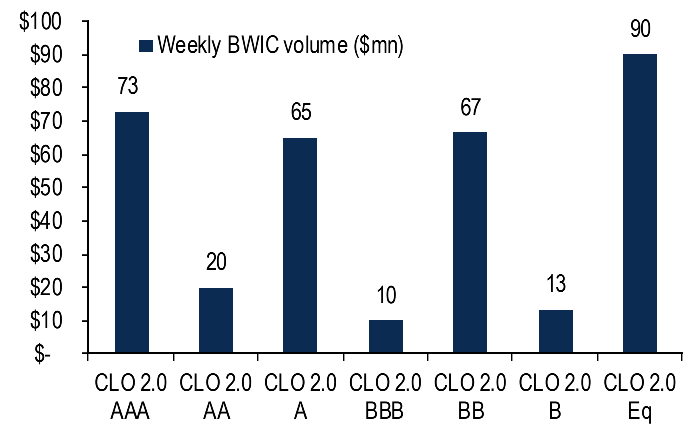
However, we expect it might take some time for the renewed interests to materialize in tighter mezzanine spreads, if at all, given the lagging fashion CLOs have tracked broader risk assets into any rally YTD. Similarly, a lot of the equity bonds in for the bid ended up not trading as bid/ask spread materially widened. All things considered, generic secondary spreads remained unchanged across the CLO capital stack this week.

Chart 9: US CLO secondary spreads and WoW spread change



Source: BofA Merrill Lynch Global Research

Chart 10: Weekly BWIC volume ($mn)



Source: BofA Merrill Lynch Global Research

The US CLO primary market kicked off September with three new issue deals and no refi/reset/reissues (as of writing). Pricing levels on the deals were relatively in line with recent prints as Regatta XII Funding obtained financing at a WA DM of 134bp for AAAs and 700bp for BBs. YTD CLO new issue volume totaled $80bn while refi/reset/reissue volume held at $33bn.

Table 2: US BSL/MM CLOs that priced in the new issue market this week

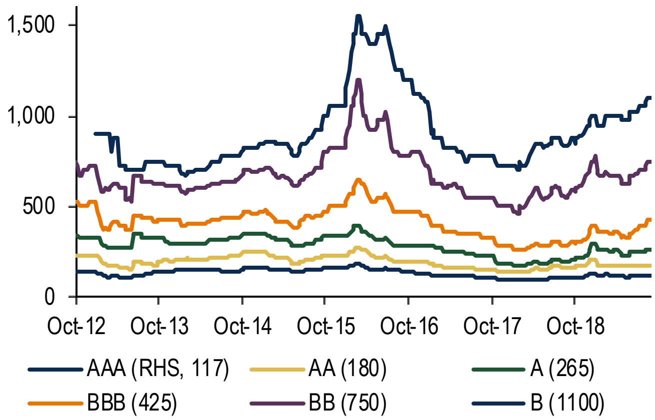
Pricing Date	Deal	Manager	Size ($mn)	Middle Market	Reinv. (yrs)	Non-Call (yrs)	WA DM (coupon spread) AAA	AA	A	BBB	BB	B
9/4/2019	Sound Point CLO XXIV	Sound Point Capital	506	No	5.0	2.0	(139)	(210)	(310)	(411)	(731)	
9/3/2019	Regatta XII Funding	Regatta Loan Management	409	No	5.0	2.0	134	175	245	375	700	
9/3/2019	Tralee VI	Par-Four Investment Management	354	No	5.0	2.0	(140)	(205)	(317)	(463)	(775)	

Source: BofAML Merrill Lynch Global Research, S&P LCD, Bloomberg

Note: pricing DMs are weighted average of all floating rate tranches within each rating bucket / *Blended spread between AAA/AA tranche

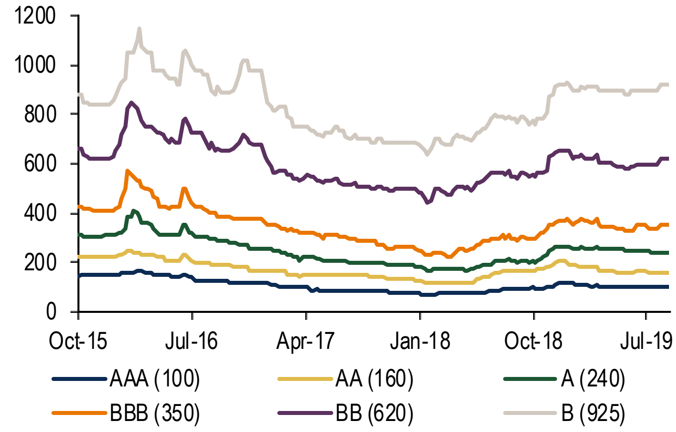
CLO Spread Data

Chart 11: Generic US CLO 2.0 secondary spread levels



Source: BofA Merrill Lynch Global Research

Chart 12: Generic Euro CLO 2.0 secondary spread levels



Source: BofA Merrill Lynch Global Research / Note: "NA" values for short & long AAA/BB spreads are because we only started tracking the series in May 2019

Table 3: CLO spread tracker

		Change			2019 YTD	
	9/6/2019	1-Wk	4-Wk	YTD	Min	Max
US						
CLO 2.0 Secondary						
AAA	**117**	0	2	-15	112	132
AA	**180**	0	5	-30	170	210
A	**265**	0	15	-35	235	300
BBB	**425**	0	35	25	330	425
BB	**750**	0	50	0	625	775
B	**1100**	0	50	100	950	1100
CLO 2.0 Secondary by term						
Short AAA (2-3Y)	**95**	0	0	NA	NA	NA
Long AAA (5-6Y)	**125**	0	2	NA	NA	NA
Short BB (4-6Y)	**650**	0	50	NA	NA	NA
Long BB (7.5Y+)	**790**	0	50	NA	NA	NA
CLO New Issue (4-5Y Reinv)						
AAA	**134**	2	0	11	123	138
AA	**175**	0	-5	-10	174	203
A	**245**	-3	0	-10	230	298
BBB	**375**	-8	-5	0	340	410
BB	**700**	0	-15	10	657	738
B	**950**	0	0	50	900	950
Europe						
CLO 2.0 Secondary						
AAA	**100**	0	0	-15	100	117
AA	**160**	0	0	-45	160	200
A	**240**	0	0	-25	240	265
BBB	**350**	0	10	-20	330	380
BB	**620**	0	25	-35	580	650
B	**925**	0	30	5	885	930

Source: BofA Merrill Lynch Global Research / Note: "NA" values for short & long AAA/BB spreads are because we only started tracking the series in May 2019

CLO Issuance Data

Table 4: Global CLO issuance ($mn)

	US BSL ($)	US Refi/Reset ($)	US Reissue ($)	US MM ($)	US Other CLO/CDO ($)	Euro (€)
2016-01	826	0		0	0	414
2016-02	1,726	120		826	0	410
2016-03	4,200	389		0	1,005	1,542
2016-04	4,420	0		1,007	1,115	1,793
2016-05	5,441	0		0	0	1,130
2016-06	6,643	343		305	0	1,642
2016-07	5,048	1,334		410	767	2,557
2016-08	5,059	2,391		798	0	363
2016-09	7,939	3,775		300	0	1,711
2016-10	7,558	10,783		854	0	1,711
2016-11	8,878	11,888		1,512	757	2,011
2016-12	4,889	9,860		2,237	0	1,256
2017-01	981	7,695		0	0	414
2017-02	6,912	18,998		1,618	0	830
2017-03	6,860	22,903		1,011	328	1,583
2017-04	7,293	22,958		2,655	297	1,669
2017-05	8,330	8,757		1,513	0	2,364
2017-06	14,348	18,079		674	0	1,631
2017-07	8,363	11,834		0	0	1,611
2017-08	10,925	7,378		1,006	492	778
2017-09	8,590	8,821		627	660	1,596
2017-10	11,586	14,587	463	1,243	340	1,342
2017-11	9,060	8,219	505	3,552	858	4,745
2017-12	9,114	12,962	0	348	532	1,137
2018-01	5,832	12,373	1,632	0	514	1,335
2018-02	11,651	7,905	1,783	2,029	913	2,929
2018-03	8,447	4,914	2,714	1,761	506	2,515
2018-04	8,527	13,613	5,423	2,342	535	2,517
2018-05	9,619	8,980	6,866	326	1,960	1,287
2018-06	13,493	14,079	2,576	605	404	2,908
2018-07	7,331	13,120	2,609	1,410	1,476	4,544
2018-08	11,811	10,713	3,121	1,815	327	1,331
2018-09	6,999	6,936	1,939	451	964	1,605
2018-10	8,659	12,243	4,237	456	0	2,438
2018-11	8,774	10,893	2,393	2,569	1,416	4,056
2018-12	5,372	3,446	0	310	0	0
2019-01	4,717	1,745	0	0	400	509
2019-02	12,562	2,372	509	350	1,175	2,953
2019-03	9,909	3,466	1,019	789	715	3,392
2019-04	11,216	2,593	1,189	2,880	2,685	2,524
2019-05	7,869	4,955	0	2,116	2,660	2,553
2019-06	8,353	5,903	0	1,315	1,001	2,346
2019-07	9,011	5,784	0	301	0	5,421
2019-08	6,106	3,607	0	1,159	0	0
2019-09	1,268	0	0	0	0	0
2019 YTD	**71,010**	**30,425**	**2,716**	**8,910**	**8,636**	**19,699**
2019 Annualized	**105,360**	**45,142**	**4,030**	**13,220**	**12,814**	**29,228**
2018 Full Year	**106,516**	**119,214**	**35,293**	**14,074**	**9,013**	**27,465**

Source: BofA Merrill Lynch Global Research, S&P LCD, Intex, Bloomberg

Cross-sector spreads

Table 5: Cross-sector spreads

		1-Week Δ		1-Month Δ		12-mth Δ		2019 YTD			
CLO	Current Level	bp	%	bp	%	bp	%	bp	%	2019 Min	2019 Max
2.0											
AAA	117	0	0%	2	2%	10	9%	(15)	-11%	112	132
AA	180	0	0%	5	3%	20	13%	(30)	-14%	170	210
A	265	0	0%	15	6%	65	33%	(35)	-12%	235	300
BBB	425	0	0%	35	9%	135	47%	25	6%	330	425
BB	750	0	0%	50	7%	190	34%	0	0%	625	775
B	1,100	0	0%	50	5%	260	31%	100	10%	950	1,100
Corporate											
S&P/LSTA LLI											
All	435	1	0%	24	6%	75	21%	(33)	-7%	389	468
BB	286	(2)	-1%	(1)	0%	19	7%	(77)	-21%	273	363
B	462	0	0%	10	2%	74	19%	(37)	-7%	419	499
Corp Indices											
IG Corp	141	0	0%	1	1%	30	27%	(15)	-10%	115	159
HY Corp	416	(1)	0%	(23)	-5%	81	24%	(109)	-21%	363	525
Non-agency Spreads											
Legacy Spreads											
Jumbo Fixed (CCC)	110	10	10%	10	10%	15	16%	0	0%	100	115
Alt-A Floater (CCC-)	120	10	9%	10	9%	20	20%	0	0%	110	125
Option ARM (CCC-)	120	10	9%	10	9%	20	20%	(5)	-4%	110	125
Current Pay Subprime (B/CCC)	85	10	13%	10	13%	10	13%	(5)	-6%	75	90
LCF Subprime (B/CCC)	130	10	8%	10	8%	5	4%	(5)	-4%	120	135
New Issue Spreads											
NPL A1 (NR, 1.5Y)	150	0	0%	0	0%	6	4%	(20)	-12%	130	170
NPL A2 (NR, 3Y)	385	0	0%	0	0%	97	34%	35	10%	325	396
SFR											
SFR A (AAA)	92	0	0%	0	0%	17	23%	(18)	-16%	90	110
SFR B (AA)	115	0	0%	0	0%	27	31%	(10)	-8%	115	130
SFR C (A)	130	0	0%	0	0%	22	20%	(10)	-7%	130	149
SFR D (BBB)	150	0	0%	0	0%	12	9%	(15)	-9%	150	165
SFR E (BBB-)	185	0	0%	0	0%	20	12%	(40)	-18%	185	225
SFR F (BB)	230	0	0%	0	0%	35	18%	(35)	-13%	230	265
Risk Transfer											
STACR Low LTV M1 (BBB+)	77	0	0%	7	10%	9	13%	(24)	-24%	70	101
STACR Low LTV M2 (BB/B)	201	(1)	0%	(13)	-6%	(4)	-2%	(91)	-31%	201	292
CAS Low LTV M1 (BBB-)	82	0	0%	7	9%	13	19%	(19)	-19%	73	101
CAS Low LTV M2 (BB/B)	198	(1)	-1%	(15)	-7%	(8)	-4%	(92)	-32%	195	290
CMBS Spreads											
On-the-Run Conduit CMBS Spreads											
5yr AAA	65	0	0%	3	5%	24	59%	0	0%	53	70
10yr AAA	93	(1)	-1%	(1)	-1%	13	16%	(7)	-7%	68	85
A-S	121	(3)	-2%	1	1%	16	15%	(19)	-14%	105	140
AA	135	0	0%	0	0%	5	4%	(30)	-18%	120	165
A	175	0	0%	0	0%	5	3%	(50)	-22%	165	225
BBB- (RR compliant)	290	0	0%	0	0%	0	0%	(110)	-28%	290	400

Source: BofA Merrill Lynch Global Research, ICE Data Indices LLC, Bloomberg

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