The Opportunity in Senior CLO Notes

IN THIS RESEARCH NOTE, WE EXPLORE THE OPPORTUNITY IN SENIOR CLO NOTES THROUGH A SERIES OF QUESTIONS

- What are CLOs and how do they work?
- What makes AAA investors senior?
- How wide are CLO spreads and why?
- What have the rating agencies done?
- How does credit deterioration affect CLO paper?
- If default rates spike, how will it impact AAA paper?
- How does AAA CLO paper compare with other AAA securitized paper?

INTRODUCTION

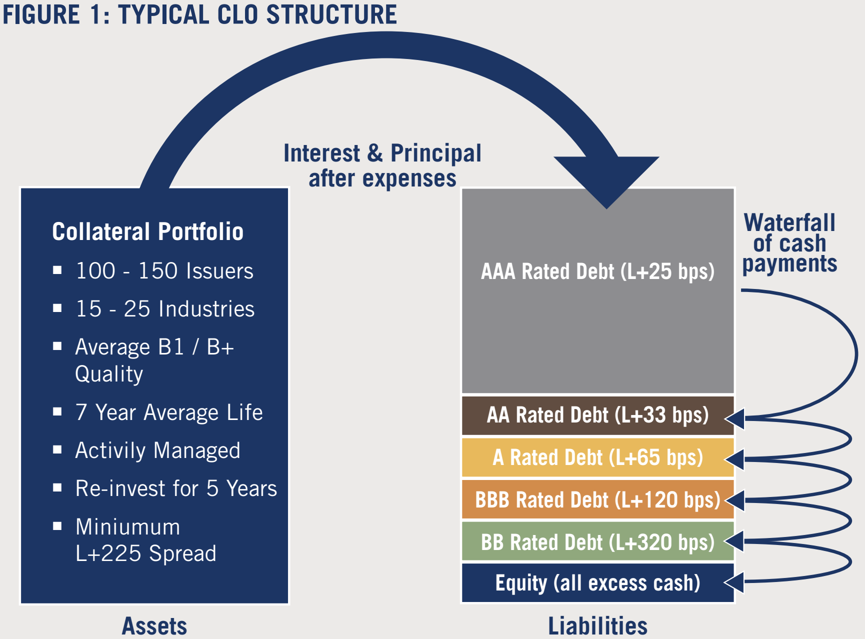
Collateralized Loan Obligations ("CLOs") have been inaccurately lumped with other currently troubled structured products. Despite a rally in the broader credit markets over the past two months, CLO liability spreads have only recently begun to tighten from historical wides. However, we believe senior CLO bonds are still oversold in many cases as CLO liabilities are trading at a substantial discount to the underlying portfolio collateral. This presents an investment opportunity of double-digit returns for those who understand how these structures work.

WHAT ARE CLOS AND HOW DO THEY WORK?

A CLO is a Special Purpose Vehicle or Entity (SPE) created to issue debt and equity for a set period of time. Proceeds are used to purchase a portfolio of investments, in this case loans. Cash flow from the portfolio is then used to pay interest on the debt, expenses and equity dividends.

The CLO-issued debt is divided or "tranched" into senior and junior priority claims (see figure 1). Senior tranches[1], rated AAA and AA by independent rating agencies, are shielded from credit losses by junior tranches and often have yields lower than that of the loan portfolio. On the other hand, junior tranches represent a leveraged investment to the underlying collateral. Being exposed to losses first, the junior tranches pay higher coupons to compensate for the higher risk.

FIGURE 1: TYPICAL CLO STRUCTURE



1 The precise definition of senior tranche may vary between organizations and where we are in the credit cycle. For the purposes of this Research Note, we are defining the senior tranche as AAA and AA bonds of the CLO.

> “The cash flow from the loans is paid down the CLO structure via a ‘waterfall’.”

From an investor’s point of view, the multiple debt tranches of a CLO present investment opportunities with varying risk/return profiles. At the same time, the investor faces diversified exposure to a specific asset class managed by an experienced manager.

A collateral manager’s objective is to maximize cash flow through initial credit selection, ongoing portfolio management and loss mitigation. The way CLOs are structured, the manager is insulated from daily price volatility and thus has the ability to manage for the medium to the long term.

The cash flow from the loan portfolio is paid down the CLO structure via a “waterfall.” Cash proceeds from the collateral portfolio are applied each quarter to fees and the tranches of debt from the top down. The equity tranche then receives any excess cash.

The CLO structure hence enables the capture of the excess cash flow from a diversified portfolio of assets (loans) to its liabilities (CLO bonds). The subordinated investors receive all the excess cash flow after the senior tranches are paid. So, as long as the cost of issuing debt is less than the yield of the portfolio of loans, and defaults in the portfolio remain within assumed levels, excess cash will be available to pay the CLO equity tranche. In other words, a positive arbitrage is possible.

WHAT MAKES SENIOR TRANCHE INVESTORS SENIOR?

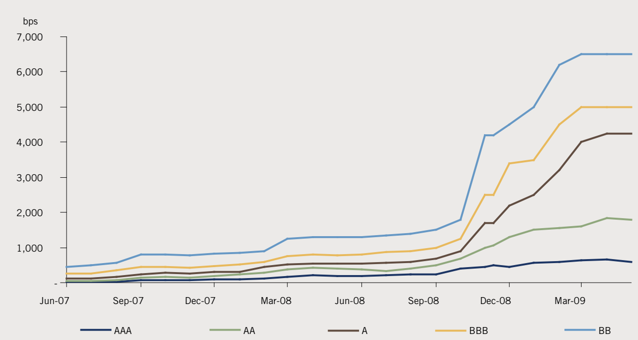
In recessionary times when default rates rise and the yield on the loan portfolio falls, it is possible for the subordinated investors not to receive any cash flow. The senior investors, however, are cushioned from losses on the underlying collateral being higher up in the waterfall. Minimum over-collateralization and interest coverage covenants divert cash flows away from junior tranches and use it to pay-down senior tranches if losses do occur in the portfolio. Investing in senior CLO debt is hence a way for conservative investors to gain exposure to non-investment grade assets.

HOW WIDE ARE CLO SPREADS AND WHY?

CLO spreads have been widening since the summer of 2007 (see figure 2), due to a number of technical and fundamental issues in the underlying loan market. Technical reasons include TRS[2] unwinds, and market value CLO liquidations. As the loan market declined, hedge fund managers that had used TRS programs for leverage were forced to liquidate part of their portfolios to maintain fixed collateralization ratios. These forced sales further exacerbated declines in the loan market. Fundamental reasons include a slowing economy tipping weak companies toward bankruptcy, causing prices of bank loans to fall.

Beyond the deterioration of the loan market, a number of key events outside the realm of loans and CLOs have unfairly added to the widening of spreads. These include the

FIGURE 2: CLO SPREADS



Source: Citi Research and Analysis as of May 1, 2009

2 Total Return Swap: a derivative program to facilitate leverage

dramatic increases in delinquencies in sub-prime loans in the Fall of 2007 that dragged down CLO paper in its wake, and the market crisis that ensued after the Lehman bankruptcy filing.

AAA spreads at the end of the second quarter of 2007 were 25 basis points. By the end of the first quarter of 2009, AAA spreads stood at 625 basis points representing a multiple of 25. BB spreads have increased from 450 bps to 6500 bps. AAA and AA paper have actually rallied a little since the end of the first quarter of 2009 (see page 6, "AAA Paper has just joined the rally of the broad credit markets. The investment opportunity still exists.")

NEGATIVE ARBITRAGE INDICATES AN INVESTMENT OPPORTUNITY.

Despite the recent rally in AAA CLO paper, we believe CLO bonds are still oversold. In many cases, CLO liabilities are trading at a discount to the underlying loan portfolio collateral leading to a negative arbitrage between the assets and liabilities of the CLO. In the case illustrated in table 1, the CLO liabilities trade at an approximate 25-point discount to the underlying portfolio collateral. This means that if one were to buy all the liabilities at market value, and then liquidate the assets at market value, one could make $74 million profit in this hypothetical example. It should, however, be pointed out that such liquidation of a CLO vehicle in the short term is not practical in reality due to indenture provisions and limited market liquidity.

TABLE 1: EXAMPLE OF NEGATIVE ARBITRAGE

COLLATERAL		NOTIONAL	COUPON	DM (BPS)	DURATION	PRICE	MARKET VALUE
Bank Loans	B1/B2	383,631,701	250	701	5.1 yrs	77%	295,664,952
Cash		2,376,038	0	0	.0 yrs	100%	2,376,038
Total		**386,007,738**	**248**	**696**	**5.1 yrs**	**77%**	**298,040,989**

LIABILITIES	RATING	SIZE	COUPON	DM	DURATION	PRICE	MARKET VALUE
A1	Aaa/AAA	128,500,000	23	600	5.8 yrs	71%	91,235,000
A2A	Aaa/AAA	155,000,000	22	500	5.6 yrs	76%	117,025,000
A2B	Aa1/AAA	17,500,000	30	1200	7.1 yrs	40%	7,000,000
B	Aa2/AA	16,000,000	33	1650	6.8 yrs	28%	4,480,000
C	A2/A	21,000,000	65	3000	5.1 yrs	13%	2,730,000
D	Baa2/BBB	16,000,000	120	3800	3.5 yrs	10%	1,600,000
E	Ba2/BB	12,000,000	320	9999	2.1 yrs	3%	360,000
Equity	NR	34,000,000	12%		.0 yrs	0%	-
Total		400,000,000			5.1 yrs	56%	224,430,000

Arbitrage between Assets and Liabilities (Negative Arbitrage): **(73,610,989)** **-25%**

Source: Babson Capital Management LLC as of May 19th 2009

WHAT HAVE RATING AGENCIES DONE SO FAR?

Structured finance CDOs have suffered massive downgrades based on poor performance of sub-prime mortgage collateral. As can be seen in table 2 on the following page, 15,628 CDOs were downgraded in 2008 out of which 14,695 were structured finance CDOs, and only 371 were HY Loan CDOs (CLOs).

TABLE 2: CDO UPGRADES & DOWNGRADES

CDO TYPE	DOWNGRADES JAN-09	UPGRADES JAN-09	DOWNGRADES 2008	UPGRADES 2008
HY Bond	18	0	81	35
HY Loan	51	0	371	75
Middle Market	25	0	66	11
Structured Finance	718	4	14,695	142
Emerging Markets	10	0	16	6
Trust Preferred	115	0	260	3
Other	22	0	139	6
Total	**959**	**4**	**15,628**	**278**

Source: Morgan Stanley, Moody's S&P, Fitch IBCA

AAA CLO PAPER HAS BEEN SPARED BY MOODY'S DOWNGRADES IN THE EARLY PART OF 2009.

Given the rise in loan defaults to 8% by par value (S&P LCD, March 31st, 2009), the credit deterioration of collateral and the expectation of worse to come, it is not surprising to find that the rating agencies have been very active in the CLO space in early 2009. In March, Moody's announced that it had placed nearly all tranches of U.S. and European CLOs on review for possible downgrade. By the end of March, Moody's had downgraded more than 2,000 tranches from more than 600 CLOs. AAA bonds were spared for the most part but mezzanine CLO tranches were generally downgraded more than four notches. It is, however, expected that the rating agencies will be downgrading AAA CLO paper over the next few months.

HOW DOES CREDIT DETERIORATION AFFECT CLO PAPER?

In times of credit deterioration, a concern for CLO mezzanine[3] investors is the increase in the number of CCC[4] credits within CLOs. It is estimated that on average CCC assets represent 12.9% of CLO portfolios, up from 11.6% the previous month (Morgan Stanley, March 6th 2009). In nearly all cases, a significant percentage of these credits must be held at market value, as opposed to par value, for purposes of calculating Overcollateralization Tests ("OC"). An OC test is the requirement for the collateral value to be greater than the liability value of the particular tranche and the tranches below it.

THE RISE OF CCC CREDITS WITHIN CLOS IMPACTS MEZZANINE PAPER BEFORE SENIOR PAPER.

As a result of rising CCC credits, many deals are now failing OC tests and diverting interest proceeds away from mezzanine CLO tranches and toward principal payment of senior tranches. Many market participants fear that mezzanine CLO tranches will never recoup the foregone interest as default rates, and therefore losses, "catch up" to rating downgrades. However, it is important to highlight that these triggers are in place to protect CLO debt investors by diverting cash earlier to repay debt. They were designed to trip ahead of actual defaults and seem to be working as intended. The good news for senior tranche investors is that the senior tranches can perform well in this situation because they receive increased principal amortizations as defaults rise.

HOW WILL AAA CLO BONDS BE IMPACTED BY HIGH LEVELS OF DEFAULTS? YIELDS FOR AAA AND AA PAPER WILL PROBABLY REMAIN POSITIVE.

AAA and AA CLO paper, we have seen thus far, have the benefits of subordination. With the cushion

3 Mezzanine paper defined here are CLO paper rated A and below

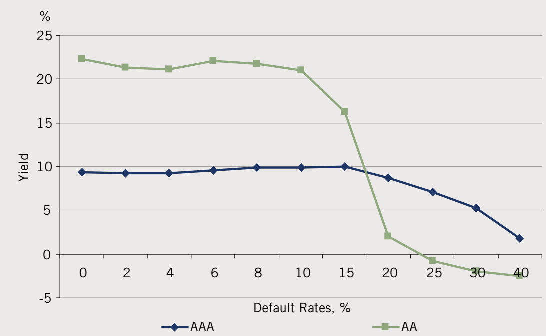
4 An obligation rated 'CCC' is currently vulnerable to nonpayment and is dependent upon favorable business, financial, and economic conditions for the obligor to meet its financial commitment on the obligation. In the event of adverse business, financial, or economic conditions, the obligor is not likely to have the capacity to meet its financial commitment on the obligation (Standard & Poor's)

of lower-rated bonds and the equity tranche beneath them, senior paper in a CLO can withstand high levels of loan defaults before resulting in negative yields. In an analysis done at Babson Capital[5] (see figure 3) it was shown that AAA paper in a typical CLO maintained positive yields up to loan default rates of over 40% in the market and that the yield on AA paper remained positive up to 23% default rates.

> "The good news for senior tranche investors is that the senior tranches can actually perform well in periods of rising CCC credits because they receive increased principal amortizations as stipulated by the indenture of the CLO."

In the example depicted here, the relative performance of the senior AAAs actually improves as the default rate rises past 15%. Given that, since the LTM default rate hit a peak of 7.5% by par value in 2000-2002, however, we do not expect defaults to rise past 15% in this downturn. For U.S. speculative-grade issuers, Moody's forecasting model predicts that default rates will reach a peak of 14.1% in the fourth quarter of 2009. Likewise, JP Morgan forecasts loan default rates for 2009 and 2010 to be 15% and 12% respectively. At these levels of defaults and recovery assumptions of 55%, AAA yields remain at 8% (see figure 3).

FIGURE 3: SAMPLE AAA & AA YIELDS AT VARIOUS ANNUAL DEFAULT RATES



Source: Babson Capital as of May 6, 2009

The WAL (weighted average life) of the AAA tranche also falls as default rates increase. As defaults rise and lower tranches fail OC tests, interest proceeds are diverted away from the lower tranches to pay down the AAA tranche. The WAL falls as a result and hence the yield also rises as seen in the chart from 9.3% to 10% (see figure 3). The deeper the discounted purchase price of the senior tranche and the shorter the actual average life, the greater the effect of rising default rates on yields. Please note that the rise in yields is only for increasing default rates within a range.

It is worth pausing here to note that in the case of CLO bonds in the current market, an investor

TABLE 3: AAA SPREADS JOIN THE CREDIT RALLY

	AAA	AA	A	BBB	BB
June 1st, 2007	25	54	109	257	449
December 1st, 2008	450	1,300	2,200	3,400	4,500
January 1st, 2009	560	1,500	2,500	3,500	5,000
February 1st, 2009	600	1,550	3,200	4,500	6,200
March 1st, 2009	625	1,600	4,000	5,000	6,500
April 1st, 2009	650	1,850	4,250	5,000	6,500
May 1st, 2009	600	1,800	4,250	5,00	6,500

Source: Citi Research and Analysis

5 Assumptions as of March 6, 2009 include: AAA price of 75.68% with L+.25% coupon, AA price of 26.82% with L+.43% coupon, 20% recovery on bonds, forward LIBOR curve reinvest 2.65% WAS, 0% prepayment and 55% recovery of defaulted assets

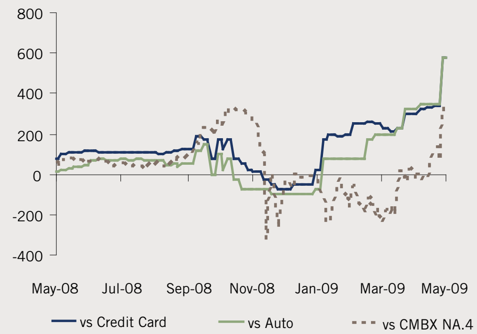
can go up in the capital structure by owning senior bonds, and get higher return potential than the original equity holders are getting at the bottom of the capital structure. Yet corporate bonds, because of their seniority in the capital structure, generally have significantly less long-term credit risk (and volatility) than the equity tranche, and usually offer less reward. The current risk/reward profile of CLO senior paper makes it particularly attractive.

AAA PAPER HAS JUST JOINED THE RALLY OF THE BROAD CREDIT MARKETS. THE INVESTMENT OPPORTUNITY STILL EXISTS.

The equity markets and the broad credit markets started improving in the second week of March with a backdrop of market friendly government intervention and a discernible turn-around in economic indicators.

CLOs, however, seemed to at first lag to the rally in underlying leveraged loans and in competing securitized markets with AAA spreads widening out from 600 to 650bps (see table 3) until the end of April. CLO AAA paper finally joined the rally in late April, and we have seen spreads starting to tighten down to 600bps and below. A point to note in this rally in AAA paper is that it is backed by strong bids that are also deep in nature, with many bids for a tranche.

FIGURE 4: AAA CLO SPREAD DIFFERENTIAL TO AAA CREDIT CARD ABS, PRIME AUTO ABS & CMBX.4 (BP)



Source: J.P. Morgan, S&P LCD

HOW DOES AAA CLO PAPER COMPARE WITH OTHER AAA SECURITIZED PAPER? AAA CLO PAPER IS ACTUALLY CHEAPER THAN ITS CMBX, CREDIT CARD ABS, AND AUTO ABS COUNTERPARTS.

CLOs actually offer value versus CMBS (see figure 4) with the AAA spread premium to CMBX.4 entering positive territory and jumping to approximately 300bp the week of May 8th (JP Morgan). Further, the spread premium to TALF-sponsored ABS (e.g. Credit Cards, Autos) is at the highest level in recent history, and AAA CLOs earn an approximate 575bp+ premium.

CONCLUSION

We believe the current dislocation of the credit markets presents a unique window of investment opportunity in senior CLO notes. Having been associated with subprime mortgage CDOs, We think CLO securities have been oversold in the credit sell-off of the past year and a half, and CLO spreads have only recently begun to tighten from historical wides. Despite the recent rally in AAA paper, we believe the assets of many CLOs are worth more than the market value of their liabilities indicating the extent to which CLO paper is still oversold. AAA CLO paper has also been spared from downgrades in early 2009, and perhaps there is still some level of investor fear of future downgrades that is holding prices down. Even with expectations of rising default rates in the loan market, we expect the return for a portfolio consisting primarily of AAA CLO bonds, with 25% to 35% second and third pay bonds, to be in the 13-15% range over a medium term horizon of three to six years making a very compelling argument for this asset class.

Appendix

RISK FACTORS OF INVESTING IN CLO PAPER

The risks of investing in CLO paper can be summarized as a combination of economic risks of the underlying loans combined with the risks afforded from the rules of the structure that affect the disbursement of on-going cash flow. Below is a summary of potential risks, but certainly not a complete disclosure of all risks, these are typically discussed in CLO offering memorandums.

1. **Subordination**

   Non-first pay CLO securities provide subordination and enhancement to first pay securities, and are therefore more at risk with respect to defaults in the underlying collateral portfolio. In addition, defaults or losses above certain levels as well as excessive exposure to CCC-rated collateral could reduce or eliminate all current cash flow to non-first pay securities and entail loss of principal. Defaults or losses above certain levels could also result or eliminate all current cash flow to first pay securities and entail loss of principal. Defaults, downgrades, and principal losses that result in very low collateral coverage in a CLO can trigger an event of default within the CLO, often giving senior classes the right to accelerate and/or liquidate the collateral portfolio.

2. **Collateral Risk Factors**

   The managed account portfolio will be subject to credit and liquidity risks. Substantially all of the collateral held by the CLOs in the portfolio will be rated below investment grade.

3. **Recovery Rates**

   There can be no assurance as to the rates of recovery on the defaulted collateral in the underlying CLOs in the portfolio due to the credit quality and possible lack of liquidity.

4. **Lack of Liquidity**

   There is limited market liquidity for CLOs, and there is no assurance that one will develop. An investment in a CLO security should be viewed as a long-term investment and not a trading vehicle.

5. **Manager / Trading Risk**

   The managers of the CLOs in the portfolio generally have discretion to sell certain collateral and purchase replacement collateral within certain parameters. These transactions could result in a net loss.

6. **Interest Rate Risk**

   Although the underlying collateral in each of the CLOs in the portfolio will be predominately LIBOR-based bank loans, and the CLO securities in the portfolio will be floating rate-based, the portfolio may have some exposure to interest rate fluctuations or mismatches between LIBOR sets on the underlying bank loans and the CLO securities.

7. **Documentation Risk**

   CLO legal documentation is highly complex and can contain inconsistencies or errors, creating potential risk and requiring significant interpretational expertise.

DISCLOSURE

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