19 September 2014 | 16 pages

Structured Credit
Global

Global Structured Credit Strategy

Five Reasons for Euro CLO Equity Now*

- **ECB-led Rally Boosts Euro CLO Relative Value** — Slightly softer loan spreads, plus the potential of the recent 'Draghi' ABS rally reaching CLO 2.0 debt, means better prospects for the Euro CLO equity arbitrage, and higher certainty of achieving low-teen yields.
- **Despite Higher Funding Costs, Euro CLO 2.0 Equity on Solid Footing** — Wider loan spreads, increased CLO leverage, and more efficient interest-rate matching have led to many new deals being on track to match the 4% quarterly cashflows that 2006-2007 vintage CLOs are currently achieving according to our study.
- **Euro CLO Historical Equity Study Shows Value of Manager Selection** — Our detailed historical equity performance study shows the dispersion in performance among managers, and highlights the potential benefit of greater choice of managers that the more flexible European risk-retention model will bring to investors.
- **Some Volcker Progress in US, but Euro Equity Keeps Bond Exposure** — The pace of US deals refinancing and becoming Volcker-compliant continues, despite the recent passage through the House of the Barr bill and the possibility, subject to Senate approval, of grandfathering pre-2014 deals. Without Volcker pressure, Euro equity is exposed to the benefits and risks of higher-carry, but more volatile bonds
- **Primary Market Health Leads to Increased Forecast** — YTD US CLO issuance, including an unusually busy August, stands at $88.7bn excluding refinancings. We now expect that full-year issuance excluding refinancings could reach $120bn. While CLO 1.0 spreads have tightened, the supply has led to wider 2.0 spreads.

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***CORRECTION:** In our original note, we had old data in Figures 6 and 8.

See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

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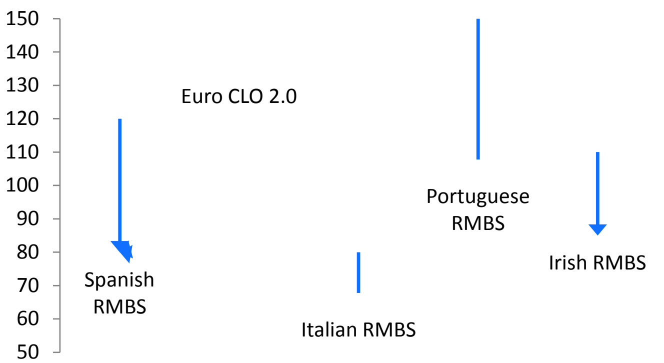
Why Euro Equity Now?

Better arbitrage provides two reasons

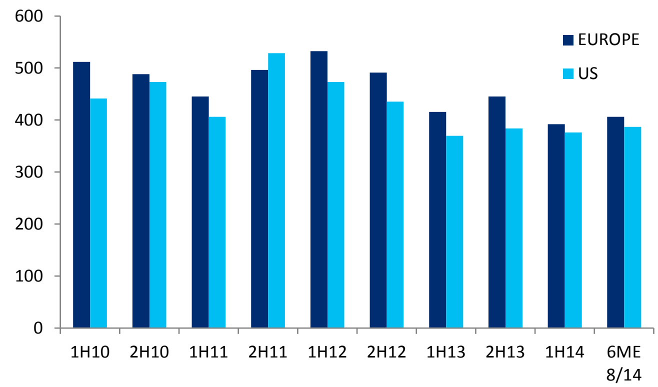
European CLOs have lagged the rally (Figure 1) that has benefited most European ABS markets after the ECB announced plans to push forward with its ABS purchases (Draghi's €1tn Bazooka Should Turbo-Charge ABS). Provided that loan spreads do not widen out significantly, the positive momentum in the broader ABS market should be supportive of senior CLO spreads and even help in some modest tightening. At the same time, the slight widening in European loan spreads (Figure 2) is helping the Euro CLO Equity. Twelve-month trailing default rates for Europe's ELLI index too have been stable, though, at 5%, much higher than for the US.

Figure 1. First-pay Euro ABS and CLO spread change from 1/8/2014 to 5/9/2014 (bps)



Source: Citi Research

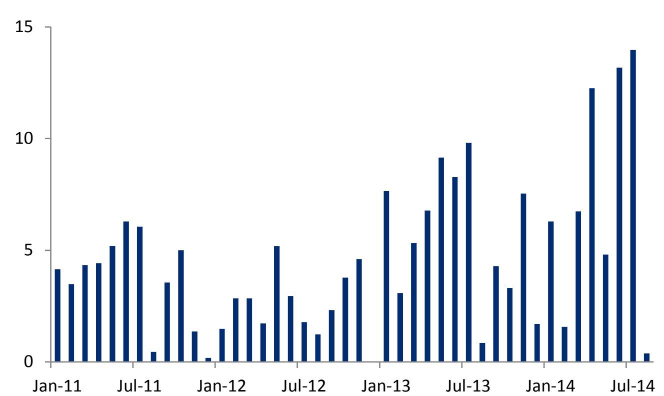
Figure 2. Institutional tranche loan spreads, bps



Source: S&P LCD

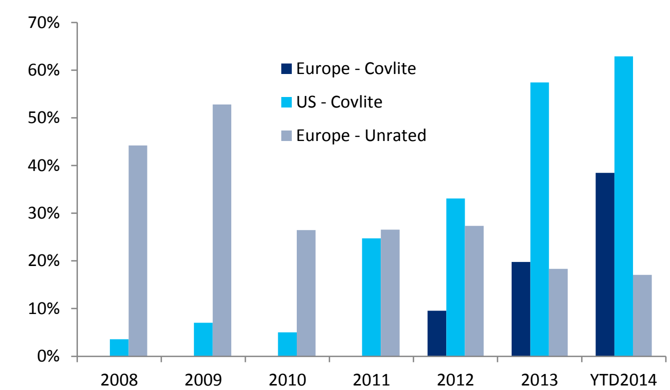
Loans supply, another European constraint, is looking better too. According to S&P LCD, volume in the European leveraged loan market, at €59.2 billion as of 5th September, is up 17% versus the same period in 2013. September saw three launches (BvD, Corialis, WMF) and there are several auctions in the calendar which should result in higher loan supply except in cases where strategic buyers do not need leverage. Finally, the higher presence of banks, relative to the US, in the European leveraged lending space means that it is less simple to push through cov-lite deals (Figure 4). More institutional money is, however, leading to increased cov-lite supply, but also beneficially, greater rating transparency.

Figure 3. Senior and mezz loan tranche issuance, €billion



Source: S&P LCD

Figure 4. Percentage of loan issuance in cov-lite and unrated form



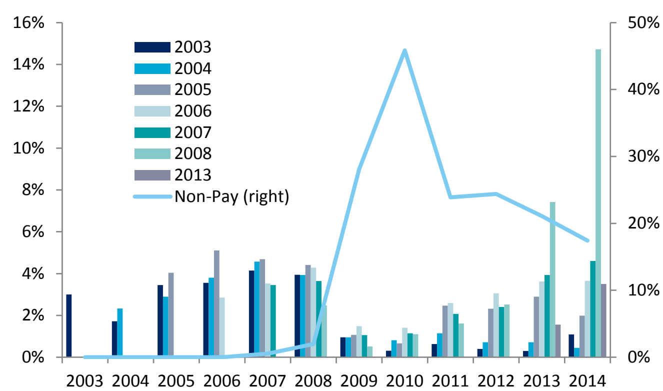
Source: S&P LCD

Three more reasons to do with structure

To understand how the current group of Euro CLO 2,0s might perform in the future, there are some lessons to be learnt from the past. Our Euro CLO equity performance study mirrors the one that we did for the US product last month (CLO Equity Still Beats Alternatives, Debt Appeals Despite Supply) and shows that many new deals are beating the constraints of higher financing costs, relative to Euro CLO 1.0s, and starting to match returns. Higher leverage (just as with the US product) together with more strategic asset-liability matching also helps returns. The future trajectory is not riskless, though. In particular, 2008 vintage shows the dangers to equity returns from a front-ended default cycle. We do not believe that this is the base case for a Euro CLO equity purchase today.

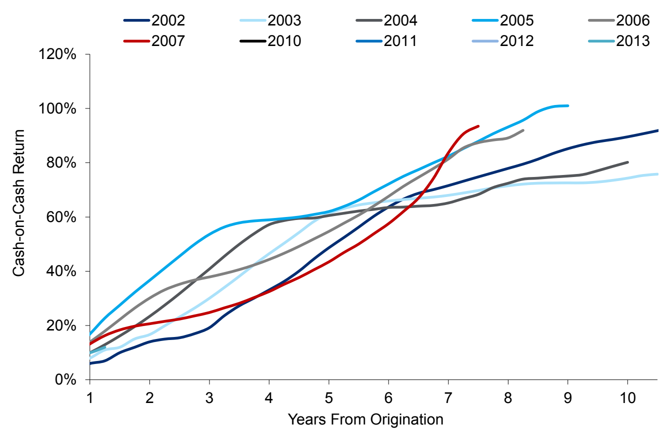
Our sample includes 224 Euro CLO deals issued between 2001 and 2013, with €57bn notional outstanding. The observed CLO equity cashflow returns (i.e. cash-on-cash returns) take into account all interest and principal payments, including final distributions in paid-down deals. For simplicity, we define "leverage" as "Deal Par divided by Equity Tranche Par". Figure 5 shows the average quarterly US CLO equity cashflow returns by vintage and by year of payment.

Figure 5. Euro CLO Equity quarterly cashflows by vintage and year of payment. Also shown percentage of deals with no payment.



Source: Citi Research, INTEX

Figure 6. Cumulative cash-on-cash for CLO Equity by vintage



Source: Citi Research, INTEX, **Note: fluctuation in certain vintages' average cumulative returns is due to the noises of paid down deals and/or some semi-annually paying CLO equity tranches in the sample

Unlike the US universe, most of the Euro universe still comprises of legacy deals, but the growing number of Euro CLO 2.0s is giving clues as to the future trajectory of the product. Despite many CLOs coming out of their reinvestment, average quarterly payments of legacy improved during 2014 as a result of fewer deals failing cash diversion tests and a small uptick in loan spreads that we saw earlier. As Figure 5 shows 2006 and 2007 CLO equity saw quarterly cashflows increase to 3.7% and 4.6% respectively from last year's figures of 3.6% and 3.9% respectively. However, even now, many Euro CLOs are held back because of the continuing failure of their cash diversion tests as the figure shows. Though the number of CLOs making payments to equity is much higher than just after the crisis, the figure shows that 17% of deals are still not paying. If one excludes non-paying deals, the average 2006 and 2007 CLO performing equity generated 4.3% and 5.3% respectively.

Because of lower deleveraging, 2007 deals were better placed than 2006 to capture the increased loan spreads. In contrast, 2008 equity has seen much lower average cashflows than the two prior vintages. The biggest reason for the lower average is

the early cashflows of many deals from this vintage were zero because they failed their cash diversion almost immediately after closing. As defaults rose and more loans were downgraded to triple-C, deal OC cushions were eroded. As an aside, the jump in 2008 vintage's equity cashflow in 2014 is due to a few optional redemptions in the last few months.

Surprisingly cumulative cash-on-cash performance for the CLO 2.0s (2013 deals) in our study has not been far behind legacy deals for the same history (Figure 7). There are two reasons. First, cumulative cash-on-cash for legacy deals has been held back by the 2009-2011 period when many deals saw no cashflow. Second, new deals are enjoying higher loan spreads than pre-crisis CLOs. Based on the five quarters of cash payments received by 2013 deals, the average 13% of initial investment (assuming par purchase price) received to-date is similar to 2005 deals but less than the bigger universe of 2006 and 2007 deals (Figure 8). Of course, cumulative cash-on-cash falls far short than for US CLOs where an average 2005 or 2006 vintage US CLO equity tranche has already returned over 160% of its original par to investors, and 2007 vintage CLO equity has distributed as much as 178% of its original par on average.

Figure 7. Dispersion in average quarterly distribution by vintage

	Count	By Cashflows				By Deals			
		Average	Median	75%ile	25%ile	Average	Median	75%ile	25%ile
2002	5	2.3%	2.2%	3.7%	0.0%	2.4%	2.1%	2.7%	2.0%
2003	6	1.9%	1.2%	3.4%	0.0%	1.9%	2.0%	2.0%	1.6%
2004	15	2.0%	1.6%	3.5%	0.0%	2.0%	2.0%	2.2%	1.7%
2005	21	2.9%	2.8%	4.6%	0.3%	2.9%	2.7%	3.5%	2.4%
2006	61	3.1%	3.3%	4.6%	0.0%	3.0%	3.1%	3.8%	1.9%
2007	70	2.7%	2.3%	4.5%	0.0%	2.6%	2.7%	3.6%	1.5%
2008	20	3.7%	0.5%	2.5%	0.0%	3.1%	1.3%	2.6%	0.3%
2013	18	2.4%	3.0%	3.7%	0.0%	2.6%	2.3%	4.0%	0.2%

Source: Citi Research, INTEX

Figure 8. Cumulative cash-on-cash distribution by vintage

Quarters	2002	2003	2004	2005	2006	2007	2008	2013
2	3%	4%	5%	8%	7%	7%	4%	8%
3	4%	6%	7%	12%	10%	10%	5%	9%
4	6%	8%	10%	17%	14%	13%	6%	10%
5	7%	11%	13%	23%	18%	16%	9%	12%
6	10%	12%	16%	28%	22%	18%	11%	
7	12%	15%	20%	32%	26%	20%	11%	
8	14%	17%	23%	37%	30%	21%	15%	
9	15%	20%	27%	41%	33%	22%	15%	
10	16%	23%	32%	46%	35%	22%	19%	
11	17%	26%	36%	50%	37%	24%	37%	
12	19%	30%	41%	54%	38%	25%	40%	

Source: Citi Research, INTEX

It is also worth commenting on the dispersion in performance among deals and managers. Whether one looks at the distribution of quarterly cashflows (where each deal has a series of quarterly cashflows), or at the distribution of deals (where each deal is represented by its average cashflow from closing to now), Figure 7 shows significant difference between the 25th and 75th percentiles. It is telling that even for a poorly performing vintage as 2008, characterized by many deals with little cashflows to date (see how much median is below the average), the 75th percentile performance by deal is still appreciable relative to other vintages. The crisis affected some deals and managers a lot less than others.

In Figure 9, we tabulate the list of managers and focus on the number of deals and historical average cashflows. Also note, we show deals on a consolidated basis where deals acquired from legacy managers are considered as part of the new manager's performance. The point is important because different legacy subsets can have different performance and that the new managers' averages can be skewed by any significant outliers (Volcker Clouds, Opal Highpoints, and Impact of Consolidation). We emphasize that high historical returns should not be the only factor on which to base choice of manager – considerations such as depth of loan and CLO management experience, access to loan pipeline, and sponsorship from well-capitalized parents are all very important. Moreover, averages will also be influenced by deal structures. Deals with low leverage, for example, might have had low credit losses but will not generate the highest equity cashflows. Nonetheless, a balance between manager size (here expressed as deal count in the study) and

past performance should serve as a good starting point for an equity investor to begin their due diligence.

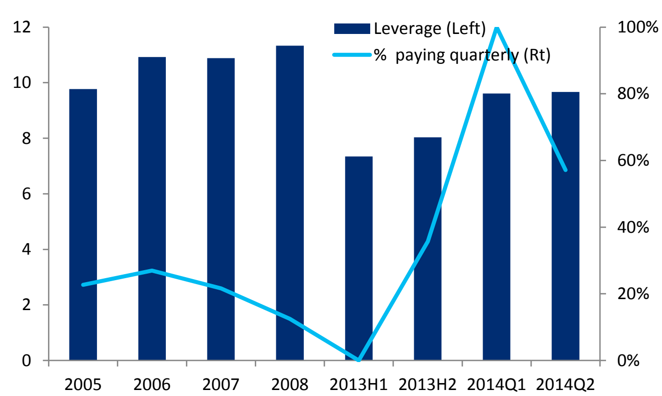
Figure 9. List of Euro CLO Managers in Study by Number of Deals in Study, and by Quartile of Historical Average Quarterly Payments from Deal Closing (A highest) – Deals include mandates acquired from other managers

Manager	Deals	Quartile	Manager	Deals	Quartile	Manager	Deals	Quartile
3i	14	3	Credit Suisse Asset Management	5	2	KKR Financial	10	3
Alcentra	16	2	CVC Cordatus Group	3	1	M&G Investment Management	13	3
Apollo Credit Management	1	1	DWS Finanz-Service	1	3	N M Rothschild & Sons	5	4
Ares Management	5	2	Eaton Vance Management	2	1	NAC Management	4	4
AXA Investment Managers	4	2	Egret Capital	1	2	Natexis	1	4
Babson Capital	8	2	GoldenTree Asset Management	3	1	Neuberger Berman	2	2
Black Diamond Capital	3	4	Halcyon Structured Asset Management	6	4	NIB Capital	5	3
Blackstone / GSO Debt Funds Europe	24	1	Henderson Global Investors	3	3	Oak Hill Advisors	2	1
BNP Paribas	7	4	IKB Deutsche Industriebank AG	3	4	Penta Management	1	2
Cairn Capital	3	1	IMC Asset Management	1	4	Permira Debt Managers	1	4
Caja de Ahorros y Monte de Piedad de Madrid	2	3	Intermediate Capital Managers Limited	14	3	PIMCO	3	3
Carlyle Group	13	2	Invesco Senior Secured Management	1	3	Pinebridge	3	1
CQS	4	1	Investec Bank	5	2	Pramerica Investment Management	14	2
						Sankaty Advisors	1	1

Source: Citi Research, INTEX

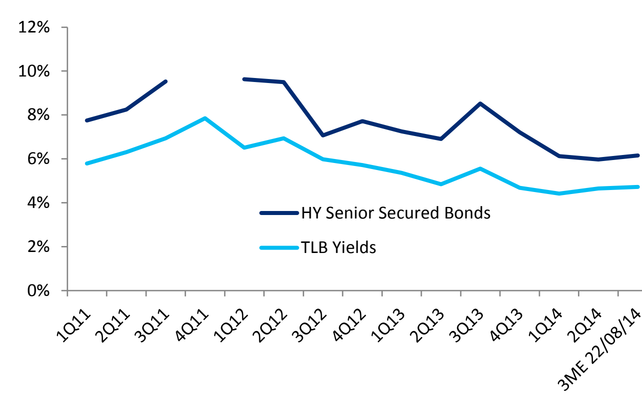
How about the future performance of CLO equity? There are five positive pointers, the first two of which we mentioned previously. First, the recent price talk for CLO triple-As is around 130-135bps which is 5-10bps tighter than a few months ago. Second, loan supply and spreads offer some hope for better deal economics, though a large widening in loan spreads will have an impact on CLO debt spreads as well. Third, new deals are benefiting from an uptick in leverage (Figure 10). Fourth, there is better cash management as more deals are choosing to pay their liabilities on a quarterly as opposed to a semi-annual basis. The upward-sloping shape of the curve means that deals lose out if the bulk of their liabilities reference 6-month rates, while most of their liabilities are linked to the 3-month rates. Fifth, unlike the US product, Euro CLOs still have the ability to invest in bonds which has the possibility of generating higher-carry than par loans (Figure 11). It is true that the Euro loan market has not greatly benefited from interest rate floors, which have been a boon for US CLOs, but that is changing. Not only are more loans being done with Euribor floors, but the more benign policy environment is likely to keep the benefit of those floors for a longer period in Europe than in the US.

Figure 10. Leverage and payment frequency in Euro CLOs by vintage



Source: Citi Research, INTEX

Figure 11. Bond versus term loan B yield in Europe



Source: S&P LCD

On the negative side, Europe is suffering from higher default rates but the previous experiences of the legacy years has, for the moment, led to perhaps more conservative collateral. Comparing CLO 2.0 with1.0 equity, second-lien has very

little presence in CLO 2.0s, and other CDOs are absent. The presence of debt from GIIPS countries is smaller. Neither factors, of course, will prevent, nasty sudden core-country surprises like Phones 4u (present only in a few CLO 1.0s) or Vivarte (much more prevalent). Moreover, high yield bonds are included in European CLO 2.0s, unlike in the US. There is positive optionality in owning bonds for equity since they bring higher carry, as well as the possibility of mark-to-market gains if managers can time their purchases (naysayers will immediately bring up the NAV volatility as a result of owning bonds). Overall we expect CLO 2.0 return to outperform CLO 1.0s Equity at the front end, as the older product starts to delever. Conversely, in previous publications we have sung the praises for CLO 1.0 mezz because of their higher spread relative to their maturity, see Simple Model Shows RMBS Fair with Upside; CLOs Cheap).

Risk Retention and Volcker Driving Flows

Two of the biggest themes in the European and US CLO markets today are risk retention and Volcker. The former is behind the reluctance of European investors to buy the overwhelming majority of US deals, which, as a result, has supported the European markets. As more US managers look for international buyers, it is likely that the universe of retention compliant US-deals will increase from the current level. Volcker implementation has led to a raft of refinancings (see Refinancing Heating Up) of US CLOs that have eliminated their non-loan buckets, and often simultaneously re-priced their debt tranches. As the regulation now stands, the risk of owning non-compliant deals is significant (see Volckerization Leaves Bonds Behind). The rule has led to nearly all new deals being structured without bond buckets. Both of these large themes are seeing recent developments.

On risk retention, Europe may be leading the way to get new capital into CLOs in a way that satisfies regulators' requirements to see sufficient 'skin in the game', Euro CLOs and RMBS are increasingly taking benefit from the now Parliament-adopted, 'originator' route to satisfy risk retention rules (see, for more details, Fitch Doubts On RMBS Risk Retention Matter For CLOs). Most recently this route to risk retention was illustrated by a Blackstone / GSO Loan Financing Limited IPO to seed a fund, Blackstone / GSO Corporate Funding Limited, which will buy loans as well as Blackstone / GSO managed CLO equity. In the US, risk retention had been put on the back-burner for a while after 'final rules' put out by regulators last year led the LSTA to put out counter proposals (Risk Retention Battles Continue – LSTA Fights on in the US). After many months of silence, a memo from the LSTA last week, quoting a Wall Street Journal article, said that Fed Governor Daniel Tarullo on Wednesday stated in a hearing before the Senate Banking Committee that while the regulators were "in the home stretch" on finalizing the risk retention rules, he added "I can't say (that they will be finished) by the end of the year." Tarullo's sentiment on timing was supported by the chairs of the SEC, the OCC and the FDIC each of whom stated they hoped to be done by the end of the year. Our take is that the timing is hopeful, rather than certain.

There is some news on Volcker too. The Barr bill (H.R.4167) that was passed through the House in April 29th (it never made it to Senate) and would have made senior tranches of with-bond CLOs held as of Jan 31st on bank balance sheets exempt from Volcker was passed by the House this Tuesday (H.R. 5461) as part of a wider package. The bill proposes that manager-removal rights in non-compliant deals do not automatically constitute an 'ownership interest', a feature which has led many banks to seek amendments to 'Volckerize' deals by eliminating bond buckets. It also seeks to automatically give an extension to banks till 21 July 2017 for divesting positions (so long as the securities were issued before 31st Jan 2014), Note that these measures are the same as the previous bill, but the hope is to put it

in a form that could hopefully pass down the road in the Democrat-controlled Senate. While the passage through the Senate is not guaranteed, the Fed had already declared its intention in a note to grant two one-year extensions in August 2104 (which date has now passed) and August 2015 (thus effectively pushing conformance date to August 2017) to allow banks to bring into compliance legacy positions (The Fed's Volcker Postponement).

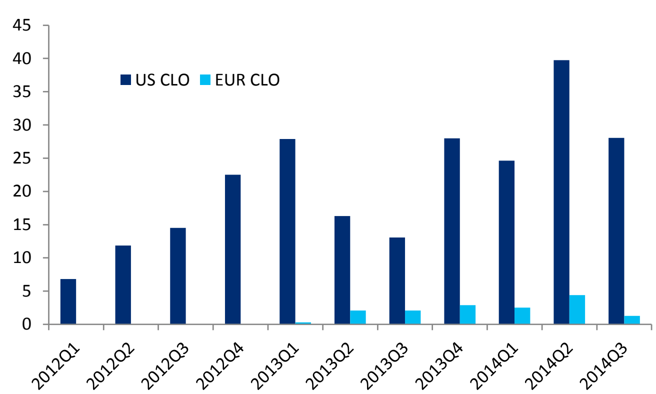
Primary and Secondary Activity

The pace of primary supply, including refinancings, has been on track for a blowout year in the US markets (Figure 12). As of this week, YTD US CLO issuance stands at $96bn from 184 deals, or $88.7bn excluding 22 refinancings. August, traditionally a quiet month, saw healthy issuance of $12bn with managers opportunistically benefiting from softer loan prices after sustained retail loan fund outflows. Euro CLO issuance is another €8.6bn YTD from 21 deals. In the US, the average run rate is about $12bn new issuance a month since February, with the average deal size now $550bn. We have increased our previous issuance forecast from mid0summer and anticipate that full-year issuance excluding refinancings could reach $120bn.

The main spread story has been in CLO 1.0 space (both USD and Euros). USD CLO 1.0 spreads for less than 2y WAL, at 75bp, are 38ps tight to beginning of year. Euro 1.0 first-pays, at 70bps, are 45bps tighter to beginning of year, and 5bps tighter to just beginning-of-August (Figure 13).

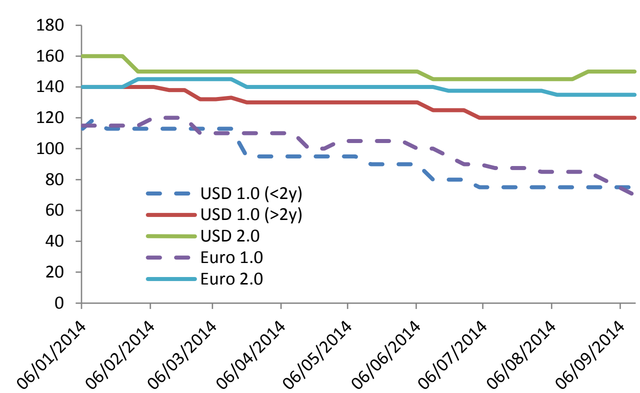
CLO refinancing activity continues, helped by new investor appetite for shorter duration refinanced tranches. Twenty-two deals have refinanced this year totaling $7.3bn, with the latest being Symphony VIII. On average, we saw a 25bp reduction in AAA coupons and a 81bp reduction in AA. But there is tiering among deals with one factor being the remaining length of the reinvestment period. Also, a few deals, such as Avalon IV, ING IM, Gramercy Park and Dryden XXIII, increased their Cov-lite loan exposure during refinancings. Others such as Centurion 16 may have extended their reinvestment periods or WAL tests.

Figure 12. US and EUR CLO issuance, in billions (USD, EUR)



Source: Citi Research

Figure 13. Diverging 1.0 vs. 2.0, and Euro vs. US, AAA spreads, bps



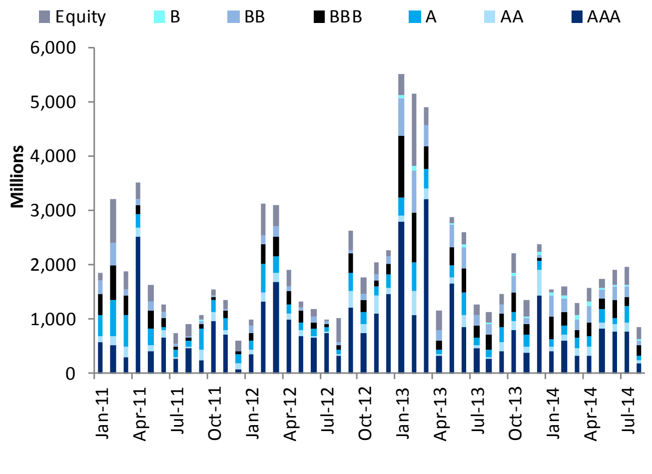
Source: Citi Research

We provide an update of global CLO BWIC volume by original tranche ratings (Figure 14, Figure 15). Volumes were down in August unsurprisingly - both in US and Europe – but there were some interesting themes. In Europe customer activity centered on greater interest in CLO 1.0 debt leading to spread tightening across the capital structure, with probably the strongest effect in single-As. Investors have arguably started to appreciate at last the prepayment of European loans, and the

deleveraging in European structures. CLO 2.0 debt gave back some of the supply-led widening that had happened early in August, as investors coped with the 'Draghi' effect. According to our trading desk, there is also an increasing number of investors seeking leverage, which has helped junior mezz spreads. Leverage on CLO 2.0 BBs is typically being offered with a 25-30% haircut and 140bp funding spread which could bring returns to high single digits.

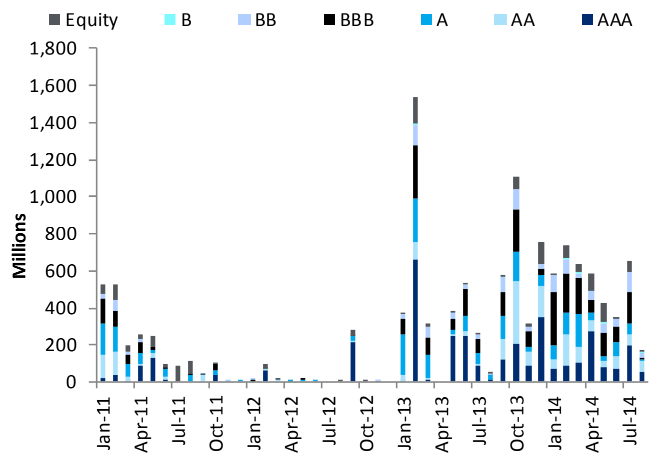
US spreads, especially CLO 2.0, are being somewhat negatively affected by the supply of new deals. Across the capital structure US CLO 2.0 spreads are wide to Europe. Given our issuance forecasts, we do not see these pressures easing in the near-term. Issuance, despite these wide spreads, is made possible by slightly wider loan spreads and a large number of equity buyers. A growing number of risk-retention compliant US deals may start to benefit from the tighter European spreads, as US managers try to tap into the European markets.

Figure 14. Volume of USD CLO BWIC, millions



Source: Citi Research

Figure 15. Volume of EUR CLO BWIC, millions



Source: Citi Research

Appendix

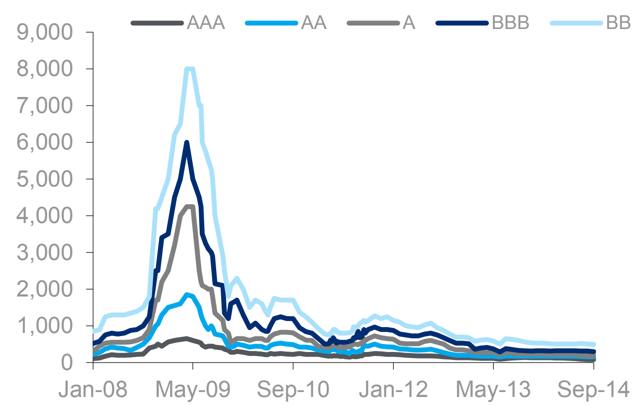
Cash Flow CDO Market

Figure 16. Secondary Cash Flow CDO Spreads/Prices

Collateral Type	AAA	AA	A	BBB	BB
US HY CLO 1.0 (Spreads) – 1-*Aug-14*	81	155	190	298	495
US HY CLO 1.0 (Prices) – 1-*Aug-14*	High 90s	Mid 90s – High 90s	Mid 90s	Mid 90s	Mid 90s
US HY CLO 2.0 (Spreads) – 1-*Aug-14*	147	222	324	430	639
US HY CLO 2.0 (Prices) – 1-*Aug-14*	High 90s - Par	High 90s – Par	High 90s	Mid 90s – High 90s	Mid 90s
Euro HY CLO (Spreads) – 1-*Aug-14*	85	160	324	385	600
Euro HY CLO (Prices) – 1-*Aug-14*	High 90s - Par	Low 90s – High 90s	High 80s – Mid 90s	Mid 80s – Mid 90s	Mid 80s – High 90s

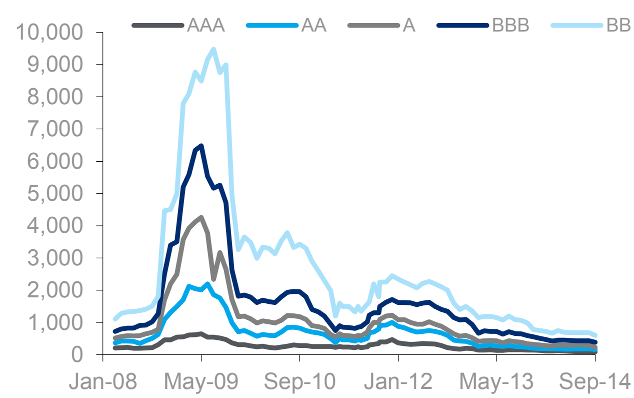
Source: Citi Research

Figure 17. US CLO Tranche Spreads



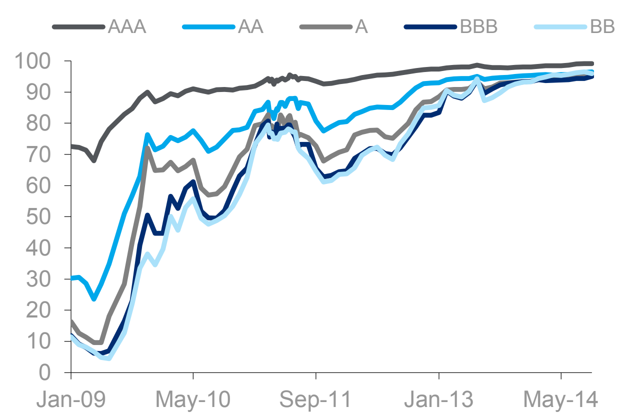
Source: Citi Research

Figure 18. European CLO Tranche Spreads



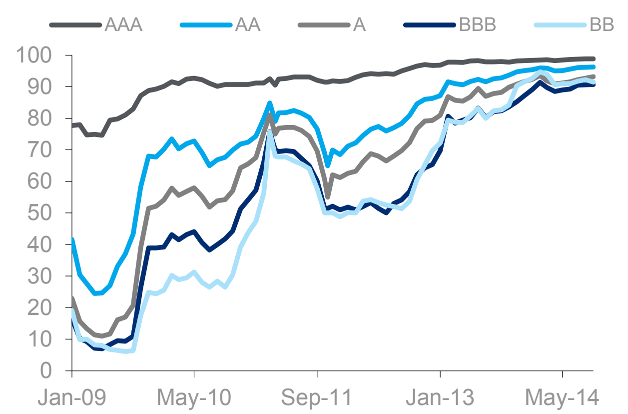
Source: Citi Research

Figure 19. US CLO Tranche Prices



Source: Citi Research

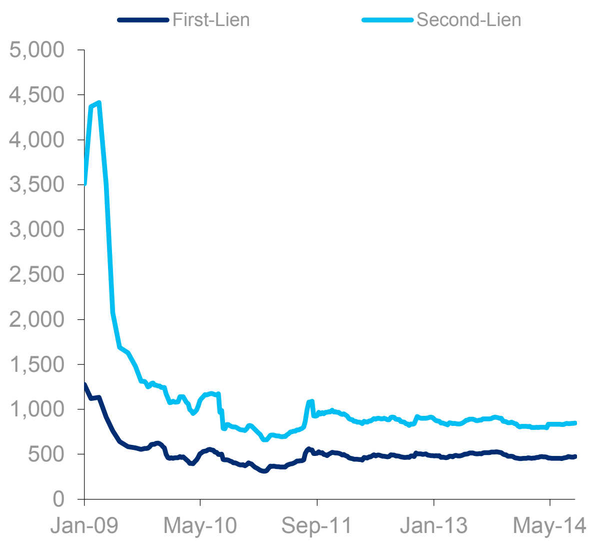
Figure 20. European CLO Tranche Prices



Source: Citi Research

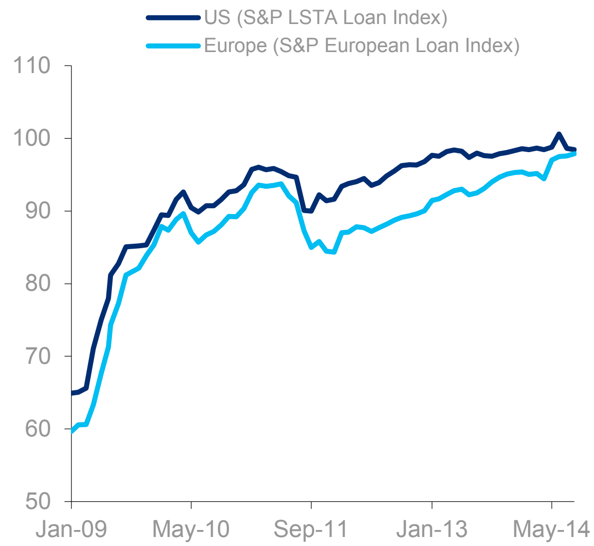
CLO Collateral

Figure 21. Avg First and Second-Lien Secondary Spreads to Maturity



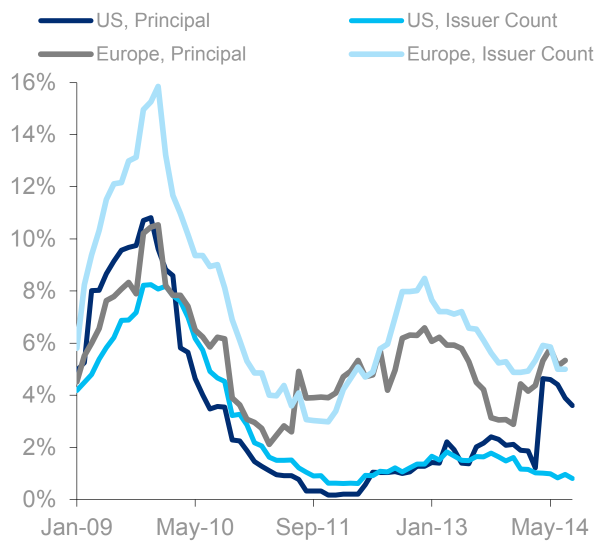
Source: S&P

Figure 22. Weighted Average Bid



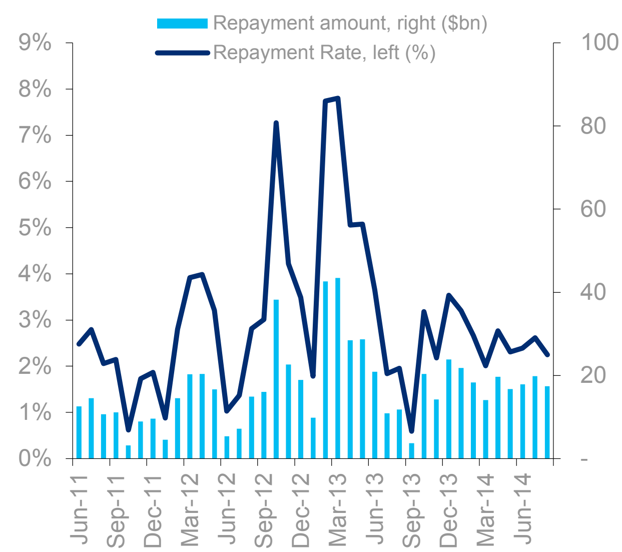
Source: S&P

Figure 23. US Lagging 12mo. Default Rate by Principal and # of Issuers



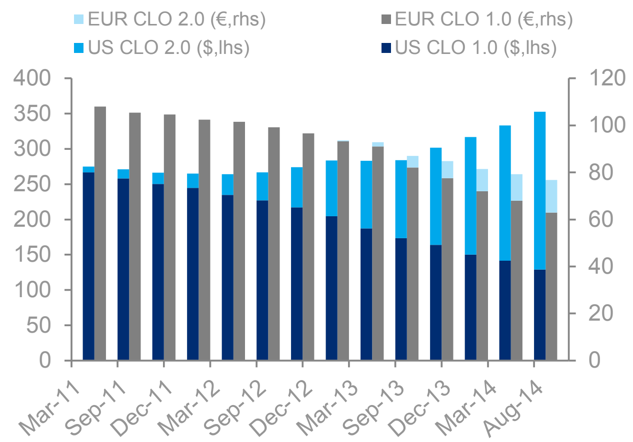
Source: S&P

Figure 24. US Monthly Repayment Rate and Repayment Amount



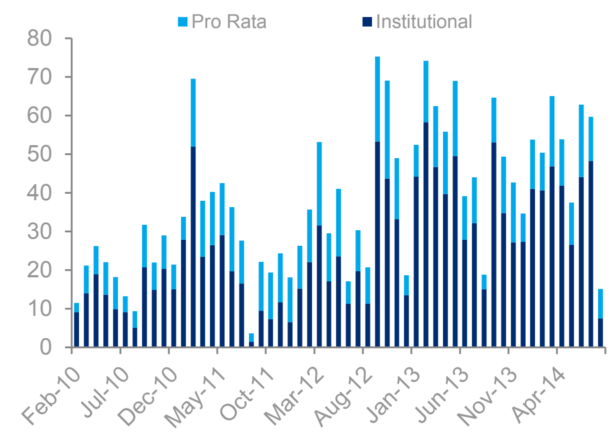
Source: S&P

Figure 25. Amount of CLOs Outstanding ($ for US, € for Eur)



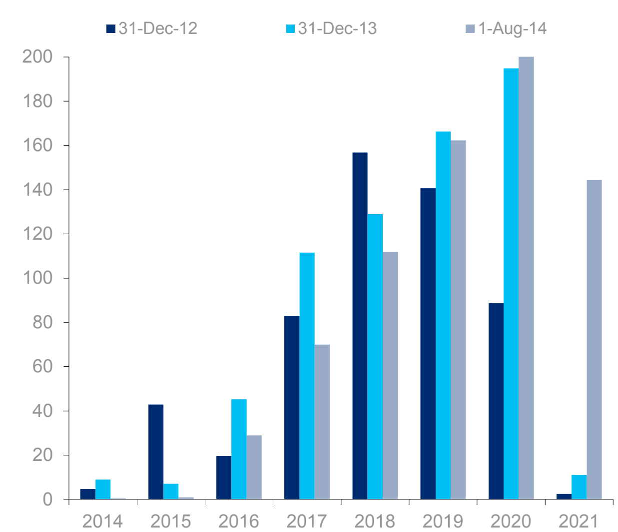
Source: Citi Research

Figure 26. US Loan Issuance ($bn)



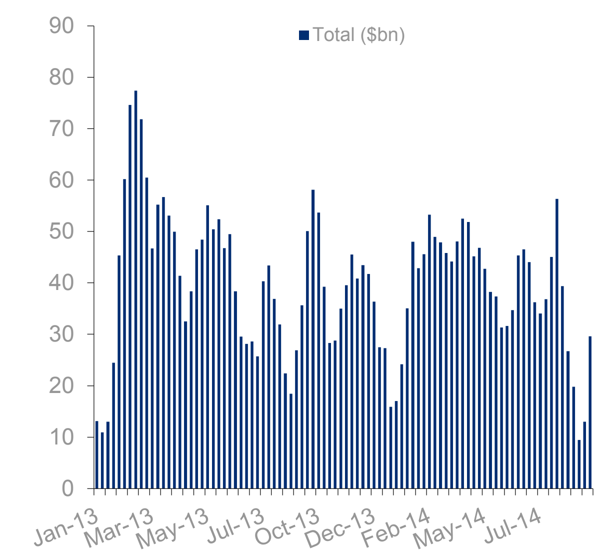
Source: Citi Research

Figure 27. US Loan Distribution by Year of Maturity



Source: S&P

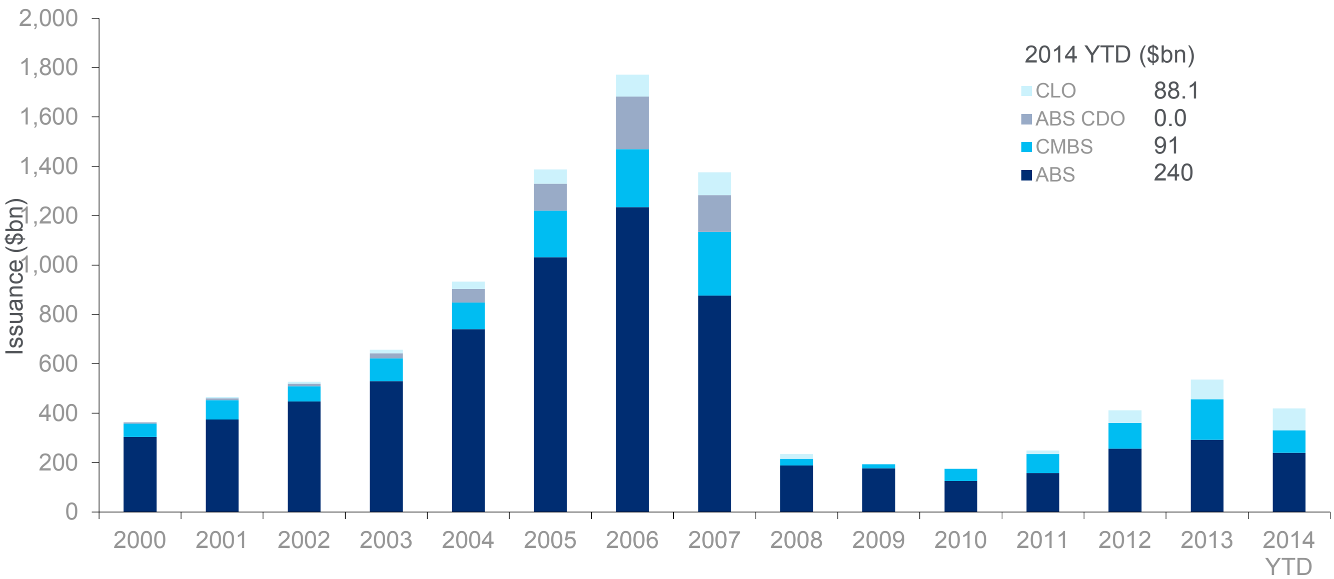
Figure 28. US Institutional Loans Launched to Market, $bn (Rolling 30-Days)



Source: S&P

Securitized Products Issuance

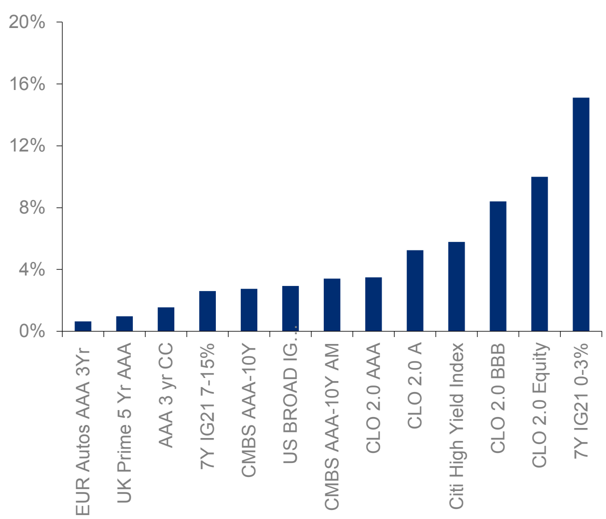
Figure 29. Year-to-Date CDO Issuance and Securitization Market Historical Issuance ($bn)



Source: Bloomberg, Citi Research

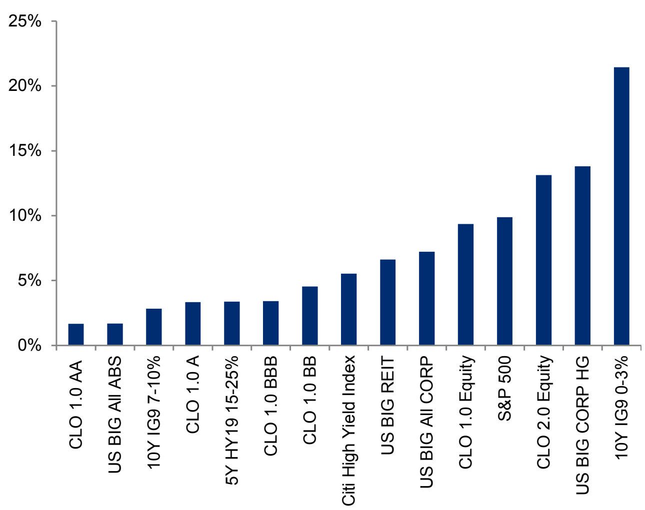
Securitized and Non-securitized Products Returns

Figure 30. Simple Yield



Source: Citi Research

Figure 31. Total Returns, 2014 YTD



Source: Citi Research

Appendix A-1

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