

Global Structured Credit Strategy

Summer volatility returns, Euro CLOs as a recovery play

- **New issue spreads widen again this year** — Summer 2012 is starting to look exactly like last year for the CLO primary market. Triple-A spreads in 2011 had gone to 120bps before blowing out to over 160bps by the time summer had ended
- **We expect some spread tightening in new-issue senior bonds** — With the volume of new issue constrained by how wide average CLO liability costs become, and the prepayments of legacy CLO bonds, we anticipate growth in investor interest will lead to a small tightening in senior new issue spreads.
- **June BWIC volumes are still moderate, but size is no advantage** — Though June was a relatively low BWIC month, offer-sizes made little distinction in the percentage of bonds in that category that traded versus those that did not trade.
- **European recovery prospects not reflected in senior CLO spreads** — Not only are spreads wider for European deals, but subordination level differences between the two CLO types are still intact after the credit cycle. The gap left by last year's US investors in the European markets looks attractive.
- **Buy Euro double-As based on lower idiosyncratic risk** — With higher default expectations in Europe than in the US, and greater dispersion among the riskier buckets in different CLO pools, double-As represent a good mix of attractive spreads and lower default risk.

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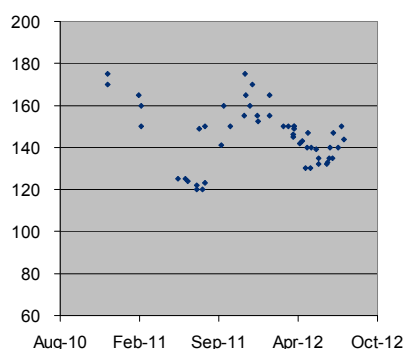
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CLO Primary – we have been here before

Figure 1. CLO Primary Triple-A spread by issuance month, bps

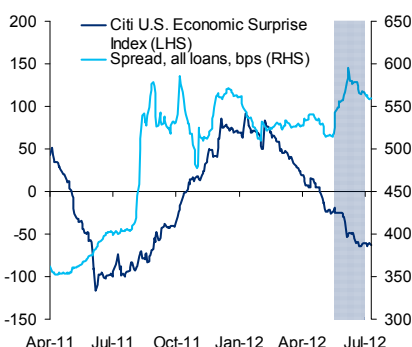


Source: Citi Research

Summer volatility returns

Summer 2012 is starting to look exactly like last year for the CLO primary market, though we see many investors failing to recognize the pattern. Triple-A spreads of new issue deals got as tight as 120bps last year before blowing out to over 160bps by the time summer had ended (Figure 1). The reasoning mainly concerned European headlines and a market-wide risk aversion by Q3 2011 and, we think, a general unpreparedness of the market. The reasons this year may be a little different. For one, policymakers in Europe appeared to have made significant progress in their recent summit and even found a way to recapitalize the banks using ESM money – until a case brought before Germany's supreme court delayed the possibility of any further decision-making until September. Moreover, the market appears to be much more defensively positioned, with investors either running large cash positions or having hedges (both of which are generally supportive of spreads). Further, supply technicals are also supportive ([US Credit Weekly](#)) – corporate supply year to date is running below our strategists' 2012 forecasts both in gross and net terms, due in part to a decline in M&A and strategic activity.

Figure 2. Fundamental data surprises to downside

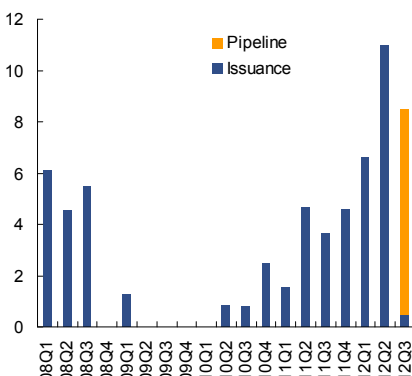


Source: Citi Research

Fundamentals and some technicals a little worse

Despite the positive technicals, we find it difficult to foresee a powerful rally from here. The fundamental backdrop continues to weaken, and in fact the Citi U.S. Economic Surprise index moved deeper into negative territory (Figure 2). This makes current valuations less cheap, and in many markets, such as CDX, more stretched after their rally. Moreover, though early in the earnings season, negative announcements appear to be outnumbering positive ones with companies that had earlier provided positive guidance suddenly starting to talk about end market visibility and rapidly changing conditions ([US Credit Weekly](#)). The structured credit markets, in particular, were also affected by its own idiosyncratic issues in the form of JPMorgan losses in its CIO office and the unwinding of previously-held positions (or halting of new purchases). At the same time, more regulatory focus on banks from a variety of sources is proving a dampener for demand from bank treasury departments. These pressures are likely to persist for some time; and so, in the absence of further Euro headline shocks, we expect a range-bound environment.

Figure 3. CLO Issuance, \$bn

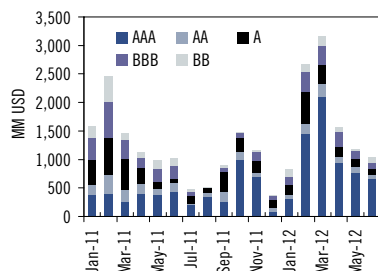


Source: Citi Research

Still we expect some tightening in new-issue seniors

Despite the pressures, we are constructive on the new issue market, especially on the senior parts of the capital stack. As the number of alternatives to finding relative value in corporate space shrinks, we think senior tranches of CLO will benefit. CLO issuance is constrained by the available residual cashflow to equity holders, and a significant widening in liability spreads acts to put a ceiling on total amount of CLO issuance. To that, add the accelerated repayment of senior tranches (from last year's rapid loan prepayments) and there is a relatively positive technical for senior tranches. What happens lower down the capital stack depends more strongly on yield-buyers such as credit funds. If loan spreads continue to tighten (Figure 2), there should be a positive impact on mezz spreads. For the moment our base case is for issuance to stay on track for an approximately \$25-30bn issuance year, and for the average liability costs of a new CLO 2.0 to remain range-bound even if the dispersion between senior and junior spreads increases from here.

Figure 4. Recent BWIC activity (\$mm)



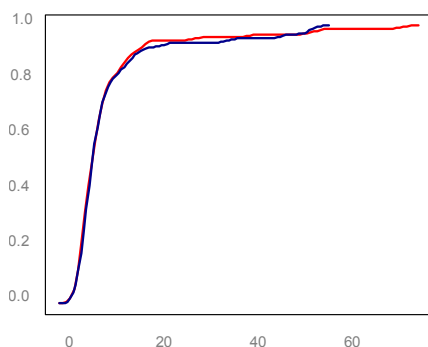
Source: Citi Research

Lower secondary activity in CLOs

One indication of investor apathy is a fall-off in BWIC activity. Until recently, mezz CLO bonds had been the mainstay of secondary BWIC activity. This has almost died this month (Figure 4) in a sign that dealers may not be providing much liquidity and investors are not willing to sell into an uncertain market. In contrast, there is more activity in senior bonds as legacy owners used the rally at the beginning of the year to reduce their positions, and real money investors such as insurance companies bought secondary bonds. We expect more senior tranche activity to continue, though it is probable that dealer support for legacy mezz bonds may decline because of higher regulatory capital charges ([US Bank Capital Rule on Structured Credit](#)).

However, other segments of CDOs did see activity. The Fed auctions of Maiden Lane assets brought considerable investor interest, even if the universe of buyers is smaller than that of CLOs. Most of the assets sold were commercial real estate and residential mortgage backed CDOs. Investor interest will have been sparked by improvements in the US housing sector, and lack of available yield opportunities elsewhere.

Figure 5. Fraction of universe that traded (red) and did not (blue) by offer size (x-axis, \$mm)



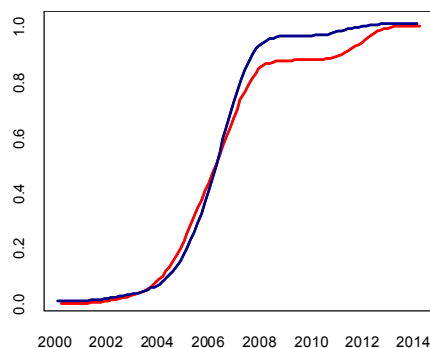
Source: Citi Research

June investor preferences

Though June was a relatively average-to-lower-volume BWIC month, some interesting observations can be made about the nature of supply and what investors prefer. Figure 5 shows that unsurprisingly most offer sizes were below \$20mm., but more interesting was the fact that there was little distinction in the fraction of bonds in that category that traded (red) versus that those that did not trade (blue). One can do this by looking at the two lines for offer sizes of less than the \$20mm offer size. The lines are a cumulative fraction – namely, the difference between any two points on the red line will show the fraction of bonds that traded for the range of offer size. We assumed that all bonds traded where covers were provided.

If one looks at the June BWIC universe by vintage, most of the deals were from the pre-2008 universe. This is not a surprise as most of the outstanding CLO universe is from that period. However, it appears that, at least in June, investors expressed a measure of preference for new deals. We say this because a bigger proportion of deals that did trade were post-2008 (area under red line). In contrast a bigger proportion of deals that did not trade (area under blue line) were pre-2008.

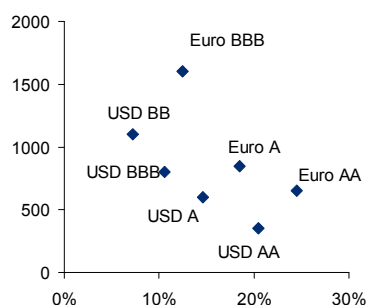
Figure 6. Fraction of universe that traded (red) and did not (blue) by vintage (x-axis)



Source: Citi Research

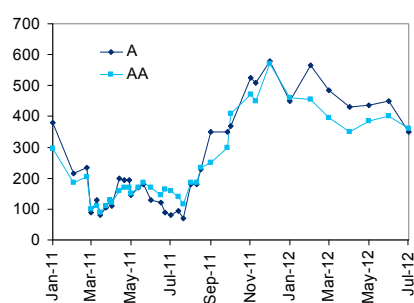
We anticipate that as markets become more confident, more investors will look at the secondary markets and this is likely to lead to a post-summer price appreciation and greater willingness from investors to look at the secondary markets.

Figure 7. Current subordination (x-axis) and spread, bps, for Euro and US CLO 1.0



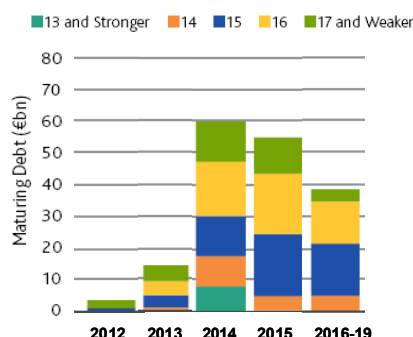
Source: Citi Research

Figure 8. CLO Spread differential, bps, between US and European deals



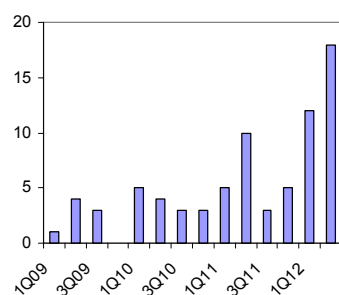
Source: Citi Research

Figure 9. Moody's Euro LBO pool



Source: Moody's

Figure 10. European A-to-E requests



Source: S&P LCD

Euro CLOs – not a crowded trade

How much wider can the spread-subordination go?

In a headline driven world, perhaps we should not be surprised that valuation considerations should fall by the wayside, but looking at the gap (Figure 7) between European and US CLOs should tempt some investors at least. Not only are spreads wider for European deals, but subordination level differences between the two CLO types are still intact after the credit cycle (because of lower recovery assumptions and lower diversification, Euro deals started life with higher subordination). Last year saw the spread discrepancy between the two CLOs initially decline at the beginning of the year (Figure 8) with the entry of more relative-value investors, especially from the US. That momentum has since declined, as such investors have chosen to dig deeper into the US CLO capital stack to meet their yield targets rather than risk a European meltdown. Now that policymakers in Europe appear to be making progress in resolving some of the region's problems, the spread differential between European and US senior bonds should narrow.

Mind default headlines, not the way you think

We do not doubt that Europe is in a worse credit position than the US – our forecast, in fact, calls for defaults to reach 6% by year-end for Europe and only 2.5% for the US ([Default Rates to Climb Rapidly in Q3 and Q4](#)). However, even at a rate of 5-6% annual default rate per year most senior tranches have enough subordination to withstand losses. Bankruptcy regimes differ between countries, true, but anecdotal evidence suggests increasing convergence. First-lien lenders, of which banks occupy a bigger share in Europe than in the US, are learning to take a haircut to expedite bankruptcy resolution. Moreover, if the policy discussions in Europe lead to a healthier banking sector, banks will be better positioned to absorb losses rather than continue to hold non-performing loans.

Despite worse forecasts for Europe, investors should treat with care headlines (often repeated to the writer), such as in a recent study from Moody's, that 25% of companies will default. First, readers ignore the fact that the study only included unrated LBOs, and, moreover, the basis for the 25% number is the fact that they were shadow-rated to a triple-C or lower category (Figure 9, 17 and weaker). First, the median triple-C bucket in Euro CLOs is currently at about 14%, and, moreover the 25% default prediction is over a cumulative period.

Buy AAs – amendments, yes; losses, likely not

With higher default expectations in Europe than in the US, and greater dispersion among the riskier buckets in different CLO pools, double-As represent a good mix of attractive spreads and lower default risk. Dispersion also prevents us from recommending a generic single-A or lower bond. The biggest risk to senior bonds is that the bonds do not get paid off as early as many investors hope because of loan extensions. In a situation of low CLO formation and lack of capital markets, borrowers have little choice but to ask for loan extensions, a market development that we are already seeing (Figure 10). S&P reports that already this year there have been 25 amend-to-extend requests, compared with 23 in the whole of 2011 (with, moreover, requests from some borrowers whose loans are trading well below par). To put things in perspective, moreover, extension risk is not uniquely European. Senior buyers in the US also have to contend with extension risk for different reasons – namely, the desire of managers and equity owners to keep low-cost financing in place for as long as possible. Even with those caveats, though, the subordination below double-A bonds should be able to withstand a multi-year 5-6% default rate and be able to survive in all but the most difficult scenarios.

CLO Monitor

After improvements in 2011, defaults rise very slightly

Defaults in 2011 were lower than 2010, but are starting to rise again albeit very slowly. In their recently published monthly default study, Moody's trailing 12 month global speculative-grade default rate ended the second quarter of 2012 at 2.7%, up from its 2.5% level at the end of the first quarter. In the US, the speculative-grade default rate ended June at 3.1%, up from the previous quarter's level of 2.9%, while in Europe the rate eased to 2.6% from 3.0% in the previous quarter (but the decline was more to do with a larger denominator with a higher number of fallen angels). By region, their forecast for the speculative-grade default rate is anticipated to rise to 3.5% in the US by the end of this year whereas in Europe, the comparable rate is expected to stay at its current level at 2.6%. The European numbers are more optimistic than Citi's forecasts ([Default Rates to Climb Rapidly in Q3 and Q4](#)) where default rates seem likely to increase rapidly in the second half of 2012, reaching 6% by the end of the year.

Loan spreads have also fortunately stayed elevated and have not tightened as much as some of the investment-grade markets. This has enabled reinvesting CLOs to maintain their average collateral spreads.

CLO Monitor shows positive effect of deleveraging for debt-holders

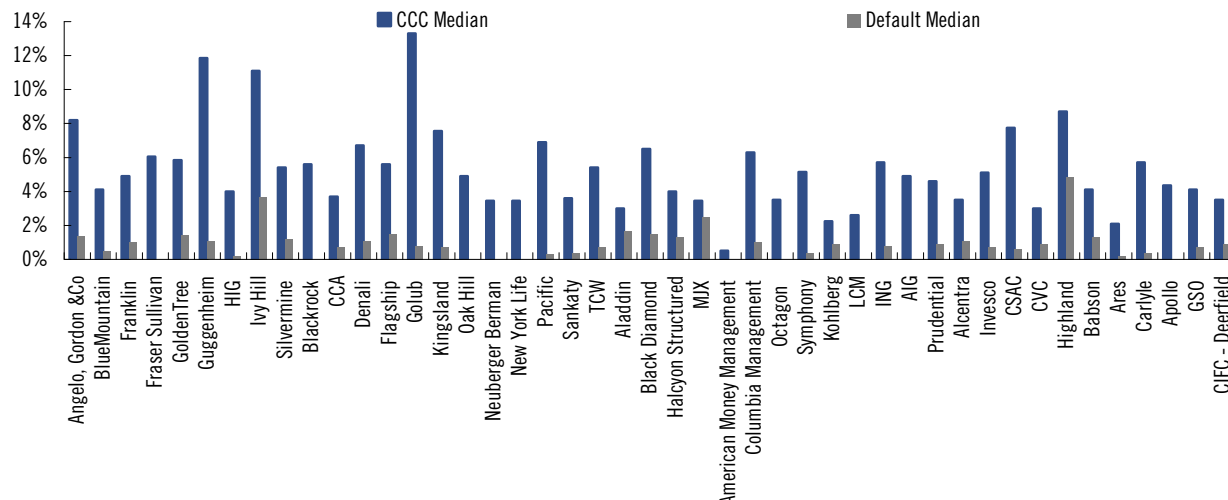
Diversion test cushions are continuing to improve in the US CLO 1.0 deals as more CLOs start deleveraging. Median portfolio default rates have picked up slightly, consistent with our comments above about the overall loan universe. Even in Europe, a small amount of stabilization is evident (Figure 22) with some deals having paid some of their senior bonds because of earlier failure of cash diversion tests.

The overall picture though is one of stability. If anything, CLOs continue to enjoy a rise in average collateral spreads, particularly those that are still in their reinvestment period such as most of 2007 CLOs (Figure 13). Some older 2004 deals are showing the impact of collateral deterioration (Figure 12) in the absence of active management, highlighting a bigger risk for back-ended mezz bonds.

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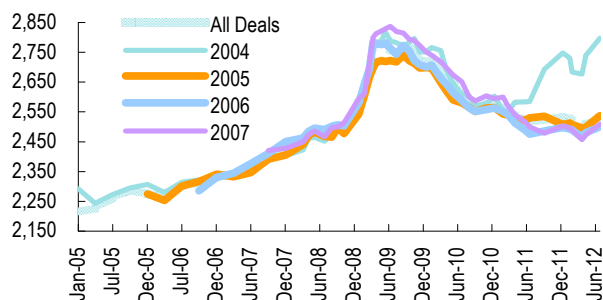
US CLO Data

Figure 11. Median of Default and Triple-C Baskets for Large US CLO Managers^a



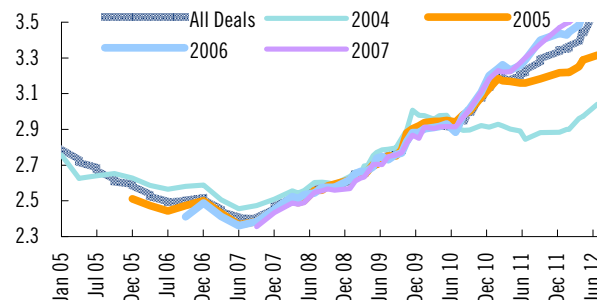
^a Minimum of S&P and Moody's deal-defined ratings.
Source: Intex and Citi Research

Figure 12. Weighted Average Rating Factor (WARF) Migration



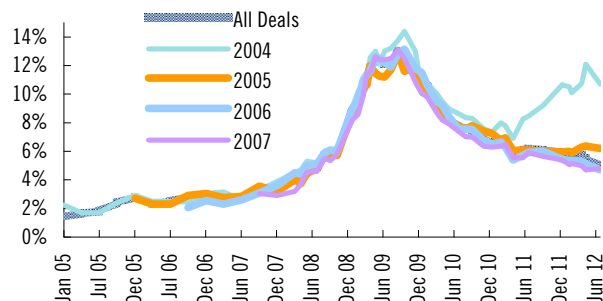
Source: Intex and Citi Research

Figure 13. Weighted Average Spread (WAS) Migration



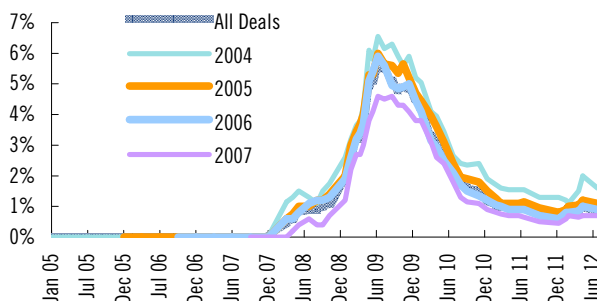
Source: Intex and Citi Research

Figure 14. Triple-C Basket Size



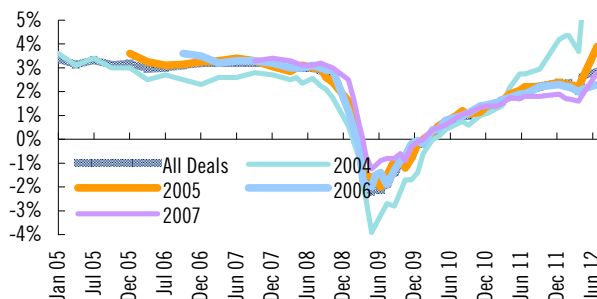
Source: Intex and Citi Research

Figure 15. Median Portfolio Default Rate



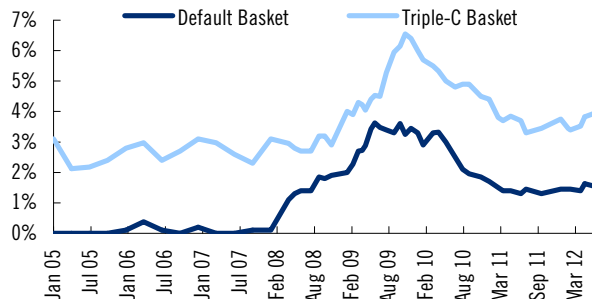
Source: Intex and Citi Research

Figure 16. Median Interest Diversion Trigger Cushion



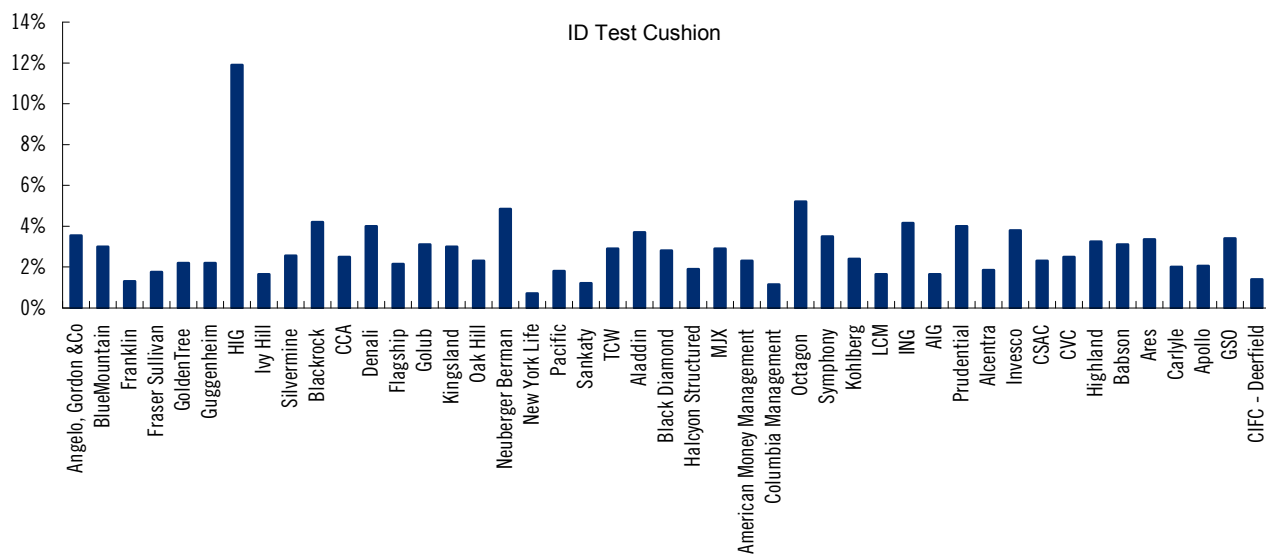
Source: Intex and Citi Research

Figure 17. Dispersion in Deal Performance: 25–75 Percentile



Source: Intex and Citi Research

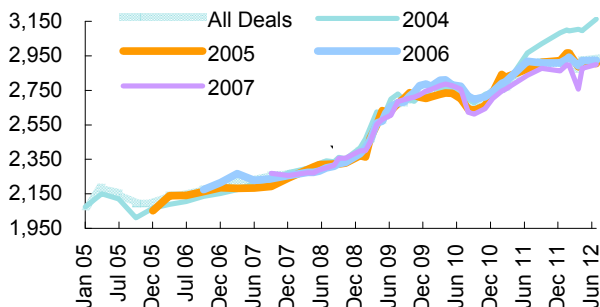
Figure 18. Median Interest Diversion Test Cushion in US CLOs by Manager



Source: Intex and Citi Research

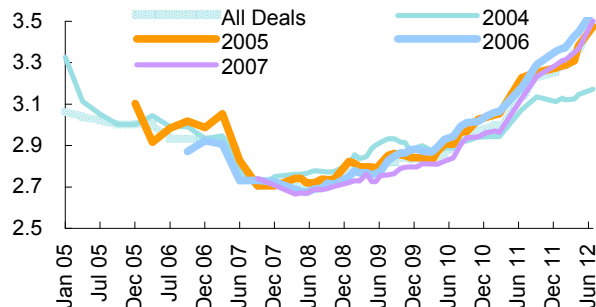
European CLO Data

Figure 19. Weighted Average Rating Factor (WARF) Migration



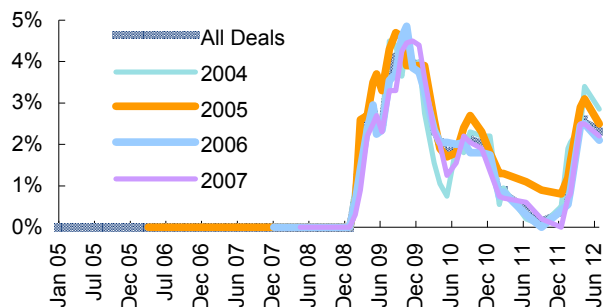
Source: Intex and Citi Research

Figure 20. Weighted Average Spread (WAS) Migration



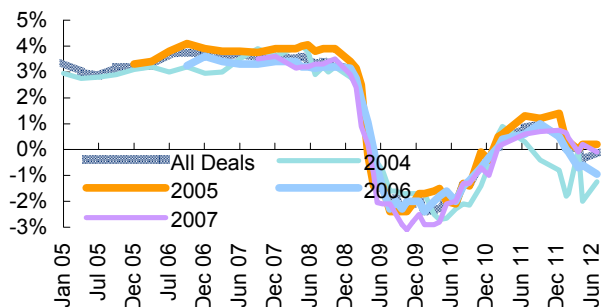
Source: Intex and Citi Research

Figure 21. Median Portfolio Default Rate



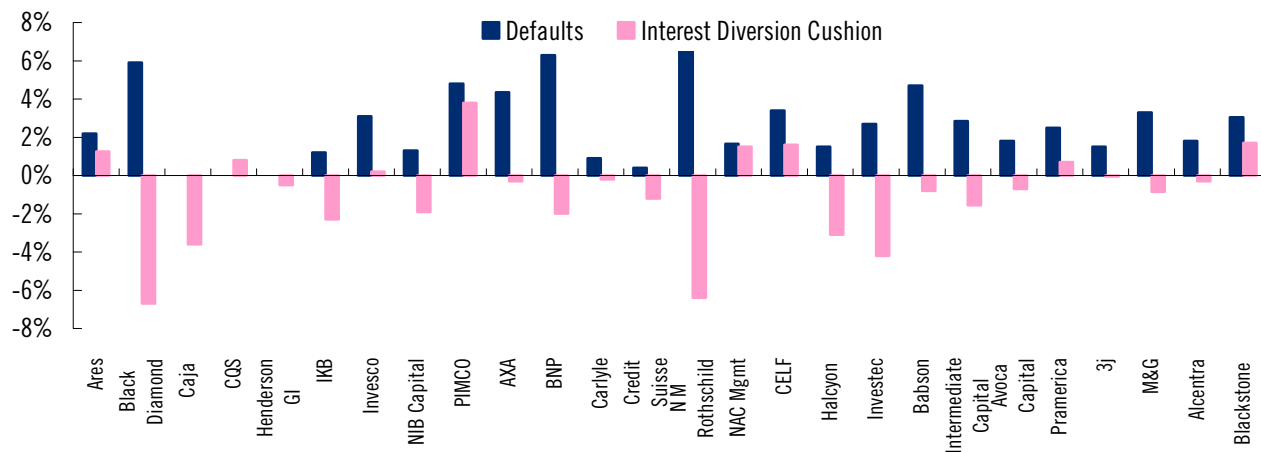
Source: Intex and Citi Research

Figure 22. Median Interest Diversion Trigger Cushion



Source: Intex and Citi Research

Figure 23. Average Default Rate in European CLOs by Manager



Source: Intex and Citi Research

Appendix

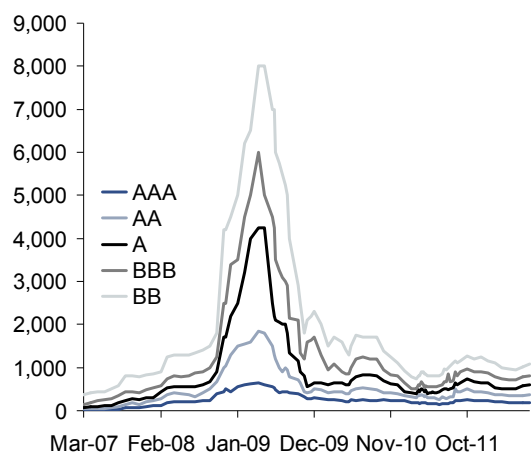
Cash Flow CDO Market

Figure 24. Secondary Cash Flow CDO Spreads/Prices

Collateral Type	AAA	AA	A	BBB	BB
US HY CLO 1.0 (Spreads) – 1-Jul-12	180	360	600	800	1075
US HY CLO 1.0 (Prices) – 1-Jul-12	Low 90s – Mid 90s	Mid 80s – High 80s	Mid 70s – Low 80s	High 60s – Mid 70s	High 60s – Mid 70s
US HY CLO 2.0 (Spreads) – 1-Jul-12	145	300	430	630	850
US HY CLO 2.0 (Prices) – 1-Jul-12	High 90s – Par	Mid 90s – High 90s	Low 90s – Mid 90s	Low 80s – High 80s	Low 70s – Low 80s
Euro HY CLO (Spreads) – 1-Jul-12	330	720	950	1500	2200
Euro HY CLO (Prices) – 1-Jul-12	Low 90s – Mid 90s	Mid 70s – Low 80s	Mid 60s – Mid 70s	High 40s – High 50s	High 40s – High 50s

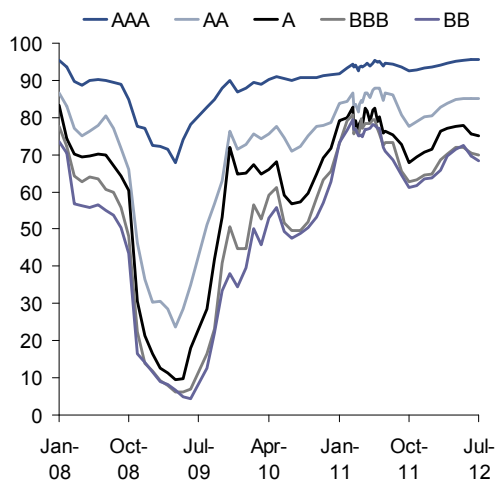
Source: Citi Research

Figure 25. US CLO Tranche Spreads



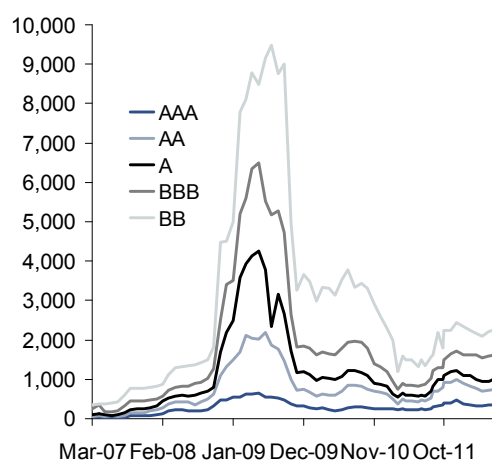
Source: Citi Research

Figure 27. US CLO Tranche Prices



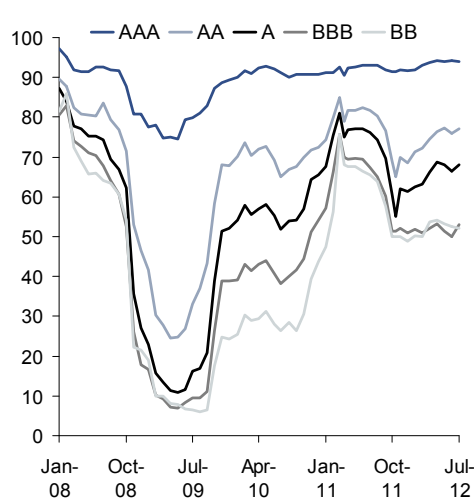
Source: Citi Research

Figure 26. European CLO Tranche Spreads



Source: Citi Research

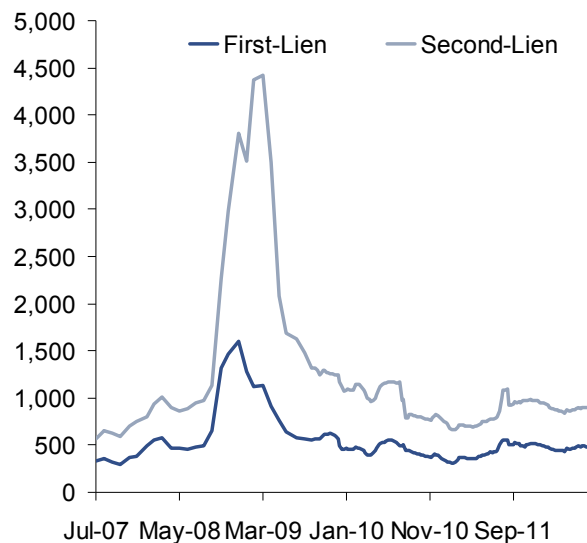
Figure 28. European CLO Tranche Prices



Source: Citi Research

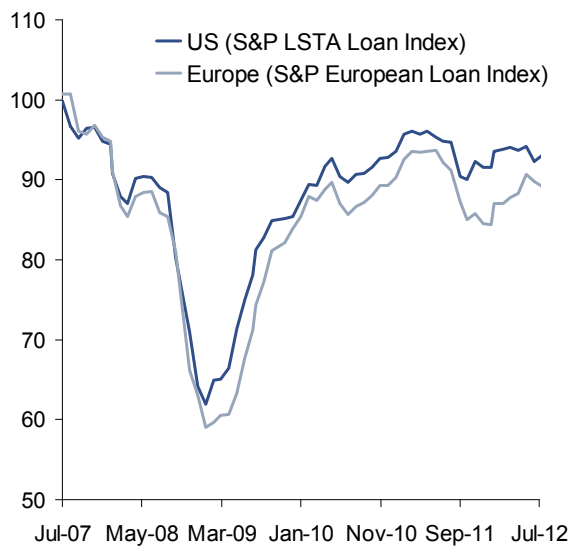
CLO Collateral

Figure 29. Avg First and Second-Lien Secondary Spreads to Maturity



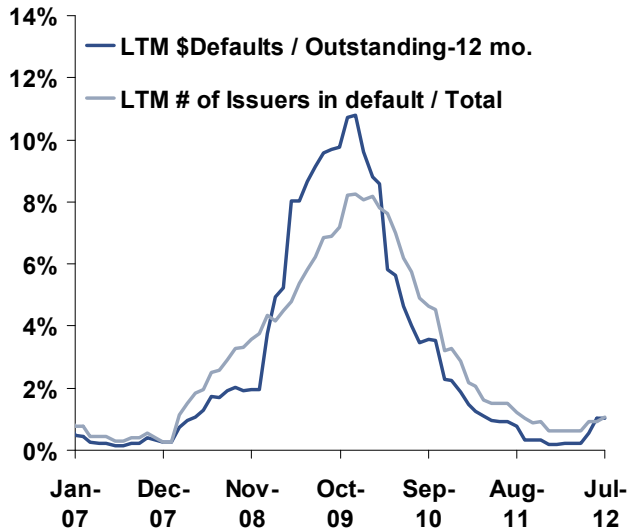
Source: S&P

Figure 30. Weighted Average Bid



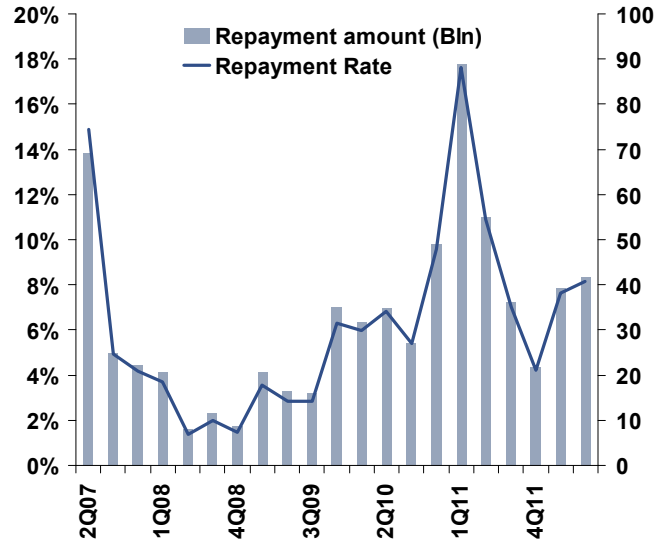
Source: S&P

Figure 31. US Lagging 12mo. Default Rate by Principal and # of Issuers



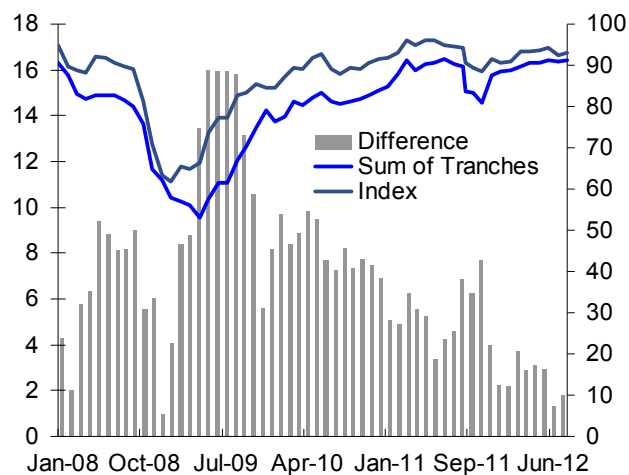
Source: S&P

Figure 32. US Quarterly Repayment Rate and Repayment Amount



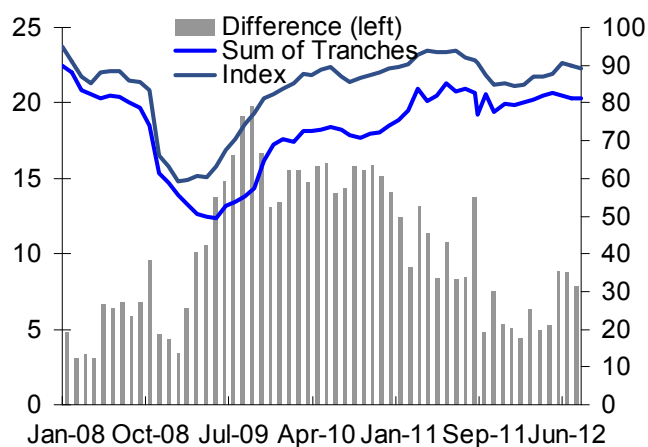
Source: S&P

Figure 33. Collateral/Tranche Arbitrage (US Deals)



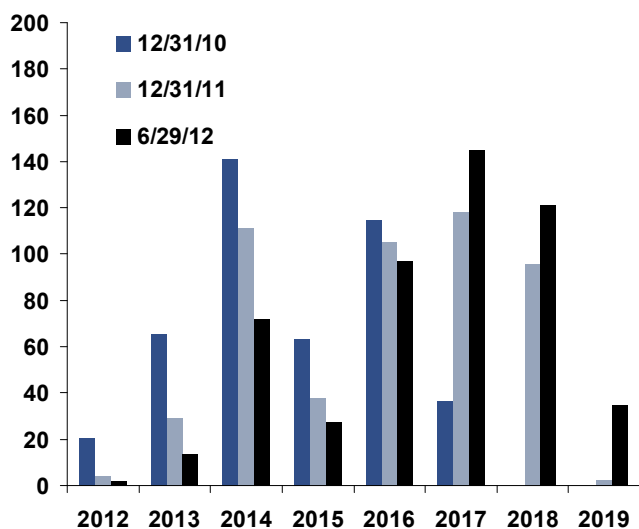
Source: Citi Research

Figure 34. Collateral/Tranche Arbitrage (EUR Deals)



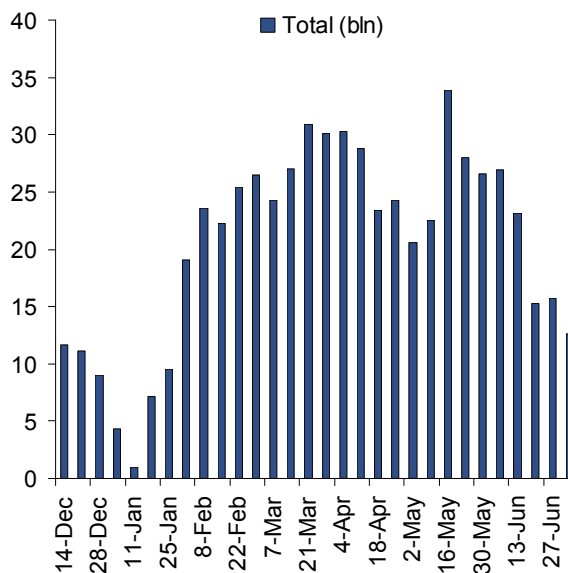
Source: Citi Research

Figure 35. US Loan Distribution by Year of Maturity



Source: S&P

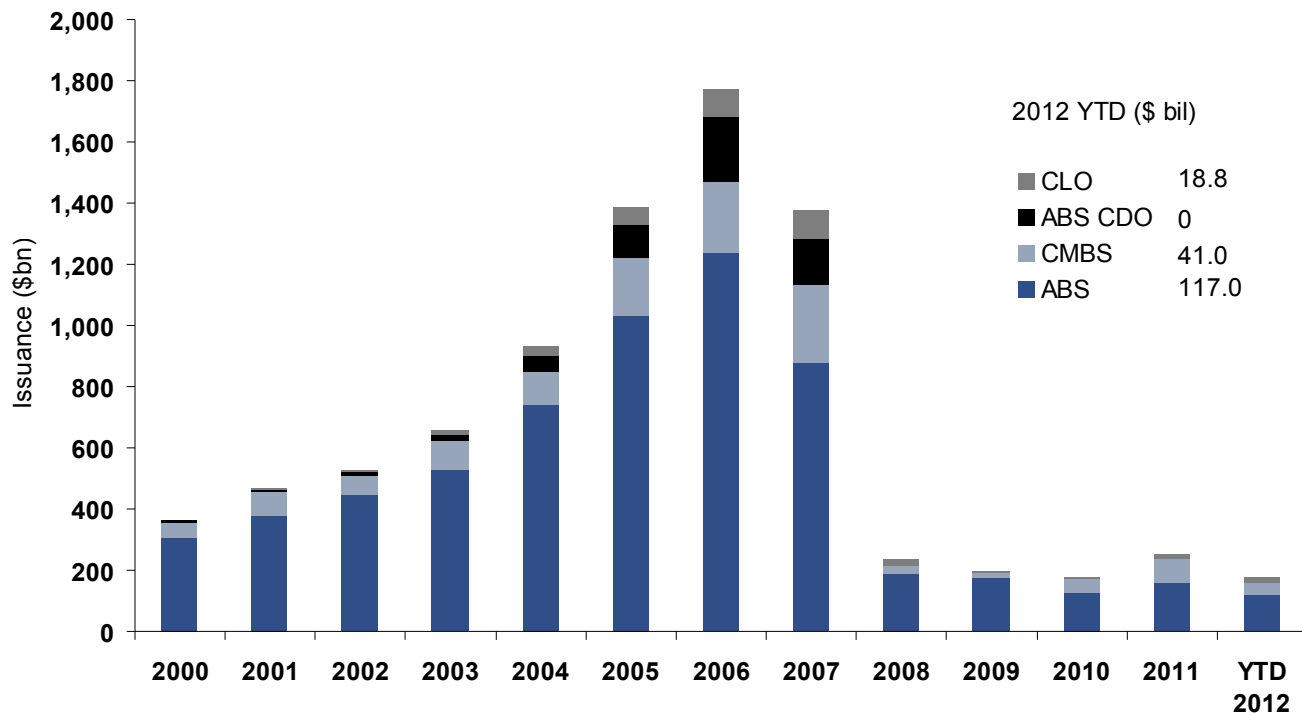
Figure 36. US Institutional Loans Launched to Market (Rolling 30-Days)



Source: S&P

Securitized Products Issuance

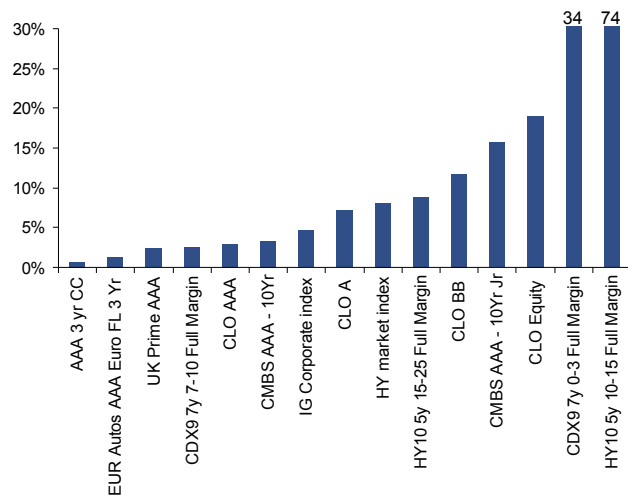
Figure 37. Year-to-Date CDO Issuance and Securitization Market Historical Issuance (\$bn)



Source: Bloomberg, Citi Research

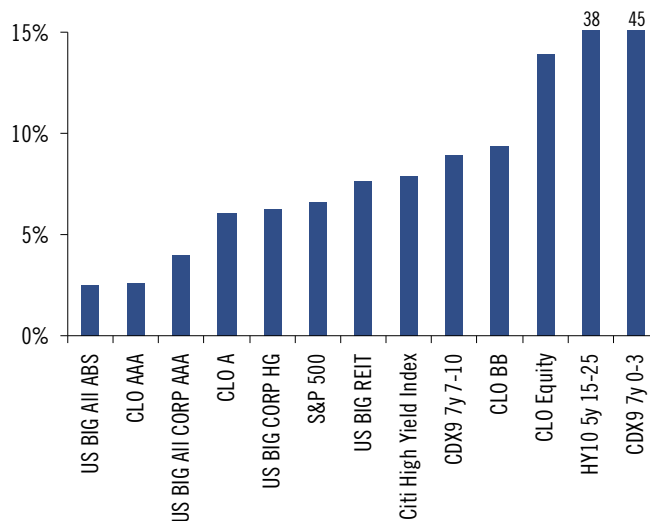
Securitized and Non-securitized Products Returns

Figure 38. Simple Yield



Source: Citi Research

Figure 39. Total Returns, YTD 2012



Source: Citi Research

Appendix A-1

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