20 December 2013 | 37 pages
Global

Global Structured Credit Outlook

A Rockier Ride

- **Less accommodative US Policy** — Despite a controlled and widely-telegraphed QE-taper, US structured credit is liable to see the momentum behind tight spreads and low volatility dissipate through 2014. Europe should see more benign policy.
- **Opportunistic Trading More Important** — With current low yields and potential volatility ahead, investors and CLO managers have to use leverage and purchases at market dips to boost returns and cashflows to CLO equity holders.
- **Synthetics over Cash, and Structural over Financial Leverage** — Scarcity of balance sheet will likely favor synthetics and will increase financing costs which will make non-recourse leverage such as CLO Equity and tranche investments appealing.
- **Regulation Even More Important in CLOs** — The final Volcker and Risk Retention Rules need clarification to stabilize the US CLO market, while the established FDIC and Basel framework for US banks will keep triple-As cheap for all investors.
- **Flat Expectations in US CLOs, Growth in Derivatives and in Euro CLOs** — We project a flat $65-75 bn primary market for US CLOs, but see significant growth to at least €10 bn for Euro CLOs and a greater use of options and bespoke tranches.
- **Europe a Bigger Investment Theme** — Despite faster expected growth in the US, we see the Euro recovery theme coupled with a more benign policy to be stimulative for European structured credit and US-Europe relative value derivative strategies.
- **Move Up Credit Curve and Up Capital Stack** – The steepness of credit curves argues for long/short carry trades, given the limited upside to credit spreads (especially in the US), while rising idiosyncratic risks and technicals should cause mezzanine tranches to outperform.
- **CLO Trades for 2014** — Non-regulated investors should buy into any pre-mature Volcker or European bank review (AQR)-driven selling, and strategies around CLO calls, European loan recovery, and deals that may be regulation-compliant.

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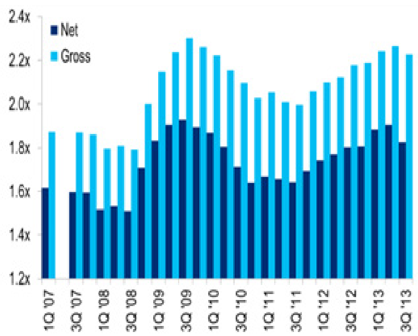
Macro Outlook

2014: Not more of the same

Figure 1. Rising leverage in US IG corporates (ex-fins) is a headwind for IG spreads.



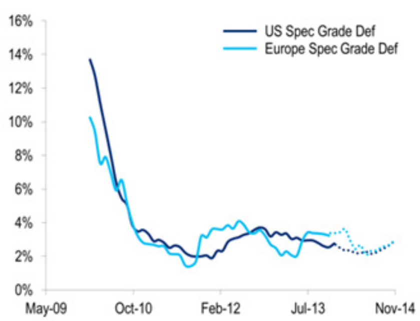
Source: Moody's, Citi Research

As we approach year end, the market environment feels very different from year end 2012. Back then, we were ending the year somewhat cautious about the near term, with the fiscal cliff fight reaching a crescendo, but the longer term outlook into 2013 was more constructive (see Global Structured Credit Outlook - "A Man for All Seasons"). We expected spreads to tighten and volatility to decrease once the fiscal cliff was avoided, which is exactly what happened.

This year, the expectations are different. Even though markets are not overly concerned in the short term about the upcoming debt ceiling negotiations, there is nervousness about the medium and long term prospects, fueled by the start of a Fed taper in January and rising corporate leverage in the US (see Figure 1).

Interestingly, from a fundamental growth perspective, the situation does not appear to be so dire. Our economists predict 2014 GDP growth of 2.6% (see Global Economic Outlook and Strategy - Prospects for Economies and Financial Markets in 2014 and Beyond), a 1% improvement over the 2013 forecast. Default projections also remain fairly benign – Moody's expects 12 month trailing US speculative grade defaults to inch up marginally from 2.76% at the end of October 2013 to 2.82% in October 2014 (see Figure 2). However, credit will be subject to several substantial headwinds in 2014 – Fed tapering, re-leveraging of non-financial US corporates, and the impact of regulations which are expected to hurt cash assets.

Figure 2. Corporate default rates are not expected to move up significantly.



Source: Moody's, Citi Research

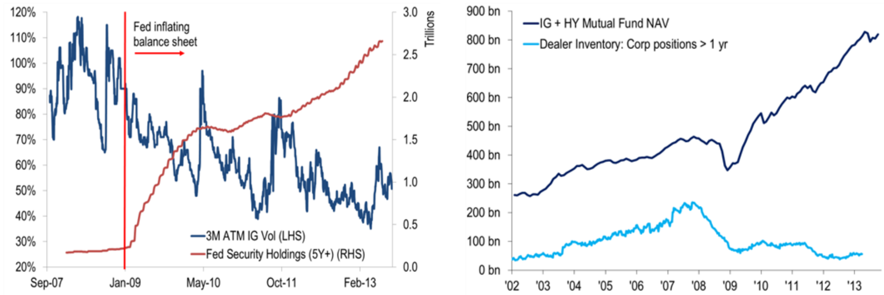
We expect the multi-year tightening in structured credit spreads to lose momentum and end in 2014, though some assets such as CLO senior bonds may see a round of tightening in the first few months of 2014 (see CLO section). The actual path of spread moves in 2014 depends on the timing and magnitude of additional Fed tapering, rate rise expectations, and how fast corporates lever up. The Fed has announced a $10 bn monthly taper to start in January 2014, and our economists expect QE3 to end by September. We believe US synthetic credit spreads will stop tightening during H2 2014 and end the year flat to slightly wider. While our IG strategists expect non-financial IG spreads to widen 15-20bp (see US Credit Outlook - 14 for '14 (part 1), fourteen predictions for 2014), we expect the widening move in synthetics to be more muted, given its shorter duration.

In the volatility space, we believe that technical factors will cause volatility in US synthetic credit to start rising modestly above current levels, most likely in H2 2014. Apart from the gradual reduction in the Fed's balance sheet, which has kept a lid on volatility (see Figure 3), we also have new regulations putting a cap on dealers' capacity to absorb credit risk (see Figure 3).

For both synthetic credit spreads and volatility (for US credits), we do not see much in fundamentals and/or technicals that would argue for being a net credit positive. Hence, given how tight synthetic spreads are and how low volatility is, we feel that on balance, both have more downside (wider spreads, higher volatility) than upside, which is driving our current view. As such, we expect 2014 to be a year of transition for credit, as spreads stop their multi-year tightening and begin to position for rate increases in 2015. One area where price volatility could be beneficial is CLO equity.

We are thus faced with an interesting market environment for 2014 – with synthetic credit spreads losing their tightening momentum, a shortage of balance sheet, and volatility moving up modestly. In the absence of a strong market direction, we believe that investors would prefer structural leverage over financial leverage, market (duration) neutral strategies, and relative value and alpha versus market-beta.

Figure 3. Technicals: An inflated Fed balance sheet has kept a lid on volatility by injecting liquidity (left), while reduced dealer balance sheets for corporate cash versus mutual fund holdings of $ corporates indicate less capacity for the market to absorb supply during a sell off.



Source: Bloomberg, EPFR, Fed Reserve, Citi Research

….Regulations will start to bite….

We believe that regulations will continue to make balance-sheet usage expensive for (structured) cash assets. The last 2 years have seen a mix of regulations that has put conflicting pressures on banks and dealers to optimize regulatory capital consumption and balance sheet usage. The net impact is uncertain except that we believe that liquidity for cash instruments will remain constrained (adding volatility to markets in a downturn), senior floating-rate instruments such as CLO triple-As will remain at attractive spreads, and the shortage of balance sheet will favor synthetics over cash. We provide a summary of some of these factors here – more specific issues that have an impact on CLOs, such as FDIC, Volcker Rule for Securitizations, and Leveraged Lending Guidance, will be discussed in the CLO outlook section.

Leverage ratio to favor higher margin assets – The overall impact of the Fed's final Basel III rule announced in July is a greater focus for all banks on balance sheet size, rather than risk-weighted assets (see Global Structured Credit Strategy - CLOs in a Post-Fed World). The rule has increased the minimum supplementary leverage ratio from 3% to 5% for bank holding companies, and requires a 6% leverage ratio for insured bank subsidiaries. The new leverage ratios will only apply to eight systemically important banks (SIBs) who have until 2018 to fully comply.

As of Q3 2013, five of the SIBs have a leverage ratio at or slightly below the 5% requirement and only one is positioned above 6.5%. Historically, banks have managed their balance sheets using a risk-based approach. By moving the focus to overall balance sheet size, banks will be incentivized to hold more junior-paper (while still trying to optimize risk-weighted assets) relative to low-yielding short-dated paper.

AOCI concerns to help higher-yielding floating-rate paper – Basel III regulations require mark-to-market losses in AFS securities to flow through into bank Tier I capital. The final US rules published in July allows smaller banks (less than $250 bn in assets) to opt out of this provision, but it remains in force for the larger banks. We believe that these larger banks would be incentivized to prefer higher-yielding floating-rate assets such as senior CLO paper for the AFS portfolio over the traditional MBS holdings (see 2014 Agency MBS Outlook - The Era of Regulation for more details). This will help the banks to boost yields and reduce price volatility in the AFS portfolios. Thus overall demand for duration and liquidity from large banks may go down in favor of structured credit assets.

Financial leverage through repo to become expensive – Banks' focus on leverage ratios is also likely to constrain leveraging cash assets. It is likely that banks will scale back balance sheet intensive businesses where returns are low and exposure measures are high. A reduction in repo and reverse repo activity is a likely result (see High Grade Strategy Notes - The Legacy of the Bank Leverage Ratio (for Credit)).

Banks lend money to leveraged counterparties through reverse repo trades and we believe that the supply of leverage will decline and costs will rise. Term, as opposed to shorter-dated financing, will become scarcer still. For example, the difference in haircuts between a 1-month and a 12-month trade for a high-grade bond in the pre-crisis period was only 6% (2% vs. 8%); now it is15% (see How to Earn 10%, Part 1…). The appeal of structural leverage in synthetics could be enhanced as a result.

Liquidity Coverage Ratio better suited for covered and MBS assets over structured credit – The liquidity coverage ratio requires banks to keep a certain amount of high quality liquid assets (HQLA) to cover any potential outflows over a 30-day stressed scenario. The HQLA portfolio calculations assign higher haircuts and lower overall limits to corporate debt and structured credit assets compared to covered bonds and MBS, making balance sheet usage for structured credit less efficient.

Volcker rule impact not as bad as feared – Since the Volcker rule banning proprietary trading by US banks was first mooted as part of the US Dodd-Frank regulations, US banks had become increasingly worried about their ability to provide liquidity to markets or to hedge their positions. The final version of the rule that came out on December 10th was somewhat of a relief (see Global Banks & Brokers - First Read on Volcker Rule Is Better Than Feared). In particular, we view the reduction of reportable trading metrics from 17 to 7 as a general positive for market making operations, and should help to mitigate the risks of lower liquidity.

…. But what will it mean for structured credit?

As we argued in last year's outlook, structured credit offers plenty of tools to adjust to a changed environment. While some of the 2013 tailwinds for structured credit (low default, low volatility, and low rates) are less obvious in 2014, a more volatile, range-bound credit environment that is more dominated by idiosyncratic risks will also be amenable to structured credit investing. Consequently, we believe that 2014 will be the year when investors will move up the capital structure in CLOs and in synthetic tranches from equity to junior mezzanine tranches or even higher.

Mezzanine over junior – The subordination levels in the mezzanine parts of the capital structure should provide enough protection to weather any idiosyncratic defaults, but at the same time, deliver some structural leverage to enhance returns. In other words, the best of both worlds in 2014 will no longer be at the bottom of the capital structure, but somewhere higher. Managed CLO equity will likely do better than synthetic equity because of its ability to buy into market cheapness during periods of volatility.

Roll down the curve – As with last year, the focus will be on shortening duration and the use of structural leverage over mark-to-market leverage. Synthetics should do better than cash by enabling investors to gain from implicit leverage as well as employ curve strategies. An important factor that helped structured credit investors realize above average returns in 2013 was the steepness of credit curves. Currently, credit curves in general are extremely steep – in particular, the steepness of synthetic credit curves is close to all-time highs across the term structure (see

Figure 34). Even if credit curves were to flatten somewhat in 2014, we would still see significant roll-down benefits for long synthetic structured credit trades, especially in the 3-5 year maturity bucket, which is the most popular.

Regulation-driven skews in asset allocation - Regulations will continue to skew investor preference and, as such, exert a strong influence on the market supply and trading. We believe senior securitization spreads will be impacted by the regulatory headwinds that we just outlined. For example, the negative pressure will prevent a drastic tightening in CLO senior spreads. CLO creation will be further impacted by more specific pressures that we discuss later.

Structural over financial leverage in synthetics – In the synthetic space, we expect most of the activity to focus on the junior and mezzanine parts of the capital structure because of the structural leverage of these tranches. The low yields in the very senior parts of the capital structure were once acceptable to the insurance buyers of super-senior risk, but they have mostly departed the scene post-crisis. For the remaining players, such low yields are difficult to justify without financial leverage, which has become more expensive because of the regulatory pressures we outlined earlier.

Summary

Overall, however, we remain cautiously optimistic on structured credit. In our opinion, this sector will no doubt face a more challenging environment in 2014 than it did in 2013. However, some of the headwinds that vanilla credit investors will face, such as range-bound spreads with a re-emergence of idiosyncratic risk, should serve to increase the relative attractiveness of structured credit, especially in the mezzanine parts of the capital structure.

A more restrictive regulatory environment will most likely lead to CLO issuer consolidation, and reduce supply, but the synthetic tranche market may see some more inflows as a consequence. Tail risks will continue to be a source of some concern, but they are mostly macro in nature, and should not disproportionately affect structured credit markets, unless there is a market meltdown on par with 2008.

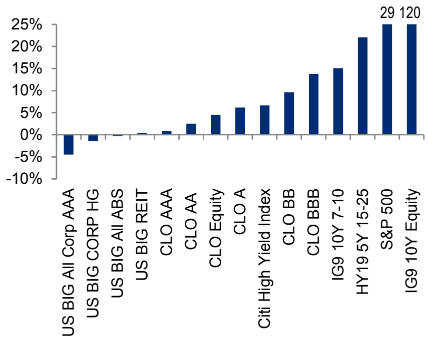
CLO Returns Outlook

CLO returns in 2013 striking

The last year was great for risky assets, though equity outperformed credit except perhaps in junior synthetic credit tranches (Figure 4). European CLO returns were especially high. The product visibly outperformed returns on its US peer (Figure 5), as investors priced in a European recovery story (see Europe Returns - Assessing value across flow and structured credit assets).

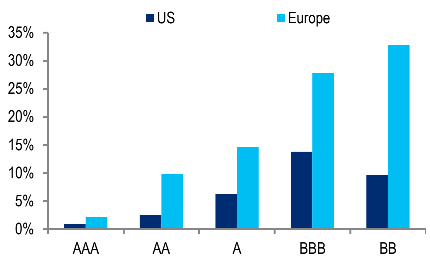
Though the carry, especially of CLO 2.0s, explains some of the total returns, a good chunk is also because of price appreciation. There has been a significant change in investor composition over the last year with new investors entering the mezzanine part of the CLO stack. A good example is US banks, who would otherwise have bought triple-As, now actively seek out double-As and even single-As after FDIC charges reduced the net carry on CLO positions (Figure 6). Likewise, there are many more real money accounts (e.g., mutual funds and insurance companies) who buy single-As and triple-Bs, compared to fast money accounts. Such real money accounts are more likely to be stable pools of money, have lower yield thresholds, and we expect to see less profit-taking trades from them.

Figure 4. Total Returns among US assets, 2013 YTD



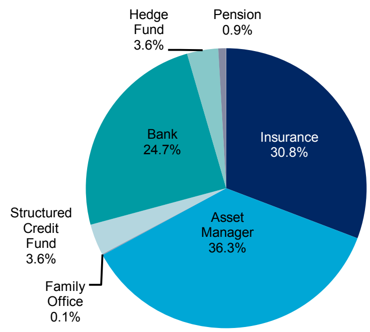
Source: Markit, Bloomberg, Yieldbook, Citi Research

Figure 5. Euro CLOs Outperform US CLOs- Total Returns in 2013



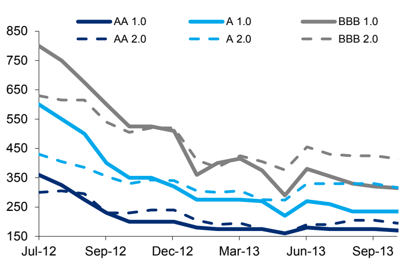
Source: Citi Research

Figure 6. Who buys CLO mezz?



Source: Citi Research

Figure 7. US CLO spreads



Source: Citi Research

Expect worse US Sharpe Ratios despite value

While we think CLOs still offer relative value to many peer structured and corporate assets and therefore have room to tighten, we think the US product, in particular, has many strong headwinds. First, spreads of most CLO tranches, with the notable exception of triple-As, are at post-crisis tights (Figure 7). Second, we reiterate our theme for 2014 – more volatile markets in the US. The last couple of years have benefited from a strongly accommodative US monetary policy, but the landscape could be very different by the end of 2014. Opinions differ on how much the QE-taper has been priced into the market but the gyrations last summer show that the market has enough ability to be surprised.

Even outside of the actual onset of QE-taper, the Fed is expected to provide guidance on the future direction of rates, which could subsequently have a strong impact on the re-allocation of money from floating to fixed assets. Citi's economics team projects QE ending in late 2014 and the first rate hike could well be in 3Q15. Changes in the expectations of the speed of monetary policy tightening will likely bring higher price volatility. Combined with the lower spread of most CLO bonds versus much of 2013, we expect lower (but positive) total returns in 2014 and (possibly) lower Sharpe Ratios.

Better prospects from European policy

Europe could provide better upside opportunities. With the balance of risks around the outlook for inflation skewed to the downside, our economists expect (see Global Economic Outlook and Strategy) the ECB to cut its key interest rates in H1 2014 and introduce additional non-standard measures. However, they doubt that downside surprises to its inflation mandate will be sufficiently large to overcome the reluctance to engage in large scale sovereign bond purchases and other QE-type measures. As such, we expect European policy to be more supportive of risky assets than US policy. Even if spreads do not tighten substantially from current levels in Europe, we see less volatility in the year ahead.

New CLO Supply

US CLOs – Flat but a busy Q1

Our gross annual US CLO issuance forecast for 2014 of $65-75bn is based on the difficulty of creating attractive CLO equity returns, the strong positive technical of having a rapid amortization of legacy vehicles, and finally the incentive of managers to ‘front-end’ CLO management mandates ahead of US risk-retention rules (see later). 2013 ended with a very healthy $75bn of total issuance and showed the strong impact of a difficult ‘arbitrage’ on the pace of CLO issuance (Figure 8). The second and third quarters saw substantial drops in total issuance as the market digested the impact of tighter loan spreads (following a raft of loan repricings earlier in the year) and wider triple-A spreads (following the pullback of a few large buyers). We suspect the increased issuance in Q4 was driven by dealers’ desire to clean up balance-sheets over the year-end and make room for new warehouse lines. Many managers too wanted to start the new year with a record of deals closed in 2013.

We also suspect that the first-quarter of 2014 will see a healthy issuance calendar and should even see some moderate tightening in triple-A spreads. In the past, we have had periods of sharp tightening followed by a similar spate of widening, with 2013 being no different (Figure 9). First, many bank treasurers get their new allocations at the beginning of the year which they then spend over the next few months. Dealers try to opportunistically bring deals which leads to some over-supply. We believe bank treasurers will be more wary of this pattern in 2014 and not chase the spread to the tights seen earlier in 2013. The one significant risk to our Q1 issuance premise is the recent confusion caused by the Volcker rule (see later).

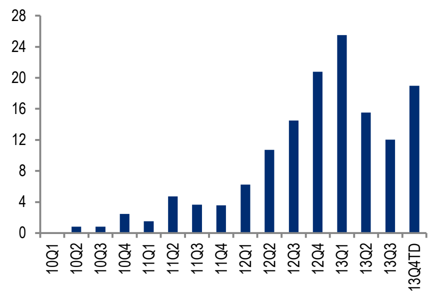
Net US supply will not create overhang

By our estimate, our gross US issuance forecast only translates into $10-20 bn of net issuance. Legacy deals have been steadily amortizing (Figure 10) and we think the pace will continue given the inability of the currently outstanding universe to find short-dated loans that do not breach CLO tests (notably, the portfolio and asset life tests). Given the historic pace of prepayments after the end of the reinvestment period, we think that there will be $50-60 bn of CLO 1.0 repayments or calls. Calls will likely be a small part of the total since even legacy deals from 2006 and later have not amortized enough to make their average liability costs similar to those available in the markets currently (see CLO Call (or Extension) Candidates). Most deals that got called in 2012 were pre-2006 deals and a good part of the small 2008-2010 issued CLO universe (see Global Structured Credit Strategy - CLO AAAs valuable despite refinancing risk). The relative value of the product versus corporate and other structured assets should be supportive of these forecast levels.

Euro CLOs helped by lack of other assets

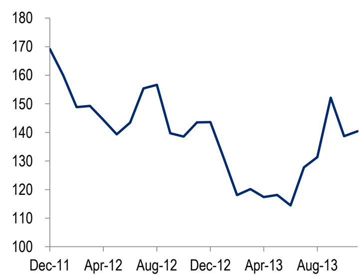
Euro CLOs should see a good amount of net new supply. The slightly less than €8 bn of issuance in 2013 surprised the market positively (our beginning of 2013 forecast was €3-4 bn). Euro CLO issuance should be helped by the low volumes of issuance on other Euro denominated markets, and the amortization of most European structured finance assets (Figure 11). Our forecast for 2014 is €10 bn but we believe that there is a non-negligible probability of substantially exceeding this level. The challenge will be the volume of available assets and risk retention rules that limit the number of portfolio managers that can sponsor new vehicles.

Figure 8. US CLO Issuance, $bn



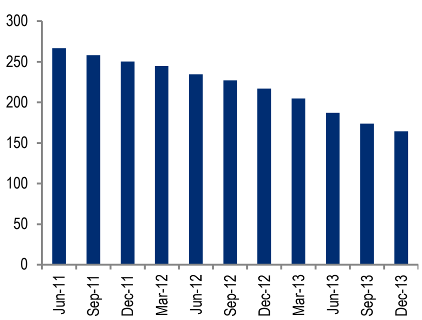
Source: Citi Research

Figure 9. Triple-A CLO 2.0 spreads, bp



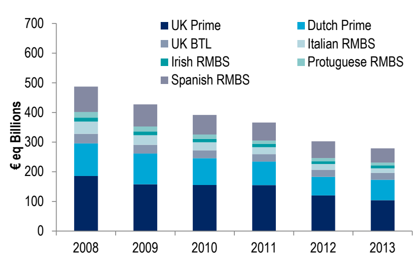
Source: Citi Research

Figure 10. CLO 1.0 Outstanding, $bn



Source: Citi Research

Figure 11. Euro ABS Outstanding, €bn



Source: Citi Research

Regulatory Impact for 2014 – Good and Bad

Volcker – Confusing

The elephant in the room is the impact of the Volcker Rule on CLO creation and liquidity. There is a lot of confusion (see Global Structured Credit Strategy - Volcker Clouds, Opal Highpoints, and Impact of Consolidation) but the rule as it stands is much better for loans than most CLOs. The final version forbids banks taking “ownership” interests (which we take to mean equity, but could mean debt tranches too) or engaging in certain transactions with “covered funds” (which would likely include all CDOs) but exempts “loan securitizations” (defined as a loan-only vehicle) from the definition of “covered funds”. Unfortunately, most real-life CLOs would be non-exempt since they also include bonds. Until there is more clarification, we can see hesitation from US banks in buying technically non-exempt CLOs. Despite the positive news that the rule allows market-making of securities (thus allaying fears that such activity from US banks could be viewed as ‘proprietary-trading’) and does not require conformance till 2015, the confusion about non-exempt CLOs could also be disruptive for secondary trading in the product. We await clarification.

Basel – Good and bad

Our introductory section talked in greater detail about the impact of Basel III across all structured assets, so this section we will just hit the high points for CLOs. We think the combination of FDIC charges for US banks and a focus on leverage ratios for all banks will cast senior mezz (such as double-As) in a better light than lower margin securities such as triple-As for institutions needing to optimize balance sheet and capital consumption versus net carry (see Global Structured Credit Strategy - CLO Call Candidates; FDIC versus Basel?). The Fed’s inclusion of price changes in its July 2013 final Basel III rule within the AFS book for an ‘advanced’ bank’s Tier 1 capital may also reduce demand for low-margin securities but higher-margin floating-rate bonds such as CLOs look better relative to fixed-rate assets (see Global Structured Credit Strategy - CLOs in a Post-Fed World). However, the CLO universe can look less attractive compared to some other assets such as whole loans and many covered bonds (see Mind Regulatory (Dis)Incentives).

Leveraged lending – Bad for supply

As reported in the press, banks received letters from the OCC and the Fed addressing their concern over the preponderance of “criticized” loans underwritten by major banks. Generally, regulators prefer loans with meaningful covenants that are made to companies with moderate leverage and the “ability to de-lever to a sustainable level within a reasonable period of time.” These guidelines are vague, perhaps purposely so, making them even more limiting than hard rules. Our high yield strategists see this development as a negative for loan supply (see 2014 High Yield and Loan Outlook) at the same time that the Volcker Rule points to more loan-only CLOs. Arrangers could choose to issue a combination of secured and unsecured liabilities, with the latter getting more lenient treatment. Second, there could be fewer LBO loans since these loans would have had to increase leverage and financing flexibility to attract buyers of LBOs, which are trends regulators are intent on restricting. Fewer loans and more loan repricings will not help the CLO arbitrage and will act as a dampener to greater CLO creation.

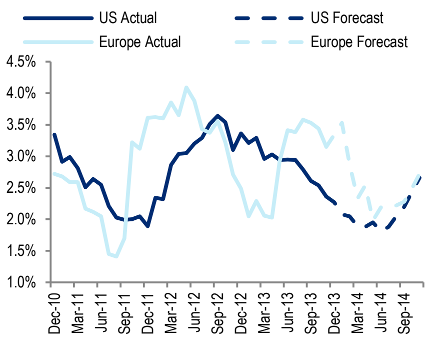
Risk retention

Risk retention, covered separately for US and Euro CLOs in the next sections, is in effect in Europe, but can reduce the US CLO market size. The Fed’s final implementation is facing strong opposition from lawmakers and trade bodies.

US CLO Equity At Crossroads

Defaults low

Figure 12. US and Euro Default Rates

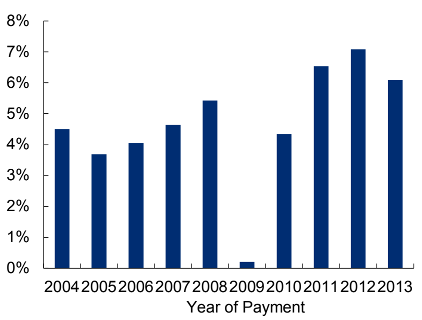


Source: Moody's

At the recent Opal CLO conference, there were plenty of discussions on the appeal of CLO equity as a product because of its leverage combined with convexity characteristics. It is also reassuring that not only are defaults running at a low level, but, according to Moodys', also expected to remain low for the near future (Figure 12). Our high yield strategists also expect a lower annual default rate next year of 2.0%. – compared to 3.4% at the beginning of 2013 and 2.4% by Oct-end. Moreover, they make the point that the actual default rate is a poor measure of default drag. Last year, the actual default drag was only 50bp (compared to the 2.4% default rate) because many of the 2013 default cohort already traded not far from their recovery price. This year, our strategists expect the default drag to be slightly higher at 90bp (relative to their 2.0% default forecast).

Loans: More repricing, and no outflow

Figure 13. US CLO Equity Qtly. Cashflows

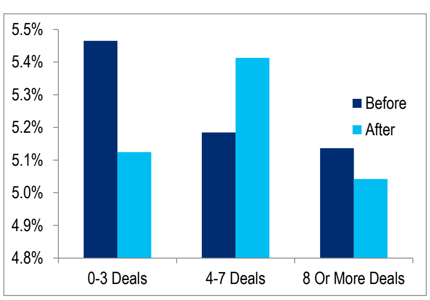


Source: Citi Research

Recent high US CLO equity cashflows (Figure 13) have had less to do with low default rates than with the high attractive all-in (Libor floor, OID, coupon) loan returns. Through the course of the year, loan spreads have had periods of strong repricing as borrowers have used loan demand from CLOs and funds to pay down old loans and reissue at tighter spreads. Our high yield analysts believe the trend for repricings will continue. Given expectations for higher Treasury yields in 2014 and a dwindling spread cushion on high yield bonds, they expect the loan market will continue to benefit from persisting inflows. Even though underperformance of loans versus high yield bonds and lower loan coupons could derail this technical for the loan market, their historical analysis (see Will Retail Turn on Loans?) shows it isn't usually historical performance (or lack thereof) that reverses the inflow trend. Perhaps the outflows occur in response to doubts about future relative returns or credit concerns. Therefore, if there is a sustained reversal in 2014, we expect it to come from lending standard concerns or unexpected Fed action.

Will retention remove good managers?

Figure 14. Average Qtly US CLO Equity Cashflow (vertical axis) by Manager Size (CLOs under management) before and after Consolidation



Source: Intex, Citi Research

The US Risk Retention Rules (see CLO Risk Retention – Too Big To Fail? - A Tale Of Unintended Consequences) has the substantial possibility of reducing the CLO universe. Risk retention will require a significant initial investment which will stretch the resources of many institutions. Consequently, they may choose to exit the CLO business by selling their management mandates to bigger, better-capitalized, peers. The overall result will be a less diversified CLO manager universe which will restrict investor participation. Many investors have limits on individual managers either because they are not on their 'approved-manager' lists or, as shown in previous research, there is much greater portfolio overlap among deals from the same manager compared to deals from the bigger CLO universe. Fewer CLOs also leads to fewer corporate loan buyers, and potentially higher funding costs for corporates.

Passive equity investors will also find the probable consolidation not optimal. Though larger managers may have better market access, the managers with the most deals were not the ones with the highest quarterly cashflows, both before and after consolidation (see Benefits of Manager Consolidation). Caveats abound (for example, whether the acquired mandates diluted a managers' record, or the sample size of small managers) but investors would agree that the lack of need to buy the market counts for a lot in a product dependent strongly on a manger's 'alpha'.

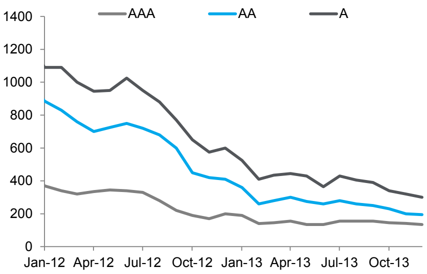
The agencies' final implementation plan for CLO risk retention is, as a result, facing strong opposition from bodies such as the LSTA. Watch this space.

Euro CLOs – More Demand Than Supply

Spreads show investor appetite

Euro CLOs are back in favor with a stronger appreciation in secondary spreads (Figure 15) than we saw in the US market. The rally has also led to the growth of a primary market where total issuance year to date is just a little short of €8bn. Our forecast for 2014 is €10bn but we believe that there is a substantial probability of considerably exceeding this level (see earlier Supply section). Moreover, new issue Euro CLO spreads no longer look wide compared to US CLO spreads.

Figure 15. Euro CLO Spreads, bp

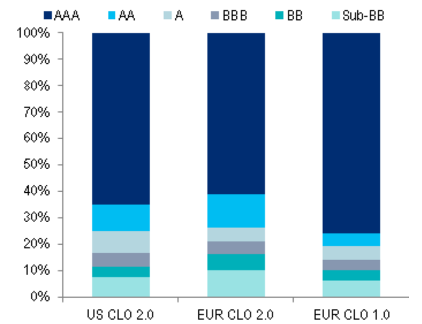


Source: Citi Research

Relative value to US and Euro assets

Though primary spreads are not very different from those in the US, it is well worth commenting on the higher subordination that Euro CLO 2.0 tranches enjoy (Figure 16). The subordination in new deals is higher than in pre-crisis CLOs (Euro CLO 1.0s). The subordination is also higher than that seen in US CLO 2.0 deals, partly a result of lower recovery assumptions from the agencies and less diverse collateral. The new deals include tighter reinvestment constraints and smaller buckets for riskier collateral such as peripheral country credits. The higher coupons on the new issue bonds are also attractive.

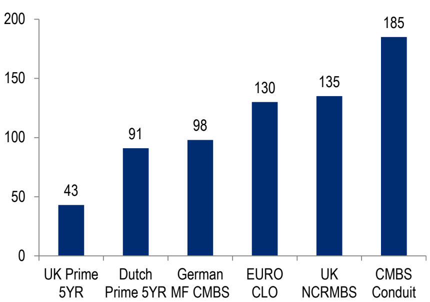
Figure 16. Different CLO Capital Stacks



Source: Citi Research

Manager alignment through risk retention is another aspect of the Euro CLO 2.0 product. Unlike the US (see previous section) risk retention is already in place. The European Banking Authority (EBA) published its draft standards which are due to come into force as of 1 January 2014. Managers of deals that are compliant either own an equity slice which equates to 5% of the asset pool or purchase a "vertical strip" of all the securities. Euro CLOs must also obtain two ratings on all the tranches implying that noteholders benefit from the most conservative methodology.

Figure 17. Euro ABS and CLO First-Pay Spreads, bp



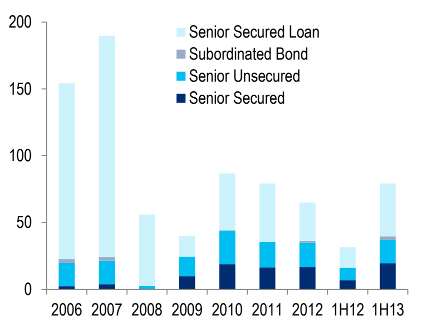
Source: Citi Research

Moreover, Euro CLOs look attractively priced relative to many other securitized assets with a similar weighted average life (Figure 17). As pointed out earlier, the product is helped by low issuance volumes and the amortization in most other European structured finance products (Figure 11).

Loan shortage means manager key

Sourcing collateral is a challenge in Europe which managers need to overcome. Despite a recent uptick in issuance, the total outstanding loan universe has been hurt by bond-for-loan refinancings, in addition to other repayments. LCD reports that the par volume for their ELLI index decreased from just under €148 bn at its peak in October 2008 to €102.9 bn by end-Nov. There may not be much net issuance next year. Bond-for-loan refinancings will be an ongoing theme, and little M&A activity is foreseen. Moreover, loan demand is strong. European pension and insurance managed accounts are competing with the Euro CLO market. It remains to be seen whether the new demand will lead to increased supply or just loan repricing (which will hurt equity holders).

Figure 18. Euro Lev'd. Fin. Supply, €bn



Source: S&P LCD

Euro CLOs have the ability to buy bonds, much of which is secured (Figure 18) and thus different from the unsecured assets that achieved very low recoveries in the early 2000s default cycle. The lack of loan issuance has also led to bigger buckets for non-Euro collateral. In addition to having general access to Euro loans, the manager needs to manage such non-core assets. Euro CLOs have had a mixed history with strong dispersion in performance. Investors should consult our previous notes on equity performance but also be mindful of the positive and negative impact that consolidation can have on returns, a subject we have discussed recently.

Strategic Themes To Consider for 2014

An annual outlook is not the best vehicle to express short-term opportunistic trades but based on the credit and regulatory themes that we have covered in our outlook, we believe investors should keep an eye out for the following themes. Most of our recommendations are for funds who do not face the same regulatory hurdles as banks and many insurance companies.

- **Volcker selling –** Many US banks will be holding CDOs (we include not just CLOs in this description) that they are likely to sell before the 2015 deadline.

- **Euro bank AQR selling –** Most European banks are going through an Asset Quality Review (AQR) which is expected to take a more credible look at their capital ratios. The incentive to sell legacy assets at today's higher prices, especially if they are mezzanine bonds with higher capital charges, has increased.

- **CLO AAAs from lesser known managers –** For investors not requiring liquidity, the premium that new managers need to pay (due to a shallow triple-A buyer base) is attractive. It is likely that such deals will have tighter documentation as well.

- **Low bond-bucket CLOs –** Though many expect some changes in the last Volcker rule, deals with no allowable or currently small bond buckets will find it easier to become compliant and thus appeal to a broader investor base.

- **Risk-retained CLOs –** As with Volcker, the Risk Retention rule might be modified. Nonetheless European financial institutions can only buy compliant deals (investors should check with local regulations on aspects such as requirements to be retained for life).

- **Single-As –** Imposition of FDIC charges has led many US banks to double-As causing a compression between double- and triple-As. Single-As are attractive, but may not appeal to banks because of a steep regulatory capital curve.

- **Oversold legacy call potential –** Most legacy, particularly 2006-2007 vintage, deals still have average finance costs well below 2.0 deals. Even with significant deleveraging, it will take some time for such deals to get called.

- **Step-up CLO AAA –** Quite a few CLO 2.0 deals were done with step-up coupons. Such deals may well step-up and the expected refinancing / repricing may be delayed because of documentation complexities.

- **Discount euro CLO legacy mezz –** A growing trend in Europe is a stronger managed account loan investor base. Such demand could lead to higher loan prepayment in legacy deals, which may then find it difficult to re-invest in other loans because of constraints in the indenture.

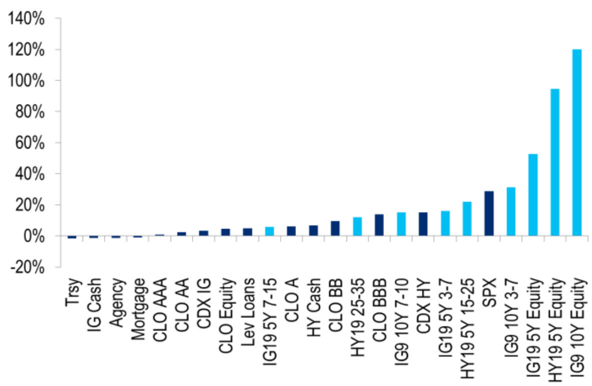
- **Non current-pay Euro CLO junior –** Deleveraging (see above point) combined with resumption of payments on previously non-paying mezzanine loans within CLOs should help some vintage equity. Legacy Euro CLOs need detailed analysis, however, because of the distressed credits in many deals.

Synthetic Structured Credit Revival?

A blow-out year in 2013….

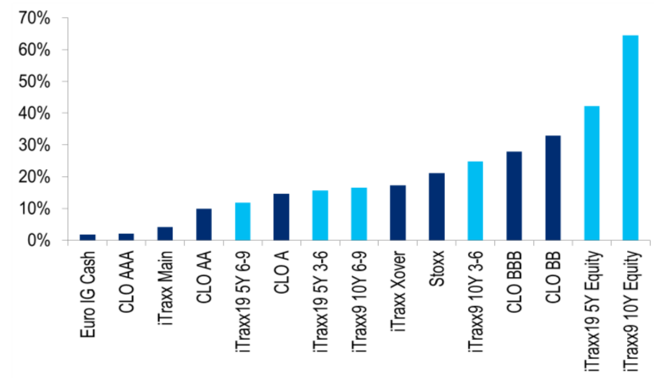
The past year has been really good for synthetic structured credit, whose outperformance was driven by low defaults and low volatility. While a combination of low yields and expensive financial leverage proved to be headwinds for non-structured asset classes, demand for synthetic structured credit has been high because of the non-recourse structural leverage inherent in this asset class, especially in the junior parts of the capital structure.

Figure 19. YTD returns by asset class, US securities (synthetic tranches in light blue)



Source: Markit, Bloomberg, Yieldbook, Citi Research
US CLO returns are for CLO 1.0 tranches

Figure 20. YTD returns by asset class, European securities (synthetic tranches in light blue)



Source: Markit, Bloomberg, Yieldbook, Citi Research

Synthetic structured assets have outperformed their peers both in the vanilla credit space as well as the structured cash (CLO) space in 2013 (see Figure 19 and Figure 20). Interestingly, CLO equity tranches have underperformed some of the more senior parts of the capital structure, while synthetic equity tranches are among the top performing ones. To some extent, the outperformance in synthetics was driven by a delayed recovery in this asset class following the financial crisis.

…. But on reduced volumes

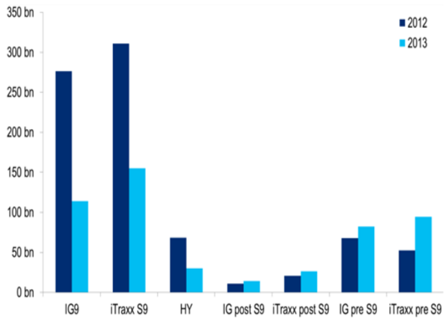
However, in terms of market volumes, the synthetic index tranche markets continue to decline. Compared to 2012, we find that total transacted volume in the first 11 months of the year has declined across the major index categories (see Figure 21). Overall, the average weekly volume in terms of gross notional has come down 36% from $16.8 bn in 2012 to $10.7 bn in 2013[1]. The legacy series 9 tranches for both IG and iTraxx indices continue to dominate (see Figure 22), and the post series 9 tranches have not really gained market share. The silver lining here is that in terms of absolute volumes, the post series 9 tranches have edged upwards very slightly.

The decrease in tranche volumes is a result of multiple factors. First, regulatory changes have made tranche trading less capital efficient for dealers. Second, the synthetic CSO machine from pre-crisis days has more or less ground to a halt (though the bespoke tranche market has seen some resurgence – see below). This has restricted most of the current activity to the series 9 tranches (~73% of the total gross notional traded in 2013), which are slowly beginning to roll off. Third, the lack of natural buyers of risk in the senior parts of the capital structure post the 2008

[1] YTD data up to 30-Nov-2013, compared to same period in 2012.

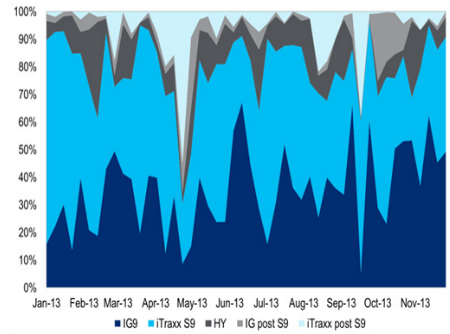
crisis has made it difficult for dealers to manage risk by completing the capital structure.

Figure 21. Tranche volumes are mainly down YoY, but post S9 tranche volumes are inching upwards.



Source: DTCC, Citi Research
Total volumes till end of Nov for both 2012 and 2013.

Figure 22. Series 9 tranches continue to dominate market share.



Source: DTCC, Citi Research

In contrast to index tranches, the bespoke tranche market has actually seen an uptick in volume in the past year. By Citi estimates, volumes in 2013 have tripled compared to 2012 in terms of gross tranche notional, almost all of which has been in the junior parts of the capital structure. Going forward, our expectations are for volumes in bespoke tranches to remain flat through 2014.

Overall, we expect the right sizing to continue in 2014. Despite lower volumes, opportunities arise in these markets because of the flexible ways in which investors can take on risk. In addition, the regulatory headwinds unique to the cash structured credit (CLO) markets could push investors into considering synthetic tranches as a possible asset class for 2014, giving it a new lease on life.

Can any of this be repeated in 2014?

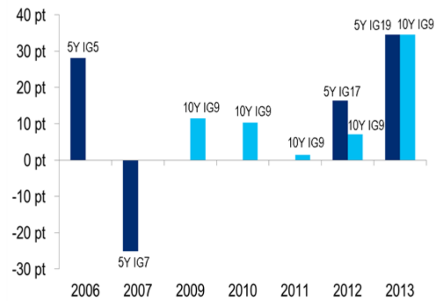
We expect the market environment in 2014 to be very different from 2013, especially in the US. Some of the tailwinds that led to the spectacular returns for structured credit will be slowly dying down as the Fed tapers, rates back up, and a more volatile environment sets in on the back of increased market friction. However, this does not mean that the prospects for synthetic structured credit are dead. Indeed, we believe the richness and variety of the different parts of the capital structure actually make this asset class quite attractive under a wide variety of market conditions. In the remainder of this section, we try to identify some of the trends that we expect to see in 2014 and provide ideas on how investors may take advantage.

Mezzanine index tranches to become more attractive in general – Equity tranches have been the main beneficiary of the levered beta trade in 2013, which has driven valuations to rather rich levels. By historical standards, it is difficult to find a comparable year when equity tranches have performed this well (see Figure 23 and Figure 24), and we believe that at current levels, some of the equity tranches are priced too rich, especially the legacy series 9 tranches.

As idiosyncratic risks rise during 2014, we believe that the mezzanine parts of the capital structure will begin to offer more value, especially when compared to equity tranche valuations. In particular, our European strategists have written on the

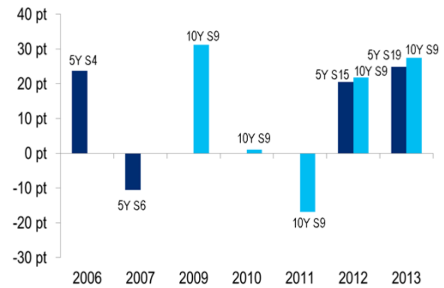
attractiveness of the mezzanine tranches in iTraxx9 going into 2014 (see iTraxx Tranches Views & Trades Mezz may be back next year … though nowhere near 2004-7).

Figure 23. Select IG equity tranche returns.



Source: Markit, Citi Research

Figure 24. Select Main equity tranche returns.



Source: Markit, Citi Research

Figure 25. 7s10s iTraxx9 mezz curves steeper.

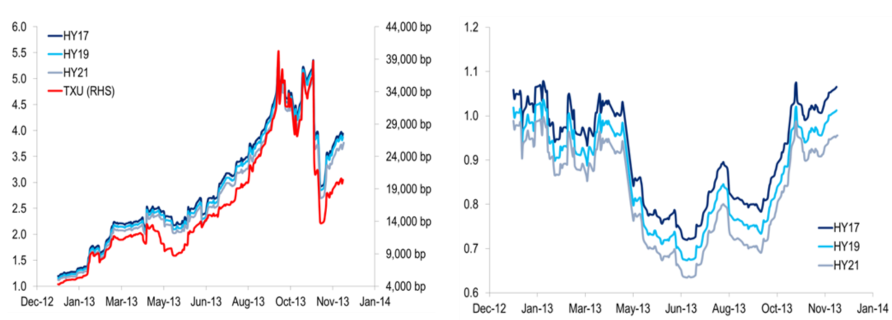
Source: Markit, Citi Research

In contrast, the 10Y IG9 mezzanine tranches do not appear as attractive at the moment, despite the strong outperformance of the IG9 equity tranche in 2013. The 10Y IG9 equity tranche still trades at a premium to iTraxx9 equity, despite a 6 month shorter maturity, which makes it relatively less rich compared to the mezzanine tranches. The 7s10s curve on the IG9 mezzanine tranches are flatter (see Figure 25) because of a stronger pull to par for the 7Y IG9 tranches – this makes the iTraxx mezzanine tranches better in terms of roll down. We therefore believe it is too early to move up the capital structure for IG9.

However, for the HY indices, we believe that mezzanine tranches offer better risk-adjusted returns for 2014. HY equity tranches have had a spectacular year (see Figure 19). The main event in HY credits during 2013 has been the TXU bankruptcy story – and we will continue to see it play out in 2014, though the question is now more of timing.

Even without TXU, the dispersion among the remaining credits in both HY17 and HY19 has been rising recently (see Figure 26), indicating a rise in idiosyncratic risk in the HY portfolios. Even if we do not see further defaults in the HY portfolios during 2014, we think that higher idiosyncratic risks will produce underperformance in the equity tranches.

Figure 26. Portfolio dispersion in HY indices has been dominated by TXU spread moves (left), but has been rising recently ex-TXU (right), indicating a rise in idiosyncratic risk.



Source: Markit, Citi Research

In contrast, the senior tranches with high subordination levels are more likely to offer better risk adjusted returns. We show projected performance characteristics in terms of roll down and carry for some of the newer HY index tranches – for subordination levels of 15-25% (can tolerate up to 15-25 defaults with 0 recovery), these tranches can generate 4.5-11pt in roll down and carry in one year, which is very attractive (see Figure 27).

Figure 27. HY mezzanine and senior tranche characteristics, one year roll down+ carry for select tranches highlighted in gray – all prices/spreads as of EOD 6-Dec-2013.

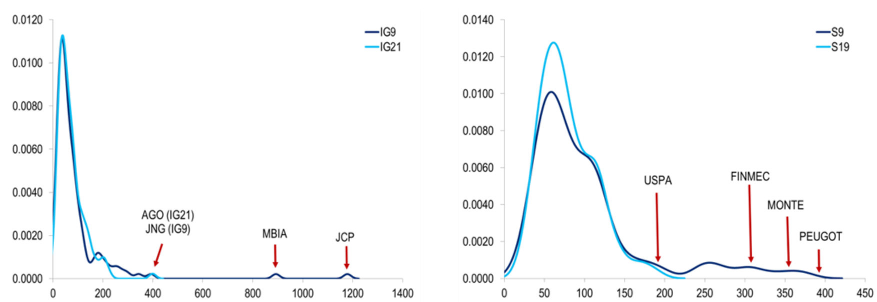
	5Y 15-25%			5Y 25-35%		
	HY17	HY19	HY21	HY17	HY19	HY21
Maturity	20-Dec-16	20-Dec-17	20-Dec-18	20-Dec-16	20-Dec-17	20-Dec-18
Spread (bp)	194.38	310.91	486.48	77.25	162.20	244.68
Spread Ratio*	0.93	1.19	1.43	0.37	0.62	0.72
Upfront (pt)	-9.07	-7.16	-0.60	-12.77	-13.18	-11.96
1 year roll + carry (pt)	4.27	6.90	11.57	2.20	4.58	6.22

*Ratio to underlying index spread

Source: Markit, Citi Research

Post series 9 equity tranches to still offer value – Despite our projections of a rise in idiosyncratic risks in 2014, we believe that the cleaner portfolios in the post series 9 indices make the equity tranches attractive. The newer tranched indices have portfolios that are radically different from the legacy series 9 indices. The spread distributions for the on-the-run tranched portfolios (IG21 and iTraxx19) show that the dispersions are significantly lower than for the corresponding series 9 portfolios, which indicates a much lower level of idiosyncratic risk (see Figure 28). In an environment of range bound spreads and steep credit curves, these tranches can therefore serve to enhance returns through structural leverage and sharp roll downs.

Figure 28. Distributions for credit spreads in the IG (left) and Main (right) portfolios – the legacy series 9 portfolios have much wider spread distributions, indicating higher idiosyncratic risk.



Source: Markit, Citi Research

Investors concerned about spread widening in H2 2014 may consider putting on an equal notional 3s5s flattener in equity tranches – the short 3Y position would act as a hedge for the core long 5Y position in this case, while the overall trade remains long duration.

MAV technicals unlikely to play a major role for seniors/super-seniors – The MAV notes were created as a result of a restructuring in January 2009, after a group of Canadian ABCP conduits holding leveraged super-senior tranche risk failed to roll their short-term debt during the financial crisis. There were three asset vehicles

created to house the ABCP conduit assets, and C$32 bn of short-dated ABCP was exchanged for MAV notes with an expected life of seven years.

The process to unwind the MAV II notes (issued by one of the three vehicles) was finally approved in October 2013. The MAV II vehicle contains about C$52 bn of leveraged super-senior tranche notional – by our estimates about 64% of this is in US names and the remaining 36% in mainly European names. The super-senior tranches in the MAV II portfolio refer to IG 5-7 and iTraxx 4-5 indices, along with several bespoke tranches.

Figure 29. MAV unwind amount estimates

Per Quarter	(in millions)
Projected Liquidation Amounts	C$500 - C$1,500
Average	C$1,000
US Exposure	C$640
European Exposure	C$320
Hedged %age (assumption)*	75%
US Exposure	C$480
European Exposure	C$270
Equivalent in USD/EUR**	
US Exposure	$449
European Exposure	€186

*Hedged using IG5-7/iTraxx 4-5 tranches
**USDCAD = 1.07, EURCAD = 1.45

Source: Bloomberg, Citi Research

Figure 30. Tranche volume from SDR data

Tranche volume*** since April		
Index	Notional (mln)	Trades
IG 5-7	10,426	272
iTraxx 4-5	4,707	147
IG 9	41,972	1,373
iTraxx 9	26,763	1,049

***Using SDR (DTCC) data

Source: DTCC, Citi Research

The unwind is scheduled to take place quarterly through an auctioning process, with an unwind size between C$0.5 bn and C$1.5 bn each quarter. Markets participants expected that as the leveraged super senior trades were unwound, dealers would also start to unwind their hedges, which are mainly long risk senior or super-senior tranches. This could create a technical where spreads on senior/super-senior tranches move wider.

However, we believe that the impact on super-senior spreads will be relatively contained, and so far we have not seen much signs of super-senior spread widening. By our estimates (see Figure 29), we find that the equivalent amount of tranche notional unwinding per quarter is about $449 mm in US names and €186 mm in European names.

Using a fairly aggressive assumption that 10% of total traded tranche notional (see Figure 30) is senior/super-senior tranches, we estimate the traded volume per quarter as $391 mm for IG 5-7 tranches and $1,574 mm for IG 9 tranches. For iTraxx 4-5 and iTraxx 9 tranches, the corresponding numbers are €177 mm and €1,004 mm, respectively. If dealers were to unwind using IG 5-7 and iTraxx 4-5 tranches, there is no doubt that this technical could have significant impact. However, we believe that that the tranche hedge unwinds would most likely be executed in the more liquid series 9 markets, which show ample liquidity to absorb the extra demand for senior/super-senior protection.

Bespoke technicals favor mezzanine tranches as well – Most of the 2013 activity in bespokes has been in the junior parts of the capital structure, as investors have taken advantage of the levered beta trade. Combined with a lack of participants in the senior parts of the capital structure, this has created an interesting technical where dealers are axed to buy protection in the mezzanine and senior tranches so that they can complete the capital structure and hedge their positions more efficiently. In 2014, we expect this technical to intensify, and dealers

to offer more attractive terms on mezzanine and senior bespoke tranches, both in terms of spreads and financial leverage.

We feel that investors should take advantage of this technical to selectively put on risk in senior bespoke tranches, especially against a backdrop of increasing idiosyncratic risk. Further, compared to standard index tranches, bespoke tranches can be constructed to yield better spreads and maturities can be adjusted to provide the best roll down characteristics based on the term structure of the underlying credit curves.

Figure 31. Sample bespoke tranche pricing and projected performance.

Tranche	Bespoke 7-10%	Bespoke 10-15%
Maturity	20-Dec-17	20-Dec-17
Number of names	149	149
Tranche Spread	331	187
Portfolio Spread	115	115
Widest Name	389	389
Defaults to hit	17	25
Defaults to wipe out	25	37
1 year roll + carry (pt)	7.33	4.85

Source: Citi Research

Consider, for example, the pricing on some sample bespoke tranches offered in the market. We look at a portfolio of 149 names with 46% IG names, and none of the names trading above 400bp. The duration weighted average spread (DWAS) for the portfolio is 115bp, which is much less risky than the HY19 index portfolio with the same maturity currently trading at 250bp. The pricing and 1 year return from roll down and carry for the 7-10% and 10-15% mezzanine tranches on this portfolio are shown in Figure 31.

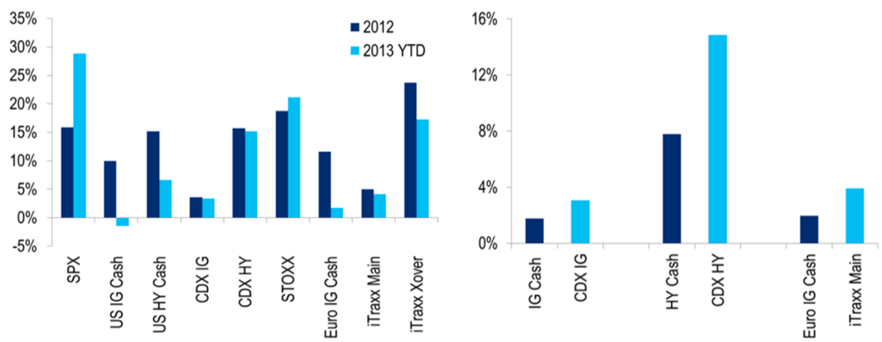
Furthermore, such returns, combined with 2-5x financial leverage (based on sample initial margins easily provided by dealers) provide comfortable double digit returns with very good subordination. In our view, investors would do well to consider such trades as part of their long credit portfolio in 2014.

Credit Indices: Tightening Losing Momentum

Credit indices lose to equities, beat cash

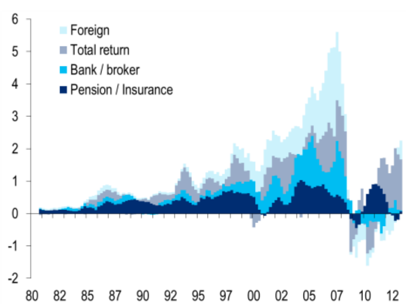
The rally in synthetic credit indices ran out of steam in 2013, with returns down from 2012 (see Figure 31). During 2013, we reached a point in the credit cycle where shareholder friendly activity from corporates resulted in equities outperforming credit, as corporates took advantage of the low rate environment to lever up, especially in the US. YoY equity performance is up over 2012, synthetic credit indices are at about the same level, while cash credit performance is down significantly, with US IG cash showing negative returns YTD.

Figure 32. Equity indices have outperformed both cash and synthetic credit on a total return basis (left), and synthetic spread returns have outperformed cash spread returns (right).



Source: Bloomberg, Markit, Yieldbook, Citi Research

Figure 33. Net purchases of US corporates by buyer type ($ bn).



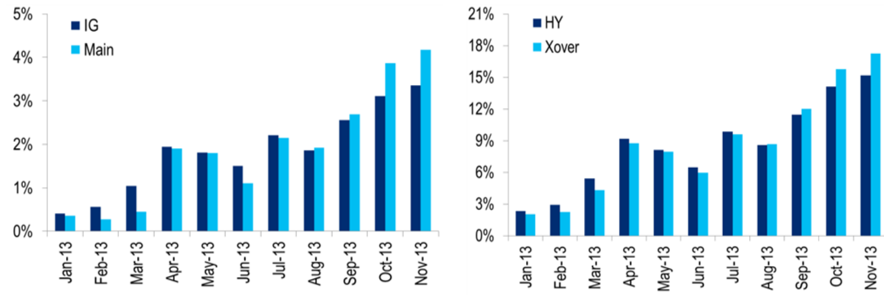
Source: Fed Reserve, Citi Research

Synthetic index returns beat cash returns over 2013, both from a total return and a spread return basis (see Figure 31). We believe that this underperformance was mainly driven by the total return buyer base in the cash market. For example (see Figure 32), the Fed's flow of funds data indicates that net purchases of US corporates have recently been dominated by total return buyers – as treasury yields have begun to back up, these investors have reduced allocations to fixed rate corporate bonds, which has widened the entire market in response.

European indices outperform US counterparts

From a total return perspective, US credit indices also underperformed their European counterparts over the year. If we look at cumulative YTD returns on a monthly basis (see Figure 33), we find that the US credit indices actually outperformed their European counterparts during the first half. However, this dynamic started reversing during summer and the European indices rallied strongly during the last quarter, as the tight (absolute) levels in the US indices brought convexity into play. The easing stance from the ECB and signals of imminent Fed tapering also contributed to the outperformance of the European indices in H2 2013.

Figure 34. Cumulative YTD total returns by month showing US credit indices outperformed their European counterparts in the first half, but fell behind since then, ending the year as underperformers.

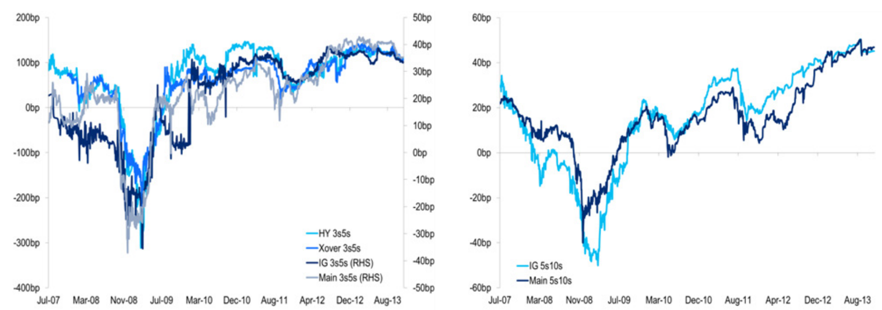


Source: Markit, Citi Research

Credit curves remained steep for most of 2013

Index curves have continued to remain steep during most of 2013. At the short end, we are finally beginning to see some flattening in the 3s5s curve since end June/early July after the curves reached all-time high in steepness for all the four major indices. In contrast, the long end 5s10s curves have remained close to all-time high in steepness and do not show many signs of flattening.

Figure 35. 3s5s at the short end of credit curves have started flattening since July (left) whereas 5s10s at the long end continue to remain close to all-time steepness (right).



Source: Markit, Citi Research

We believe that this dynamic can be mostly explained by the moves in the 5Y point of the credit curve, which happens to be the most liquid point. As credit conditions have improved over 2013, the 5Y point has significantly tightened in response, while the 3Y and 10Y points on the curves have reacted less. This has flattened the 3s5s curves while the 5s10s has remained steep (see Figure 34).

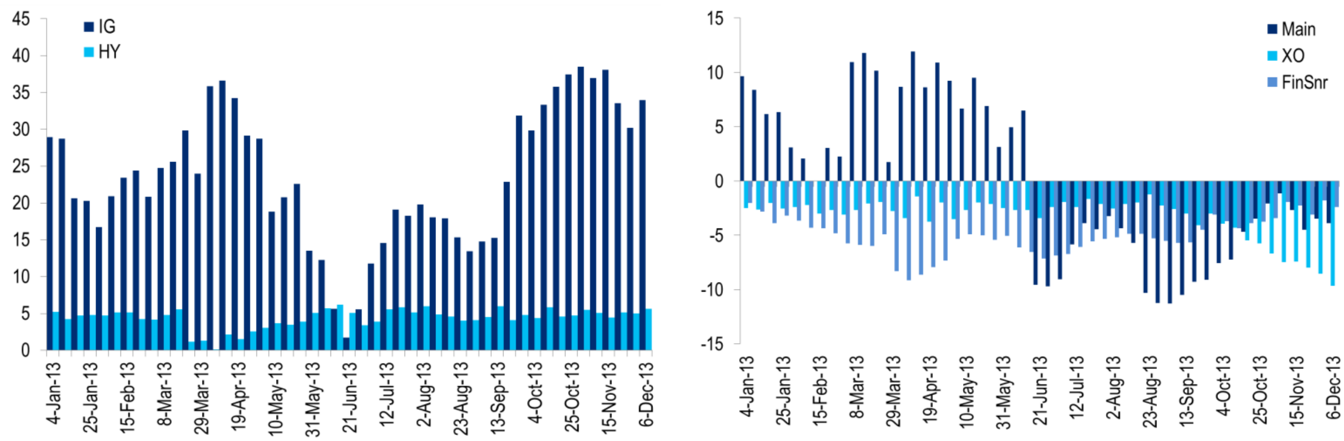
Investor positioning

Investors have continued to maintain very large net long positions in CDX IG and modest longs in CDX HY through most of the year (see Figure 35). What is striking here is the stickiness of the investor longs in CDX IG, except for the short period in June/July. Given the underperformance of IG cash in the US, we believe that many investors are choosing to gain long exposure via the synthetic index which has also benefitted from its shorter duration.

In contrast, the activity in the European indices has been mostly on the net short side (see Figure 35). Xover seems to have gained favor as a short in the second

half of the year over FinSnr. We believe that this dynamic has been partly driven by investors focusing more on idiosyncratic risks due to a lack of negative bank headlines. Interestingly, despite this dynamic, Xover continues to rip tighter and is currently trading at a level not seen since late 2007.

Figure 36. Net investor positioning in credit indices, US (left), Europe (right). All amounts in billions of $ equivalent notional.



Source: DTCC, Citi Research

Most striking is the evolution of investor positioning in Main – there was a switch from a net long position for the first half of the year to a net short position in the second half, though there has been a reduction in the net short position in recent weeks. The switch happened at the end of June, coinciding with the market turmoil after the Fed taper statements were misinterpreted, but it is difficult to speculate as to why the net Main position has not turned positive since then.

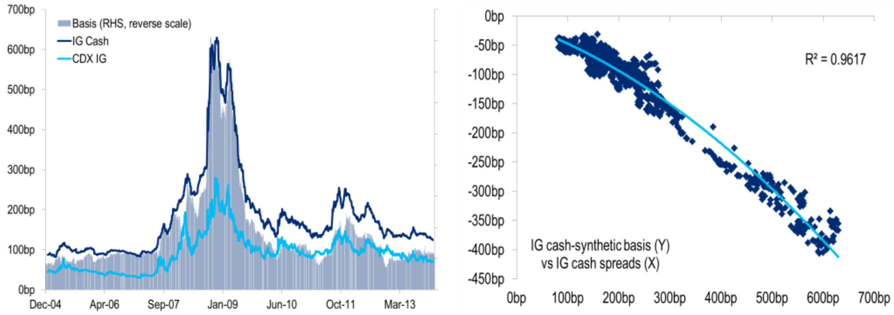
Overall, we are heading into 2014 with investors overwhelmingly long in US indices, and modestly short in European indices. This is a technical that should favor our Europe versus US outperformance view (see next section).

How to position for 2014

Synthetics to outperform cash – Synthetics have outperformed cash in both the US and Europe. So why do we prefer synthetics over cash in 2014? First, the technicals that were responsible for the outperformance of synthetics are still in place, especially in the US. In particular, we refer to the increased influence of total return investors on the US cash corporate markets. As rates back up in 2014, reduction in risk allocation from this class of investors should continue, causing cash spreads to underperform the synthetic spreads, which are mainly the domain of spread investors.

Second, there is the duration effect – while we expect US IG (non-financial) cash spreads to widen 15-20 bp (see US Credit Outlook - 14 for ’14 (part 1), fourteen predictions for 2014), the effect on synthetic spreads should be less because of lower duration. The effects of tapering and re-leveraging of US corporates should impact the longer end of the term structure more negatively. Third, the correlation between cash spreads and the cash-synthetic basis is strong (see Figure 36), with a tendency for the basis to go more negative as cash spreads widen, which is our base case for 2014.

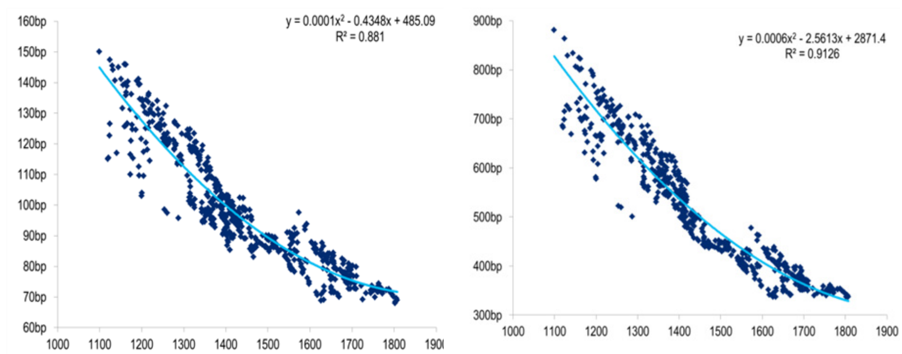
Figure 37. Cash-synthetic basis tends to go more negative as cash spreads widen, which is our base case for 2014.



Source: Yieldbook, Citi Research

Equity to outperform credit – We expect the equity outperformance over credit to continue in 2014. From a fundamental perspective, our macro strategists have argued that the leverage cycle seems to be in the credit unfriendly/equity friendly phase (see Global Macro Strategy Focus - Mind The Gap Again: Equities to Continue to Outperform Credit). While credit default projections are not meaningfully higher for 2014, a macro environment with higher projected growth globally (see economic projections in Global Economic Outlook and Strategy - Prospects for Economies and Financial Markets in 2014 and Beyond) is likely to favor equities over credit. In particular, in the US, share buybacks and M&A activity funded by cheap debt are likely to continue so long as rates remain close to historic lows (see US Credit Outlook - 14 for '14 (part 1), fourteen predictions for 2014), which is a net positive for equities and net negative for credit.

Figure 38. Credit spreads (X-axis) start showing non-linear behavior (convexity) relative to equity indices (Y-axis) when they trade at very tight levels because of the zero lower bound – we show this for CDX IG vs SPX (left) and CDX HY vs SPX (right).

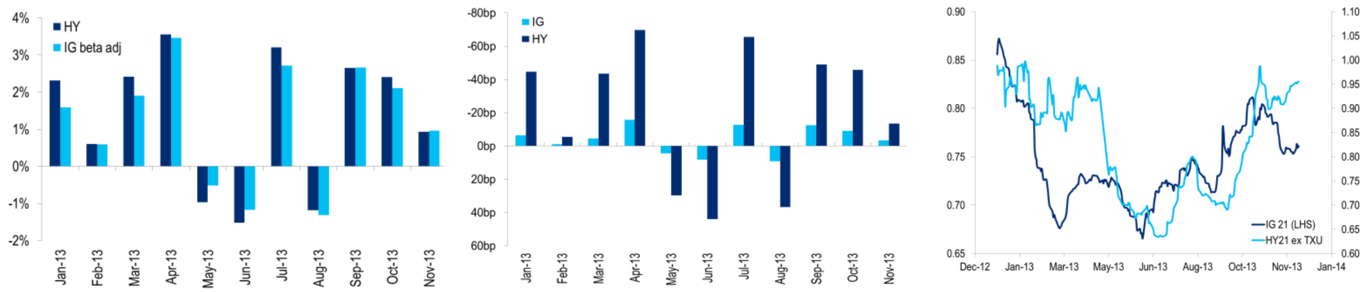


Source: Markit, Citi Research

In terms of technicals, credit spreads have limited upside from their current levels. We wrote earlier in the year about a possible floor to CDX IG credit spreads – our credit strategists' base case projection was at 60bp (see US Credit Weekly - How low can IG CDX go?), and the index is currently trading around 68bp, not too far off. Similarly, CDX HY prices are now around 107.5pt, which is an all time high, while overall risks to the credit asset class are not much lower. At these levels, the relationship between equity and credit becomes non-linear due to the convexity in credit spread/price behavior, leading to equity outperformance (see Figure 37).

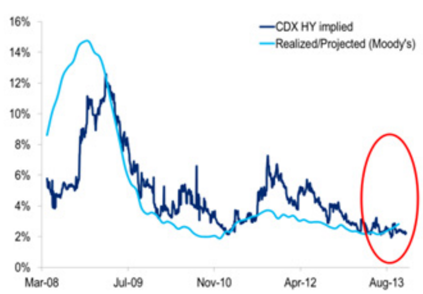
CDX HY outperformance over beta adjusted CDX IG to end – In an environment where credit spreads are expected to end the year flat to slightly wider, we expect lower excess returns of CDX HY over beta-adjusted CDX IG. For the past two years, during which spreads have significantly tightened, CDX HY has outperformed CDX IG, beating beta-adjusted IG returns by 2.3% in 2012 and 2.0% so far in 2013. However, in 2014, we expect the tightening momentum in credit spreads is going to come to an end. The monthly total returns of CDX HY vs beta-adjusted CDX IG over 2013 indicate that CDX HY outperforms when spreads tighten a lot, but underperforms when the moves are modest in either direction (see Figure 38) – this can be ascribed mostly to the high-beta nature of HY credits.

Figure 39. HY underperforms IG on a beta-adjusted basis when spreads widen (left, middle). The middle graph shows the monthly (roll-adjusted) change in spreads. Also, idiosyncratic risks are rising in the HY portfolio compared to the IG portfolio, as reflected by the dispersion (right).



Source: Markit, Citi Research

Figure 40. 1Y default rates implied by CDX HY are starting to underestimate the corresponding realized or projected default rates from Moody's.



Source: Moody's, Citi Research

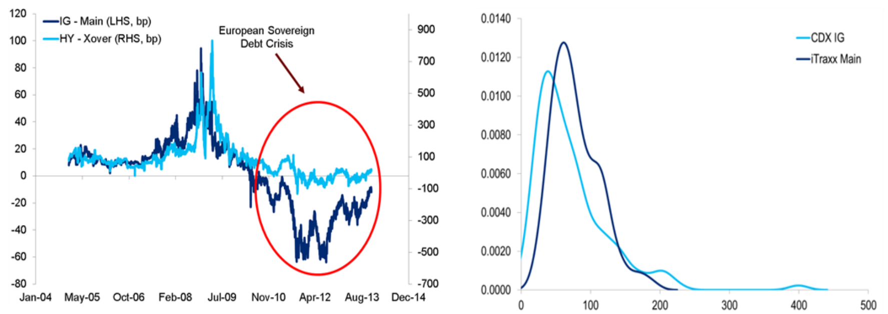
Therefore, we believe that in an environment where spreads remain mostly range-bound, the outperformance of CDX HY over beta-adjusted CDX IG is going to shrink significantly. In addition, rising idiosyncratic risks in the HY portfolio should also drive the excess returns over CDX IG lower (see Figure 38). Also from an implied default rate perspective, CDX HY spreads are trading too rich when compared to realized/projected default rates from Moody's (see Figure 39). On the flip side, HY credits have not really levered up last year in the manner that non-financial IG credits have, which is a potential headwind for CDX IG spreads.

We believe the key is in how the spread moves play out in H2 2014 – on balance, we feel that the risks for CDX HY performance relative to beta-adjusted CDX IG are to the downside. We therefore call for a slight underperformance of CDX HY versus beta-adjusted CDX IG.

Europe to outperform the US – Overall, we are more constructive on Europe than the US in the credit sector. While economic fundamentals have been improving in the US, we view the steady re-levering of US non-financial corporates and the removal of Fed accommodation as negatives. The relatively tight absolute spread levels also make it difficult to argue for further upside.

In contrast, European credit should benefit from the easing stance of the ECB. European banks are also expected to continue de-leveraging, which makes it unlikely that European non-financial corporates will be levering up any time soon. In fact, our European credit strategists predict about 15-20% tightening in European credit spreads for 2014 (see "Vol is dead! Long live risk repression!": Is 2014 a year to yield or rebel?), which is quite bullish.

Figure 41. IG-Main spread shows strong correlation to the sovereign debt crisis in Europe, whereas the HY-Xover spread is mostly idiosyncratic in nature (left). The spread distribution for the IG portfolio is wider, indicating higher idiosyncratic risk than the Main portfolio spread distribution (right).



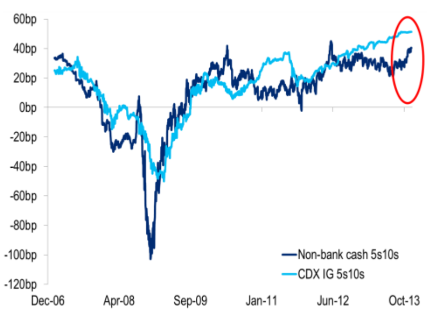
Source: Markit, Citi Research

For synthetic indices, we expect the outperformance of iTraxx Main versus CDX IG to continue. As macro risks in the periphery have abated, the Main-IG spread has compressed significantly (see Figure 40), and this should continue into 2014 as the ECB keeps those systemic risks in check. In fact, the spread distribution for the Main portfolio is tighter compared to the IG spread distribution (see Figure 40), indicating that the major risk in the Main portfolio is systemic. The concentration of de-levering bank names in Main should also help catalyze the compression.

In contrast, the main driver in the high yield world is idiosyncratic risk. This is why the Xover-HY spread has behaved very differently from the Main-IG spread during and after the sovereign debt crisis (see Figure 40). The Xover-HY spread does not show much correlation to the systemic risks in Europe, and is currently negative, demonstrating the higher idiosyncratic risks in the HY portfolio. The spread distributions also corroborate this fact.

Long end of CDX IG curve to offer attractive returns – Synthetic credit curves are currently at their steepest in history (see Figure 34), especially at the long end (5s10s) for the high-grade indices. In fact, the CDX IG 5s10s curve is steeper than the 5s10s curve for a similarly constructed non-bank cash index[2] (see Figure 41). Furthermore, our rates strategists expect the US treasury 5s10s curve to steepen in early 2014 (see 2014 US Rates Outlook – Beyond Base Camp) – given the greater stickiness of corporate yields in general, we expect this to compress the 10Y CDX IG spreads. We therefore like taking long risk at the 10Y point of the CDX IG curve, to take advantage of both the spread compression and the sharp roll down characteristics.

Figure 42. CDX IG 5s10s are currently even steeper than comparable non-bank cash 5s10s.



Source: Markit, Yieldbook, Citi Research

[2] We constructed such an index to strip out the effects of the bank names in the IG cash index that are absent in the CDX IG index.

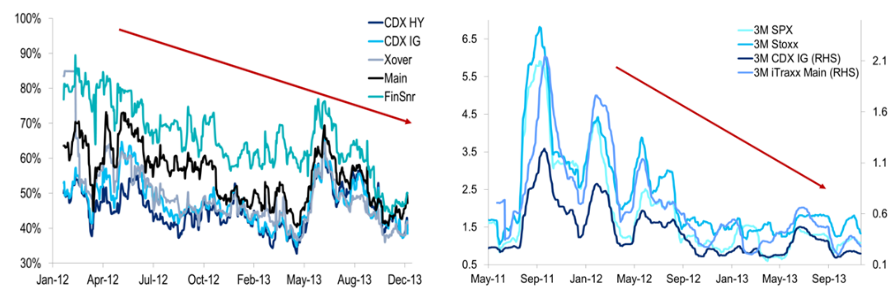
Credit Options: Becoming Mainstream

The portion of this research report regarding non-OCC issued options is not intended for US clients other than Qualified Institutional Buyers. Investing in options is not suitable for all investors. Please see the disclosures concerning the risks of investing in options below and discuss with your Financial Advisor whether this particular options strategy is suitable for you. Interested investors should contact our trading desk for updated price and liquidity information. Also, complex option strategies may entail higher commissions costs.

Volatility has continued its mostly downward trend….

The past year has been a story of a continued fall in credit option volatility, driven mostly by easy central bank monetary policy (see Figure 3 and Figure 42). This is most evident from the fact that the largest volatility spike in 2013 was precipitated by markets misinterpreting Chairman Bernanke's comments about the timing of tapering operations. In contrast, other (negative) headlines have failed to have much effect, with market reaction mostly contained – witness the volatility moves in March during the Cyprus bailout negotiations and those in October during the US government shutdown.

Figure 43. . Implied volatility has mostly come down over the past 2 years (left), as has vol-of-vol for both credit and equity (right). The graph on the right shows 60 day vol-of-vol using price volatility for the credit indices.



Source: Bloomberg, Citi Research

Figure 44. 3M ATM volatility of all 5 major indices is near 1 year lows.

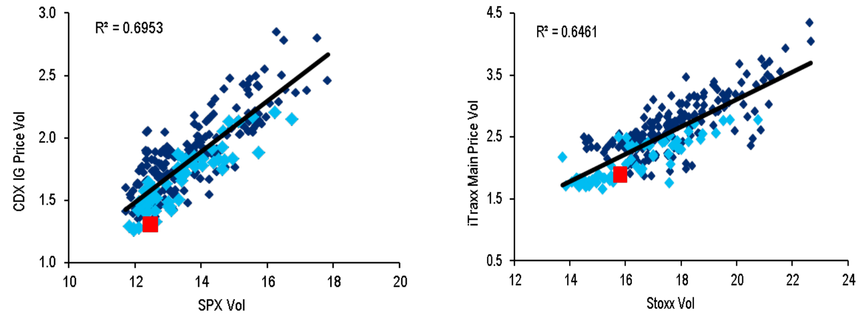
Index	Volatility	Percentile	YTD Change
CDX IG	38.5	10%	-12.73
CDX HY	39.4	20%	-11.97
iTraxx Main	47.2	35%	-4.82
iTraxx Xover	41.5	27%	-8.49
iTraxx FinSnr	50.1	17%	-8.03

Source: Citi Research
As of EOD 6-Dec-2013.

Implied volatility for various indices is on track to end 2013 near one year lows. As of the first week of December, the benchmark 3M ATM volatility for the 5 major global credit indices were anywhere in the 10-35 percentile of their 1 year range, with the US indices experiencing more of the decline in volatility (see Figure 43). In a reversal of the traditional trend, credit (price) volatility has actually traded cheap to equity volatility for most of the time during the past three months (see Figure 44). The behavior during the government shutdown in October was particularly surprising – as the US neared a debt ceiling breach, both 3M ATM S&P volatility and the VIX reacted by spiking upwards, but the credit markets remained relatively calm.

We believe that credit investors, faced with a less liquid market than equities, have preferred to keep their risk profile unchanged, relying more on the central bank "put", which has kept credit volatility in check. In fact, the volatility of volatility ("vol of vol") in credit markets has come down significantly from 2 years ago as market liquidity has improved with the entrance of more participants (see Figure 42). In contrast, equity investors have been more tactical, taking advantage of the more liquid markets to increase/decrease portfolio risk.

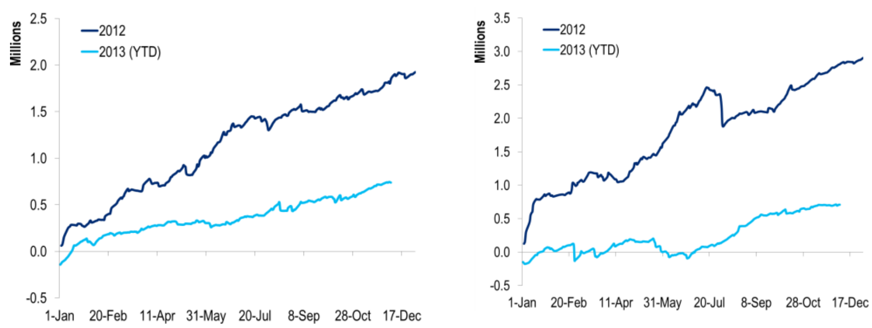
Figure 45. Credit index price volatility (Y-axis) has traded cheap to corresponding equity volatility (X-axis) for the past 3 months (points highlighted in light blue).



Source: Citi Research

With increasingly efficient volatility markets, the gap (or volatility risk premium) between implied and realized volatility has also shrunk, especially as (opportunistic) volatility selling has become a strategy of choice for investors in the hedge fund community. We have therefore seen a slow deterioration in the performance of the systematic volatility selling strategy (see Figure 45) that we had described in an earlier publication (see Profiting from the Credit Volatility Premium - Selling credit volatility can be consistently profitable even after paying bid-ask).

Figure 46. Lower volatility risk premium has reduced the profitability of selling volatility (1M ATM straddles) for IG (left) and Main (right). P&L in $/€ mm.

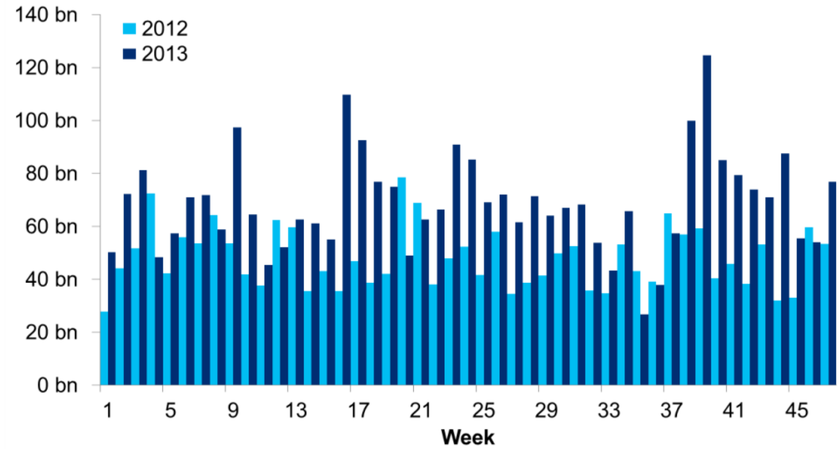


Source: Citi Research

…. As volumes have continued to rise

The key factor that has been driving up efficiency in volatility markets is increased investor participation. Traded option volumes, have been generally higher throughout the year – total volume traded in the first 11 months of 2013 is up 43% over a similar period in 2012 (see Figure 46), and 69% over the same period in 2011.

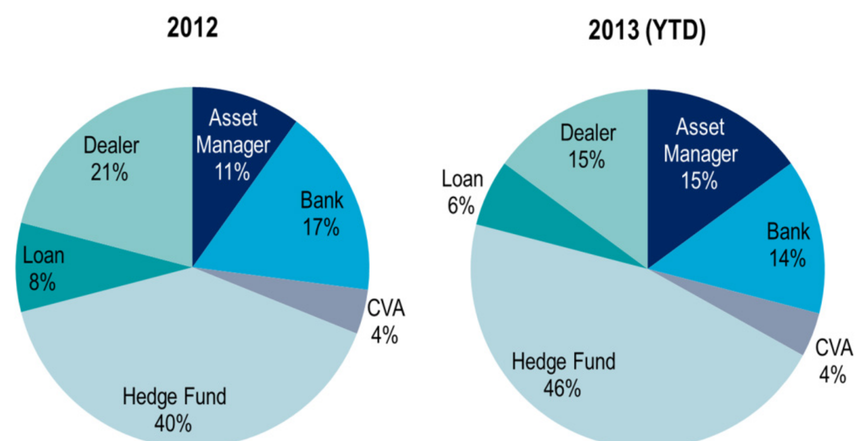
Figure 47. Aggregated option trading volumes are up week for week between 2012 and 2013. Notionals are calculated by adding volumes in the following 3 categories from DTCC data: new trades, full assignments, and partial assignments.



Source: DTCC, Citi Research

The client base composition has also changed – the proportion of asset managers and hedge fund investors has risen, while inter-dealer transactions continue to shrink in relative importance (see Figure 47). Loan desks, banks, and CVA desks have remained steady in terms of market share since 2011. The growth of real money market share from 4% of the overall market in 2011 to 15% (close to 4x) is an especially encouraging sign as it indicates that the credit option product is becoming a more widely accepted and mainstream instrument.

Figure 48. The client base in option markets included more asset managers and hedge funds.



Source: Citi Research

Real money participation in credit option markets has mostly been from a hedging perspective as options provide convexity and customizability to a level that is often difficult to obtain from a straight index hedge. For example, investors who are comfortable with modest spread widenings but only want to hedge against large moves would be more inclined to optimize hedging costs by buying bearish risk reversals, while others who want to smooth out mark-to-market volatility from sporadic spread widening would prefer payer spreads as a more optimal instrument. Such customization is difficult to achieve using straight index positions.

In contrast, hedge funds have mostly focused their activities in (opportunistic) volatility selling programs as well as relative value trades using options. Such trades continue to be an important source of volatility in the credit option markets, especially as more real money investors start considering hedging using credit options.

Trends for 2014

Over the past year, we have seen option market participants grow in size and breadth and we expect this trend to continue into 2014. In particular, in the US, where we expect the environment to be one with few compelling directional trades, options should provide alternatives to enhance carry and reduce hedging costs (see below). We also expect a US-Europe divide in the credit option markets, driven primarily by where each region is in the post-crisis credit cycle, which should produce some interesting relative value opportunities. We identify and discuss some of these trends in the rest of this section.

Option trading to become more transparent and standardized – We expect more dealers to move their credit option trading operations from an over-the-counter derivative platform to live screens, such as the Bloomberg OMON screen. We are already beginning to see a start of this trend, which will eventually improve price transparency.

Another byproduct of this trend will be a standardization of pricing and risk models that will enable market participants to respond more efficiently to underlying market moves. While volatility of volatility ("vol-of-vol") has mostly been falling over the past year (see Figure 42), we expect a standardization of models to reduce the daily variability in volatility further, as dealers no longer have to play "catch up" and periodically re-calibrate their individual models and volatility surfaces to reflect market conditions.

Options to see increased use for relative value and hedging – As credit option markets have grown over the past 2 years, we have observed a gradual adoption of credit options by investors for hedging and to express relative value ideas that were traditionally done using credit indices. We expect this trend to grow during 2014.

We have already started to notice this trend in our conversations with real money clients in particular. Traditionally, many of these clients would use straight index shorts to hedge credit risk, but 2012 left them saddled with large losses from their hedges as credit indices ripped tighter. The convexity and flexibility of option hedges has proved particularly appealing for them, and we are seeing that translated to more option-based hedging programs over 2013, and expect this trend to gain further momentum in 2014.

The one area where we have not seen much real money participation is relative value. This is where hedge funds dominated in 2013 – however, we believe that as real money participants get more comfortable with credit option instruments through their hedging programs, we are likely to see them to start considering credit options as a potential alpha generator as well.

Use of credit options to grow in cross-asset volatility strategies – We expect credit options to become an increasingly important part of strategies employed by cross asset volatility investors, especially as option trading migrates to live screens that are more similar to platforms used by equity option investors in particular.

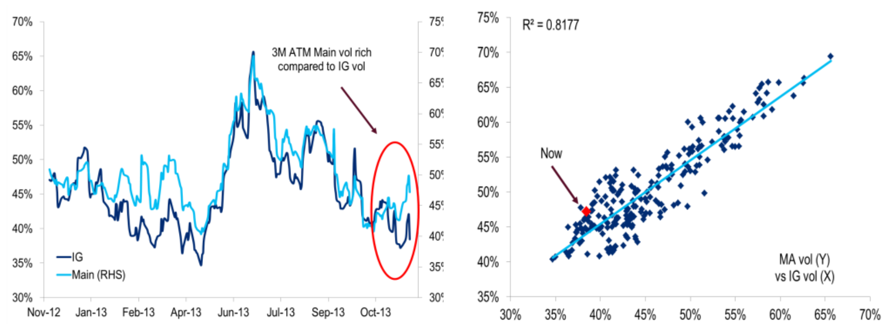
When the credit option market was in its infancy in 2010-2011, the high volatility risk premia in credit option markets incentivized investors to finance long volatility trades in other asset classes by selling credit volatility. As the risk premia has come down in credit option markets due to increased participation of volatility sellers, we have started to see the opposite trade when the opportunity presents itself. For example, several investors put on long credit volatility, short equity volatility trades during the October US government shutdown when credit volatility remained stable while equity volatility spiked. We believe that cross-asset volatility investors will continue to be opportunistic and move away from using credit volatility as a financing vehicle to using it as an asset class in its own right.

US-Europe divide to manifest itself in credit option markets – Europe and the US have reached different points in the credit cycle, and we expect this dynamic to play out over 2014.

In the US, Fed tapering and continued corporate re-leveraging will act as headwinds to already tight credit spreads. Fed accommodation has been a major technical driver pushing volatility levels lower though most of the past two years. As this accommodation lessens and dealers continue to reduce balance sheets in the face of increased regulation, market frictions will increase and sensitivity to headlines will rise.

Given that volatility levels in the US are in the bottom quintile of their one year range (bottom decile for CDX IG, see Figure 43), we feel that on balance, volatility has more room to go up than fall further in the face of such unsupportive technicals. Furthermore, our base case scenario for IG cash spreads is to end the year slightly wider (see earlier discussion) – we therefore expect to see an increase in hedging activity from investors, which should also push up the demand for credit volatility in the US.

Figure 49. Main 3M ATM volatility is currently rich to IG 3M ATM volatility – going forward, we expect IG volatility to rise modestly, and Main volatility to fall.



Source: Citi Research
Data current as of EOD 6-Dec-2013.

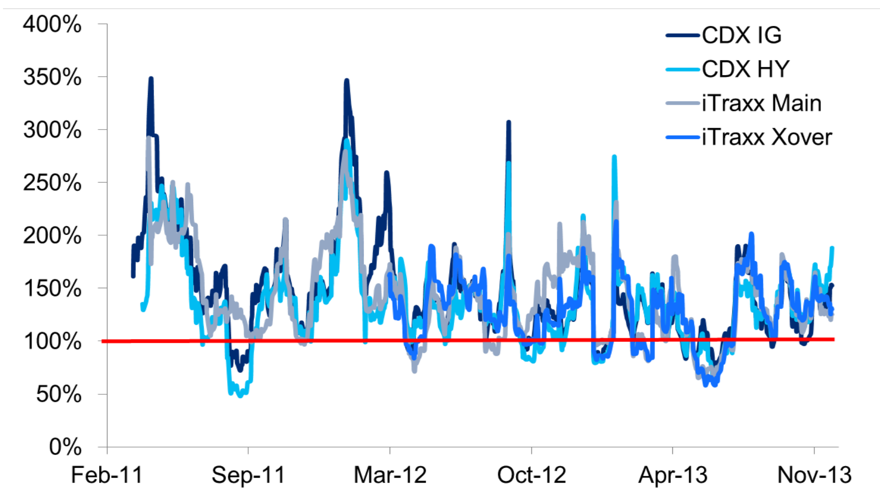
In contrast, the ECB is expected to maintain its easing stance in Europe (see Global Economic Outlook and Strategy - Prospects for Economies and Financial Markets in 2014 and Beyond) and our expectations are for lower realized and implied volatility, with infrequent episodes of moderate volatility spikes (see Credit Options – What did investors do in 2013?: What will they do in 2014?). European banks will continue to delever, which will keep the leverage of European corporates in check in contrast to US corporates. Consequently, the expected outperformance of European credit will keep hedging demand low, also contributing to keeping implied volatility low and close to realized volatility.

We think that the opposing dynamics in the two credit markets will produce cross-index relative value opportunities for investors as we go into 2014. Apart from long volatility US/short volatility Europe trades (see Figure 48 for a comparison of Main vs IG volatility), investors should also consider directional relative value trades between US and European indices using options, given our base case scenario of European indices outperforming US indices – in particular, we expect Main to outperform IG during 2014.

Volatility risk premia to get squeezed further – One of the more profitable volatility trades has been the systematic selling of short-dated volatility through straddles and/or strangles. Over the past two years, the volatility risk premia has come down significantly as a result of increasing volatility selling by market participants, especially hedge funds, and we have seen this reflected in the reduced performance of the volatility selling strategy (see Figure 45).

We expect the volatility risk premia in credit markets to continue to decrease, as markets grow in size and become more transparent and efficient. Investors who wish to profit from a volatility selling strategy should no longer depend on a systematic selling strategy, but instead consider overlaying a decision making process that determines whether it makes sense to sell volatility at the current time.

Figure 50. 1M (backward looking) ATM implied volatility to realized volatility ratio is strongly mean reverting across all indices. Also note the mostly positive volatility risk premia, when the IV/RV ratio is above 100% (red line).



Source: Citi Research

For example, consider the ratio between 1M implied and realized volatility for various indices (see Figure 49). In order to make the comparison accurate, we have plotted the ratio of 1M backward looking implied volatility to 1M realized volatility, such that both cover the same time period.[3] A statistical test for mean reversion shows that this ratio is strongly mean reverting – therefore, when the ratio between implied and realized is really low (at a trough), it is a good time to sell volatility.

As we go forward from a trough, mean reversion implies that this ratio will go up. In other words, the ratio of “implied at the trough” to “realized over the next 1 month period” will be high, and the investor selling volatility will benefit from the high

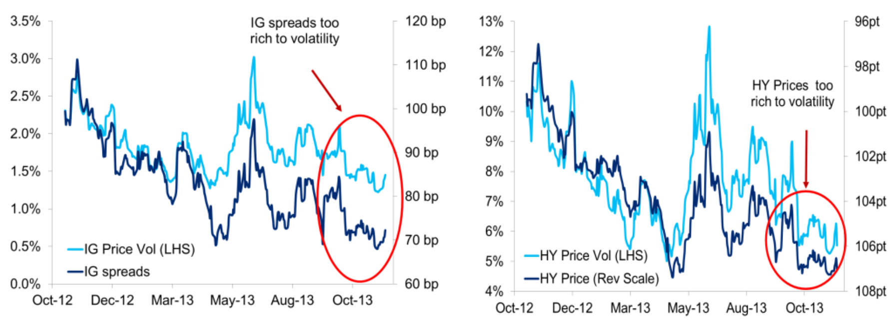
[3] This is because implied volatility is a forward looking measure, while realized volatility is a backward looking measure. The way to line them up such that they refer to the same time period is to take the backward looking ratio of 1M implied to 1M realized volatility.

volatility risk premium over that period. For the same reason, the systematic strategy should avoid selling volatility when the (backward looking) implied to realized ratio is elevated.

Less conviction among investors to benefit those using options – Overall, for US credit, we believe that compelling opportunities will become increasingly hard to find. We argued earlier that it is difficult to see further significant tightening in credit spreads in the face of unfavorable technicals (removal of Fed accommodation) and fundamentals (re-leveraging of IG corporates). It is also hard to find compelling shorts – while most investors would agree that credit spreads have less room to tighten than widen, it is difficult to predict the actual path and timing for spreads to go wider. In such an environment, with yields so low, the cost of carry becomes an important factor for shorts as investors wait for the right triggers to start the market move wider.

We believe that options can help investors in both categories by generating extra carry for longs and reducing the carry cost of shorts. For long investors, we recommend covered call trades in US corporates (see Vol is Low, Sell It Anyway, Part 1 - "Covered" call strategy with an intriguing payoff profile) where the investor goes overweight a cash credit portfolio and adds extra carry by selling OTM receiver options. The (still mostly) positive volatility risk premia (see Figure 49) in credit option markets and our base case scenario of synthetic spreads ending the year flat to slightly wider should help the trade.

Figure 51. Covered puts using options appear cheap, given how rich index spreads/prices are relative to 3M ATM volatility for both CDX IG (left), and CDX HY (right).



Source: Markit, Citi Research

On the short side, the richness of credit spreads/prices compared to (price) volatility (see Figure 50, also Has Credit Vol Decoupled from Spreads? - Price volatility is a better risk indicator) suggests covered puts where the investor buys index protection and finances it by selling OTM payers. Such trades can significantly reduce the cost of carry[4] and benefit the investor during modest spread widenings.

[4] In some cases, the investor can actually get paid to hold the short.

RISKS

When buying calls and puts (or receivers and payers) the maximum loss is the premium paid. When selling calls (or receivers), the maximum potential loss would occur as the index spread decreases but is limited by the index spread being floored at zero. For puts (or payers), the maximum potential loss (amount below the strike) would eventuate should the index price fall to zero. Sector index options are cash settled. The above calculations do not include any additional fees or transaction costs. Note that ratio writing would leave the writer uncovered in one leg of the trade.

OPTIONS RISK DISCLOSURE — PLEASE READ CAREFULLY

This section discusses possible options strategies that you may choose to employ in conjunction with the company securities discussed herein. If you choose to engage in the options transactions discussed within this document, you must have an approved options account and will be subject to certain criteria which may ultimately prevent you from engaging in certain option strategies. It is important for you as an investor to know and understand that Options do involve risk and sometimes, significant risk, therefore may not be appropriate for all investors. If you buy options, the maximum loss is the premium. If you sell put options, the risk is the entire notional below the strike. If you sell call options, the risk is unlimited. The actual profit or loss from any trade will depend on the price at which the trades are executed. The prices used herein are historical and may not be available when you order is entered. Commissions and other transaction costs are not considered in these examples.

Please speak to your Financial Advisor to ensure you have a full understanding of the risk and reward of the strategy you are considering. Strategies that are opened or closed differently than what is discussed in this document could have a significantly different outcome from what is described. It should be noted that certain Index options might have special settlement dates or settlement requirements that are different from traditional equity options. Commissions, taxes, and margin costs have not been included but will affect the outcome of any option transaction and should be considered. However, they can have a significant impact on the profitability of options transactions and should be considered carefully before entering into any option strategy. Because of the importance of tax considerations to all option transactions, the investor considering options should consult with his/her tax advisor as to how their tax situation is affected by the outcome of contemplated options transactions. Certain options trades/strategies must be executed in a margin account. Transactions executed in a margin account can require the investor to periodically deposit additional collateral into the account in order to maintain the positions. The preceding language is not a full description of all possible risks associated with options trading.

For a more complete description on the uses and risks of options, please see the document titled Characteristics and Risks of Standardized Options. If you would like an additional copy of this document please contact Citigroup Global Markets Inc., Options Department, 390 Greenwich Street, New York, NY 10013. Options are not suitable for all investors. Before entering into any transaction using listed options, investors should read and understand the current Options Clearing Corp. Disclosure Document (Characteristics and Risks of Standardized Options) at http://www.theocc.com/about/publications/character-risks.jsp, http://www.theocc.com/components/docs/January_2011_ODD_Definitive_Supplement.pdf,

http://www.theocc.com/components/docs/March_2011_ODD_Definitive_Supplement.pdf, and http://www.theocc.com/components/docs/January_2012_ODD_Definitive_Supplement.pdf

Investing in options other than Standardized Options may entail additional risks.

Appendix A-1

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