

# Vol is Low, Sell It Anyway, Part 1

## “Covered” call strategy with an intriguing payoff profile

- **Overview:** While covered call positions can provide attractive returns in a status quo environment, their upside is capped and downside can be meaningful. But in the current low default, low vol environment we believe unconventional covered calls with intriguing payoff profiles can be found (upside!).
- **Trade Idea:** We advocate a long *cash* / short *CDX receiver* trade package. We find that this type of strategy has generated attractive results in recent trading, and we believe that there are several factors in place that can enable favorable performance looking forward.
- **Scenario Analysis:** We compute P&L breakevens in both bullish and bearish scenarios. We find that the breakevens are quite high and while there is basis risk it should be manageable in the current environment, in our view.
- **Sizing the Trade:** In this article we present a very simplified version of the trade, but in a real world context there are more nuances that should be considered. As such, we will examine ways to optimize P&L on a risk-adjusted basis in Part 2.

**Stephen Antczak, CFA**

+1-212-723-3267  
stephen.antczak@citi.com

**Anindya Basu**

+1-212-723-6453  
anindya.basu@citi.com

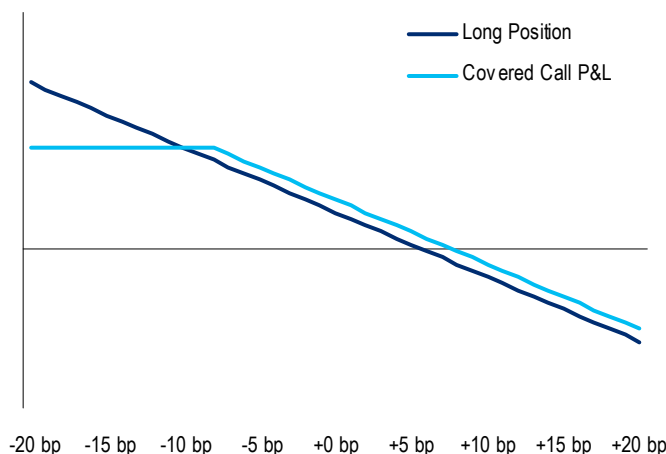
**Jason Shoup**

+1-212-723-6147  
jason.b.shoup@citi.com

**Jung Lee**

+1-212-723-1835  
jung.lee@citi.com

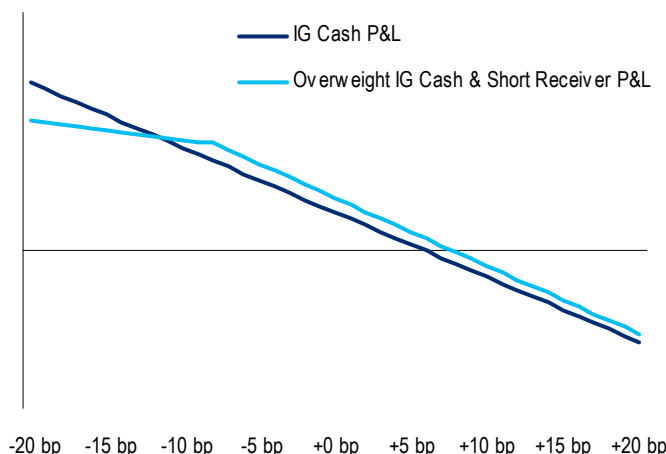
Figure 1. P&L for a typical covered call strategy is capped



Source: Citi Research

Note: Results are theoretical but generally consistent with the range of cash spared changes in the October 19, 2012 to January 7, 2013 period

Figure 2. But in the current credit market environment, unconventional “covered” calls may have less capped upside



Source: Citi Research

Note: Results are theoretical but generally consistent with the range of cash spared changes in the October 19, 2012 to January 7, 2013 period

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## Vol is Low, Sell it Anyway, Part 1

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### “Covered” call strategy with an intriguing payoff profile

Covered call strategies enable investors to collect a premium that enhances performance in a status quo environment. The downside, of course, is limited ability to participate in rallies and significant exposure to bear markets. The most common form of covered calls in the cash corporate market are callable bonds, and in the synthetic market the typical covered call takes the form of long CDX index, short receiver. As is the case with covered calls elsewhere, these positions typically have capped upside and far more downside (Figure 1; cover page).

But given how sharply CDS has outperformed cash at the broad market level, we believe that a slight tweak to the standard package described above can have a very intriguing payoff profile at this juncture. In particular, a **long cash / short CDX receiver** package may have less capped upside than a typical covered call at this stage (Figure 2; please call for calculation details).

In the current low default, low vol environment there are three key reasons for the intriguing payoff profile, in our view:

1. Implied credit vol tends to exceed realized vol (nothing new here)
2. The broad CDS market may have limited upside at current levels
3. The broad cash market may have more room to run; worst case scenario better carry

In this article we first outline this general trade idea in more detail, and also examine the package’s favorable performance in recent trading and reasons why. We then consider the breakeven of this package in bullish and bearish scenarios. Lastly, we briefly discuss sizing the trade in a real world context, which we will consider in more detail in Part 2.

### Trade Idea: Long cash & short CDX receiver

To begin, consider a hypothetical IG investor with a \$100 mm portfolio. He anticipates that defaults will remain muted in the near- to intermediate-term and considers the key risks at this stage as mark-to-market risk due to headlines out of Europe and idiosyncratic issuer risk. He is currently neutral weight, as he is very wary about valuations, but is just as wary about fighting the Fed. To generate alpha he is considering an unconventional covered call package:

#### TRADE IDEA

**Action #1:** Add a 5% market overweight position to his cash portfolio

**Action #2:** Sell out-of-the-money receivers on the CDX.IG index

Several more details about the trade package that our PM is considering:

- His trade is notionally-weighted (sell \$100 mm receivers)
- He is selling 20 delta receivers, which means that the value of these receivers changes by about 20% of any spread changes in the CDX.IG index
- Receivers have 3-month tenors

## More than normal upside

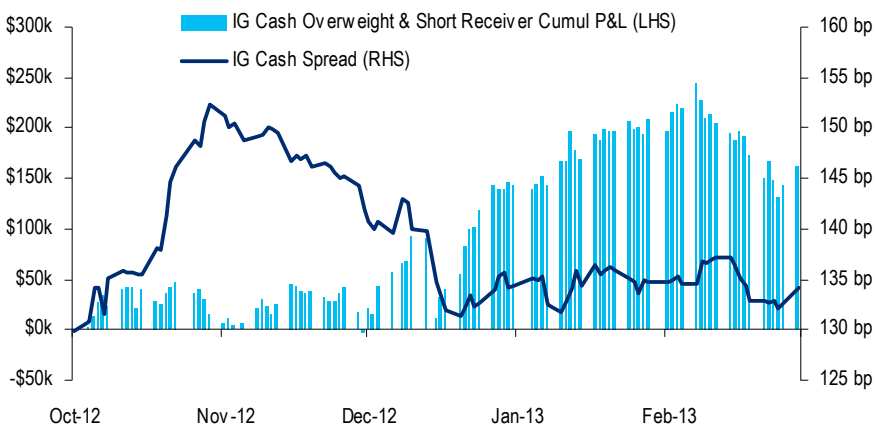
The fact that implied vol typically exceeds realized vol in the credit space notwithstanding, the essence of this trade really boils down to the cash / CDS basis – does cash have any room to outperform if spreads change?

To better understand we looked at the recent performance of our PM's trade package. Specifically, in Figure 3 we compare the P&L difference between our PM's trade idea and a neutral portfolio from last October to March of this year. We consider this period because we believe that the factors that drove the price action back then are largely in place now. In addition, while spreads ended the period unchanged they did experience distinct bouts of widening, tightening, and flat-lining. We find that the package outperformed by \$161k, or 16 bp of notional over the observed period ( $16.1 \text{ bp} / 5\text{-month observed period} * 12 \text{ months} = 39 \text{ bp annualized}$ ).

Specifically, as high-grade cash spreads leaked more than 20 bp wider from mid-Oct to mid-Nov the trade package benefitted from the call option (receiver) moving out of the money and from the passage of time. These factors more than offset the loss incurred due to the overweight position, and the cumulative P&L was \$16k.

In the tightening period (mid-Nov '12 to early Jan '13) spreads moved by the same amount (~20 bp), and while the receivers weighed on P&L performance the market overweight position generated more than enough returns and cumulative P&L was up to \$55k. The key point is that a negative P&L did not result from either spread moves. And of course in the "status quo" period time decay enabled meaningful outperformance as well.

**Figure 3. Cumulative outperformance of trade package (selling OTM receivers on CDX.IG + 5% cash market overweight) vs. market-neutral portfolio**



Source: Citi Research

Note: From October 18, 2012 to March 18, 2013; We assume selling \$100 mm notional of Jan'13 20 delta receiver in Oct and after maturity, sell Apr'13; The returns described can only be achieved if the parameters of the time period are duplicated, of which there is no guarantee.

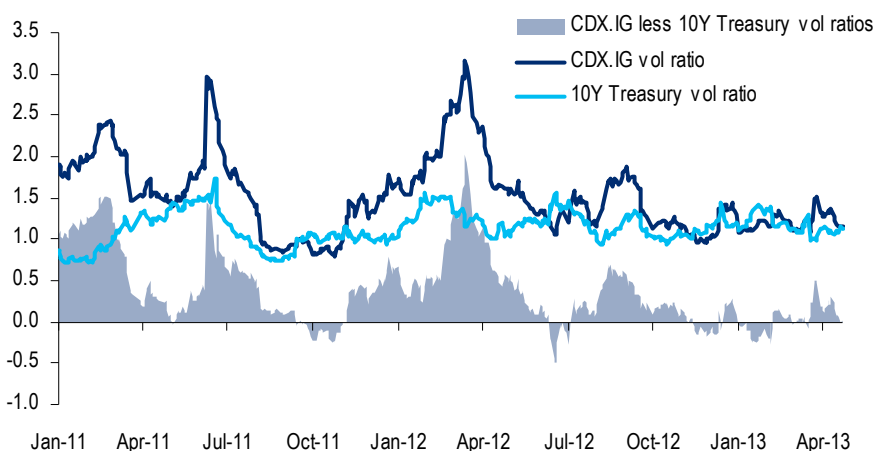
## Reasons for unorthodox payoff profile

### Reason #1: Vol buyers are generous

One reason why the covered call is well positioned to outperform is simply because implied volatility in the credit space is almost always higher than the realized volatility. We won't spend too much time on this topic since it is fairly common knowledge, but one thing to note is that while this tends to be true in many asset classes, the phenomenon can be a bit more extreme in credit. For example, in Figure 4 we compare the ratio of implied to realized vol in the credit and rates markets since '11 and find that the implied / realized vol ratio is consistently higher for the credit.

It's also worth noting that this phenomenon persists across option maturities and sub-components of the credit space, and we have found that it is possible to monetize this difference even net of transaction costs (see [Profiting from the Credit Volatility Premium](#) dated September 18, 2012).

**Figure 4. Ratio of implied vol over realized vol in the credit and rates markets – ratio in credit market is consistently higher**



Source: Citi Research, Bloomberg

Note: As of April 24, 2013; ratio calculated using implied vol at time T to realized vol at T+3 months

### Reason #2: How low can CDX go, anyway?

By selling receivers on CDX.IG our PM is, of course, limiting his upside should spreads rally. But that raises an interesting question — how much room does CDX.IG have to rally? Not all that much, in our view. For example, consider CDX.IG tightening potential in the context of a very simple bottom-up approach. Let's start with the all-time tight of 29 bp that was reached in '07 and then make two adjustments to this level to account for factors that exist in current environment but did not in the pre-Lehman era.

- **No structured bid:** We add back 10 to 20 bp for the lack of synthetic demand that had previously pushed spreads unusually tight
- **Less liquidity:** The cost of trading CDS has increased due to a higher margin requirement, particularly for protection sellers. For this we add another 10 bp

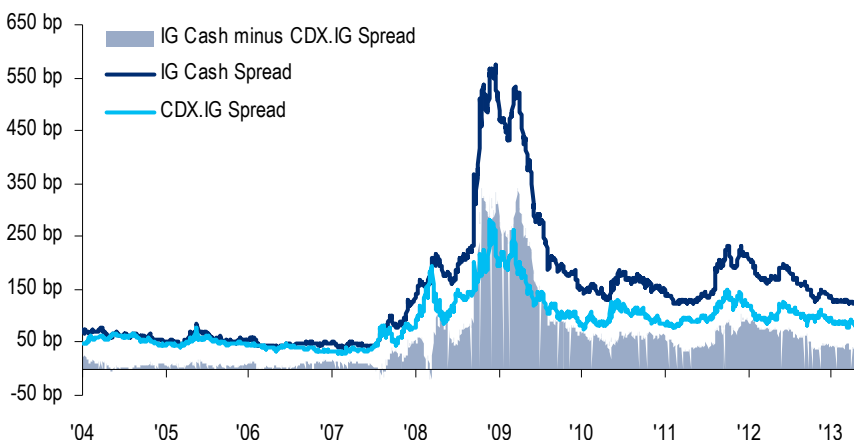
So conservatively speaking, from a bottom-up perspective about 50 bp may be a reasonable floor ( $29 \text{ bp} + 10 \text{ bp} + 10 \text{ bp} = 49 \text{ bp}$ ). We encourage readers to refer to [US Credit Weekly - How low can IG CDX go?](#) for more detail.

### Reason #3: More room to run for cash

In addition to the limited room for CDX to rally further, we also believe our PM's trade package can be further boosted by the fact that broad cash market spreads wide vs. CDX – good carry in the worst case and potentially more room to tighten in bullish environments. For example, the cash market currently trades at 118 bp vs. LIBOR, while CDX is at 72 bp (difference of 44 bp). In Figure 5 we show the cash / CDX relationship over the past decade, and we see that at this stage of the previous cycle ('04 to '07) the spread difference averaged only about 9 bp.

The key point is that in a spread starved world the cash market can offer more. In addition, the investors who have cash to put to work are mutual funds, ETFs, insurance companies, etc. — in other words, cash investors, not CDS investors.

**Figure 5. Current spread difference between the overall cash and synthetic markets seems big**



Source: Citi Research  
Note: As of May 9, 2013

## Scenario analysis

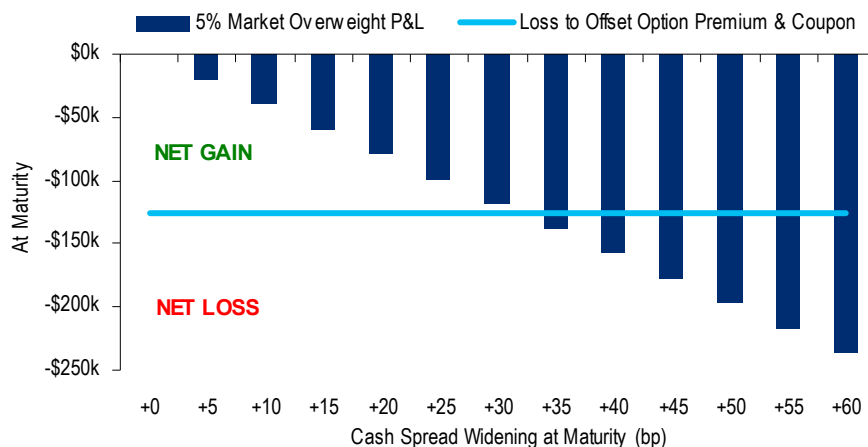
We now consider P&L breakevens, and in this regard we take a very conservative approach. Specifically, in a bullish scenario we assume that cash is unchanged and only CDX.IG tightens, and in a bearish scenario we assume that CDX.IG is unchanged and only the cash market widens.

### Bearish scenario: cash spread widening

In Figure 6 (next page), we present P&L expectations given various degrees of spread widening at receiver maturity. Breaking down the numbers, note that at current levels our PM is paid a premium of \$92.5k from selling Aug '13 receivers (\$100 mm \* current price of 9.25 bp). Also, from now until the receivers mature he receives an additional \$33k of coupon that is attributable to his 5% overweight position (\$5 mm \* 2.7% yield \* 0.25-year until receivers' expiry). So total incremental income is \$126k by the end of the 3-month period.

How much can cash spreads widen at maturity before the 5% overweight position incurs a loss big enough to offset this income? Current DV01 on \$5 mm notional in the IG market is \$4k, which means that the spread breakeven is 32 bp ( $\$126k / \$4k = 32$  bp; Figure 6).

**Figure 6. Cash spreads can widen 32 bp at maturity before the total P&L of the trade package turns negative**



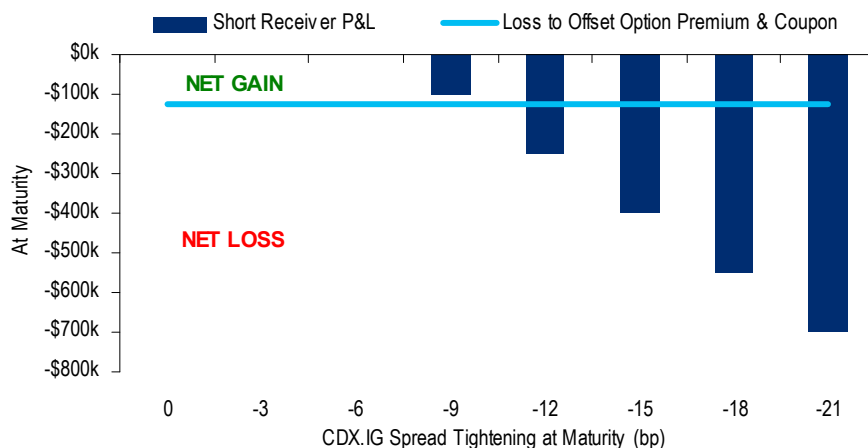
Source: Citi Research

Note: As of May 14, 2013; assume selling Aug '13 22-delta receivers, constant cash dv01 and no CDX.IG change

### Bullish scenario: CDX tightening

Again, total income generated by the receiver premium and coupon on the 5% overweight position is \$126k, and in Figure 7 we highlight how much CDX spreads can tighten at receiver maturity before the total P&L turns negative.

**Figure 7. CDX.IG spreads can tighten 10 bp at maturity before the total P&L of the trade package turns negative**



Source: Citi Research

Note: As of May 14, 2013; assume selling Aug '13 22-delta receivers, constant duration of 5 and no cash change

Currently trading at 72 bp, the CDX.IG index has 7 bp to tighten before it hits the receivers' strike of 65 bp, and then another 3 bp (\$126k / \$50k DV01 for \$100 mm CDX.IG notional) before completely offsetting the income of \$126k. That is, CDX can tighten to as low as 62 bp before we see the trade package to incur losses. Again, cash is assumed to be unchanged in this scenario and note that the last time we saw the CDX.IG index at that level was back in '07.

## How to size the trade in the real world context

### STEP 1:

$$\begin{array}{rcl} \text{Market} & * & \text{Portfolio} = \text{Overweight} \\ \text{Overweight} & & \text{Size} \quad \text{Notional} \\ 5\% & * & \$100 \text{ mm} = \$5 \text{ mm} \end{array}$$

### STEP 2:

$$\begin{array}{rcl} \text{Duration} & * & \text{Overweight} = \text{Equivalent} \\ \text{Ratio} & & \text{Notional} \quad \text{CDX Notional} \\ (7.1 / 5.0) & * & \$5 \text{ mm} = \$7.1 \text{ mm} \end{array}$$

### STEP 3:

$$\begin{array}{rcl} \text{Equivalent} & + & \text{Receiver} = \text{Receiver} \\ \text{CDX Notional} & & \text{Delta} \quad \text{Notional} \\ \$7.1 \text{ mm} & + & 20\% = \$35.5 \text{ mm} \end{array}$$

Our hypothetical PM sized his trade in the simplest way possible (notional weighting), but in a real world context one should probably consider sizing in terms of risk. For example, suppose that our PM thinks about risk in terms of duration (although one could also view it in terms of beta). He is 5% overweight on his \$100 mm portfolio, meaning that the notional of his overweight position is \$5 mm (Step 1).

Since the duration of this position is 7.1 years (market average) while the CDX.IG index has a duration of about 5, the cash market has greater MTM risk than its synthetic counterpart. Assuming roughly equal betas, we calculate that a \$5 mm cash position has about the same amount of MTM risk as a position that has \$7.1 mm exposure to the CDX.IG index (Step 2). The equivalent notional amount for a 20 delta receiver – which moves by 20% of the change in the underlying CDX.IG index – is therefore \$35.5 mm (Step 3).

There are many more nuances to this trade, and in Part 2 of this article we will look at more details in terms of sizing, how to optimize the receiver component, as well as some issues related to the timing of selling receivers.

## Summary

In general, covered calls can provide attractive carry enhancement in a status quo scenario, but upside is forgone and significant downside exposure is retained. But in the current environment we believe that select covered calls in the credit space can provide an unusual and attractive payoff profiles.

Specifically, we believe that a package that is long the broad *cash* market and short out-of-the-money receivers on the *CDX.IG index* can provide positive results. The three reasons we see for such favorable performance are tendency for higher implied than realized vol, limited tightening potential for the CDX.IG index, and more room to rally in the cash market.

In addition, we found that the breakevens for this trade package are quite high in both spread tightening and spread widening environments. There is risk, of course, but in our view basis risk should be manageable in a low default, low volatility environment.

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