7 November 2014 | 16 pages

Credit Derivatives
Western Europe

Tail, Growth & Credit Derivatives

Best trades to be long tail risk and short growth risk

- **Central bank support is still the name of the game; but how will it impact the market?** – In our view, central bank support will struggle to do much to improve the bleak picture on the economic growth front, but it should help to avoid tail events.

- **We think investors should position "long tail risk and short growth risk"** – In other words, for any pair of instruments: go long risk the one more exposed to tail risk and short the one more exposed to growth. The trick is to find pairs in which (i) one asset is clearly more exposed to growth and the other one is clearly more exposed to tail risk, and (ii) the entry point is attractive.

- **We list pair trades which fit into this theme and can be implemented via credit derivatives** – Long risk Main vs. SX5E, long risk Main vs. Crossover, long risk Senior Financials vs. Main (or Crossover), long risk senior vs. junior tranches and long risk OTM vs. ATM credit vol.

- **Is the entry point attractive on those trades?** – In some cases it is; in others isn't. This is key to selecting which trades to implement.

- **Our picks are:**

  – **Long risk Main 12-100% vs. short risk Crossover (5y, Series 22)**. This trade reflects our highest conviction recommendation: we prefer to take risk by levering up tail / low beta IG / senior financial risk, and we dislike taking high beta risk (such as Crossover or equity tranches).

  – **Long ATM vs. short OTM (payer) vol**. This trade fits the theme of growth vs. tail risk and takes advantage of the structurally high OTM payer vol in the credit options market.

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Long tail risk, short growth

Our aim in this note is to offer investors potential trades to position for this theme, should they think it makes enough sense.

The starting point of this theme is that growth will likely continue to disappoint, resulting in low inflation, and force central banks to extend their recent accommodative measures: low rates for long, monetary stimulus in different shapes (LTROs, asset purchases …). The actual measures and their timing are not irrelevant, but the details shouldn't overly affect the main theme: central banks will continue providing support as needed, liquidity will be abundant and the cost of credit should remain very low.

What will be the impact of central bank support?

- **It seems unlikely to transform the growth picture**. In a recent weekly[1] our European economists argued that "*the Eurozone malaise is unlikely to be resolved by improving credit conditions alone*." In a recent credit weekly[2] our US credit strategists noted that "*there seems to be a growing chorus of central bankers that are suspicious [QE] doesn't do much good for the economy*". We think most market participants share that suspicion.

  If one buys into that theory, one should expect assets whose returns depend heavily on growth to do worse than those whose returns don't.

- **It will likely avoid tail events**. Tail events tend to develop when someone big enough runs into a liquidity constraint and is forced to liquidate. But if central banks are going to continue inundating the market with liquidity and making the cost of credit very low, who's going to have any problems borrowing to meet a potential liquidity constraint? In a recent report[3] we argued one clear risk which can trigger a tail event is outflows from credit funds, given the limited liquidity in the secondary bond market. However, we also argued that if central bank support can achieve something it is preventing the large sell-off which would trigger outflows.

  If one buys into this theory, one should expect assets heavily exposed to tail risk to do relatively well (provided they are trading cheap enough).

Putting it altogether, we would expect "growth"-oriented assets to underperform "tail"-oriented assets. One needs to carefully take into account the entry point on any trade of course, and the above analysis ignores many issues (e.g. to what extent will lower commodity prices prop up growth?), but other things being equal we think the idea makes good sense.

In a simplistic way, if we were to classify all assets according to their exposure to growth or to tail risk we would probably put equities closer to growth and credit closer to tail risk. Within credit, high yield would be much closer to growth than, for example, senior financials, super senior tranches or very OTM payers.

In the next section we look at different potential trades and analyse how attractive their entry point is. In the last section we select the two trades we think make most sense.

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[1] *Euro Economics Weekly* *Credit and the Eurozone malaise*, 31-Oct.

[2] *US Credit Weekly* *Just another tantrum... or something more?*, 24-Oct.

[3] *Long risk EUR IG bonds and long iTraxx vol*, 30-Oct.

Potential derivative trades and entry points

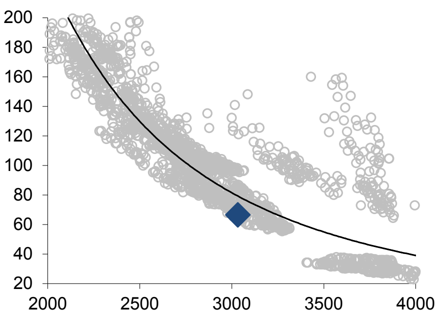
1. Long risk iTraxx Main vs. short risk EuroStoxx 50

It's not hard to argue that equity performance is more growth-dependent than credit, whose performance is more tail-oriented. At the end of the day, equities can be seen as a long ATM call on the economy and credit as a short OTM put. One could trade this via indices or via options (for example: sell Main payers & buy SX5E puts, or buy Main receivers & buy SX5E calls).

Two pushbacks on this trade: in a very bullish environment, or an environment in which corporates are levering up, equities tend to outperform (Figure 1); also, Main has substantially outperformed SX5E over the past 12m (Figure 2, beta-adjusted), making the entry point relatively unattractive. Playing it with options allows investors to lever the view in either a widening (via payers) or tightening environment. **We think this trade plays out better if the market doesn't tighten substantially**, so playing it via (slightly ITM) payers/puts is probably the most attractive option. Vol-wise, credit and equity vols are very close to each other on an implied-to-realised basis (Figure 3).

Figure 1. Main vs. SX7E levels

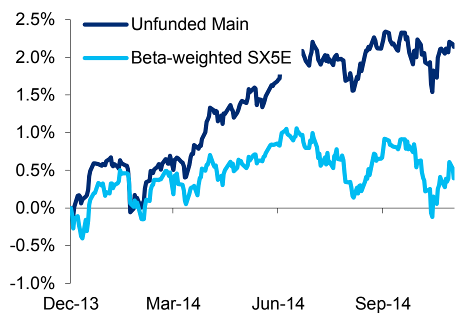
Y-axis: Main (bp); X-axis: SX5E. Daily data since 06.



Source: Citi Research, Markit, Bloomberg.

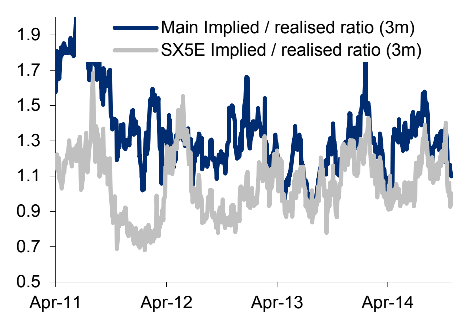
Figure 2. Main vs. SX5E - Cum. Return

Using a 3m beta-weighted notional for the SX5E.



Source: Citi Research, Markit, Bloomberg. Return of a long risk position, % of notional.

Figure 3. Implied / realised vol (3m)



Source: Citi Research, Markit, Bloomberg.

2. Long risk iTraxx Main vs. short Crossover

Within credit, we think high yield is more geared to the performance of the economy and should benefit less than investment grade from central bank support – especially in the scenario of a potential ECB bond buying programme, which will likely only include investment grade bonds. We think that further easing from the ECB will clearly have a trickle-down effect eventually benefiting high yield; however, we think the incremental impact of further ECB measures will likely benefit IG and Financials more than HY *in risk-adjusted terms*[4]. We do have to admit that whether further ECB support measures will benefit more IG or HY is the topic where we find the least consensus among investors. Our long standing view on derivatives is that investors will prefer to lever up synthetic IG credit than add unlevered synthetic HY credit going forward.

[4] See our two latest weeklies *Is the ECB about to buy corporate bonds?*, 21 Oct. and Spreads should follow in the ECB's step, 6 Nov.

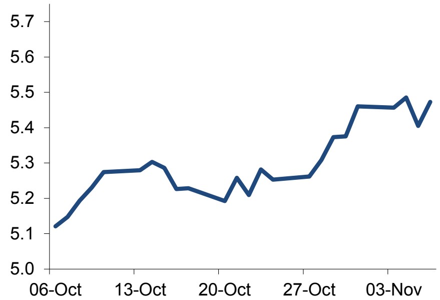
From a technical point of view we've been concerned for a while[5] about how crowded positioning in high-beta instruments (high yield, AT1s, equity tranches) seems to be.[6] The October weakness in those areas provides some support to that theory: investors have filled their "off benchmark" longs with those instruments and they are the ones with the highest risk of being unwound. We don't believe the weakness in October resulted in positioning changing substantially and, as a consequence, we remain worried about high-beta credit instruments being crowded and struggling to outperform as a result.

We are convinced supporters of Crossover / Main decompression. It's taken a long time to come (Figure 4), almost 2 years, but it seems to be playing out now; especially after the October roll (Figure 5). We think that continues and **expect this trade to perform better if the market tightens**; thus one could play it via indices or via receivers. The entry point doesn't look particularly good or bad right now, in our view.

Figure 4. Crossover to Main spread ratio

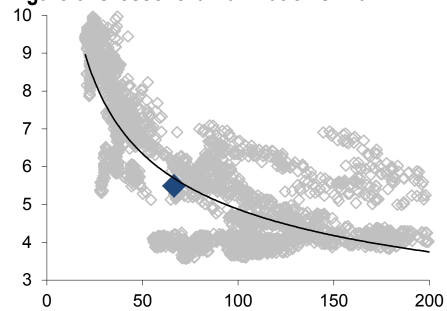
Source: Citi Research, Markit. 5y on-the-run indices.

Figure 5. Crossover to Main spread ratio



Source: Citi Research, Markit. 5y on-the-run indices.

Figure 6. Crossover / Main ratio vs. Main



Source: Citi Research, Markit. 5y on-the-run indices, daily data since 2004.

3. Long risk iTraxx Senior Fin. vs. short Main (or Xover)

Within IG, we think Financials will benefit the most from central bank support, and they provide the most direct exposure to tail risk: any event not affecting the financial system is unlikely to trigger a tail event.

One could trade this via indices, via options (e.g. sell Senior Financials payers & buy Crossover payers or buy Senior Financials receivers & sell Crossover receivers), and via tranches (e.g. **long risk iTraxx Sub Financials vs. short risk Crossover super senior tranche**). With respect to the former trade, we would size it on an equal notional basis, with Sub Financials trading at 152bp and the 35-100% Crossover tranche trading at 105bp. The trade generates a positive carry, provides a long risk Financials vs. Crossover exposure and leaves us net long risk (which is ok with us as we remain bullish).

[5] See *European Credit Derivatives– Views and Trades: Be long, but in non-crowded places*, 4-Sep.

[6] See positioning in our latest *Global Credit Survey*.

4. Long risk senior vs. junior tranches

Within the tranche capital structure, both of Main and Crossover, senior tranches will provide more exposure to tail risk than to growth; with the opposite being the case for senior tranches. Selling super senior protection is still one of our preferred trades (see Senior tranches – The best long out there?, 22-Jul).

Tranche implied correlation remains at record high levels given the extraordinary demand for equity tranche risk over the past couple of years (Figure 7), providing a good entry point for the trade. Moreover, as we highlighted in our latest European Credit Derivatives Brief, senior tranches are slowly becoming more sought after as more investors get into the trade and as the tranche continues outperforming the index. We believe that positioning in equity tranches is, like in other high-beta credit instruments, very stretched: we think that the investors who piled into this trade over the past two years still have most of that exposure. Thus, we think equity tranches have little room to outperform the index.

The main pushback of going long risk super senior vs. short risk equity is that a delta-hedged trade would generate negative carry. Thus, we would rather trade a little bit more on the super senior leg to make the trade slightly positive carry (at the expense of a small long risk directional exposure); something like 12x 12-100% vs. 1x 0-3% (the delta ratio is 11x).

Figure 7. Main Tranche Implied Correlation

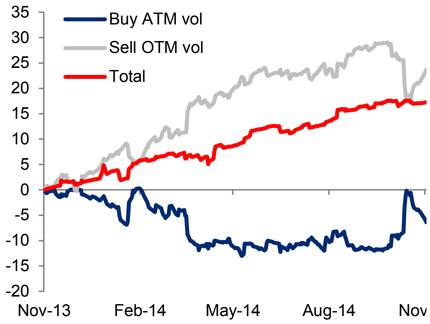
Source: Citi Research, Markit. 5y on-the-run equity (0-3%) tranche implied correlation.

5. Long ATM vs. short OTM (payer) vol

In options land, the growth vs. tail theme could be played by buying ATM and selling OTM (payer) vol. Given the consistent demand for OTM payers in credit options to hedge tail risk, **pricing-wise this trade looks very attractive**.

We back-tested the P&L of buying 3m ATM (50% delta) payers and selling 3m OTM (10% delta) payers in iTraxx Main over the past year, sizing the trade to be Vega-neutral at all times (which involves, on average, trading ~2.9x more of the OTM straddles) and delta-hedging the trade dynamically. Figure 8 shows that the trade would have had a very stable positive P&L through time.

Figure 8. P&L of buying 3m ATM and selling OTM iTraxx Main Vol



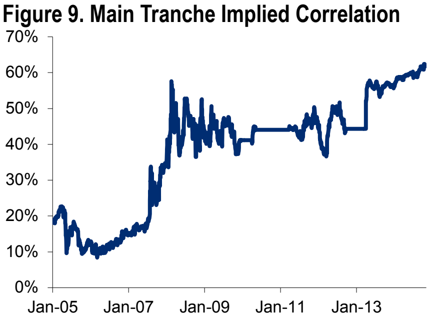
Source: Citi Research, Markit. In cents of the ATM payer notional. Daily delta-hedging at COB index level, rolling the options every month to maintain the indicated expiry. ATM: 50% delta payers, OTM: 10% delta payers. We size the trade to be Vega-neutral every day.

Our picks are …

Looking at the different ways to trade this theme and the best entry points, the two trades below look the most attractive to us right now.

Long risk Main 12-100% vs. short risk Crossover

Figure 9. Main Tranche Implied Correlation



Source: Citi Research, Markit. 5y on-the-run equity (0-3%) tranche implied correlation.

We particularly like this trade as it combines our long risk Main vs. short risk Crossover view with one of our other core recommendations: take senior tranche risk in investment grade portfolios. We like this trade from a fundamental, technical and pricing point of view: senior tranches are probably the best way of taking tail risk, it is not a crowded trade and we are seeing investors getting into it now (a trend we expect to continue) and, finally, the tranche is very wide from a historical point of view as the record high tranche correlations indicate (Figure 9).

This trade reflects our highest conviction recommendation: we prefer to take risk by levering up tail / low beta IG / senior financial risk, and we dislike taking high beta risk (such as Crossover or equity tranches).

A 12-100% super senior Main tranche would trade at around 30bp vs. 350bp on Crossover, both 5y Series 22. We would size the trade to be **zero carry** (i.e. trade ~ 11.7x more on the 12-100% tranche).

Investors who can trade **bespoke super senior** should find much more attractive spread levels there (vs. the ones in the standard index market). We would prefer bespoke super senior to index super senior.

Long ATM vs. short OTM (payer) vol

This trade, described in the previous section, fits the theme of this piece and **takes advantage of the structurally high OTM payer vol in the credit options market**: buyers of tail risk are willing to pay fairly high implied correlations, typically to free up regulatory capital in one way or another; and there aren't that many sellers of OTM payers out there. We don't expect this dynamic to change, so the implied vol premium in OTM payers (vs. ATM ones) should remain, allowing the trade to make a steady "carry" as it has over the past year as Figure 8 showed.

If the trade was to be opened today, we would buy January 70bp payer options (~ 47% delta) and sell January 100bp payer options (~11% delta), both delta-hedged on a Vega-neutral ratio (~2.5x more on the OTM payer). There is a link to our online options pricer with the trade here.

Analytics, Past Trade Ideas & Publications

Analytics – Available at Citi Velocity

Options	iTraxx Volatility // CDX Volatility Volatility P&L Report – Credit Indices	**Tranches**	**Main** **Crossover**	Series 9 // Series 21 // Series 22 Series 22 (forthcoming)
Cross Asset	iTraxx Main vs. SX5E (forthcoming) European Cross-Asset Volatility	**Indices**	Main // Crossover // Senior Financials What's moved? CDS Indices Positioning CDS Indices Trading Volumes	
Curves	iTraxx Curve P&L			
Returns	European Credit Derivatives Returns			

Recent Trade Ideas

Options	Long risk cash credit vs. long synthetic vol	30-Oct-14
Options	Buy OTM receivers	28-Oct-14
Indices	Sell the S21-22 roll in SubFin, SenFin and Crossover	2-Oct-14
Options	Main Receiver 1x2s	23-Sep-14
Curves	Short risk 5y Main NonFin vs. Long risk 7-10y iBoxx NonFin	18-Sep-14
Curves	Short risk 5y Xover vs. long risk 10y SenFin	18-Sep-14
Options	Sell Xover vol vs. buy SenFin vol	15-Aug-14
Options	Sell Xover receivers	1-Aug-14
Tranches	Long risk super senior tranches	21-Jul-14
Options	Main receiver 1x2s	13-Jun-14
Options	Main bearish risk reversal	13-Jun-14
Curves	5s10s Senior Fin flattener (J. Faith)	30-May-14
Options	European vs. US credit vol	28-May-14
Tranches	Sell 0-3% Jun-15 S9 protection: outright, vs. CDX IG 5y or vs. SX5E	21-May-15
Indices	Sub/Senior Financials compression (J. Faith)	20-May-15
Curves	5s10s Main Flatteners	25-Apr-14
Options	Main 70-75 May Receiver 1x2	2 Apr 2014
Options	Buy SenFin vs. Sell CDX IG straddles	18 Mar 2014
Single names vs. Index	Releveraging Trade (H. Lorenzen)	24 Feb 2014
Tranches vs. Options	Sell protection and monetize the positive convexity by selling straddles	20 Feb 2014
Tranches	Buy 9-100% S9 Jun-18 protection, delta-hedged	20 Feb 2014
Tranches	Sell 3-6% S9 Jun-18 protection, delta-hedged	20 Feb 2014
Options vs. Curves	Flatteners vs. OTM payers	13 Feb 2014
Options	Sell Main vol, buy SenFin vol	21 Jan 2014
Tranches	More mezz, less seniors - 3-6% vs. super senior	15 Jan 2014

"**European Credit Derivatives Views & Trades**" **Investor Presentation**

Teach-in presentations: CDS / Indices / Options / Tranches

Latest European Credit Derivatives Brief

Other publications

New Crossover Tranches: Our take on pricing, supply-demand and potential trades	13-Oct-14
iTraxx Roll: Expected spreads and preferred trades: Sell the S21-22 roll in Financials and Crossover	2-Oct-14
Cross Asset Volatility: Credit versus Rates: Use credit options to position for the coming rate hike (A. Basu)	24-Sep-14
Where to Find the Best Index Longs: A method for finding value in credit indices (A. Basu)	4-Sep-14
We love the roll	29-Aug-14
An Algorithm-driven Relative Value Signal: A simple method to monetize credit versus equity relative value (A. Basu)	14-Aug-14
Time For Action On The CDS Legal Front: All You Wanted To Know But Were Afraid To Ask About The Switch To The New CDS Contracts	13-Aug-14
Trading volumes in European credit	5-Aug-14
iTraxx Roll - Potential Changes: Crossover to be expanded to 75 names	1-Aug-14
Smart Ways to Sell Credit Volatility (A.Basu)	24 Jul 2014
2014 CDS Definitions getting closer II: Update on protocol and CoCo supplement	11-Jul-14
Hedging the tail – Why real money should consider all options (H. Lorenzen)	1 Jul 2014
Lazy longs for July	23 Jun 2014
Our preferred carry trades in indices, options and tranches	11 Mar 2014
New 2014 CDS Definitions - What's new? What's changing? Why? When? How?	26 Feb 2014
2014 European Credit Outlook: Strategy // Positioning and Trades	13 Jan 2014

Source: Citi Research. Please click the links to see the complete trade ideas and rationales and pricing at time of recommendation.

Trade Recommendations Summary

We are opening the two trades in this report.

Figure 10. Open trades – Summary and P&L

Trade Description	Leg	Format	Direct.	Notnl.	Entry Upfront	Entry Spread	Coupon	Current Upf.	Current Spread	P&L* Total
Releveraging trade	Basket of low spread/leverage CDS	Prot.	Buy	1.00	-3.14%	35	100	-3.30%	32	-0.48%
24-Feb-14	Main NonFins	Prot.	Sell	0.50	-1.54%	67	100	-1.84%	63	0.31%
									Total	**-0.17%**
iTraxx Main 5s10s flattener	Main S21 5y	Prot.	Buy	1.36	-1.42%	71	100	-1.96%	55	-1.47%
25-Apr-14	Main S21 10y	Prot.	Sell	1.00	1.48%	117	100	0.24%	101	1.78%
									Total	**0.30%**
Series 9 Jun-15 0-3%	Series 9 Jun-15 0-3%	Prot.	Sell	1.00	-0.75%	430	500	0.25%	540	1.35%
21-May-14										
									Total	**1.35%**
3-6% vs. Crossover	Sell 3-6% S21 Main prot.	Prot.	Sell	1.00	6.50%	236	100	6.24%	242	0.67%
12-Jun-14	Buy S21 Xover prot.	Prot.	Buy	1.00	-12.13%	234	500	-11.30%	235	-1.21%
									Total	**-0.55%**
Long risk super senior	S9 22-100% Jun-18	Prot.	Sell	1.00	-0.35%	16	25	-0.31%	16	0.04%
21-Jul-14	S9 Index Jun-18	Prot.	Buy	0.20	-4.46%	58	175	-4.31%	55	-0.07%
									Total	**-0.03%**
10y SenFin vs. 5y Xover	10y SenFin S21	Prot.	Sell	1.00	-0.60%	93	100	-0.63%	93	0.17%
18-Sep-14	5y Xover S21	Prot.	Buy	0.45	-11.27%	242	500	-11.30%	235	-0.32%
									Total	**-0.15%**
10y iBoxx vs. 5y Main NonFin	7-10y iBoxx € NonFin	Prot.	Sell	1.00	-0.93%	87	100	-0.83%	89	0.03%
18-Sep-14	5y Main NonFin	Prot.	Buy	0.65	-1.93%	59	100	-1.84%	63	-0.07%
									Total	**-0.04%**
Sell S21-22 SenFin roll	S21 SenFin 5y	Prot.	Buy	1.00	-2.06%	56	100	-1.93%	58	0.05%
06-Oct-14	S22 SenFin 10y	Prot.	Sell	1.00	-1.89%	63	100	-1.67%	67	-0.13%
									Total	**-0.08%**
Sell S21-22 SubFin roll	S21 SubFin 5y	Prot.	Buy	1.50	-0.83%	82	100	-0.65%	86	0.13%
06-Oct-14	S22 SubFin 10y	Prot.	Sell	1.00	2.24%	145	100	2.74%	156	-0.42%
									Total	**-0.29%**
Sell S21-22 Crossover roll	S21 Crossover 5y	Prot.	Buy	1.35	-11.55%	234	500	-11.30%	235	-0.24%
06-Oct-14	S22 Crossover 10y	Prot.	Sell	1.00	-7.63%	332	500	-6.67%	350	-0.54%
									Total	**-0.78%**
€ iBoxx IG & Buy Main Vol	€ iBoxx IG	Prot.	Sell	1.00	-0.43%	91	100	-0.50%	90	0.10%
29-Oct-14	Buy 3m ATM Main Vol ***	Price	Buy	3.00	0.00%			-0.07%		-0.20%
									Total	**-0.10%**
Main super senior vs. Crossover	Sell 12-100% S225y Prot.	Prot.	Sell	1.00	-3.56%	30	100			
07-Nov-14	Buy S22 5y Xover prot.	Prot.	Buy	11.70	-6.67%	350	500			
									Total	
OTM vs. ATM vol 3m Main ***	Sell 10% delta DH payers	Price	Sell	1.00	0.00%					
07-Nov-14	Buy 50% delta DH payers	Price	Buy	2.90	0.00%					
									Total	

Source: Citi Research. Spreads and coupons in bp. * P&L expressed as % of the leg with notional equal to 1. ** Over the last month. Prices as of COB yesterday. *** We track the trade P&L by using an initial 0% upfront and a current upfront equal to the trade P&L in %. DH = delta hedged. As of COB 6-Nov-14.

Figure 11. Open and closed trades summary statistics

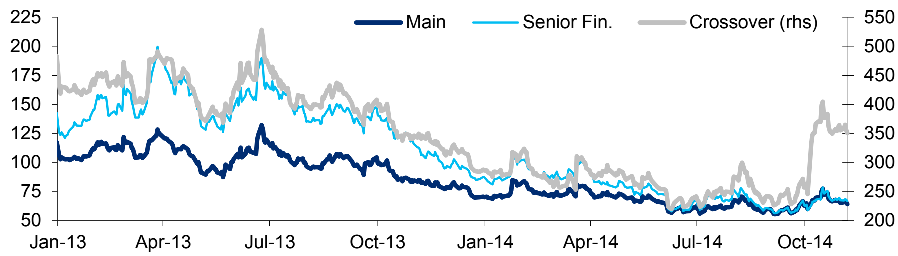
Number	Open	Closed*
In profit	2	25
In loss	9	10
	11	35

Percentage	Open	Closed*
In profit	**18%**	**71%**
In loss	**82%**	**29%**

Source: Citi Research. * Since 1-Jun-13. Excluding the trade ideas opened in the current publication.

Representative Market Conditions

Figure 12. Historical spreads – iTraxx 5y on-the-run indices Period: 1-Jan-13 – COB yesterday



Source: Citi Research, Markit. In bp.

Figure 13. Recently closed trades – Summary and P&L

Trade Description	Leg	Format	Direct.	Notnl.	Upfront	Spread	Coupon	Upfront	Spread	Total
Main May Rec 1x2s	Main May 75bp Rec	Price	Buy	1.00	0.24%			0.16%		-0.08%
Open: 2-Apr-14	Main May 70bp Rec	Price	Sell	2.00	0.10%			0.02%		0.16%
Close: 20-May-14									Total	0.09%
Flattener vs. OTM payer ***	3s5s flattener Main	Price	Buy	1.00	0.00%			0.36%		0.36%
Open: 13-Feb-14	Sell 3m 120bp Main payer	Price	Buy	0.75	0.00%			0.12%		0.09%
Close: 27-May-14									Total	0.44%
Senior Fin vs. CDX IG straddle	SenFin Jun-14 90bp straddle	Price	Buy	1.00	0.97%			0.79%		-0.18%
Open: 18-Mar-14	CDX IG Jun-14 65bp straddle	Price	Sell	1.90	0.51%			0.19%		0.61%
Close: 27-May-14									Total	0.43%
Equity tranche vs. straddle ***	Sell Jun-18 S9 equity prot., DH	Price	Buy	1.00	0.00%			-1.48%		-1.48%
Open: 20-Feb-14	Sell 1m Main straddles, DH	Price	Buy	0.50	0.00%			0.33%		0.16%
Close: 21-Jul-14									Total	-1.31%
Main vs.CDX IG ***	Sell 3m Main DH straddles	Price	Buy	1.00	0.00%			-0.05%		-0.05%
Open: 28-May-14	Buy 3m CDX IG DH straddles	Price	Sell	1.00	0.00%			-0.07%		0.07%
Close: 21-Jul-14									Total	0.02%
Main July Rec 1x2s	Main July 60bp Rec	Price	Buy	1.00	0.13%			0.00%		-0.13%
Open: 13-Jun-14	Main July 55bp Rec	Price	Sell	2.00	0.04%			0.00%		0.09%
Close: 16-Jul-14									Total	-0.04%
Sell Xover Receiver	Xover Aug 250bp Rec	Price	Sell	1.00	0.14%			0.00%		0.14%
Open: 1-Aug-14										
Close: Expired									Total	0.14%
Xover vs. SenFin vol ***	Sell 6m Xover DH straddles	Price	Buy	1.00	0.00%			0.50%		0.50%
Open: 15-Aug-14	Buy 6m SenFin DH straddles	Price	Sell	4.00	0.00%			-0.04%		0.15%
Close: 28-Aug-14									Total	0.65%
Main Oct Receiver 1x2	60bp receiver	Price	Buy	1.00	0.15%			0.00%		-0.15%
Open: 23-Sep-14	55bp receiver	Price	Sell	2.00	0.05%			0.00%		0.10%
Close: Expired									Total	-0.05%
Sell 1m Main straddles ***	Sell 1m Main straddles	Price	Buy	1.00	0.00%			0.99%		0.99%
Open: 9-Jan-14										
Close: 29-Oct-14									Total	0.99%
Payer spread vs. index long ***	Buy 3m 25-60% pay spread	Price	Buy	1.00	0.00%			-0.54%		-0.54%
Open: 9-Jan-14	Sell index prot.	Price	Buy	1.00	0.00%			1.33%		1.33%
Close: 29-Oct-14									Total	0.79%
SenFin vs. Xover Recs ***	Buy 3m SenFin Recs	Price	Buy	1.00	0.00%			0.84%		0.84%
Open: 9-Jan-14	Sell 3m Xover Recs	Price	Buy	0.29	0.00%			-2.29%		-0.67%
Close: 29-Oct-14									Total	0.17%

Source: Citi Research. Spreads and coupons in bp. * P&L expressed as % of the leg with notional equal to 1. *** We track the trade P&L by using an initial 0% upfront and a final upfront equal to the trade P&L in %.

Notes: The list of open trades reflects our current views; we have no plans to provide regular coverage or updates to these trades. P&L on trade ideas includes carry and roll costs but not trading commissions/costs. Results should not, and cannot, be viewed as an indicator of future performance.

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Risks

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Appendix A-1

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