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European Credit Derivatives– Views and Trades

The tightening has legs … no sign of synthetic hedgers

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- **Short term – Surprising absence of hedging activity in options or indices: the tightening has no resistance**. So far this year investors were quick to add hedges whenever we got close to the tights; this time around we haven't seen anything like that at all. Moreover, the options market, which is the first place where investors have historically reached out for hedges, is seeing pretty much the opposite: buyers of bullish risk reversals and receiver 1x2s, to position for tighter spreads. **It's not only that investors are not hedging; it's also that cash continues strong and investors better buyers** – reporting strong inflows.

- **Trades we like**:
  - Flatteners (from 3s5s to 5s10s): alone or vs. selling OTM payers to play tail risk relative value
  - SenFin to outperform Main, Main to outperform Xover
  - Selling straddles (get carry by positioning for a range-bound market) & Receiver 1x2s
  - Junior over mezz tranches. Sell equity protection & monetize the gamma by selling straddles: pay for carry with default risk.

- **Medium term reluctant bulls - Tighter** — Spreads tightening 10-15% in 2014.

- **More appetite to lever up, less to spend precious money on hedges** — Winners & losers:
  - Synthetics vs. Cash; Investment grade vs. high yield (in synthetics).

- **Lower vol** — Expect widening episodes where spreads realize high vol, but they should be infrequent and short lived.

Contents

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. Please contact us for more details on the trades discussed.

Analytic Reports @ Citi Velocity

Options	iTraxx Volatility Report CDX Volatility Report European Cross-Asset Volatility Report Volatility P&L Report – Credit Indices	**Tranches**	iTraxx Series 9 Tranche Report iTraxx Series 19 Tranche Report
Curves	iTraxx Curve P&L Report	**Indices**	CDS Indices Positioning Report CDS Indices Trading Volumes Report
Returns	European Credit Derivatives Returns		

Pricing Tools and Databases

Options	Online option pricing tool Options overview page	**Historical database**	Single name CDS CDS Indices Options Tranches

Model Portfolio

Found at the back of all of our trade idea publications.

Medium Term Views

Strategy

- **Reluctant bulls – Tighter**

  We see spreads ending the year 10-15% tighter than currently with balance of risks probably to the tighter side of that forecast.

- The Year of the Greater Fool's Game?(Jan-14)
  - Strategy
  - Positioning and trades
- When will the credit cycle turn? And would spreads actually widen?, Apr-14.

Figure 1. Citi 2014 Forecasts (As of 13-Jan-14)

	Current	14F target	Excess return	Total return
iBoxx € Corp	105bp	90bp	1.5%	3%
iBoxx € HY	320bp	290bp	2.5%	4%
iTraxx Main	72bp	60bp	1.3%	-
iTraxx Xover	285bp	240bp	5.0%	-

Source: Citi Research. Note: Targets have been revised slightly tighter from the previous forecast from 3 December 2013.

- **For the wrong reasons …**

  Lots not to like: Valuations are rich, leverage is rising, inflows have dropped dramatically and positions seem very long by recent standards.

- **Too much money…** – Yet central bank policies are keeping supply-demand across financial markets severely imbalanced.
- **Visible triggers for 2014 look rather tame.**
- **"Must make money"** – Like it or not, credit investors are getting dragged into the old game of leveraging up exposures. Few can afford to wait for a trigger to bring about better valuations, fewer still can make sufficient returns through alpha alone.

- **On the back of a potential ECB QE, we recently reviewed our YE spread targets** (25-Apr):
  - From 90 to 80bp in iBoxx IG
  - From 290 to 265bp in iBoxx HY

Derivatives

- **Game Changer**

  2014 to be very different from what we've been used to

  Think 2005-07 …

  Not like that in terms of volumes, just direction

  – At current or tighter levels, we think relative value relationships will be much closer to the ones back in 2005-2008 than the ones over the past three years.

- **Tighter spreads, lower vol**

  – We do expect widening episodes where spreads realize high vol, but we think they will be:

    - Less frequent than we've grown used to, and
    - Relatively short lived as investors are quick to take the other side in a market where timing will be one of the very few ways to make any alpha.

- **Much harder to reach spread targets**

- **Lower propensity to spend money on synthetic hedges**

  – Derivs conversations from: "*how do I hedge*" to "*how do I get Xbp*".

- **More synthetic leverage to make target returns**

  Main beneficiaries:

  – Synthetics vs. cash

  – Main vs. Xover

    - In synthetics, investment grade spreads should be the main beneficiaries on the back of investors looking for leverage.
    - In a low volatility environment we believe investors will be more inclined (than in the recent past) to look for high spread longs by levering up investment grade spreads than by venturing into high yield.

  – Equity and (especially) Mezz vs. Senior tranches

- **Using options to make money, not only to hedge**

  – Expect the premium of implied to realised vol to continue compressing.

  – Continue to sell short dated no-delta straddles to add carry.

  – Sell vol when the implied to realised ratio gets high.

  – Real money to sell receivers when not bullish.

Short Term Views

Nobody seems willing to take the other side of the tightening …

- **Very little seems to be going on, and trading volumes are clearly falling**:
  - Volumes have been dropping steadily in cash bonds
  - In indices they held pretty well until April, but they had a pretty bad month, with volumes 40% down
  - Even in options volumes slowed down over the past couple of weeks, from a pretty good start of the year
- **After reaching the tights of the year, the most surprising thing is the absence of any hedging activity in options or indices**
  - So far this year investors were quick to add hedges whenever we got close to the tights, but this time around we haven't seen anything like that at all.
- Moreover, the options market, which is the first place where investors have reached out for hedges is seeing pretty much the opposite:
  - Buyers of bullish risk reversals and receiver 1x2s, to position for tighter spreads.
- It's not only that investors are not hedging; it's also that cash continues strong and investors better buyers of bonds.
- Our survey indicates that inflows remain strong.
- **No resistance to the movement tighter**
- **If we do go tighter, we think the main beneficiaries, at least in synthetics will be**:
  - **Fins over Main, and Main over Xover**.
  - In options, implied vol should catch up vs. realised – i.e. go lower, and the interest in selling payers to buy receivers should continue, flattening the skew.
  - In curves, we would expect the 3s5s flattening to stop and the **5s10s to start flattening**.
  - Hopefully that'll also mean a pick up on tranche volumes.

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Positioning & Trade Ideas Menu

Indices

- **Xover / Main** Decompression
- **Senior Fins** to trade inside **Main**
- Still like **3s5s flatteners, but like 5s10s better …**

Tranches

- **Equity – Positive/Neutral**. Lower return but faithful client base. No change, it should continue doing ok, but not stellar returns like previous years.
- **Mezz – Bearish until we tighten a bit more**. We need tighter spreads for real money investors to be willing to lever up via mezz tranches. Will perform in the second leg of the tightening.
- **Seniors – Getting constructive**. Surprisingly to us, we are finding investors willing to sell super senior protection in size, taking advantage of the very high correlations.

Options

- **Sell short dated straddles** – More attractive way of earning carry than going outright long.

  Main 70bp Jun straddle: ~62/78bp breakevens.
- **Receiver 1x2s** – Aggressive tightening unlikely.
- **Buy SenFin straddles vs. CDX IG straddles** – Beta of European Financials to US corporates under-priced.
- **Sell OTM puts** – **against 3s5s flatteners**.
  - Hard trade to pitch though.
- 2014 systematic trades:
  - Sell the range via 1m no-delta straddles
  - Use payer spreads to hedge.
  - Sell Xover vs. buy SenFin receivers.

Options vs. Tranches

- **Sell equity protection & monetise convexity selling options**.

Positioning & Trade Ideas Menu (cont.)

- **Cash vs. Synthetics**
  - – Outperformance of CDS over cash
    - Structural negative basis
  - – Keep spread duration short in cash and long in CDS
    - Flat curves in cash bonds, steep in CDS

- 2013 Trading Volumes in European Credit: CDS Indices, Single Name CDS and IG Bonds

  European IG investors trade more CDS indices (Main) and fewer bonds. The 13% increase in iTraxx Main (on-the-run) trading volumes in 2013 (vs. 2012) together with the 15% decrease in cash bond volumes (€ iBoxx IG universe) is a reflection of this year's high uncertainty and low conviction among European investors.
    - More hedging via index products.
    - Fears of outflows and lower liquidity in bonds have pushed many investors to (i) maintain higher than usual cash balances and (ii) use CDS index longs to make up the lost carry.

- **Cash Bonds**
  - – Preferred way to get the carry:

    Subordination > credit risk > duration risk
  - – Financials to outperform non-financials further
  - – Cash investors with flexibility to do CDS should:
    - Hold less bonds and higher cash balances
    - Make up the lost carry by adding index longs

      We expect CDS to do better in a tightening (as investors reach out for leverage) and in a capitulation scenario (as investors force-sell bonds), but worse in moderate widenings (as investors rush for synthetic hedges).

      Liquidity in indices is much higher, at the cost of higher vol.

Credit Derivatives Returns

Figure 2. Cumulative returns as of COB 9-May-14

Unfunded CDS indices, options and tranches

Return of a long risk position as % of notional traded. Daily delta-hedged for options/tranches.

CDS Indices

	1m	3m	12m
Main	0.2%	1.2%	3.1%
Sen. Fin.	0.4%	1.8%	5.4%
Xover	1.0%	4.8%	13.4%

iTraxx Main Steepeners (DVO1-weighted)

	1m	3m	12m
3s5s	-0.1%	-0.4%	-0.7%
5s10s	0.1%	0.3%	1.3%

Main S9 10y tranches Delta-hedged

	1m	3m	12m
0-3%	-0.1%	-0.2%	4.7%
3-6%	-0.4%	-0.5%	2.8%
6-9%	-0.1%	-0.2%	2.2%
9-12%	-0.1%	-0.2%	0.8%
12-22%	-0.1%	-0.3%	-0.9%
22-100%	0.02%	0.06%	-0.31%

Main Straddle Delta-hedged

	1m	3m	12m
1m	0.0%	0.3%	0.7%
3m	0.0%	0.1%	0.3%

Funded CDS indices, cash bond indices and equities

Return of a long risk position as % of notional traded.

CDS Indices (funded)

	1m	3m	12m
Main	0.8%	2.4%	4.1%
Sen. Fin.	1.0%	3.0%	6.5%
Xover	1.5%	6.1%	14.4%
iTraxx IG*	0.8%	2.7%	5.2%

iBoxx indices

	1m	3m	12m
€ iBoxx IG Corp.	1.2%	2.4%	3.8%
€ iBoxx Senior Fins	1.0%	2.0%	3.3%
€ iBoxx HY Corp.	0.8%	3.0%	8.0%

Equity indices

	1m	3m	12m
SX5E	1.0%	5.7%	17.5%
SX7E	-3.2%	2.6%	32.6%

The index position is rolled at roll dates.
Curves: Using on-the-run indices and rolling the curve position at roll dates and/or when the trade DVO1 ratio differs more than 5% from the current ratio.
Options: Rolling the options every month to maintain the indicated expiry.
Funding for CDS indices: 5y swaps.
iTraxx IG*: 60% NonFin, 30% SenFin, 10% SubFin.

Source: Citi Research, Markit, Bloomberg, iBoxx.

Credit Derivatives Returns: Long risk CDS index vs. Cash and vs. Stocks

Figure 3. Long risk iTraxx IG* vs. short risk € iBoxx IG Corp. (beta-weighted)

Return as % of Funded iTraxx IG* notional. Using a 3m beta-weighted notional for the € iBoxx IG Corp.

Figure 4. Long risk Sen. Fin. vs. short risk € iBoxx Senior Fins (beta-weighted)

Return as % of Funded Sen. Fin. notional. Using a 3m beta-weighted notional for the € iBoxx Sen. Fins.

Figure 5. Long risk Main vs. short risk SX5E (beta-weighted)

Return as % of Unfunded Main notional. Using a 3m beta-weighted notional for the SX5E.

Figure 6. Long risk Sen. Fin. vs. short risk SX7E (beta-weighted)

Return as % of Unfunded Sen. Fin. notional. Using a 3m beta-weighted notional for the SX7E.

Source: Citi Research, Markit, Bloomberg, iBoxx. iTraxx IG*: 60% NonFin, 30% SenFin, 10% SubFin.

Investor Positioning

CDS Indices

- **Non-dealers are very long risk iTraxx Main, CDX IG** and HY.
  - Post roll, investors have added sizable longs in Main S21.
- In Europe, shorts very pronounced in Crossover (esp. S20).
- In iTraxx Fins investors remain short, as usual.
- Weekly CDS Indices Positioning Report

Figure 7. iTraxx Main vs. Crossover

Non-dealer positioning, in $bn. +ve/-ve: non-dealers long/short risk.

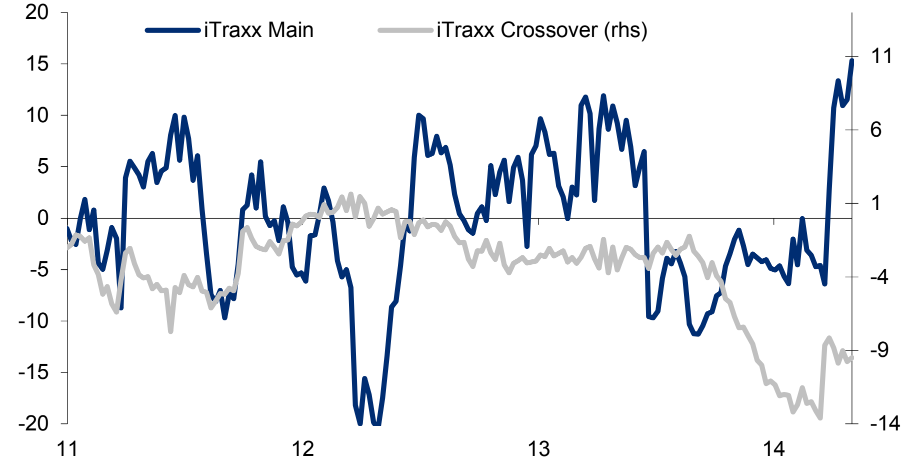


Figure 8. iTraxx Main vs. CDX IG

Non-dealer positioning, in $bn. +ve/-ve: non-dealers long/short risk.

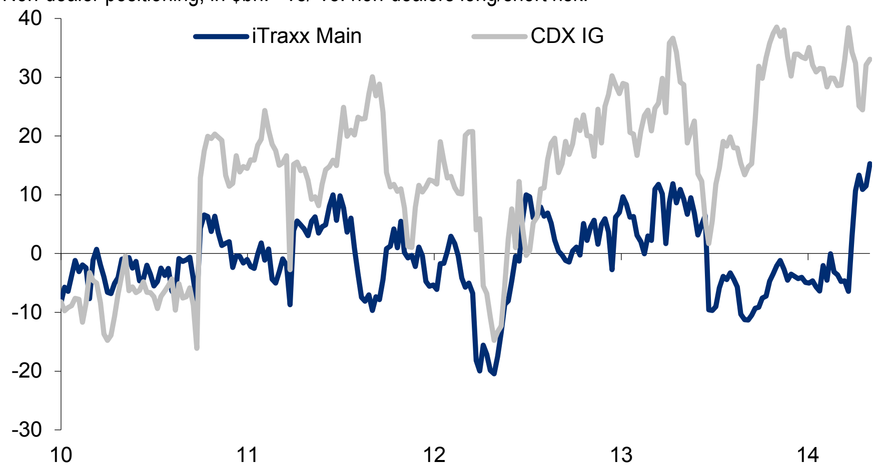
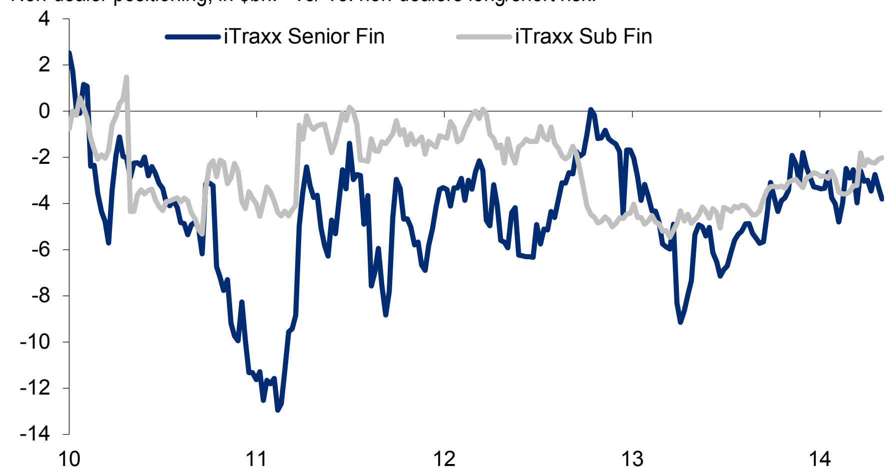


Figure 9. iTraxx Senior vs. Sub Financials

Non-dealer positioning, in $bn. +ve/-ve: non-dealers long/short risk.



Source: Citi Research, DTCC.

European Credit Survey

- **The aggregate long in credit grew for the first time this year**
- **Inflows declined slightly across currencies, but they remain elevated relative to recent history**
- Most of the extension in positions came from the highest-beta sectors: Insurance, HY, Non-Financial Hybrids and Tier I
- The long in Core Europe is now at its lowest level on record, whilst positions in the Periphery are at their highest level this year
- In line with our view, most (55%) of the respondents to our Question of the Month are expecting the ECB to launch QE this year
- Although the survey shows a slight weakening in the technical that we found so encouraging last month, the changes are so modest that the survey leaves us comfortable with the long we've been advocating
- Latest Global Credit Survey:

  Not as benign, but should still be fine, 30-Apr.

Figure 10. EUR positions in credit vs. cash inflows

From -2 (very short) to +2 (very long).

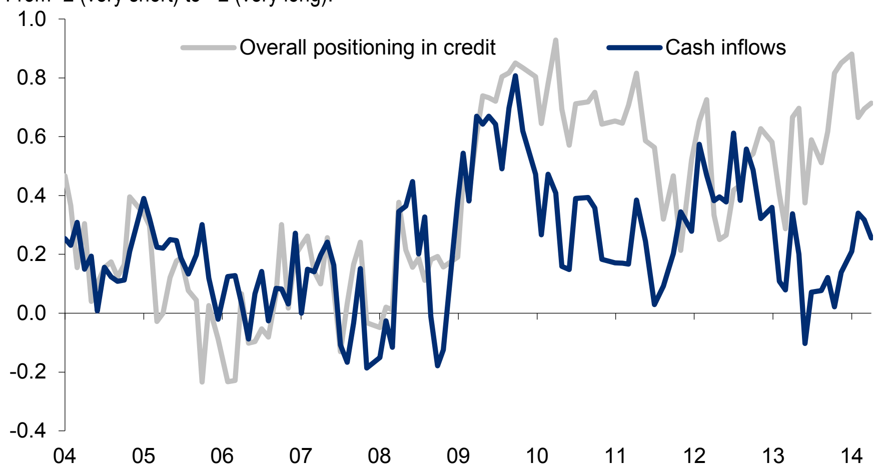
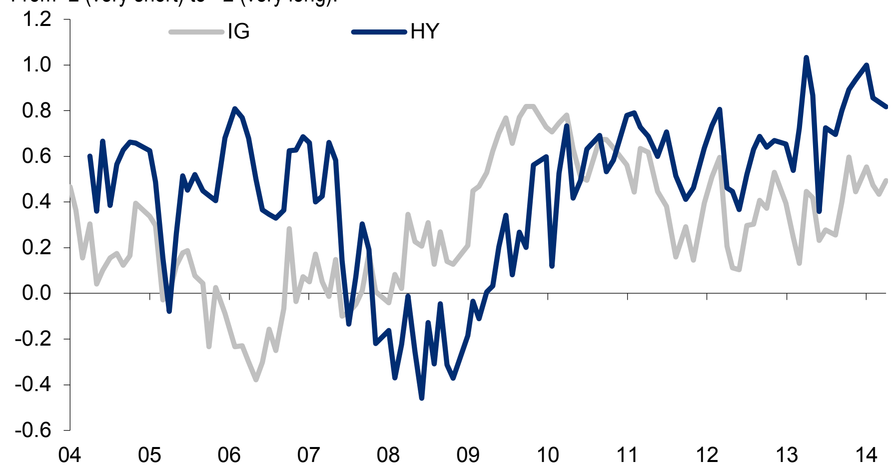


Figure 11. EUR Positions in IG vs. HY

From -2 (very short) to +2 (very long).



Source: Citi Research.

Cash-CDS Basis

- **Medium term – Expect synthetics to underperform in moderate widenings, but outperform otherwise**.
  - Tailwinds for synthetics in a stable/tightening market. Easier to lever up, higher liquidity.
  - More volatility in synthetics. Higher use of synthetics by real money, as short term trades, to hedge (e.g. options) and to add risk (e.g. indices and tranches).

Figure 12. iBoxx IG vs. iTraxx* Spreads

On-the-run indices, bp.* 60% NonFin, 30% SenFin, 10% SubFin.

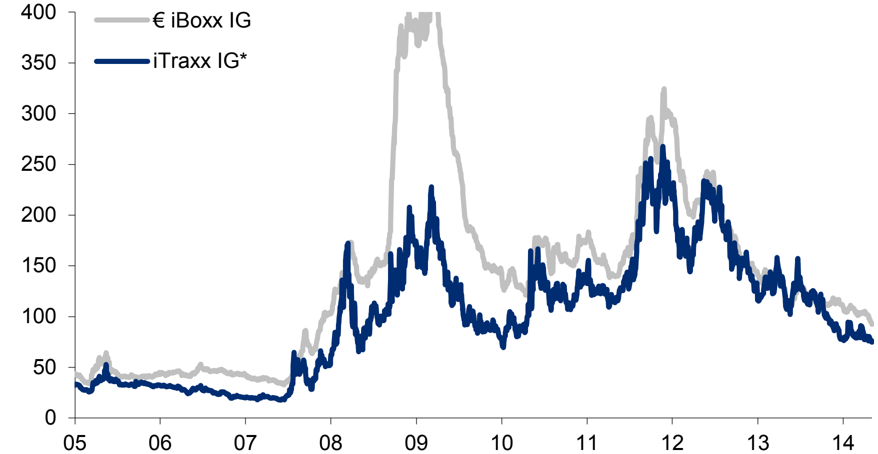


Figure 13. iBoxx IG vs. iTraxx* Spreads

On-the-run indices, bp.* 60% NonFin, 30% SenFin, 10% SubFin.

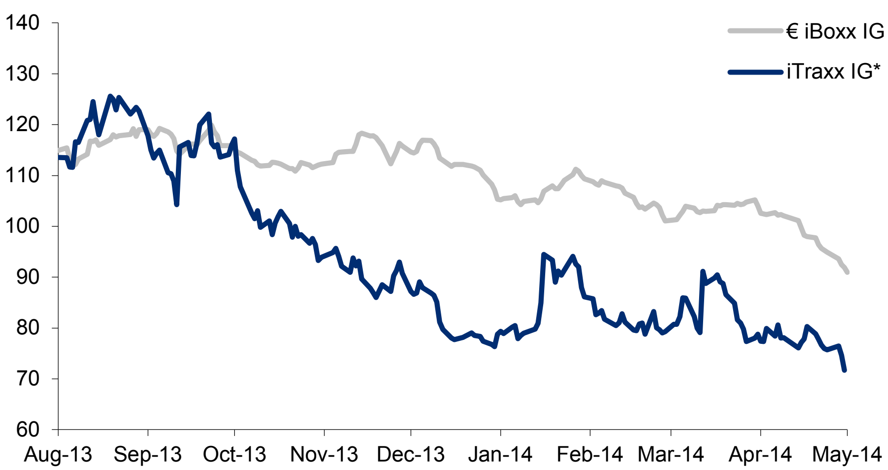
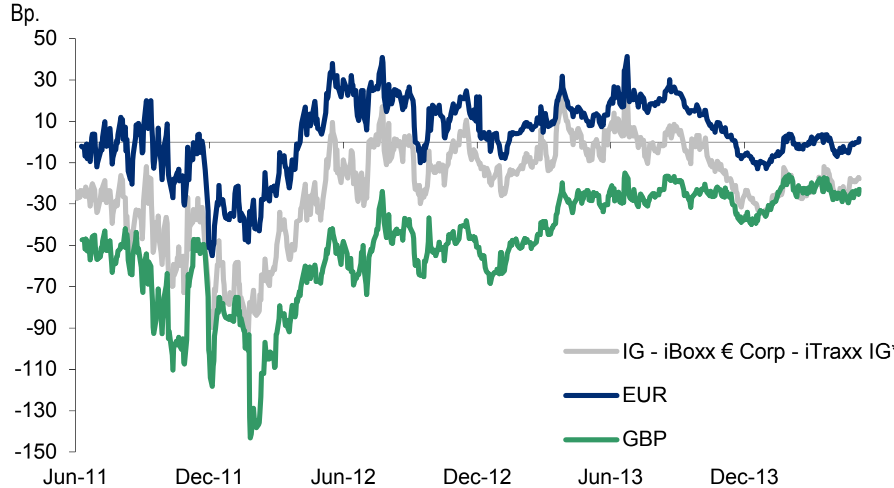


Figure 14. Bond-CDS Basis

Bp.



Source: Citi Research, Markit.

Index Skews

- **Starting to turn negative**, but only just so, after the sharp recent tightening.

Figure 15. iTraxx Main and Crossover

5y on-the-run indices, bp.

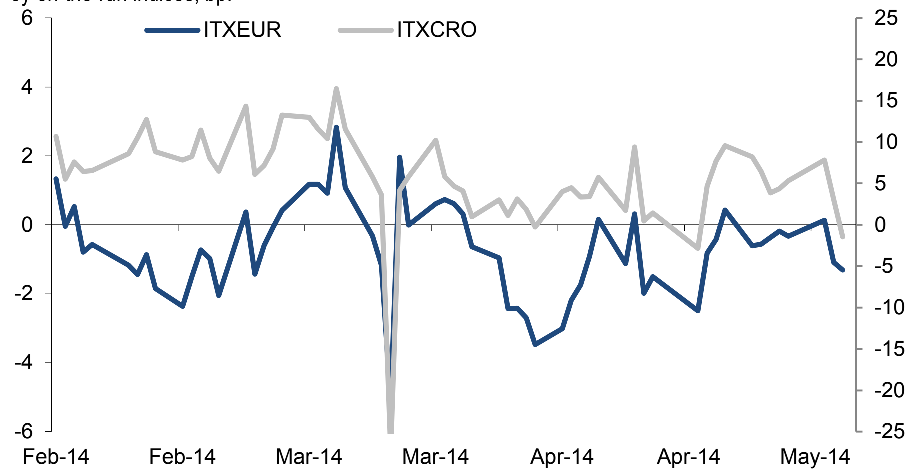


Figure 16. iTraxx Main and CDX IG

5y on-the-run indices, bp.

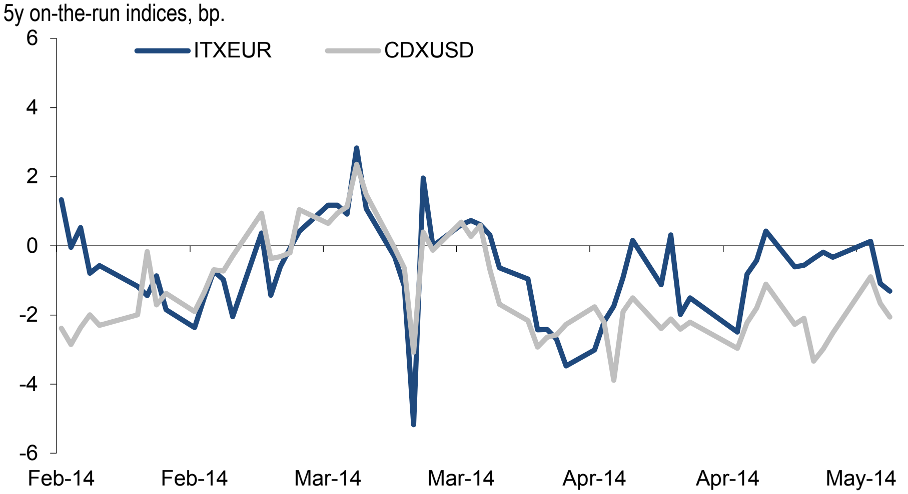
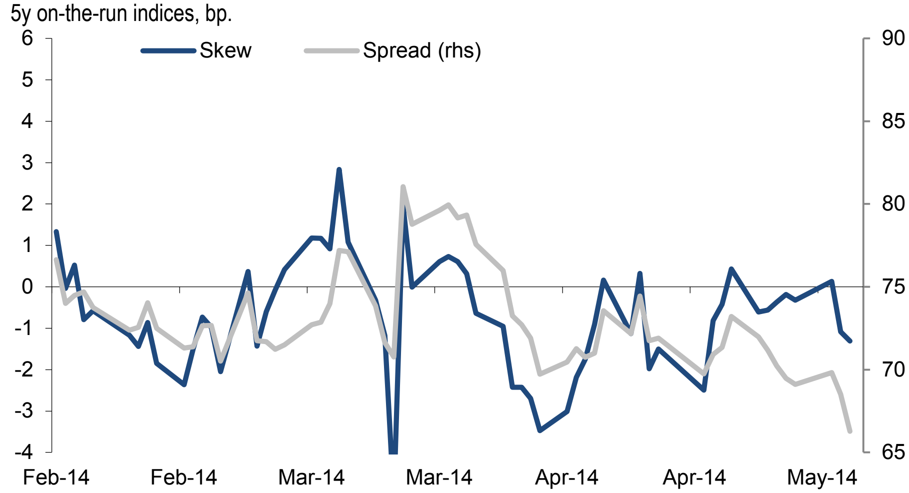


Figure 17. iTraxx Main spreads vs. skew

5y on-the-run indices, bp.



Source: Citi Research, Markit.

Indices Relative Value

Xover / Main Decompression

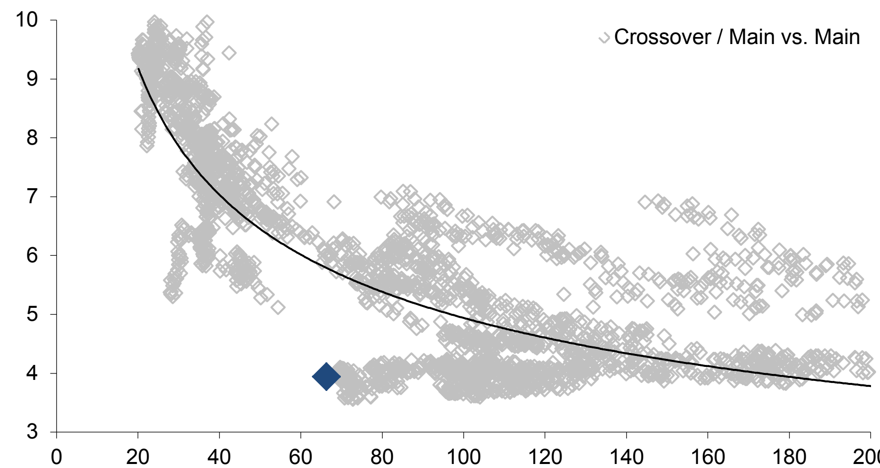
- Over the last few years the ratio between Main and Crossover has been comparatively stable at a much lower multiple that we saw from 2005-07.
- The ratio of Crossover to Main spreads has spent most of the past two years at around 4x, a level which in a historical context looks too low when compared to the currently tight spread levels.
- European Credit Outlook 2014 - Positioning and trades
- Assuming spreads tighten further or stabilize this year, we reckon that the market dynamics will gradually revert to something more similar to that which we saw before the crisis. Granted, the quality of the Crossover index has improved, but **in a low volatility environment we believe investors will be more inclined to look for carry by levering up IG spreads than by venturing further into high yield**, where valuations look increasingly stretched.
- **We believe the downside on this trade is limited** if we widen and the upside is significant if we continue tightening.

Figure 18. Ratio of Xover to Main spreads

5y on-the-run indices.

Figure 19. Ratio of Xover to Main spreads vs. Main spreads

Y-axis: spread ratio. X-axis: Main 5y spreads, in bp..



Source: Citi Research, Markit.

Long Senior Financials vs. Main

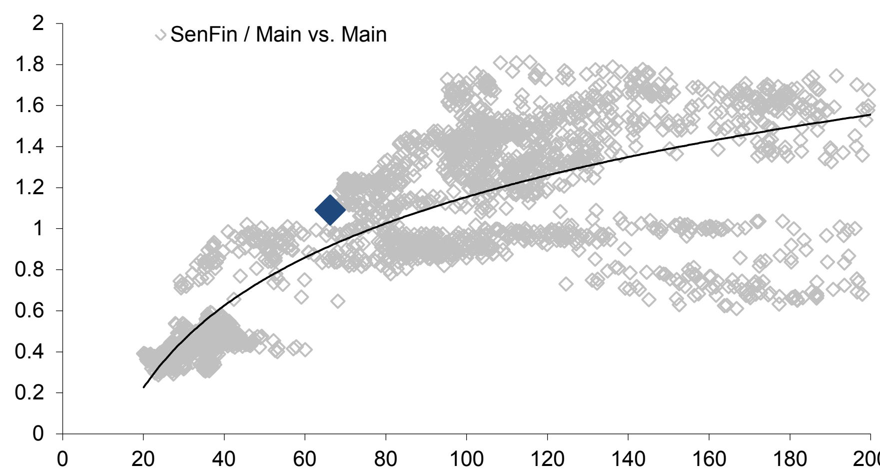
- The outperformance of financials is another trend we expect to continue playing out in 2014 as investors adjust to a new world of tight spreads, where every basis point counts.
- As we highlighted in early November, the comparatively high ratio between financials and non-financials, proxied by Senior Fins to Main, has been tempting investors into compression trades.
- European Credit Outlook 2014 - Positioning and trades
- Although the trade has started to play out, we still believe it has room to run further, especially if the ECB ends up implementing QE.
- **We expect to see Senior Financial spreads trading inside Main in 2014**.

Figure 20. Ratio of Senior Fins to Main spreads

5y on-the-run indices.

Figure 21. Ratio of Senior Fins to Main spreads vs. Main spreads

Y-axis: spread ratio. X-axis: Main 5y spreads, in bp.



Source: Citi Research, Markit.

Europe vs. US

- Consensus view is long Europe vs. US.
  - We would expect Europe to outperform in a movement tighter (ECB QE)
  - But likely underperform in an EM-led widening
- **Best to play it via options**:
  - Buy Main or SenFin straddles
  - Sell CDX IG straddles

Figure 22. Xover – CDX HY spread difference

5y on-the-run indices.

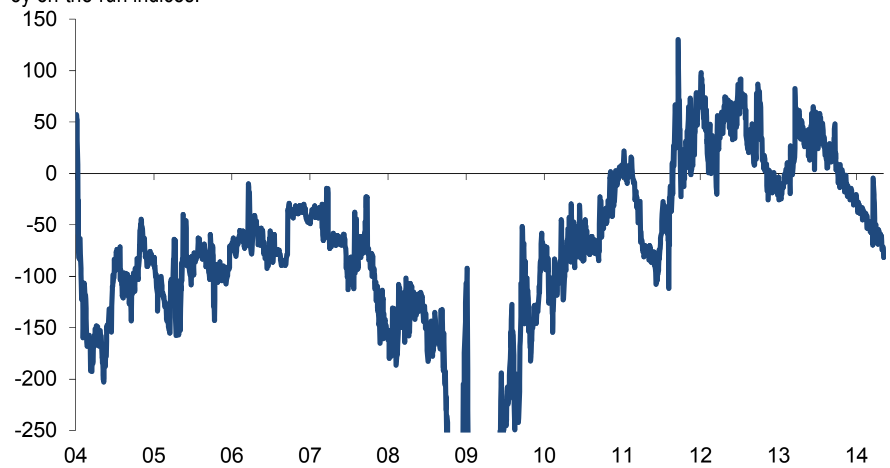


Figure 23. Main – CDX IG spread difference

5y on-the-run indices.

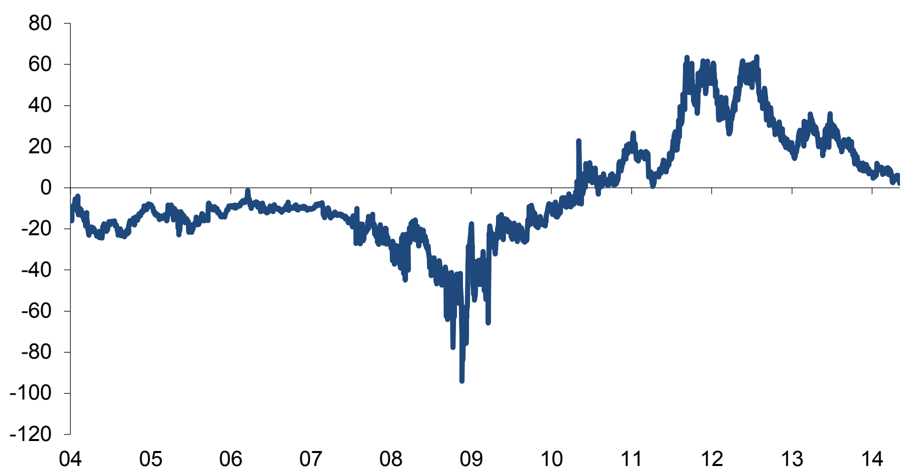
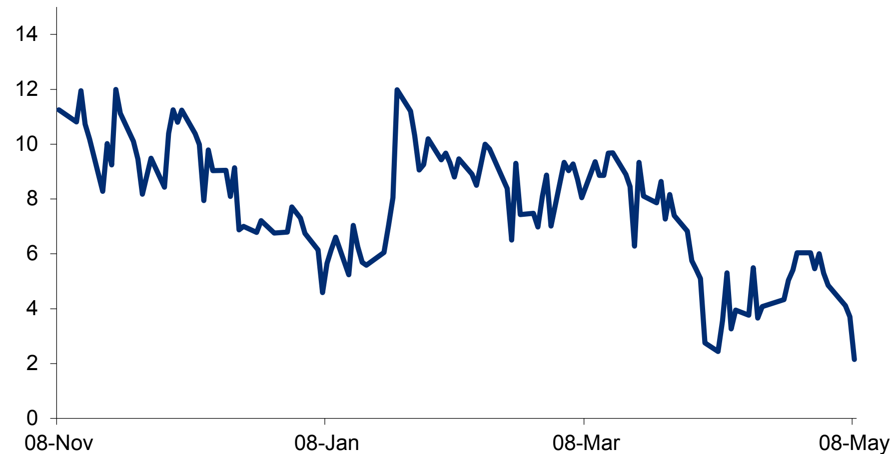


Figure 24. Main – CDX IG spread difference

5y on-the-run indices.



Source: Citi Research, Markit.

Curves

- **There still may be some P&L left in 3s5s flatteners, but they are not as attractive as they were earlier this year – we would scale back**. 3s5s flatteners still positive carry + roll down, but crowded and directional.
- **As 3s5s flatteners become less attractive, 5s10s become more so after their recent steepening – we would start adding them**. Carry + roll down not yet positive, but not crowded and less directional.
- **Trade: Main duration weighted 5s10s flatteners**, funding their running cost by reducing the amount of the 5y short risk leg

Figure 25. iTraxx Main Curves

On-the-run indices, bp.

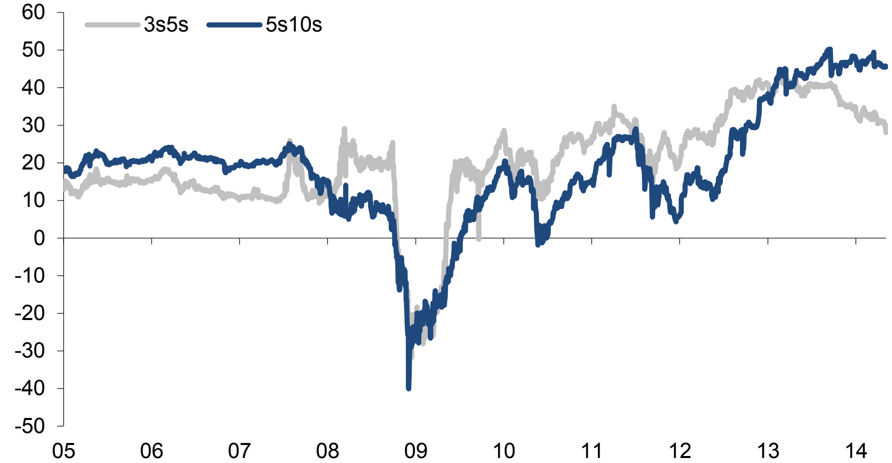


Figure 26. iTraxx Crossover Curves

On-the-run indices, bp.

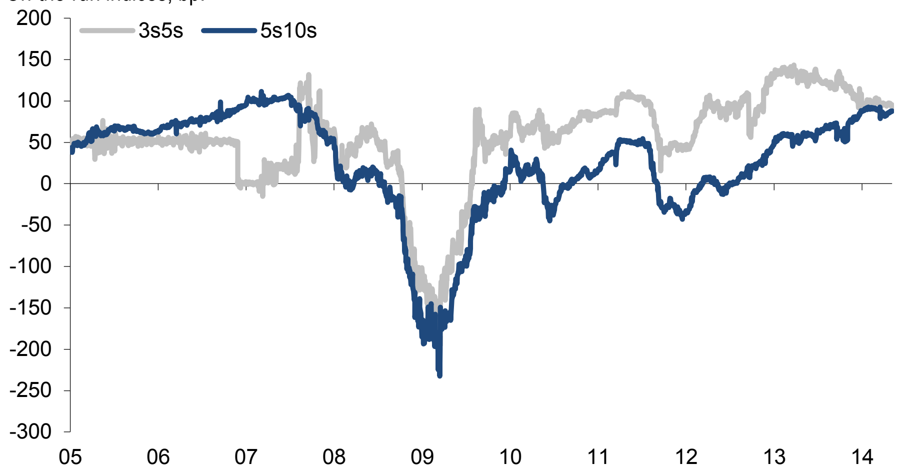
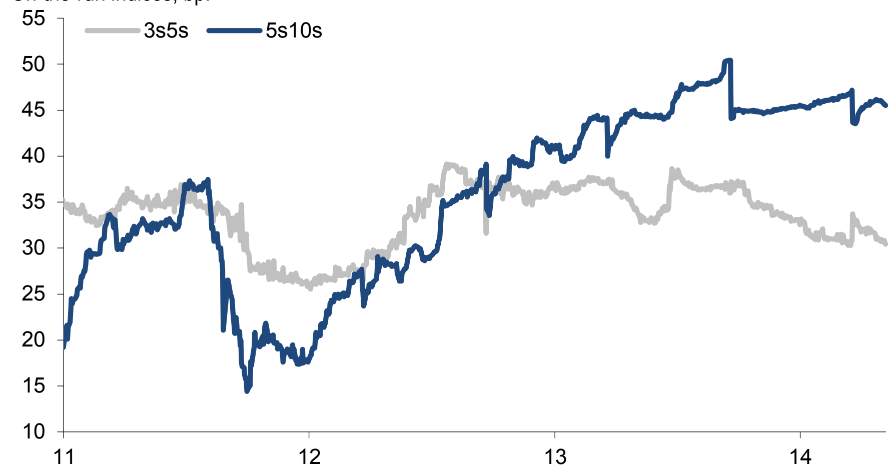


Figure 27. CDX IG Curves

On-the-run indices, bp.



Source: Citi Research, Markit.

iTraxx Main

Figure 28. Spread curves

On-the-run indices, bp.

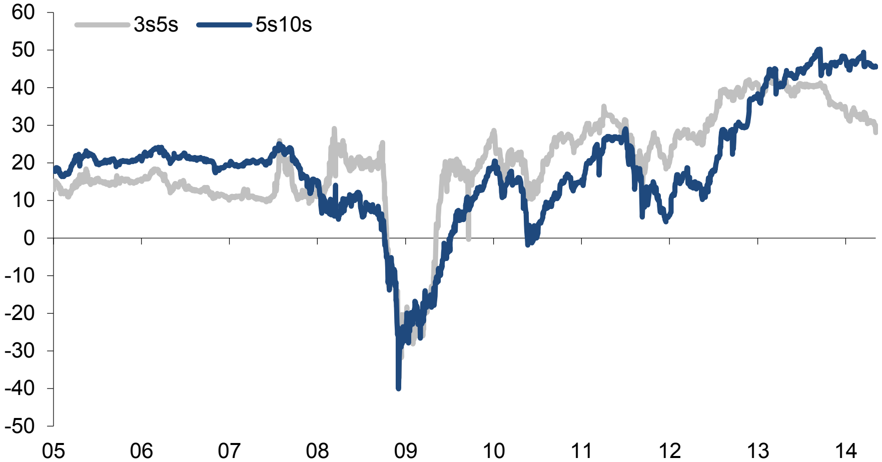


Figure 29. Annual carry (exc. roll down) of DVO1 neutral flatteners

On-the-run indices, bp. Assuming full running spread trading (i.e. no upfront, coupon = spread).

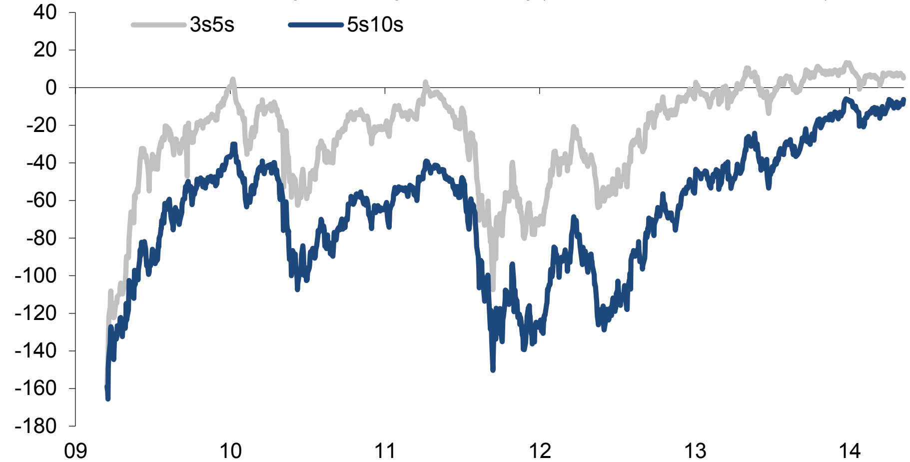


Figure 30. 3s5s vs. 5y spread

On-the-run indices, in bp.

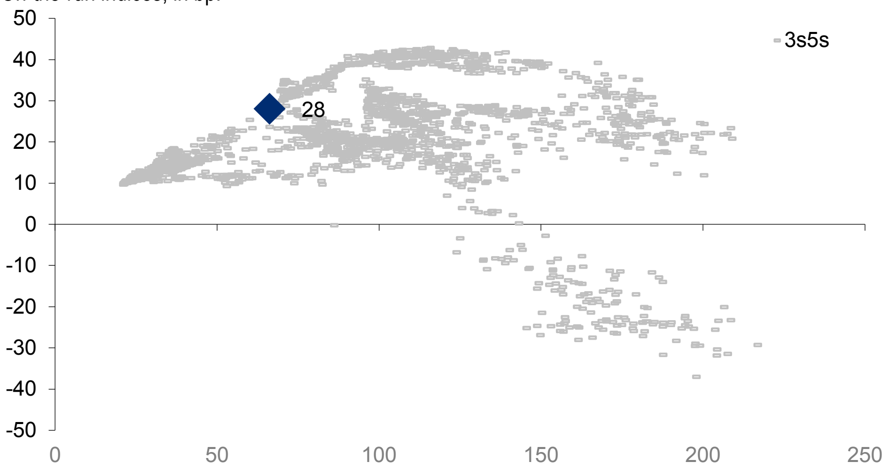
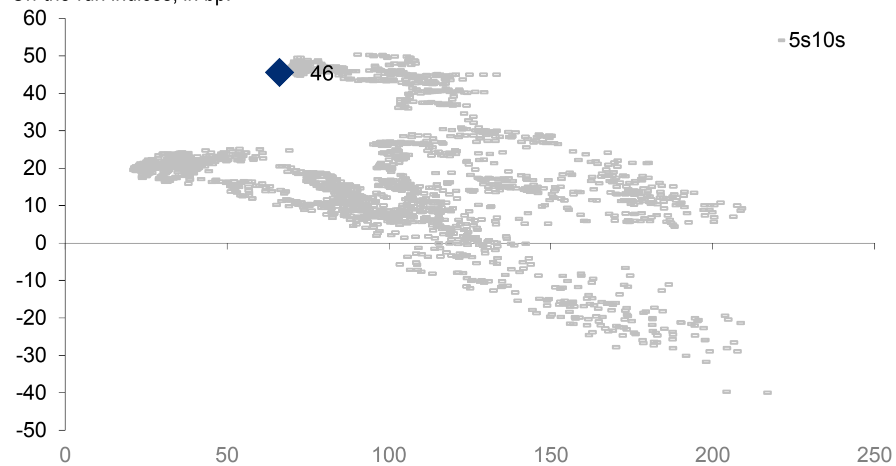


Figure 31. 5s10s vs. 5y spread

On-the-run indices, in bp.



Source: Citi Research, Markit.

iTraxx Main DV01 Weighted Flatteners

Figure 32. iTraxx Main 3s5s Duration Weighted Flattener – Assumes full running trading (i.e. coupon = spread, upfront = 0%).

Tenor	Maturity	Spread (bp)	Coupon (bp)	Upfront (%)	Notional (€)	Annual Coupon (€)	Annual Upfront (€)	12m Carry (€)	12m Slide (€)	12m Time (€)
3y	20-Jun-17	39	39	0.00%	-15,959	-62	-0	-62	-53	-115
5y	20-Jun-19	67	67	0.00%	10,000	67	0	67	43	110
09-May-14		**28**		**Total**	**-5,959**	**5**	**0**	**5**	**-10**	**-5**

Source: Citi Research.

Figure 33. iTraxx Main 5s10s Duration Weighted Flattener – Assumes full running trading (i.e. coupon = spread, upfront = 0%).

Tenor	Maturity	Spread (bp)	Coupon (bp)	Upfront (%)	Notional (€)	Annual Coupon (€)	Annual Upfront (€)	12m Carry (€)	12m Slide (€)	12m Time (€)
5y	20-Jun-19	67	67	0.00%	-17,763	-119	-0	-119	-76	-195
10y	20-Jun-24	113	113	0.00%	10,000	113	0	113	41	154
09-May-14		**45**		**Total**	**-7,763**	**-7**	**-0**	**-7**	**-35**	**-41**

Source: Citi Research.

iTraxx Crossover

Figure 34. Spread curves

On-the-run indices, bp.

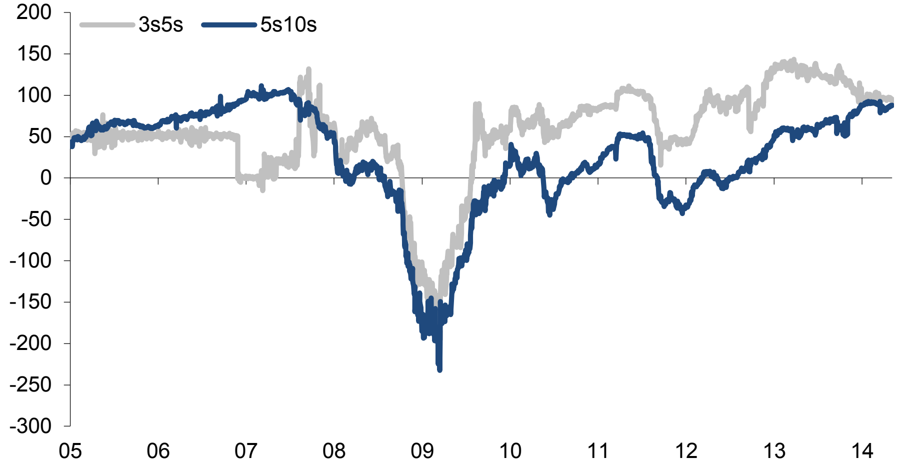


Figure 35. Annual carry (exc. roll down) of DVO1 neutral flatteners

On-the-run indices, bp. Assuming full running spread trading (i.e. no upfront, coupon = spread).

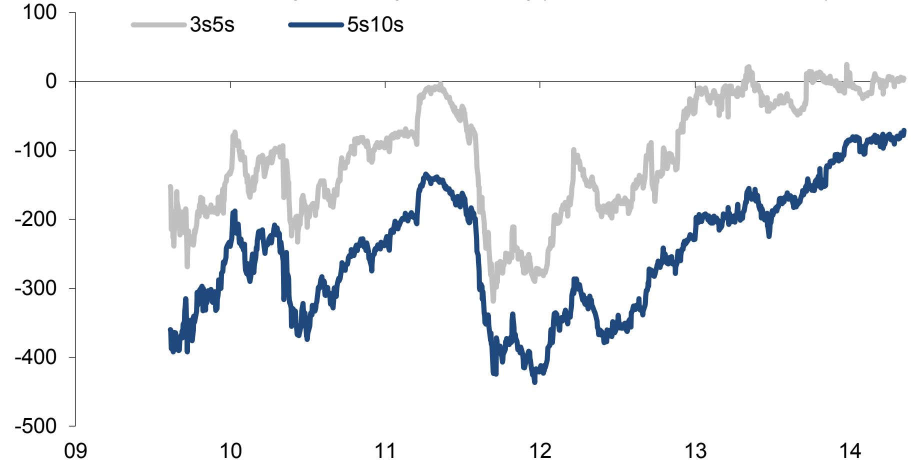


Figure 36. 3s5s vs. 5y spread

On-the-run indices, in bp.

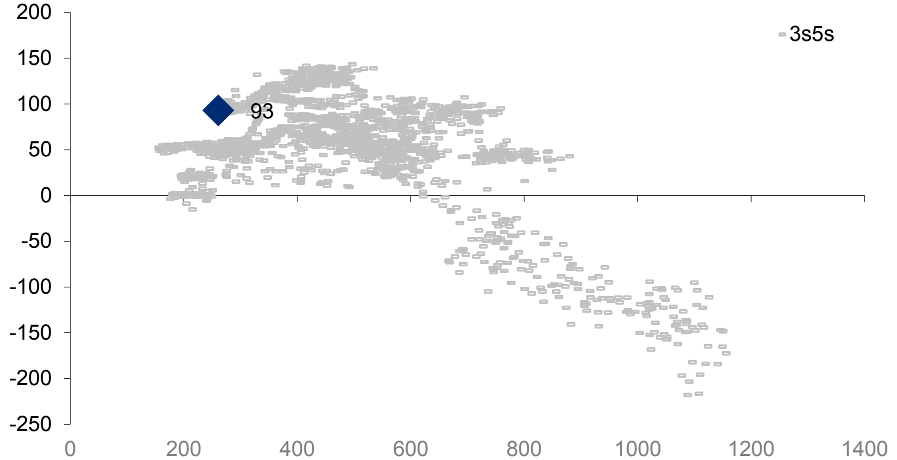
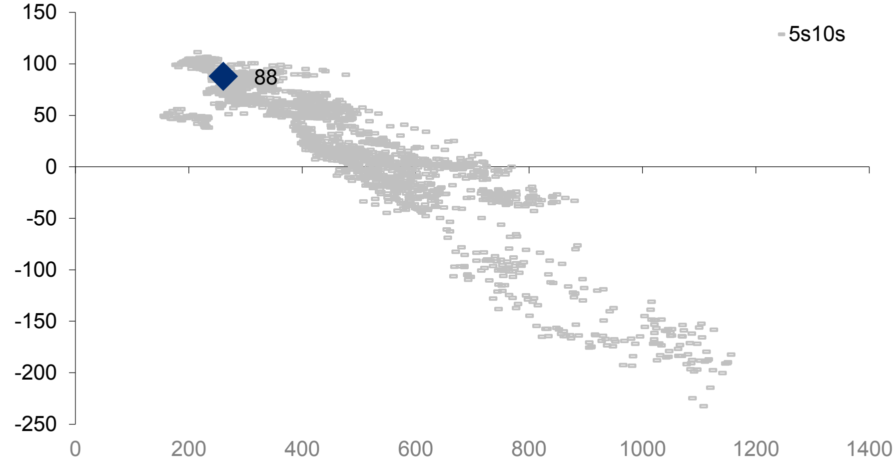


Figure 37. 5s10s vs. 5y spread

On-the-run indices, in bp.



Source: Citi Research, Markit.

iTraxx Financials

Figure 38. Spread curves

On-the-run indices, bp.

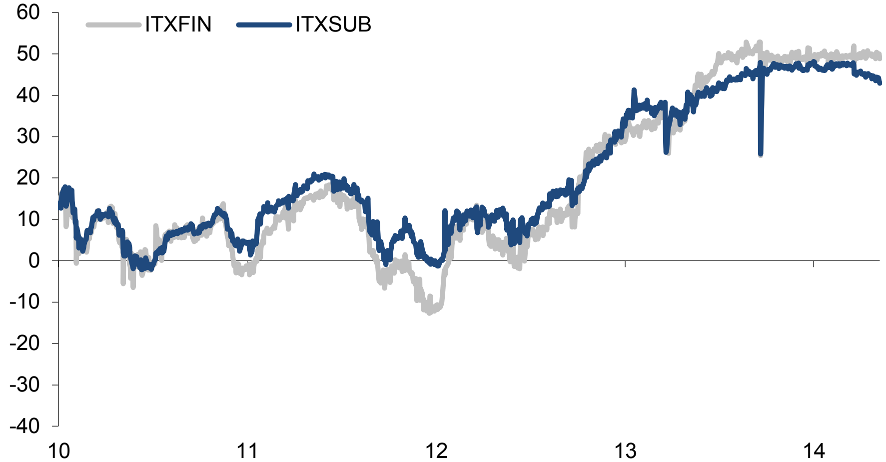


Figure 39. Annual carry (exc. roll down) of DVO1 neutral flatteners

On-the-run indices, bp. Assuming full running spread trading (i.e. no upfront, coupon = spread).

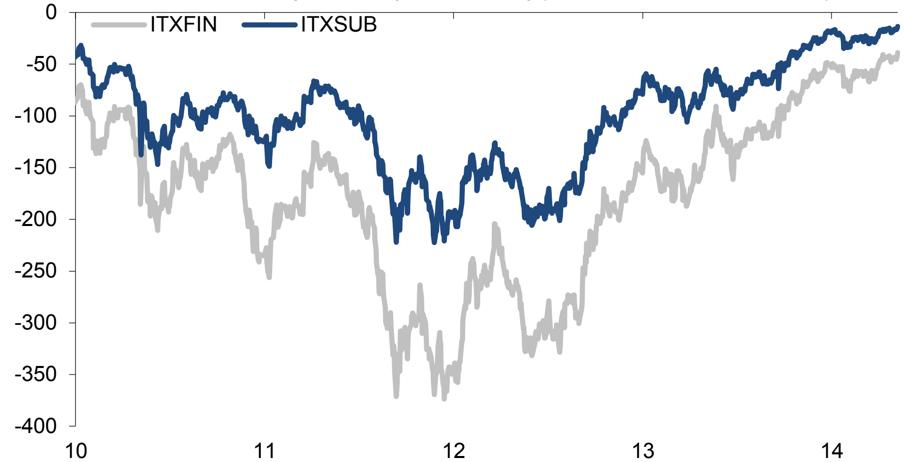


Figure 40. Senior Fin. – 5s10s vs. 5y spread

On-the-run indices, in bp.

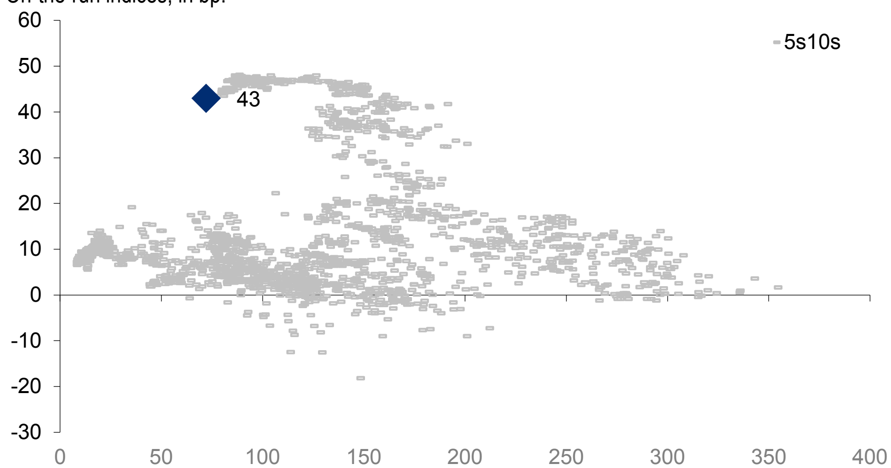
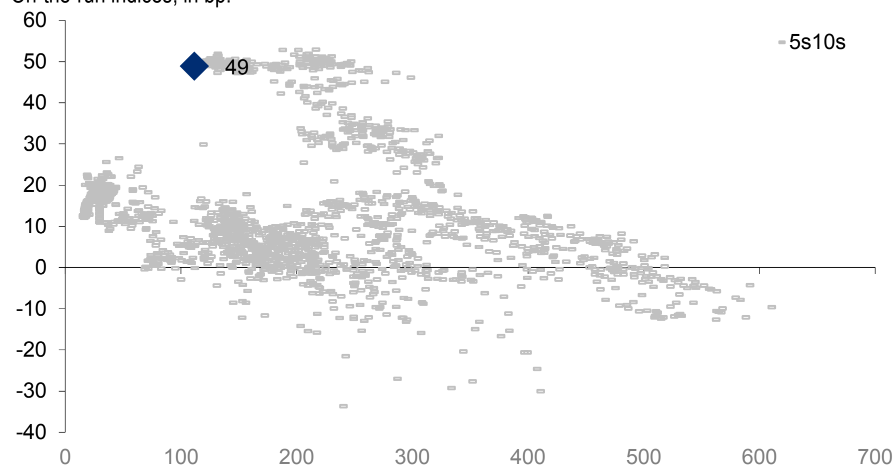


Figure 41. Sub. Fin. – 5s10s vs. 5y spread

On-the-run indices, in bp.



Source: Citi Research, Markit.

Options

- **Absence of hedging is the most relevant recent development in credit options** – investors have historically rushed for hedges whenever we've tightened this much, providing strong resistance to a further tightening.
- **Most popular trades recently have been bullish risk reversals and receiver 1x2s.**
- **Realised vol has fallen aggressively**, helped by lower index volumes, **with implied vol clearly lagging and looking high vs. spreads and realised vol**.
- Very bullish price action in Senior Financials with both payer and receiver skews extremely flat.

Figure 42. Main implied to realised vol

3m, in %.

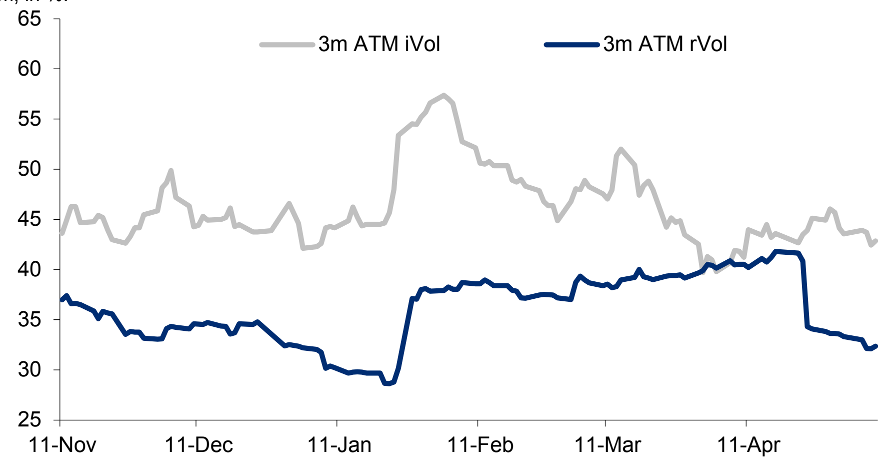


Figure 43. Current volatility SKEW for different option expiries - Main

Y-axis: Implied volatility; X-axis: Payer delta (%)..

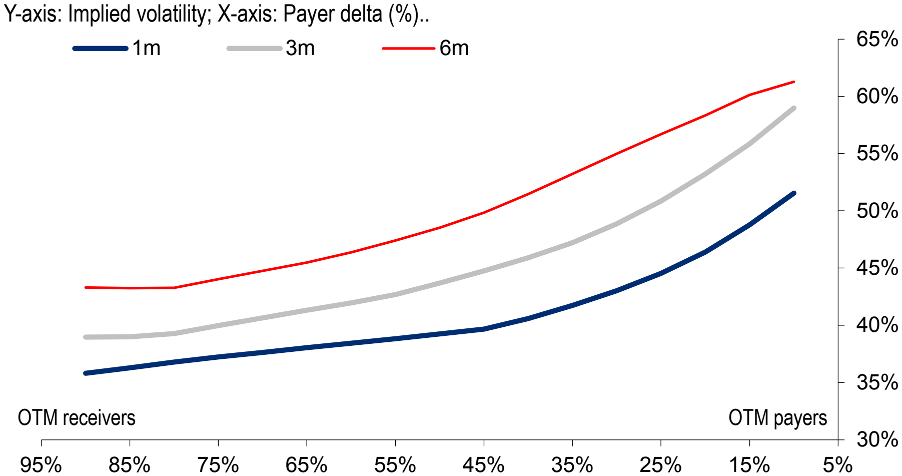
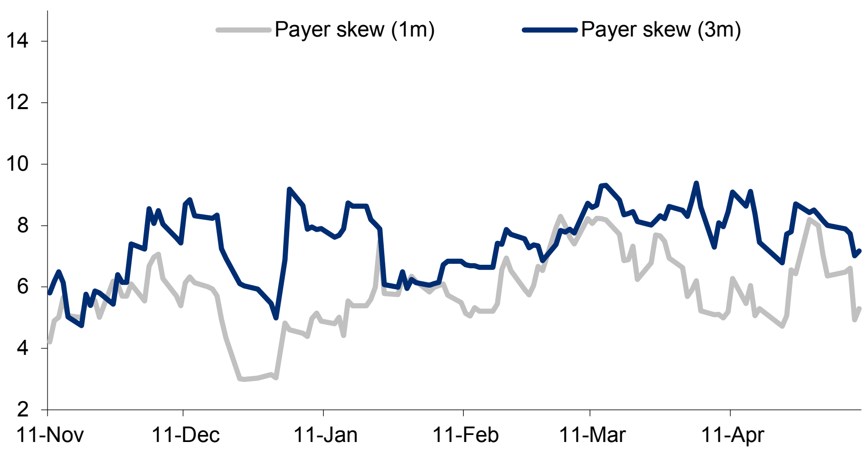


Figure 44. Main Payer Skews

Implied volatility difference between payer options with 25% delta and with 50% delta.



Source: Citi Research, Markit, Bloomberg.

Options – Short term (cont.)

- **Relative-value wise, Main vol trades low compared to Xover** – good entry point to buy Main receivers and sell Xover receivers.
- **Willingness to pay for option hedges is decreasing considerably.**
- **Volumes so far … STRONG**. On track to double this year, with very pronounced growth in Senior Financials and among Real Money investors.
- Latest [iTraxx Options Views & Trades]

Figure 45. Main vol vs. spreads

Spread in bp (lhs), vol in % (rhs).

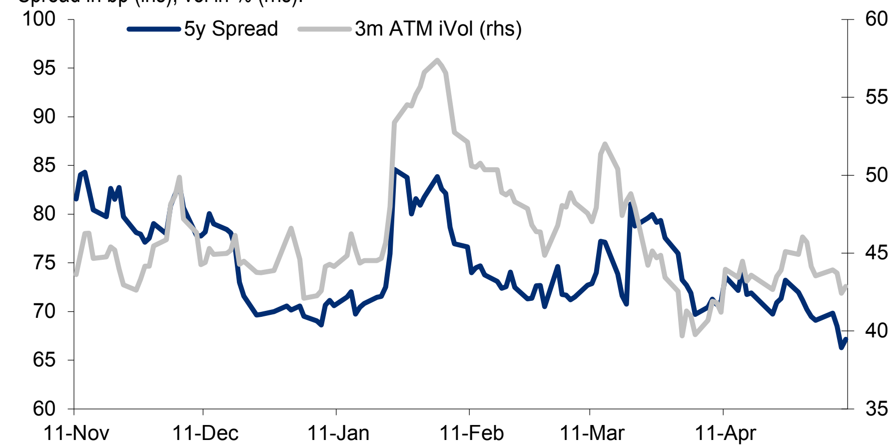


Figure 46. Vol term structure (1-3m)

ATM vol.

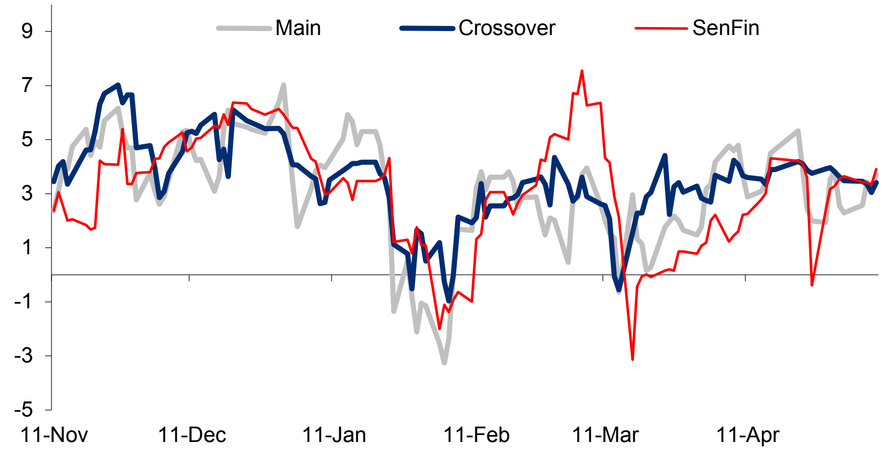
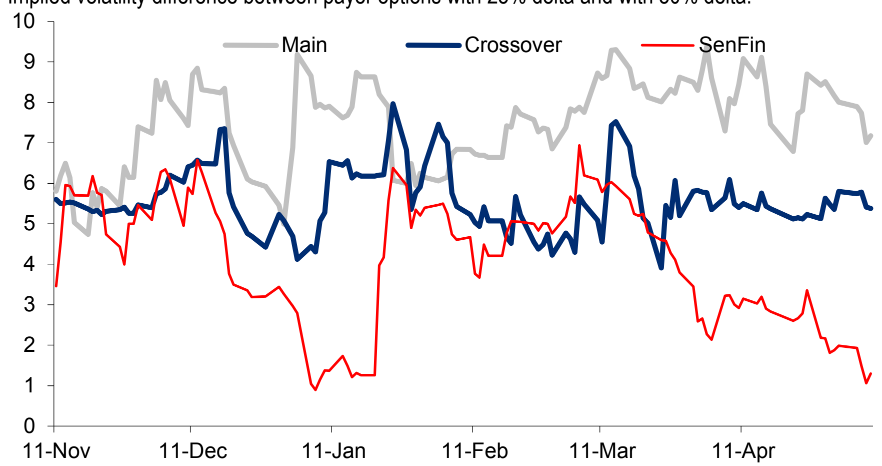


Figure 47. Payer Skews (3m)

Implied volatility difference between payer options with 25% delta and with 50% delta.



Source: Citi Research, Markit, Bloomberg.

Options – Medium term

- **Medium term, implied vol to drift tighter with spreads**
- **P&L of selling vol to probably still be positive but to continue falling.**
- **Still a "hedging" market**, with investors rushing for hedges on any weakness. Large driver of index flows.
- **Expect more focus on "carry" trades from real money and fast money** (e.g. selling vol, selling receivers).
- What did investors do in 2013? What will they do in 2014?

- **"Systematic" trade ideas for 2014**:
  - **Sell Main 1m no-delta straddles** to position for a range-bound market.
  - **Payer spreads to continue outperforming index shorts as hedges**. We are not bearish, just want to take exposure to the fact that payer spreads should beat index shorts as hedges; thus we are, at the same time, entering into an outright index long (with the same notional).
  - **Sell Crossover receivers to buy Senior Financial receivers**, i.e. expecting Crossover to underperform Senior Financials as spreads stabilize/tighten.

Figure 48. Implied vol in Credit and Equities

3m.

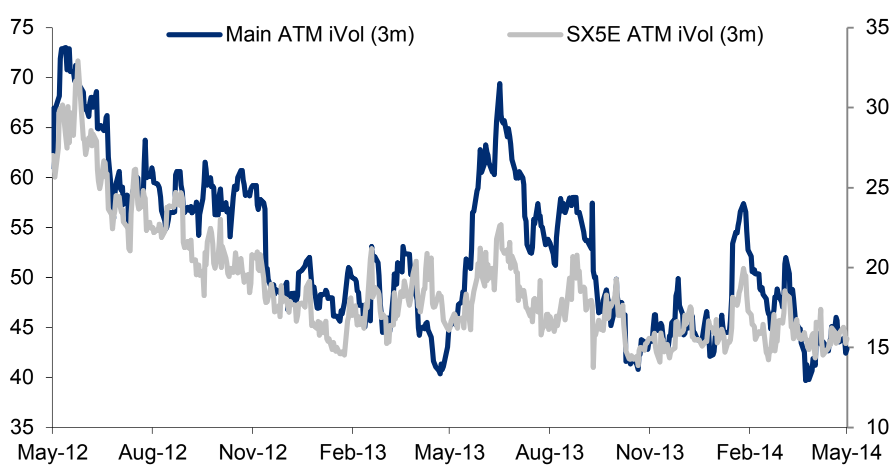
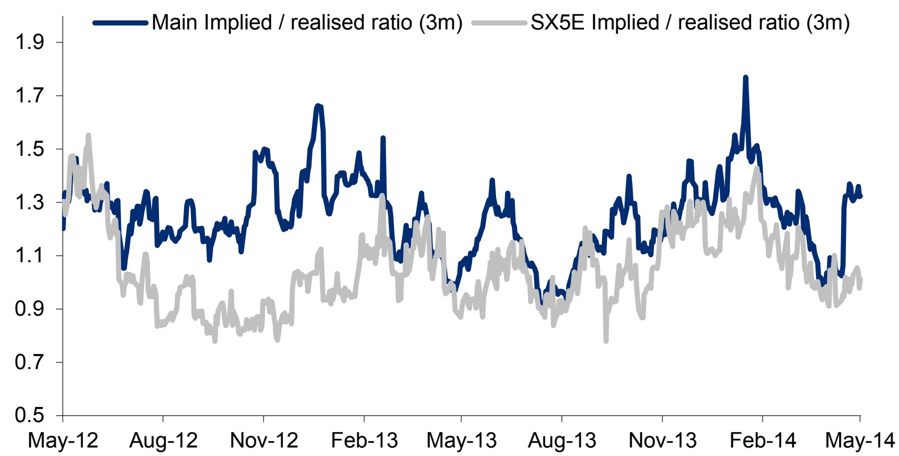


Figure 49. Implied to realised ratio in Credit and Equities

3m.



Source: Citi Research, Markit, Bloomberg.

P&L of selling 1m ATM straddles this year – Still best carry trade to us …

Figure 50. Main – delta hedged (daily, at the close)

P&L in cents of notional traded.

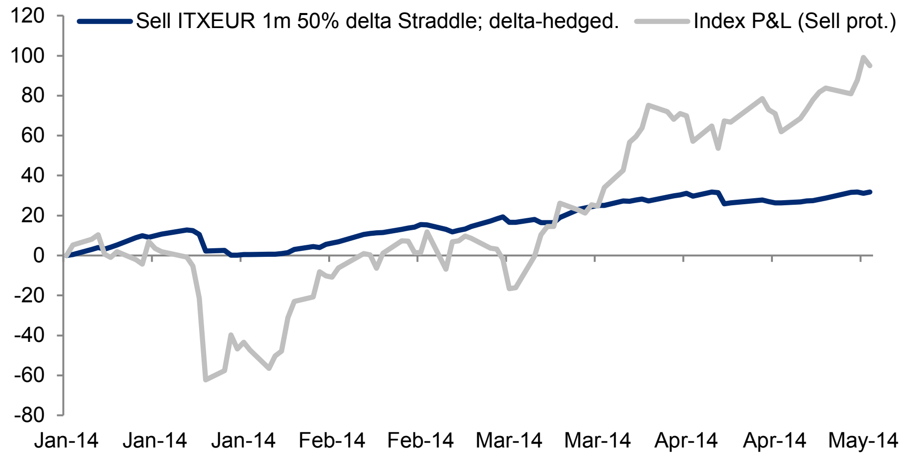


Figure 51. Main – NO delta hedged

P&L in cents of notional traded.

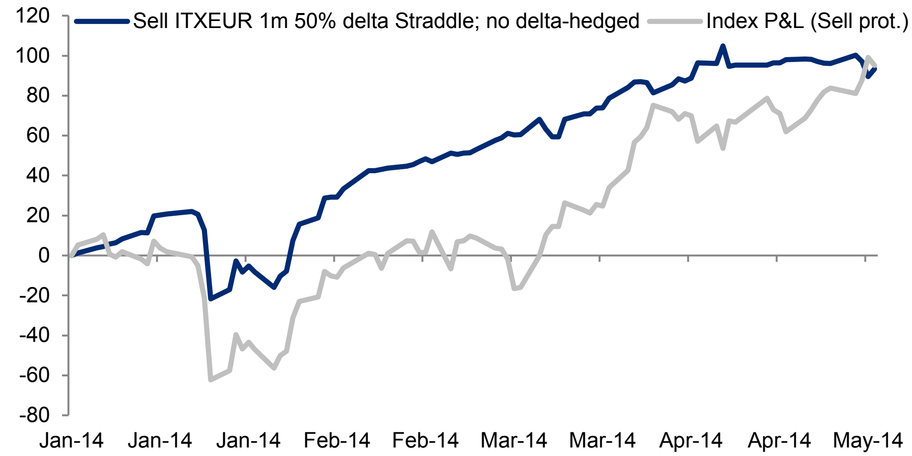


Figure 52. Crossover – delta-hedged (daily, at the close)

P&L in cents of notional traded.

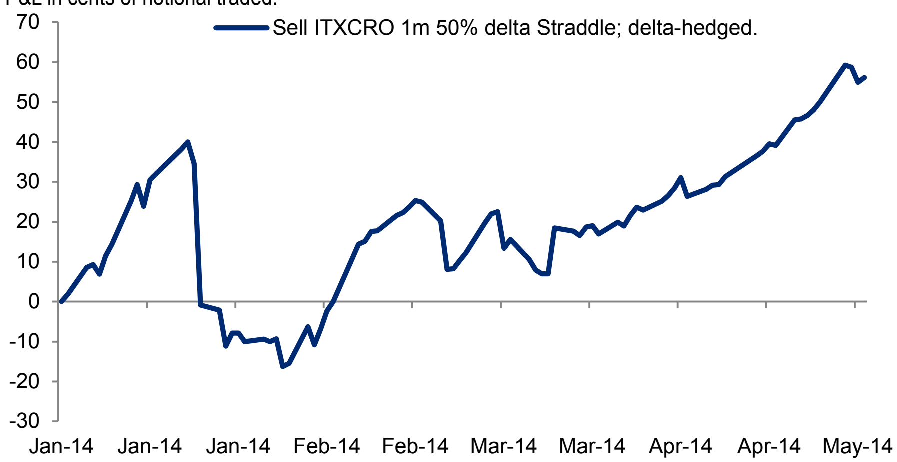
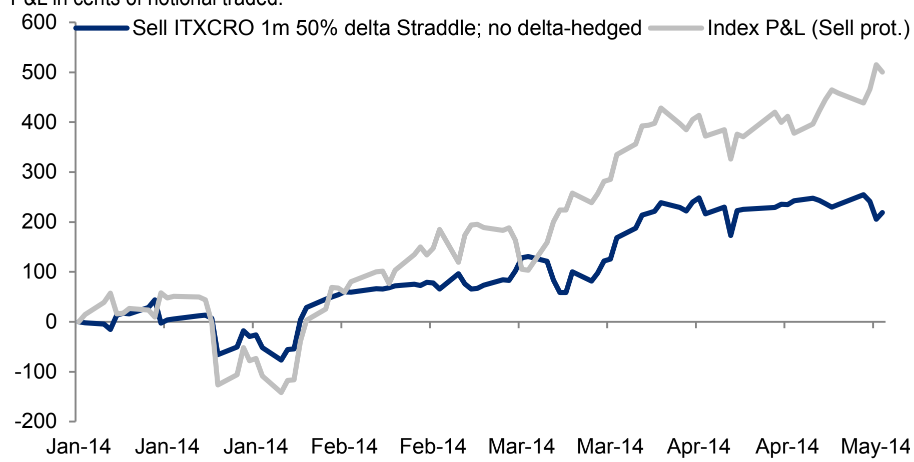


Figure 53. Crossover – NO delta-hedged

P&L in cents of notional traded.



Source: Citi Research, Markit. We sell front month ATM straddles (50% delta strikes) and leave them until expiry; daily delta-hedging assumed for delta-hedged trades. Gross of bid-ask.

Main Receiver 1x2s (May)

- **The market seems unstoppable and investors do not seem very concerned about a reversal**, judging from pricing in the options space: The demand for hedges is subdued, keeping implied volatility low and close to realised, and the receiver skew is flat, with investors better buyers of OTM receivers.
- **We are constructive and would position for spreads to continue performing, but we wouldn't get too carried away** here and would be happy to take the other side of the flat payer skew to fund ATM receivers with OTM ones.
- **There is no near term visible catalyst for a widening, but index spreads have gone too far too quickly**, in our view, with index skews turning negative and cash-CDS basis moving sharply recently as well. We would be long here but limiting the downside if we widen.
- **We like Main May receiver 1x2s, where we pay for a "moderately" long position with negative exposure to large tightenings, not to widenings**. The trade breaks even with spreads at ~65bp at expiry. We use May options, where the receiver skew is flatter.

Figure 54. Trade spread exposure – Link to pricing tool

In cents of notional traded (100c = 1%).

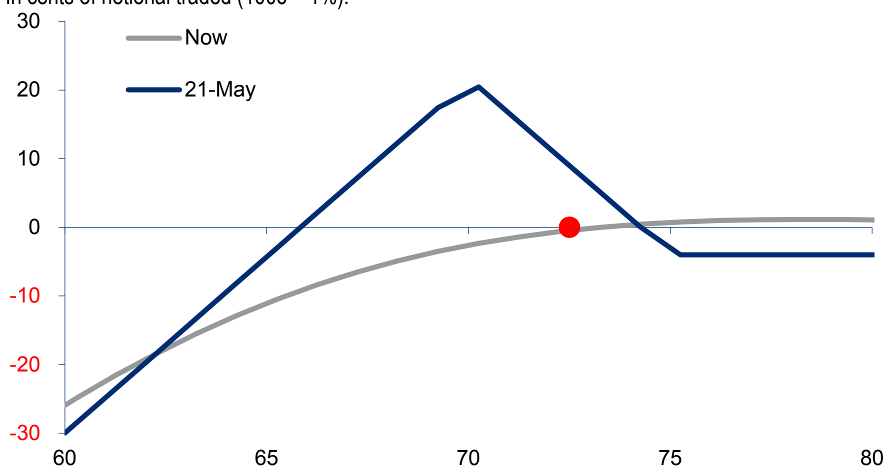
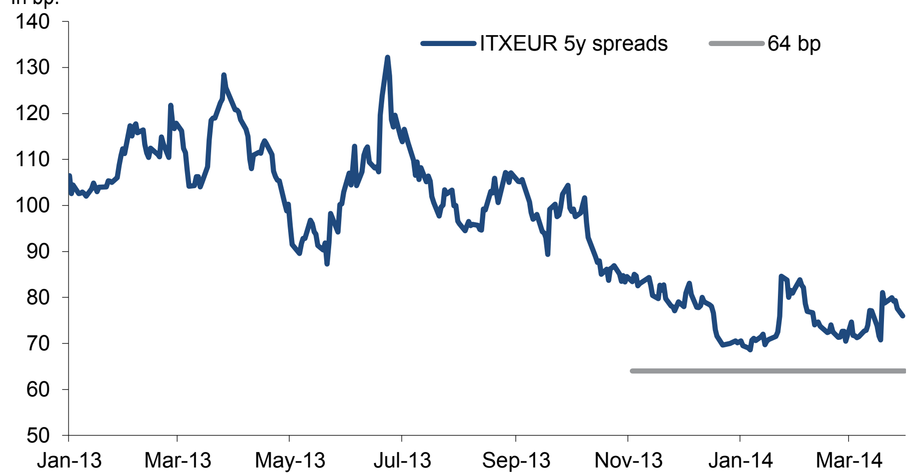


Figure 55. iTraxx spreads and trade break-even

In bp.



Source: Citi Research, Markit, Bloomberg. Charts as of 2-Apr-14 (trade publication date).

Options vs. Curves: Playing with Tail Risk

- Sell it where it's expensive **(OTM payers)** & buy it where it's cheap **(3s5s flatteners)**
- **The credit index options market continues to be dominated by hedging flows**. Investors remain better buyers of options, especially OTM payer options for tail-hedging.
- **Curve flatteners proved to be an effective tail hedge in the last tail event** (Lehman's default in October 2008). **Pricing-wise, front-end curves are currently so steep that 3s5s flatteners have been positive carry and roll down** for a while. So one can buy tail risk via flatteners, getting paid for it.
- The trade is positive time value in both legs.

Figure 56. 3s5s vs. 5y spread

On-the-run indices, in bp.

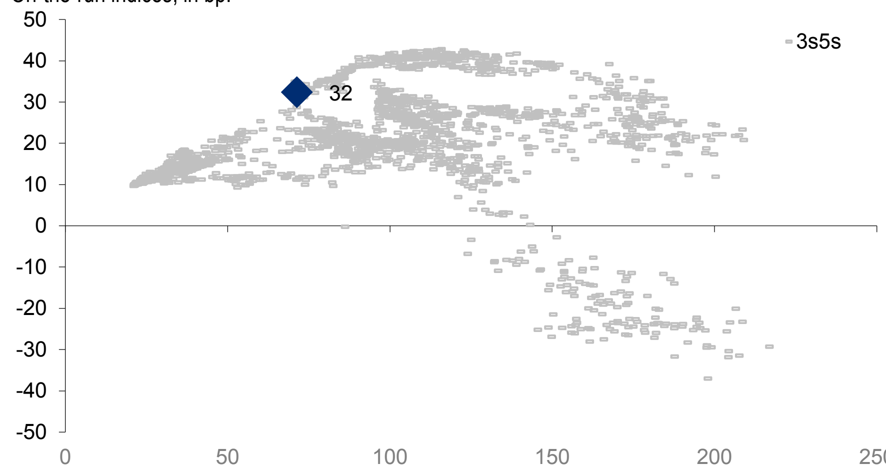


Figure 57. Main vs. SX5E skew

Main: 25-50% delta payer. SX5E: 10% put skew. 5d MA.

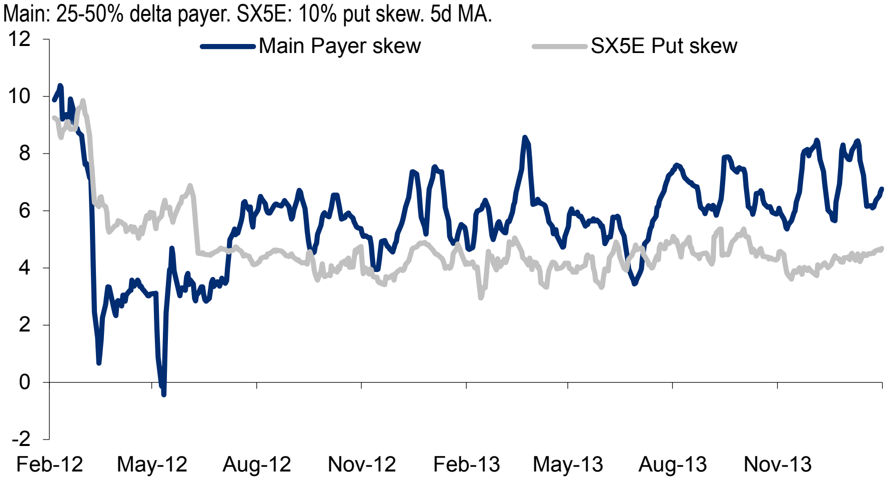
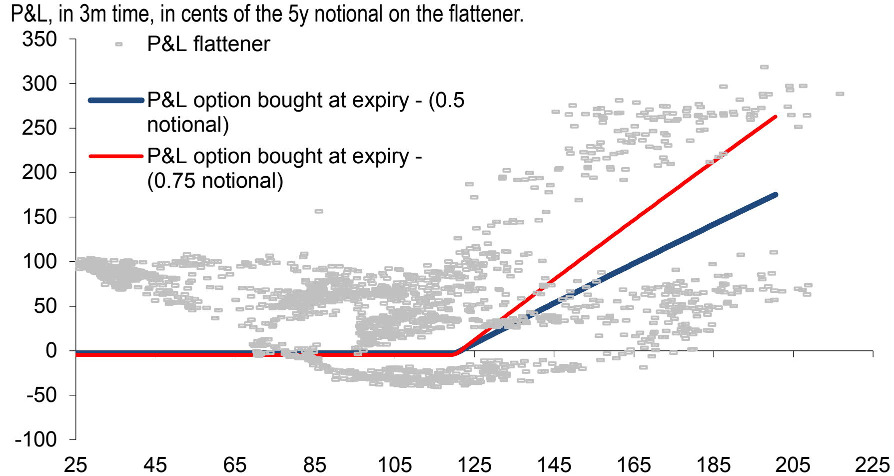


Figure 58. P&L vs. 5y spread – 3m 120bp payer bought vs. 3s5s flattener

P&L, in 3m time, in cents of the 5y notional on the flattener.



Source: Citi Research, Markit, Bloomberg. Charts as of 13-Feb-14 (trade publication date).

Tranches

- **Investors are concerned when finding out how bullish we are on the eventual return of levered products**.
- Levering up investment grade returns should be, once again, seen by real money investors as an attractive (or the only?) way to add risk with high enough spread; in particular if it doesn't generate exposure to first losses (i.e. mezzanine tranches in investment grade portfolios).
- Latest iTraxx Tranches Views & Trades, More mezz, less seniors.
- **Equity – Positive/Neutral**. Lower return but faithful client base. No change, it should continue doing ok, but not stellar returns like previous years.
- **Mezz – Bearish until we tighten a bit more**. We need tighter spreads for real money investors to be willing to lever up via mezz tranches. Will perform in the second leg of the tightening.
- **Seniors – Getting constructing**. Surprisingly to us, we are finding investors willing to sell super senior protection in size, taking advantage of the very high correlations.

Figure 59. Correlations & index spreads

Jun-18 S9 equity correlation.

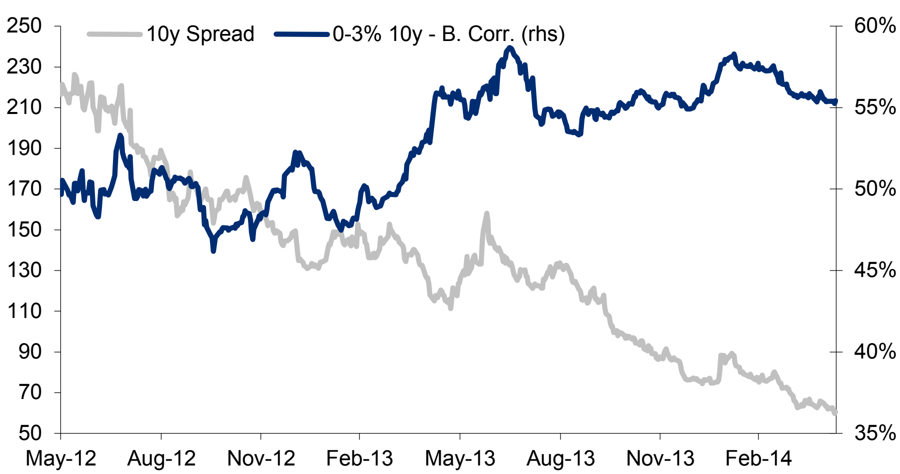
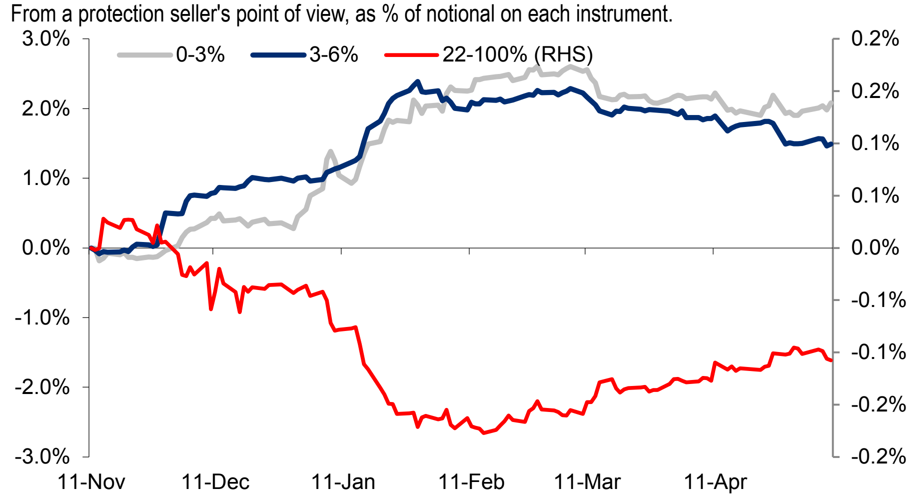


Figure 60. Delta-hedged tranche performance

From a protection seller's point of view, as % of notional on each instrument.



Source: Citi Research, Markit.

Sell equity tranche protection & sell straddles

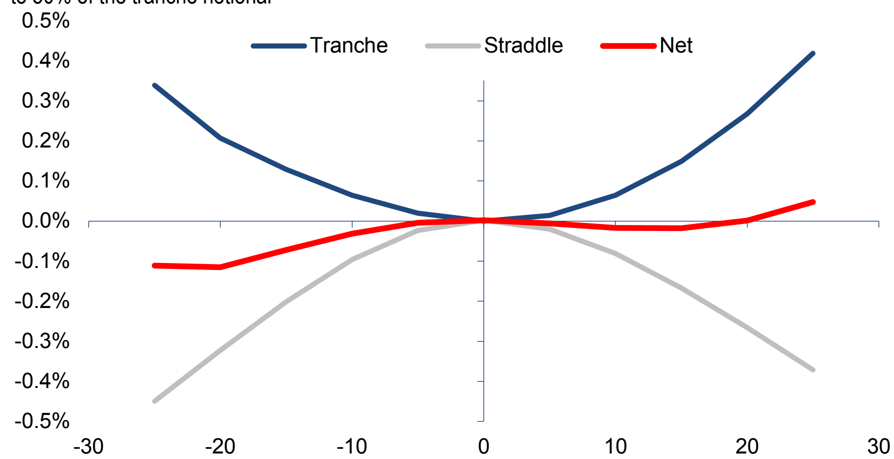
- **We believe equity tranches will continue to outperform** as fast money and the most sophisticated real money investors continue adding longs to position for their large roll down.
  - **Default risk is the best risk to take for your carry.**
- **We also like selling front dated straddles** to exploit the premium between implied and realised vol: i.e. we expect, on average, realised vol to be below implied; 1m Main options are currently implying above 2bp per day.
- **Equity tranche longs**, delta-hedged, provide positive time value and positive convexity (gamma) at the expense of a **large default exposure.**
- **The positive gamma is not needed in our view**; selling front-month ATM delta-hedged straddles is a good way of monetizing it: selling straddles provides negative gamma and positive theta (time value).
- **The trade offers positive time value on both legs at the expense of negative jump-to-default.**

Figure 61. Trade exposure

	Sell equity tranche prot. (delta-hedged)	Sell straddle (delta-hedged)	Total
Gamma	Positive	Negative	**Neutral**
Time value	Positive	Positive	**Positive**
Jump-to-Default	Very negative		**Very negative**
Correlation	Long		**Long**
Implied vol		Short	**Short**

Figure 62. Spread exposure

X-axis: spread shock, in bp. Y-axis: trade MtM as % of tranche notional, using a straddle notional equal to 50% of the tranche notional



Source: Citi Research, Markit. As of 20-Feb: **Positive time value**: The 1m time value on the equity tranche leg is ~22c, and the short straddle adds an additional ~14c. **Negative jump-to-default**: The jump-to-default on the equity tranche is ~1087c of its notional (negative), and the short ATM straddle adds an additional 6c to the negative default exposure. **Long correlation**: If equity implied correlation falls 1% the trade will lose ~64c.**Short implied vol**: the trade will lose ~0.4c if implied vol goes up 1%.

S21 Main tranches just launched … warming up for Xover tranches in Sept.

- **4 tranches: 0-3%, 3-6%, 6-12%, 12-100%.**

Figure 63. Equity correlations across iTraxx Series

In %.

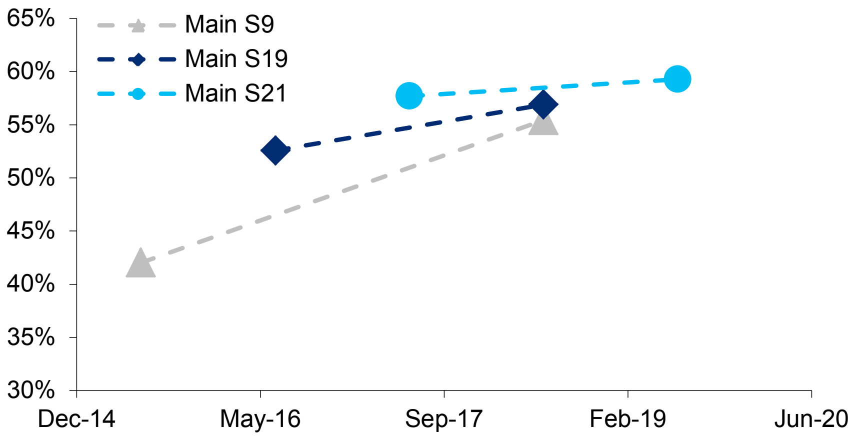


Figure 64. S21 tranches

Upfront for the equity (100bp coupon), flat spreads for the rest.

Series 21	Jun-17	Jun-19
0-3%	16%	32%
3-6%	135	297
6-12%	65	159
12-100%	14	30
Ref	39	67

Source: Citi Research, Markit.

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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.

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Appendix A-1

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