

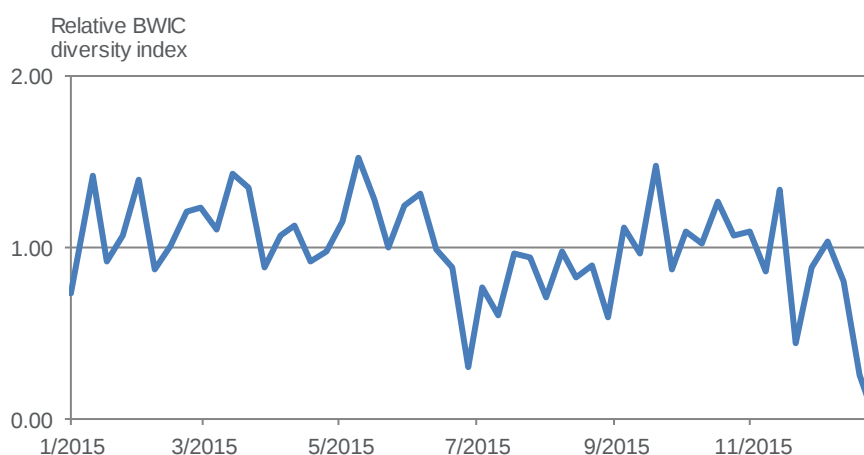
Global fixed income focus – December 2015

Liquidity • Leveraged loans • Credit default swaps • Global corporate bonds • Sovereigns • Municipal bonds • Securitised products

December proved to be an eventful month as the Federal Reserve raised interest rates for the first time since 2006, ending a zero rate policy that started exactly seven years ago to the day. The month started on a negative tone when the European Central Bank disappointed the market when it failed to meet inflated expectations of a more significant monetary stimulus. Continued weakness in oil and commodity prices also weighed in on fixed income markets.

- This month, in a new Liquidity section, we analysed trends in dealer offering and bid wanted in competition (BWIC) quote volumes to assess changes in liquidity for various securitised products over the course of 2015. **Figure 1** shows the average relative BWIC activity across CLO, CMBS, and non-agency MBS based on the weekly number of unique bonds on BWICs and normalised based on relative sector activity levels.
- The leveraged loan market continued its slide, with the Markit iBoxx USD Leveraged Loan index (MiLLi) declining 1.02% during the month, to end the year at -1.04%. 2015 is only the second time since 1992 that the US leveraged loan market finished in negative territory, with 2008 being the other time.
- Global CDS were wider across the credit spectrum, with global CCC cohorts reaching their widest levels of 2015. AAA North American CDS reached their widest level of the year, while most North American and European CDS above CCC remained below their worst levels of 2015 reported in September.
- US high yield (HY) bonds drove the majority of risk sentiment during the month, as bond returns suffered one of their worst months of 2015. Both \$ HY, as represented by the Markit iBoxx \$ Liquid High Yield index, and Euro HY suffered losses of -2.3% and -2.5%, respectively.
- French sovereign CDS were the best performer in the G7 and globally, on a spread percentage basis, as they tightened 1.7bps (-6.2%) to close the month at 25.8bps. German CDS reached its tightest levels of the year, with a spread of 12.6bps during the month.
- December capped off a phenomenal year for the municipal bond market versus most other markets, where it appeared to completely shun the global macro-economic distress that plagued the broader equity and bond sectors. Puerto Rico Commonwealth honoured its most senior GO debt by making its January debt service payments in full, but Puerto Rico's infrastructure finance authority (PRIFA) missed its January 1st debt payment.
- The 'January effect' that has consistently led to rallies across securitised products in the past has apparently skipped this January, as liquidity did improve after the holidays, but the entire sector has been unable to overcome the headwinds from the record sell-off in global equity markets that began on the first trading day of 2016.

Figure 1: Weekly 2015 CLO, CMBS, and non-agency MBS relative BWIC diversity index (1.00 = 2015 average weekly volume)



Source: Markit

Liquidity

We have added a new section to the report that will cover various aspects of fixed income liquidity, as the topic has recently been at the top of the list for both regulators and the investment community. This month, we will analyse parsed dealer quote volumes to assess changes in securitised products' liquidity over the course of 2015.

Sparse trading data requires an innovative approach to measure changes in securitised products' liquidity

According to Sifma data, the US securitised products market in Q3 2015 made up over 25% of the total outstanding US bond debt, with the agency and non-agency mortgage markets actually larger than the corporate bond market at \$8.8 trillion versus the \$8.3 trillion outstanding. Despite the vast size of the market, the availability of publically available trade data, like in the corporate and municipal bond markets, is very limited, so price transparency and changes in liquidity can be difficult to assess.

Strides have been made in improving price and flow transparency since the financial crisis, but only a few securitised product markets have the same type of trade level transparency as US corporates and municipal bonds. Dealers have been required to submit trade data for most US securitised products for almost four years now, however, there has been very little progress improving transparency for the broader sector. The first set of almost real time trade level data was disseminated for the agency to be announced (TBA) market, which is similar to a futures market, as investors are buying or selling mortgage pools before they are created on a future date and it is the most heavily traded market in the securitised products space. Pressure resulting from investor concern over competitors' abilities to reverse engineer investment strategies, has limited the dissemination of timely trade data at the bond level to only the consumer ABS and credit risk transfer MBS subsectors. However, there has been aggregated and delayed weekly trade flow information available across almost every US securitised product for a few years now. One shortcoming of the aggregate data is that the volume numbers for lower dollar priced securities (distressed or derivatives) can potentially be misleading, as the reported flow numbers are based on par totals and not market value.

Trade levels are often based on a somewhat convoluted mosaic of available trade information

Outside of the TBA market, where TRACE and broker screens have traditionally been a useful source of market trading levels, most securitised products traders and investors have always had to rely on a second hand market colour from a few different sources. Primary market colour from new issues is one

of the most available sources of pricing data for investors, but it does little to shed light on sectors like legacy non-agency that no longer issue comparable deals and it often excludes price information on deeper credit or private tranches that may have been quietly sold to one or a few investors. On the sell-side, traders use market colour communicated by buy-side portfolio managers and traders, as well as trade colour in the form of cover bids (next highest bid after the winning bid) that is occasionally shared by clients who offered their securities for sale via bids wanted in competition (BWICs). The sell-side also shares some degree of their market colour with buy-side clients as a mechanism to enhance trading relationships, while the buy-side also has access to most dealers' bond inventory offering prices, widely disseminated BWIC colour, as well as the somewhat less accurate broker pre-trade price talk levels on BWICs.

Despite the somewhat complex mosaic of available trade information, billions of dollars in market value of securities in the sector trade everyday despite the. Outside the TBA market, a very small percentage of unique securities trade in the same year, let alone the same week, so almost the entire market trades based on execution level information from what are considered comparable securities. The ability to determine which bonds are comparable comes from the market participant's experience and expertise in the sector, and is almost always subjective. Buyers and sellers will often argue how similar a bond is to another with market colour that recently traded and that is usually a key part of the price negotiation before a trade is executed.

Advances in parsing technology have improved the efficiency of price transparency

Over the past several years, parsing technology has made traders' and analysts' work day a bit easier, as it replaced the tedious process of copying and pasting and the storage of market colour into a well-designed database. The technology uses machine learning to adapt to changes in the sender's written style or format to correctly parse messages into usable market colour. Most importantly, it has taken out some of the human error that results in either missed or incorrect trade data. Both can affect profit and loss due to potentially overpaying for a bond or selling one below the market.

We analysed over three million parsed quotes from primary dealers, for the entire 2015, on agency MBS specified pools, agency CMOs, global CLOs, non-agency MBS, CMBS, and consumer ABS. The goal of this analysis was to focus only on unique bonds and not par values of offerings or BWIC bonds, so the data will include odd lot sizes. In the case of the potentially broad consumer ABS category, we only included credit card, auto loan, student loan, and equipment securities.

Table 1: Summary of parsed data results

	Agency MBS Pools	Agency CMOs	CLO	Non-Agency MBS	CMBS	US Consumer ABS
2015 Unique offerings	24,539	5,926	5,272	4,329	2,701	2,075
Average unique monthly offerings	5,796	1,424	431	726	970	856
Average monthly offering turnover	31%	30%	47%	51%	30%	25%
Average weekly BWIC volume (unique bond count)	N/A	54	157	550	271	212
Average weekly BWIC price talk depth	N/A	4	5	3	2	2

Source: Markit

Dealer offering data indicates three distinctive groups of turnover patterns

We tracked how many months a year a specific bond was offered by any primary dealer starting with all the unique offered bonds in January 2015 (**Figure 3**), as well as the monthly offerings turnover defined as a unique offering not appearing the next month. In the case of the turnover metric, if 40 out of the 100 unique bonds offered in January were no longer offered in February, then that represents a 40% turnover rate regardless of how many new bonds were offered in February.

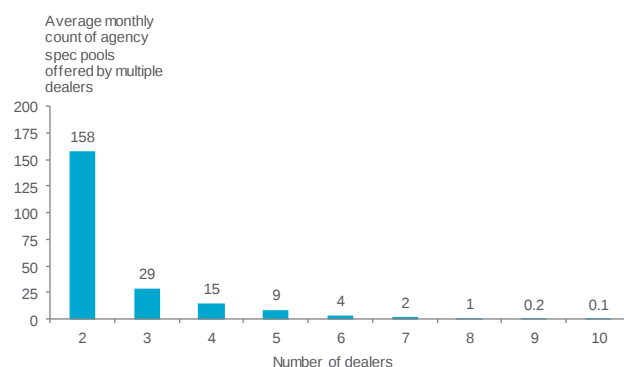
The average monthly offering turnover data was generally stable and coincided well with the frequency data. Both datasets are more of an indication of the diversity and frequency of bonds being offered versus a measure of the staleness of offerings or pace of bond sales for a given sector, as the same bond that is sold by one dealer could coincidentally be offered by another dealer the next month and the data would not indicate any changes in offering count between months.

A very liquid product would have a much higher percentage of bonds on the low end of monthly frequency and vice versa. The main bias for the frequency data is that an uptick in newly offered bonds towards the end of the year would weigh more heavily on the lower end of the months offered spectrum. Given all those factors, as well as the small potential for dealer overlap in offered bonds, it is not a perfect assessment of overall dealer's holdings or turnover. In addition, some of the data may be a result of a dealer pulling specific bonds off of their offering sheet (not a result of a sale) and transferring them into a proprietary trading book.

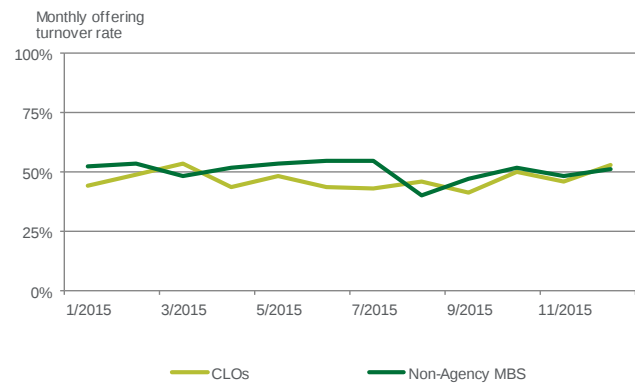
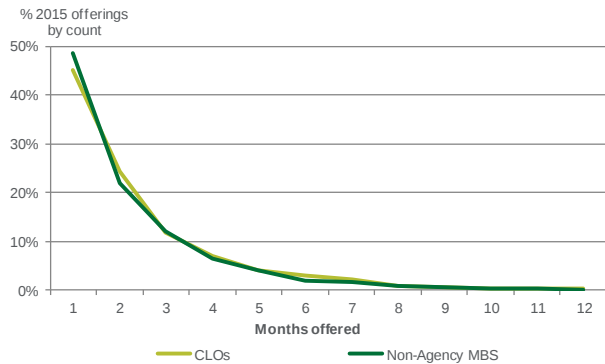
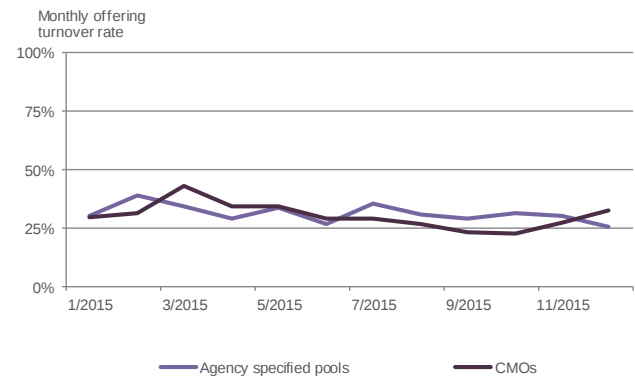
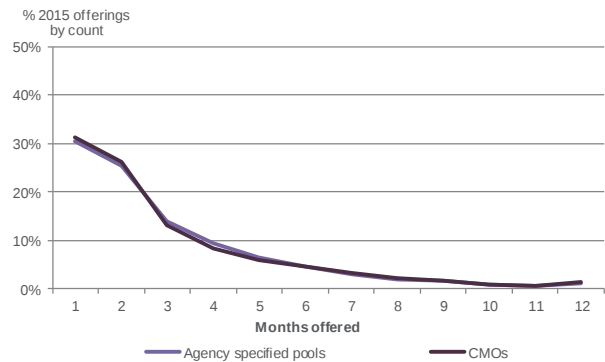
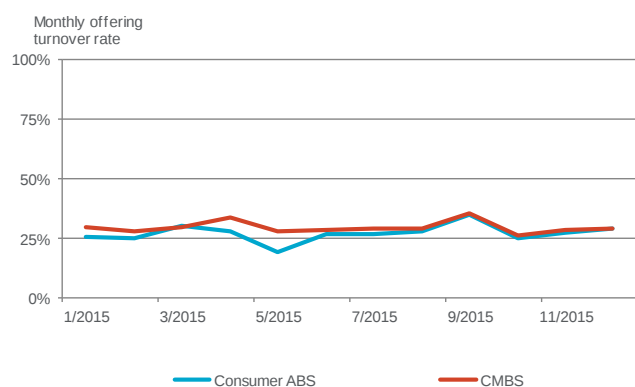
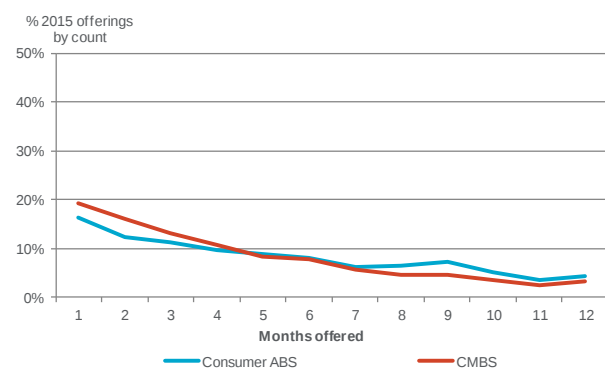
The data indicates that the offering pattern of the six subsectors can be broken down into three groups with similar patterns. Most surprisingly, the offering frequency patterns for CLOs and non-agency MBS are almost identical, despite the asset classes being very structurally and fundamentally different. The pattern may potentially indicate both the strong demand for these sectors in the first half of this year and dealers push to lighten inventory towards the latter half of the year, given the much lower percentage of bonds that were offered for more than seven months. Both agency

pools and CMOs had almost the same pattern, with slightly more than 30% of offered bonds only appearing once during the year. Lastly, consumer ABS and CMBS had the flattest of the three groups of curves, which could potentially be driven by the much larger AAA issue sizes (versus the other credit products) increasing the number of the same bonds offered by different dealers throughout the year.

In general, there was very little overlap each month between the bonds that dealers offer. Agency specified pools was the only sector with consistently more than one dealer offering the same bond (**Figure 2**). However, the roughly 200 bonds a month on average that are offered by two or more dealers is still a very small percentage given the over one million bonds outstanding.

Figure 2: 2015 average monthly dealer overlap of agency specified pool offerings

Source: Markit

Figure 3: 2015 monthly frequency of unique dealer offerings and monthly turnover**CLOs and non-agency MBS****Agency specified pools and CMOs****Consumer ABS and CMBS**

Source: Markit

Peak dealer offering count preceded peak market value of primary dealer holdings

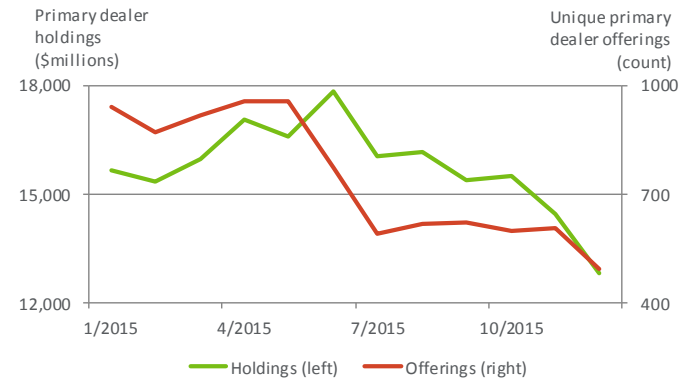
It is important for investors to differentiate between dealer offerings and holdings, as the dealers are rarely offering everything they own and quite often will move holdings onto their offering sheets when they are trying to reduce risk. They will also remove offerings from the sheet during times of extreme price volatility or very low liquidity to avoid having investors use their own offering levels against them when negotiating other trades. We compare publicly available primary dealer holdings data to the monthly unique holding count (**Figure 4**) and the timing of change in offerings and holdings do correlate to some extent, despite some potential overstatement in the offerings data due to odd lots. Note that the Fed data is released weekly, so we took the highest holding dollar amount for a given month to allow for a more accurate comparison versus the offering data and we did not compare agency pool offerings since the subsector is likely overshadowed by dealers' sizable TBA holdings.

The data indicates that peak offerings for non-agency MBS and consumer ABS preceded peak holdings by one month, with both sectors' holdings dropping precipitously by September. Consumer ABS actually increased in offering count in November while overall holdings decreased, which could indicate dealers' push to lighten up further before year-end, with declines reported in both datasets in December. CMBS dealer inventory increased substantially in May, which may have indicated that the subtle widening witnessed in BWIC and new issue spreads at the time led to a combination of opportunistic purchases and intentional offloading of holdings by increasing the number of offered bonds.

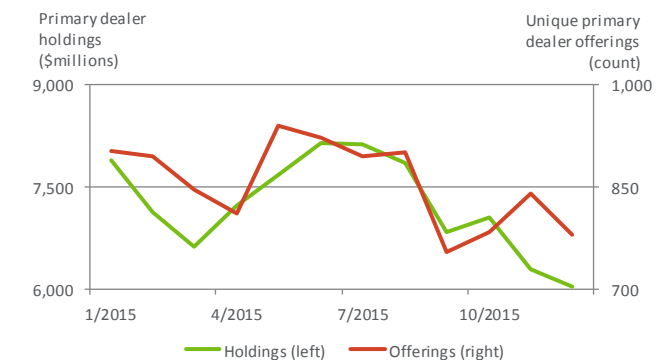
The primary dealer holdings data is an effective starting point for tracking aggregate changes in market technicals for a given high level sector. However, parsed offerings data can be combined with historical evaluated prices to be further refined into a market value. Bond level market value is an even more accurate indicator of changes in true market technicals and is much more granular than public holding data, as it allows the user to track the types of bonds within a given sector that dealers are buying and selling.

Figure 4: Primary dealer total holdings versus dealer offering count

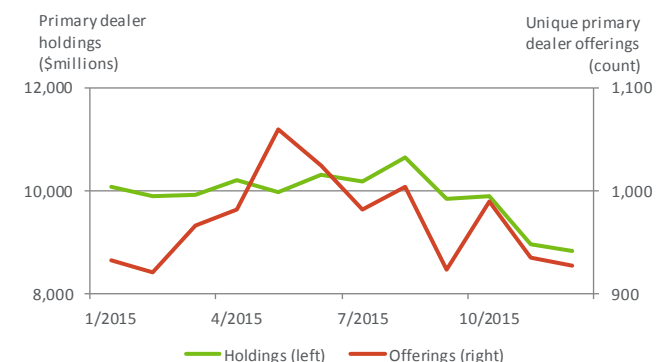
Non-agency MBS



Consumer ABS



CMBS



Source: Markit, NY Federal Reserve Bank

BWIC data can be used to create more real time metrics to gauge liquidity

BWICs are integral for sourcing liquidity in most of the securitised products market, albeit to a much lesser degree for agency specified pools and non-derivative CMOs. Using a BWIC is on the slower side of the immediacy component of liquidity, as it takes considerable time to organise and execute, and it does not always result in a market level bid. However, it will more often than not result in a better execution level than an on the fly bid from a trader looking to take a principal position.

Each day's BWIC activity holds a wealth of data, including:

- the types and quantities of bonds that sellers are trying to sell
- the category of investment fund that issued the BWIC (although never by name)
- price talk from dealers that includes their estimate of the offer side price of the bonds
- the number of bonds that trade or do not trade
- the cover bid, which improves price transparency

We measured BWIC activity, average dealer depth on disseminated price talk, and the percentage of bonds that had widely distributed market colour after the BWIC (**Figure 5**). Similar to the previous analysis of dealer offerings, we focused on the weekly quantity of unique BWIC bonds and not total par value. The results will translate into more of a diversity index, as it will count bonds on BWIC multiple times only once on a given week. The weekly number of unique bonds will still correlate to BWIC par volumes to some degree. We excluded CMOs because only a small portion of the broader universe (mainly derivatives) trade via BWICs. In the case of consumer ABS, the percentage of BWIC bonds that reported post-trade colour was relatively low compared with the size of the universe, and therefore the sample size appeared a bit small to be useful. This is probably a function of the relatively tight bid/ask spread across senior bonds in the sector.

The relative BWIC diversity index was created by using the one-year weekly average of the number of unique bonds on BWICs as the base value of 1.0, so a value above 1.0 is a more active week than the annual average and vice versa. The data does consistently show that weekly BWIC diversity progressively declined in Q4 across all products, which coincides with the aforementioned dealer offerings trends. BWIC diversity peaked in June for CLOs, in February for non-agency, and in April for CMBS.

CLOs typically have the highest average dealer price talk depth

Another interesting trend is the consistent differences in price talk depth among dealers, as CLOs will often have six or more primary dealers sharing their price views on a BWIC. Non-agency typically has three or more dealers disseminating price talk on a given BWIC,

and CMBS two or more. Creating BWIC price talk can be a time consuming and tedious task depending on the types of credits being valued. Their efforts do indicate that the trading desk is looking at every bond on the list and is hoping their time will result in a client submitting a bid through them and a potential trade. Increases in price talk depth can be interpreted as an increased effort by the street to spur investor conversations to increase the number of risk free (agent) trades and the traders' belief that the BWIC will actually trade versus a money manager just testing the market. It could simply indicate that BWICs is where most of the trading activity is that day, and not offerings or discrete client principal trades.

Market colour has been trending steadily lower throughout 2015

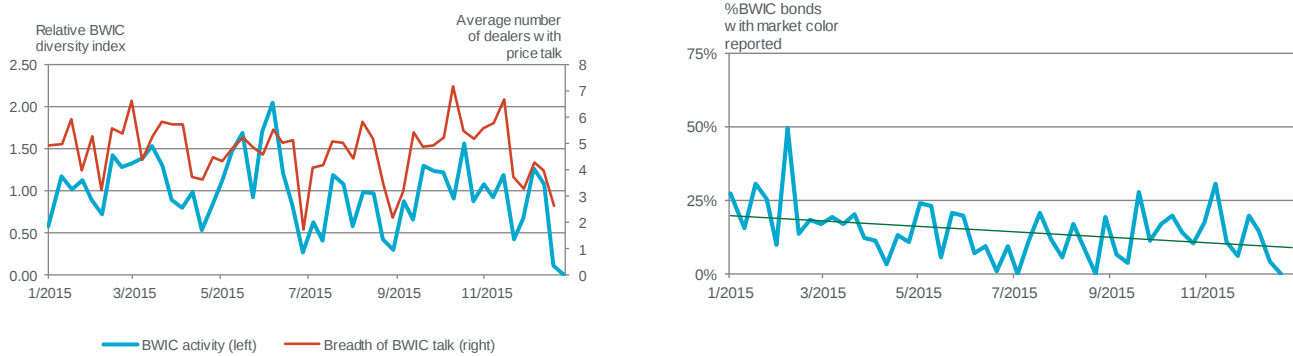
Post-BWIC market colour is highly coveted by every market participant and it is a common courtesy for the buy-side firm issuing the BWIC to share the rough level of the high bid or cover bid for every bond on the list. However, during times of declining prices or less liquidity, the frequency of the dissemination of that information drops precipitously and is often not distributed externally or only shared among a small group of trusted market participants, as that market colour can be used against them if they try to sell those same or similar bonds in the near future. Our data indicates a decline in the percentage of BWIC bonds that had reported market colour across every sector, with CMBS tapering off the most and CLOs declining the least. We note that the higher percentage of shared CLO market colour likely reflects a somewhat higher degree of liquidity and more price transparency compared with CMBS and non-agency. Overall, the decline in this metric is potentially the most concerning of all the trends we observed for the broader analysis of liquidity, as it indicates a decline in overall market transparency, which can further decrease liquidity across the sectors.

Parsed data is an integral component in the analysis of securitised products' liquidity

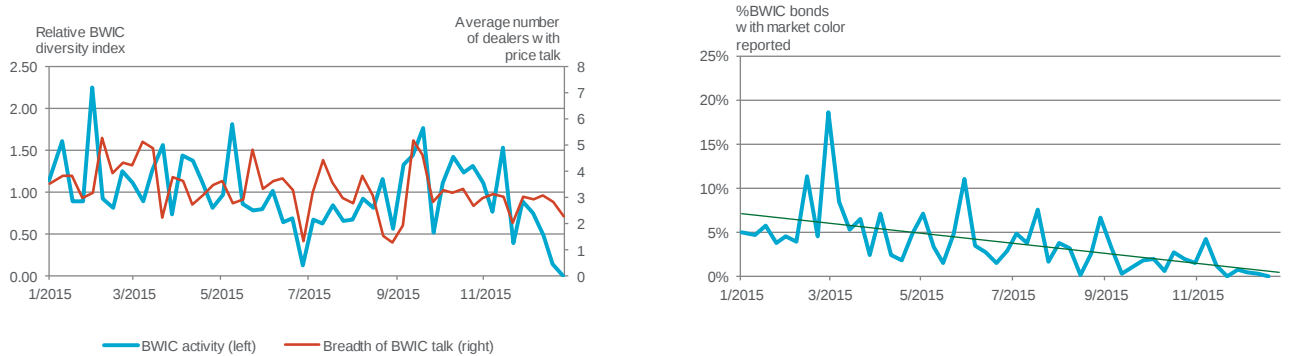
Before TRACE data was collected and disseminated for securitised products, market colour parsed from trader messages was a trader's main tool for determining trade execution levels. We believe that when this parsed data is combined with TRACE trade level data, similar to our analysis on US corporate bond liquidity in November 2015, it creates a series of useful metrics to measure supply technicals and the search cost component of liquidity. To get a much more granular assessment of shifts in liquidity, it would take only a few parsed data fields combined with historical evaluated prices to create a very accurate and almost real time liquidity barometer that can be supplemented with bond structural and performance data. Most important, these metrics can all be normalised across the very diverse securitised products ecosystem to provide a more macro view of changes in portfolio liquidity.

Figure 5: Weekly relative BWIC activity, primary dealer price talk depth, and percentage of BWICs that widely distributed market colour

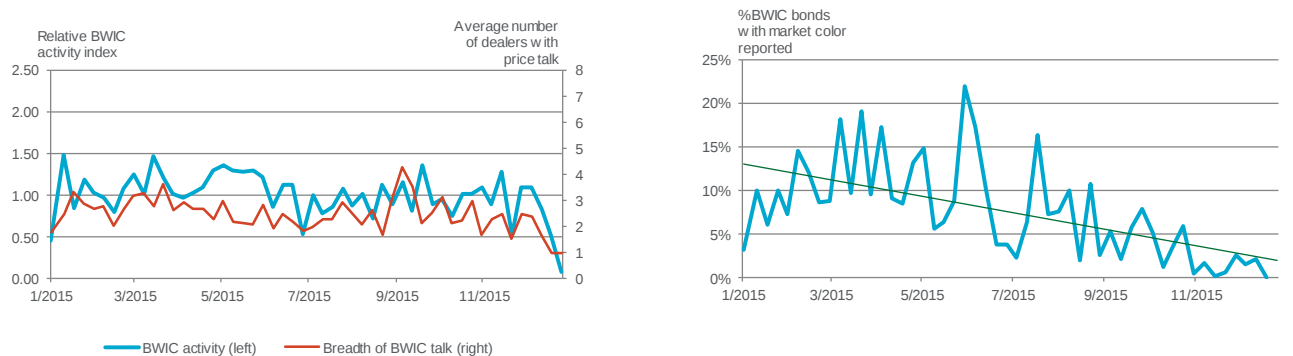
CLOS



Non-agency MBS



CMBS



Source: Markit

Leveraged loans

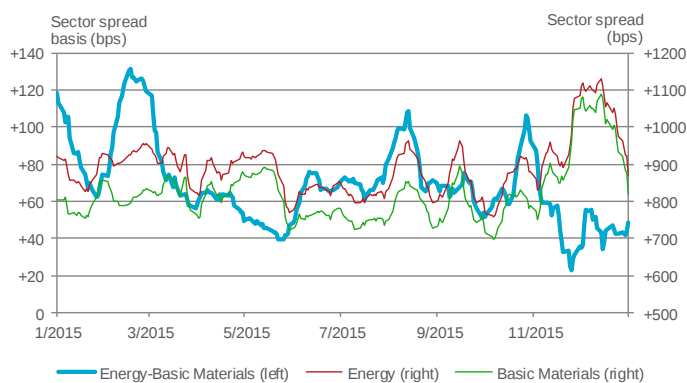
The leveraged loan market continued its slide in December. The Markit iBoxx USD Leveraged Loan index (MiLLi) declined 1.02% during the month, to end the year at -1.04%. 2015 is only the second time since 1992 that the US leveraged loan market finished in negative territory, with 2008 being the other time. On a positive note, European loans were one of the best performers during the year.

Pressure on loan and basic material issues due to steadily declining oil and commodity prices put further pressure on the entire loan market, as liquidity waned. Secondary trading saw an uptick in retail loan fund redemption driven sales during the month, but the emergence of some CLO new issues helped to support the market.

US and European energy issues dominate both worst performers lists

Energy issues made up half of all the worst global performers, with performance on the weakest US distressed credits ranging from -65.8% to -28.2% month-over-month. European distressed loans fared better than those in the US, with the Seadrill Partners 2/14 TL and Expro Holdings 8/14 Cov-Lite TL energy issues ending the month -17.5% and -12.0%, respectively. Energy Transfer Equity 3/15 TL was the worst performer among par loans, ending the month 7.3% lower, which is very modest compared to the 27% decline in its common stock price during the month.

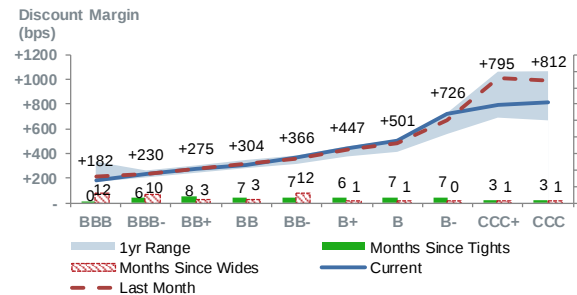
Figure 6: 2015 CCC+ energy and basic materials leveraged loan sector spread basis



Source: Markit

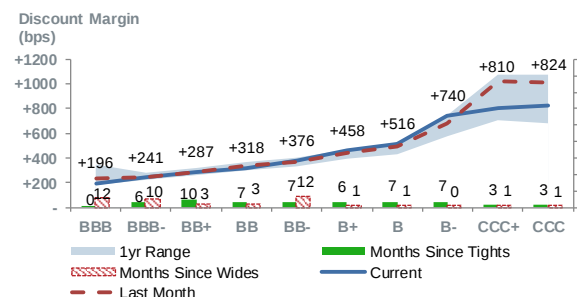
Figure 7: Leveraged loan industrials sector spreads

North America



Source: Markit

Europe



Source: Markit

Industrial loan spreads widened the most

Leveraged loan spreads were tighter across the board for BBB- through BB and the CCC+ cohort, with all CCC+ cohorts over 200bps tighter on the month (Table 2). BB- and B+ spreads were mixed, while B- spreads widened across the board. It's worth noting that the US and European industrial sector spread curves underperformed all other sectors, including the energy sector (Figure 7). The basis between CCC+ energy and basic material sector curves had been between 40bps and 130bps for most of the year, but had gradually tightened as the year progressed. The basis reached it tightest level of the year on November 25th at 23bps, as both sectors' spreads began to widen sharply in mid-December (Figure 6) and the basis had stayed under 60bps for the remainder of the month.

Table 4: December North American loans best and worst price performance¹

North America

	LXID	Loan Name	Sector	Country	Liq score	12/31 price	% change	One year low	Date	One year high	Date
Best Performers											
Par											
1	LX124070	NGPL PipeCo (5/12) TLb	Energy	USA	5	94.25	+7.9%	85.00	11/24/15	97.25	1/13/15
2	LX126015	Cannery Casino 10/12 2nd Lien TL	Consumer Services	USA	4	94.75	+6.5%	74.75	2/3/15	94.75	12/31/15
3	LX134654	Valeant 12/13 TLA3	Healthcare	USA	4	96.25	+2.5%	92.17	11/5/15	99.69	5/20/15
4	LX132659	Valeant 9/13 Series C2 TLB	Healthcare	USA	3	96.35	+2.3%	92.65	11/5/15	100.38	4/14/15
5	LX133815	Brand Energy 11/13 Cov-Lite TL	Industrials	USA	4	94.28	+2.3%	89.65	9/2/15	99.44	5/29/15
Distressed											
1	LX133451	Town Sports 11/13 Cov-Lite TLB	Consumer Services	USA	5	37.00	+10.9%	32.67	11/24/15	85.33	5/5/15
2	LX136428	Millennium Laboratories 4/14 Cov-Lite TLB	Healthcare	USA	5	42.00	+5.0%	29.75	10/1/15	100.59	3/31/15
3	LX134252	Cumulus Media 12/13 TLB	Consumer Services	USA	3	75.33	+3.0%	67.06	11/6/15	99.31	2/27/15
4	LX135737	J. Crew 2/14 Cov-Lite TL	Consumer Services	USA	2	64.48	+2.8%	62.41	12/3/15	94.33	4/9/15
5	LX136120	Fairmount Minerals 3/14 TLB1	Industrials	USA	4	67.70	+2.1%	65.42	12/17/15	99.33	5/6/15
Worst Performers											
Par											
1	LX143455	Energy Transfer Equity 3/15 TL	Energy	USA	4	89.50	-7.3%	89.50	12/31/15	100.34	4/16/15
2	LX133583	BJ's Wholesale Club 11/13 2nd Lien Cov-Lite TL	Consumer Services	USA	4	88.83	-6.9%	88.83	12/31/15	101.04	5/13/15
3	LX128471	MEG Energy 2/13 Cov-Lite TL	Energy	CAN	3	87.70	-6.5%	87.60	12/29/15	98.88	5/6/15
4	LX131438	Eastman Kodak 7/13 Exit TL	Consumer Goods	USA	5	85.67	-6.5%	85.67	12/31/15	100.33	4/13/15
5	LX134917	YRC 2/14 TL	Industrials	USA	4	86.67	-6.2%	86.67	12/31/15	99.00	1/13/15
Distressed											
1	LX138602	Energy & Exploration 7/14 TLB	Energy	USA	4	23.33	-65.8%	23.33	12/31/15	88.50	5/8/15
2	LX140820	Templar Energy 9/14 Cov-Lite 2nd Lien TL	Energy	USA	4	10.50	-63.8%	10.13	12/30/15	78.85	5/15/15
3	LX132457	Fieldwood 9/13 2nd Lien TL	Energy	USA	4	15.00	-49.0%	12.70	12/18/15	82.81	5/18/15
4	LX136847	Bennu Oil & Gas 4/14 2nd Lien TL	Energy	USA	5	24.96	-28.4%	24.50	12/30/15	82.58	5/7/15
5	LX133875	Vantage Drilling 11/13 TL	Energy	CYM	3	20.10	-28.2%	19.68	12/23/15	83.10	5/27/15

Source: Markit

¹ Par is defined as a loan with a month end price of 85 or higher and distressed has a price lower than 85.

Table 4: December European loans best and worst price performance¹

Europe

	LXID	Loan Name	Sector	Country	Liq score	12/31 price	% change	One year low	Date	One year high	Date
Best Performers											
Par											
1	LX141768	PHS 10/14 (GBP) Holdco PIK TL	Industrials	GBR	4	85.00	+4.5%	65.17	1/19/15	87.17	11/6/15
2	LX133019	Tunstall 9/13 (GBP) TLB1	Telecom Services	GBR	4	93.79	+4.2%	73.36	1/5/15	94.05	12/3/15
3	LX134783	HC Starck 12/13 (USD) 1 TLE	Basic Materials	DEU	4	91.67	+2.6%	88.58	11/10/15	98.38	7/21/15
4	LX135240	Frans Bonhomme 1/14 TLB	Consumer Goods	FRA	4	89.90	+1.9%	87.00	2/13/15	93.78	4/1/15
5	LX129945	Oxea 7/13 (EUR) Cov-Lite TLB1	Basic Materials	LUX	3	97.33	+1.3%	95.43	1/26/15	98.68	3/6/15
Distressed											
1	LX143071	BARTEC 11/14 (USD) TLC	Industrials	DEU	5	83.08	+1.7%	81.00	11/20/15	83.08	12/31/15
2	LX130766	SICL TL	Financials	SAU	5	20.25	+0.4%	11.33	2/11/15	20.38	12/29/15
3	LX137334	Deoleo 6/14 2nd Lien TL	Consumer Goods	ESP	5	80.33	+0.1%	77.67	9/16/15	93.00	4/8/15
4	LX141716	Autobar 10/14 Senior TL	Consumer Goods	NLD	2	84.61	+0.1%	84.54	11/30/15	96.70	5/18/15
5	LX059053	Fraikin 2/07 (EUR) Holdco TL	Consumer Services	FRA	4	53.50	-	51.83	10/28/15	70.40	3/11/15
Worst Performers											
Par											
1	LX138005	Mauser 7/14 (USD) Cov-Lite 2nd Lien TL	Industrials	DEU	5	87.67	-6.5%	87.67	12/31/15	99.75	6/2/15
2	LX139558	Endemol 8/14 (USD) Cov-Lite TL	Consumer Services	NLD	4	88.42	-5.4%	88.42	12/31/15	99.69	4/21/15
3	LX139578	Vivarte 10/14 Super Senior TL	Consumer Goods	FRA	2	98.31	-3.6%	77.73	2/3/15	107.46	10/27/15
4	LX122688	Tronox (2/12) TL	Basic Materials	NLD	1	88.25	-3.2%	86.50	9/29/15	100.40	4/13/15
5	LX139396	Amaya 7/14 (USD) Cov-Lite TL	Consumer Services	NLD	3	93.50	-2.3%	90.96	11/16/15	100.45	4/16/15
Distressed											
1	LX135384	Seadrill Partners 2/14 TL	Energy	GBR	2	41.33	-17.5%	34.88	12/14/15	83.50	5/20/15
2	LX139588	Expro Holdings 8/14 Cov-Lite TL	Energy	LUX	4	66.42	-12.0%	66.17	12/21/15	89.88	4/16/15
3	LX141989	Vivarte 10/14 Reinstated TL (ORA/Pref + Equity Stapled) TL	Consumer Goods	FRA	4	64.50	-11.4%	23.00	1/30/15	75.05	11/11/15
4	LX141502	Endeavour 10/14 TL	Energy	NLD	5	23.00	-10.2%	21.33	12/30/15	88.50	1/5/15
5	LX136501	SkillSoft 4/14 Cov-Lite TL	Technology	LUX	4	77.00	-8.3%	76.00	12/22/15	99.94	4/28/15

Source: Markit

Table 2: North American and European loan sector curve monthly discount margin spread change in basis points

		BBB-	BB+	BB	BB-	B+	B	B-	CCC+
Basic Materials	NA	-14	-18	-32	-3	+1	+4	+43	-231
	EU	-16	-19	-34	-5	-1	+3	+41	-233
	Change in NA-EU	+1.9	+0.4	+1.4	+1.9	+2.0	+0.6	+1.9	+1.2
Consumer Goods	NA	-7	-11	-25	+4	+8	+11	+50	-224
	EU	-8	-11	-26	+2	+7	+11	+48	-225
	Current NA-EU	+1.4	-0.1	+0.9	+1.4	+1.5	+0.1	+1.4	+0.7
Consumer Services	NA	-7	-11	-25	+4	+9	+12	+50	-224
	EU	-8	-11	-26	+3	+7	+11	+49	-225
	Current NA-EU	+1.5	-0.0	+1.0	+1.4	+1.5	+0.2	+1.5	+0.8
Energy	NA	-1	-5	-19	+10	+15	+18	+56	-218
	EU	-3	-5	-20	+8	+13	+17	+54	-219
	Current NA-EU	+2.0	+0.5	+1.5	+2.0	+2.1	+0.7	+2.0	+1.3
Financials	NA	-10	-14	-28	+1	+5	+8	+47	-227
	EU	-12	-14	-29	-1	+4	+8	+45	-228
	Current NA-EU	+1.4	-0.1	+0.9	+1.3	+1.4	+0.1	+1.4	+0.7
Healthcare	NA	-12	-16	-30	-1	+4	+7	+45	-229
	EU	-13	-15	-30	-2	+3	+7	+44	-229
	Current NA-EU	+0.8	-0.8	+0.2	+0.7	+0.8	-0.5	+0.7	+0.0
Industrials	NA	-0	-4	-18	+10	+15	+18	+56	-218
	EU	-2	-4	-19	+9	+14	+18	+55	-218
	Current NA-EU	+1.5	-0.1	+0.9	+1.4	+1.5	+0.2	+1.4	+0.7
Technology	NA	-5	-9	-24	+5	+10	+13	+51	-223
	EU	-6	-9	-24	+5	+9	+13	+51	-223
	Current NA-EU	+0.7	-0.8	+0.2	+0.7	+0.8	-0.6	+0.7	-0.0
Telecommunication Services	NA	-2	-6	-20	+9	+14	+17	+55	-219
	EU	-4	-6	-21	+7	+12	+16	+53	-220
	Current NA-EU	+2.2	+0.7	+1.7	+2.1	+2.2	+0.9	+2.2	+1.5
Utilities	NA	-15	-19	-33	-4	+1	+4	+42	-232
	EU	-16	-19	-34	-6	-1	+3	+40	-233
	Current NA-EU	+1.7	+0.1	+1.1	+1.6	+1.7	+0.4	+1.6	+0.9

Source: Markit

Credit default swaps

Global CDS were wider across the credit spectrum in December (**Figure 8**), with global CCC cohorts reaching the widest levels of 2015. AAA North America CDS reached their widest level of the year, while most North American and European CDS above CCC remained below their worst levels reported in September (**Figure 9**). Japanese CDS, from AAA to B, widened across the board, but still managed to remain below their widest levels reported in January 2015. However, Markit liquidity score data indicates that APAC CDS liquidity deteriorated in December. The percentage of liquidity scores of 2 or better decreased from 8.7% in November to 0.2% in December.

Pfizer and UnitedHealth among the best performers in the Americas

The largest CDS moves were largely concentrated towards the downside as credit investors reacted in much the same fashion as the rest of the fixed income market. Despite widespread widening, several names managed to see their CDS spreads tighten significantly over the month. Pfizer tightened the most on a percentage basis, as investors warmed up to its \$160bn merger with Botox maker Allergan. This improving sentiment drove its spreads 11bps tighter over the month to 19bps, half the levels seen just after the Allergan takeover was first announced. UnitedHealth also made the top five list of the America's best performers, as its spread improved by 9bps to 23 bps.

Auto sentiment improves in Europe

In Europe, improvements in investor sentiment towards BMW drove further tightening in the company's CDS spreads, tightening 7bps basis points over the month. While its spread is now roughly half of the widest point it reached over the summer, the continuing slowdown in its key growth market China looks to be high on investors' list of concerns, as BMW's CDS have still been trending wider since March.

Japanese basic materials CDS were the worst performers in APAC

In Asia, Japanese basic materials firms made up four of the five firms seeing the most improvement in CDS spreads over the month. This trend was led by Mitsui Chemicals whose spread widened 20bps to 94bps. Nippon Steel Sumitomo Metal saw its CDS tighten 13bps to end the year at 86bps after hitting a new one year wide of 103bps on December 14th.

Energy issuers amongst the worst performing CDS globally (again)

While some firms saw CDS spread improvements, most of the market swung the other way as seen by the broad based spread widening. Commodities firms were at the forefront of that trend, with Chesapeake Energy widening by 1686bps over the month. Energy companies Transocean and Petroleos de Venezuela were amongst the worst performers globally, as a direct result of the collapse in the oil prices. Dell also was a notable addition to the worst performers list, as its spreads widened to new 2015 highs, as investor took stock of the deteriorating PC market at the same time the firm gets ready to consummate its merger with EMC.

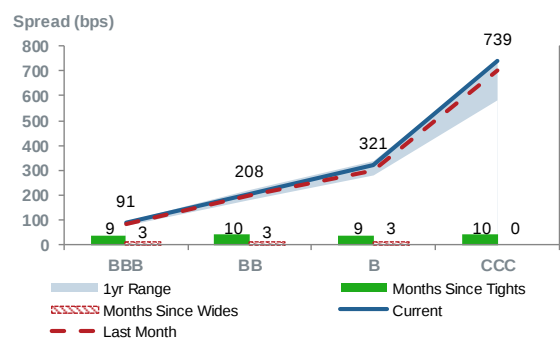
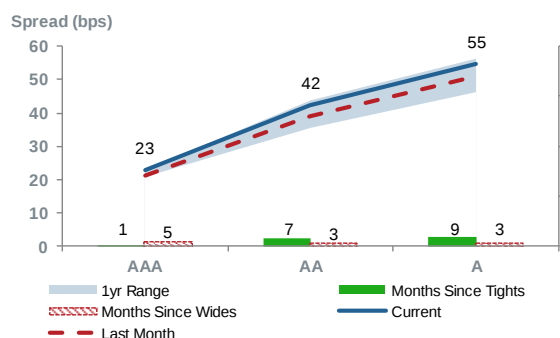
European supermarket CDS hit hardest

The most volatile swing in Europe was seen after short seller Muddy Waters targeted French supermarket company Casino which it called "dangerously leveraged". This sent the CDS spreads tied to Casino's parent company Rallye wider by 431bps to settle at 1189bps. Its peer Carrefour looks to have been caught up in the concerns for the sector, as its spread widened by 25bps to 87bps.

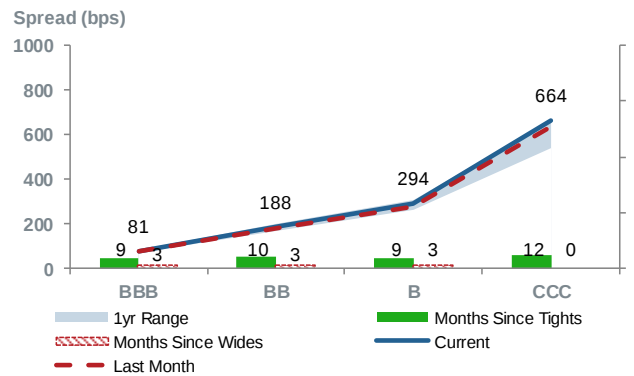
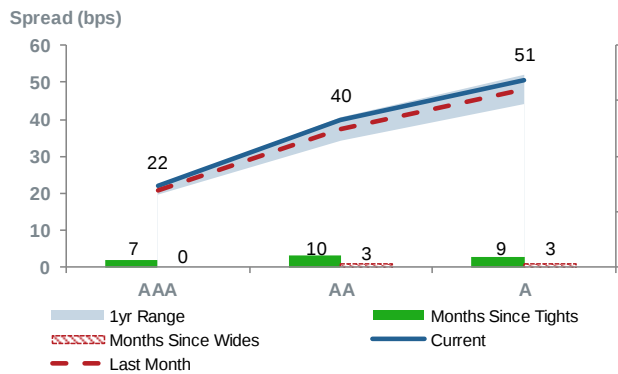
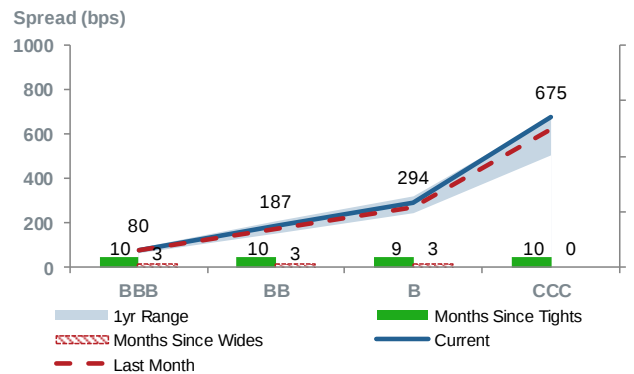
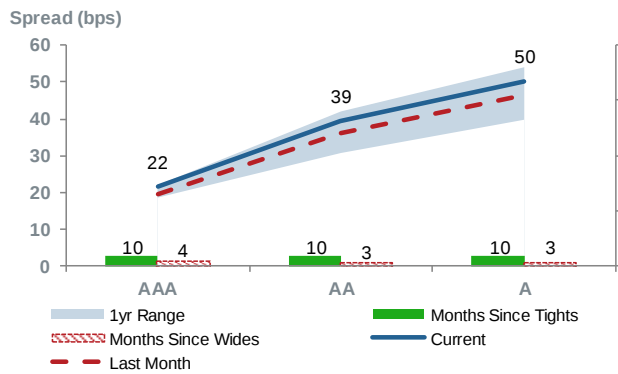
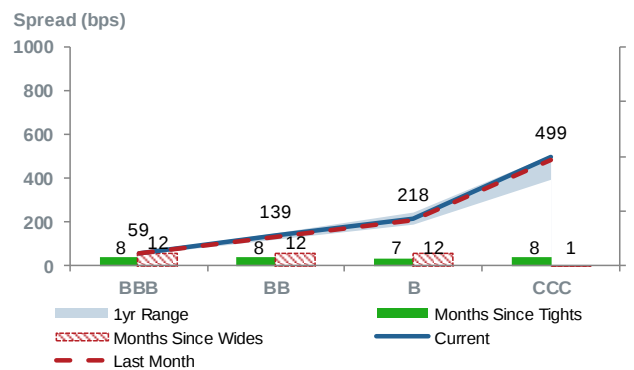
Toshiba spreads continue to come under pressure

The largest widener in Asia was Toshiba whose spreads hit new one year wides in December, widening by 81bps to close at 384bps, as the firm reported a record annual loss. Toshiba CDS were as tight as 44bps in late-April before accounting discrepancies were brought to light.

Figure 8: Global CDS sector spread summary



Source: Markit

Figure 9: December regional CDS sector spread summary**North America****Europe****Japan**

Source: Markit

Table 3: December liquid 5yr corporate CDS best spread performance²

Best performers

	Ticker	Company	Sector	Country	Liq score	12/31 spread	Change	% change	One year tight	Date	One year wide	Date
Americas												
1	PFE	Pfizer Inc	Healthcare	USA	1	19	-11	-37.3%	14	3/19/15	38	10/30/15
2	XLITLTD	XLIT Ltd	Financials	CYM	1	27	-10	-28.1%	26	1/26/15	53	9/28/15
3	UNH	UnitedHealth Gp Inc	Healthcare	USA	1	23	-9	-27.4%	22	12/23/15	40	7/1/15
4	TGT	Target Corp	Consumer Services	USA	2	23	-8	-25.4%	20	4/14/15	33	1/5/15
5	X	Utd Sts Stl Corp	Basic Materials	USA	2	2067	-571	-21.6%	442	1/1/15	2739	11/24/15
EMEA												
1	ACE	ACE Ltd	Financials	CHE	2	17	-5	-22.4%	15	1/27/15	38	7/8/15
2	CPGLN	Compass Gp PLC	Consumer Services	GBR	2	35	-5	-13.2%	23	3/6/15	50	9/29/15
3	BMW	Bay Motoren Werke AG	Consumer Goods	DEU	2	71	-7	-9.1%	34	3/6/15	130	9/24/15
4	RWE	RWE AG	Utilities	DEU	2	119	-11	-8.4%	63	3/19/15	170	9/29/15
5	DEXO	SODEXO	Consumer Services	FRA	2	45	-4	-7.6%	35	3/6/15	61	9/29/15
APAC												
1	MITTOA	Mitsui Chems Inc	Basic Materials	JPN	3	94	-20	-17.3%	66	4/30/15	120	1/6/15
2	SUMICH	Sumitomo Chem Co Ltd	Basic Materials	JPN	3	53	-10	-16.2%	39	4/29/15	68	9/30/15
3	JFEHLD	JFE Hldgs Inc	Basic Materials	JPN	3	124	-20	-13.6%	44	4/17/15	153	12/15/15
4	NIPPOST	Nippon Steel Sumitomo Metal Corp	Basic Materials	JPN	3	86	-13	-13.2%	41	4/17/15	103	12/14/15
5	TAISEI	TAISEI Corp	Industrials	JPN	3	39	-5	-12.2%	35	4/29/15	51	1/6/15

Source: Markit

² A liquid CDS is defined as an entity with a current liquidity score of 1 or 2. Markit liquidity scores range from 1-5, with 1 being the most liquid and 5 the least. This month we expanded to scores of 3 for the APAC region due to a decrease in the number of liquid CDS from that region.

Table 4: December liquid 5yr corporate CDS worst spread performance²

Worst performers

	Ticker	Company	Sector	Country	Liq score	12/31 spread	Change	% change	One year tight	Date	One year wide	Date
Americas												
1	CHK	Chesapeake Engy Corp	Energy	USA	2	4499	+1686	+59.9%	292	2/24/15	5003	12/18/15
2	DELLN	Dell Inc	Technology	USA	2	468	+157	+50.6%	145	2/19/15	469	12/28/15
3	MERIINC	Meritor Inc	Consumer Goods	USA	2	598	+188	+45.8%	253	1/26/15	602	12/21/15
4	RIG	Transocean Inc	Energy	CYM	2	1406	+367	+35.3%	556	5/14/15	1702	12/18/15
5	PDV	Petroleos de Venezuela Sa	Energy	VEN	2	6407	+1599	+33.3%	3702	5/11/15	8628	8/26/15
EMEA												
1	GENP	Rallye	Consumer Services	FRA	2	1189	+431	+57.0%	204	3/6/15	1195	12/22/15
2	CARR	Carrefour	Consumer Services	FRA	2	87	+25	+41.4%	40	3/16/15	87	12/22/15
3	REPSSA	REPSOL SA	Energy	ESP	2	257	+66	+34.8%	84	3/6/15	257	12/31/15
4	LINDE	Linde AG	Basic Materials	DEU	2	36	+9	+31.9%	20	4/16/15	36	12/15/15
5	ORANAA	Orange	Telecom Services	FRA	2	70	+13	+22.9%	43	2/27/15	75	9/29/15
APAC												
1	TOSH	TOSHIBA Corp	Industrials	JPN	3	384	+81	+26.7%	44	4/29/15	385	12/29/15
2	MARUB	Marubeni Corp	Energy	JPN	3	134	+21	+18.2%	61	6/11/15	135	12/29/15
3	MIT SOL	Mitsui OSK Lines Ltd	Industrials	JPN	3	209	+29	+15.8%	90	4/24/15	221	12/15/15
4	MUFJ-BTMUFJ	Bk of Tokyo Mitsubishi UFJ Ltd	Financials	JPN	3	90	+11	+13.7%	41	4/16/15	92	12/21/15
5	KAWKIS	Kawasaki Kisen Kaisha Ltd	Industrials	JPN	3	175	+19	+12.3%	84	3/19/15	175	12/31/15

Source: Markit

Global corporate bonds

December proved to be an eventful month as the Federal Reserve raised interest rates for the first time since 2006, ending a zero rate policy that started exactly seven years ago to the day. The month started on a negative tone when European Central Bank disappointed the market when it failed to meet apparently inflated expectations of more significant monetary stimulus. Continued weakness in oil and commodity prices also weighed on fixed income markets. Based on corporate bond sector curve data (**Figure 10**), yields on USD denominated financial sector widened from AAA through BB, while yields for BB- and below tightened slightly in December.

US high yield bonds set the tone for the month

It was the US high yield (HY) bond market that drove the majority of risk sentiment during the month, as bond returns suffered one of their worst months of 2015. Widening spreads in the CCC rated HY cohort culminated in multiple high yield credit funds being forced to liquidate, which sent ripples through the broader corporate bond market. Both \$ HY, as represented by the Markit iBoxx \$ Liquid High Yield index, and Euro HY suffered losses of -2.3% and -2.5%, respectively, in December (**Table 5**). The heightened volatility also dragged down investment grade (IG) corporate bonds, with iBoxx \$ Corporates and Iboxx € Corporates returning -0.8% and -0.9%, respectively. Ironically, the best performing global corporate bond market in 2015 was actually £ HY, which returned 4.9% in 2015, while £ basic materials was the worst at -9.2%.

Basic materials and energy sectors declined further

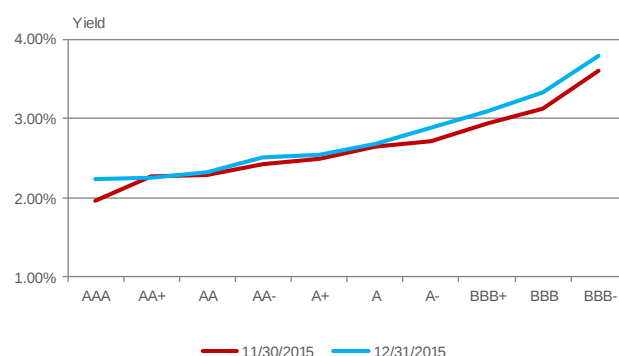
Basic materials and the oil & gas sectors suffered from further weakening in commodity prices, with \$ bonds returning -3.0% and -3.5%, respectively, on the month. In fact, no sectors in the \$ market registered a positive return in December, highlighting the extent to which the HY bond volatility and Fed rate hike and declining commodity prices affected bond returns among higher quality corporates.

It should not come as a surprise that the worst performing bonds in December were scattered amongst the energy sector (**Table 7**). NRL Energy Investments 8.25% 2018 bond dropped 75% to just 10.00, while California Resources 6% bond maturing in 2024 shed nearly 49% of its value over the course of the month.

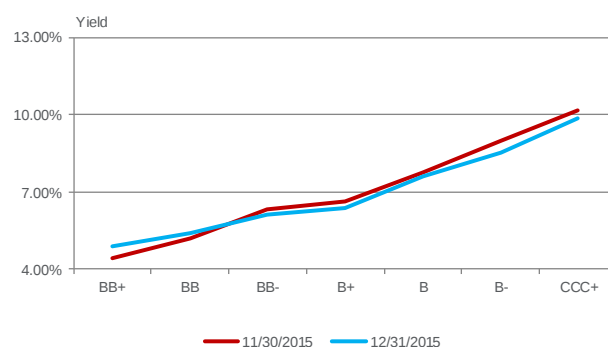
European financials end the year in positive territory

In Europe, only financial based sectors ended the year in positive territory. Like \$ corporates, December returns were negative across all sectors. Troubled Portuguese bank Banco Espirito Santo saw its 4.75% 2018 bond lose 89% of its value and was the worst performing bond in the region (**Table 7**). Portugal Telecom also saw two of its short term bonds fall over 30%. There were however a few bright spots. Societe Generale's 6% subordinated bond and Barclays Bank Plc 3/2038 both gained 8%.

Figure 10: USD denominated corporate bond financial sector credit curves
Investment grade



High yield



Source: Markit

Table 5: December corporate bond US and European iBoxx indices performance

Index	Total Return						Yield						Duration		
	Month			YTD			Current			Month					
	\$	€	£	\$	€	£	\$	€	£	\$	€	£	\$	€	£
Corporates	-0.76%	-0.85%	-1.00%	-0.40%	-0.66%	+0.57%	4.35%	1.79%	3.94%	+0.13%	+0.19%	+0.17%	6.5	5.0	7.9
Corporates AAA	+0.12%	-0.78%	-1.43%	+0.37%	-0.15%	+1.41%	3.63%	1.37%	2.98%	+0.05%	+0.13%	+0.12%	8.7	6.8	14.2
Corporates AA	-0.23%	-0.82%	-1.06%	+1.04%	-0.51%	+0.53%	3.56%	1.29%	3.35%	+0.05%	+0.16%	+0.14%	6.1	5.4	8.9
Corporates A	-0.38%	-0.74%	-1.07%	+0.88%	-0.42%	+0.55%	3.83%	1.49%	3.82%	+0.11%	+0.16%	+0.16%	6.1	5.0	8.5
Corporates BBB	-1.32%	-0.97%	-0.93%	-2.14%	-0.91%	+0.59%	5.06%	2.27%	4.27%	+0.19%	+0.22%	+0.20%	6.9	4.8	7.1
Banks	-0.31%	-0.55%	-0.73%	+1.89%	+0.45%	+2.24%	3.72%	1.38%	3.76%	+0.14%	+0.17%	+0.18%	4.7	4.1	6.3
Basic Materials	-2.96%	-2.39%	-3.77%	-7.99%	-7.52%	-9.24%	6.06%	3.18%	5.37%	+0.42%	+0.57%	+0.73%	6.5	4.9	6.8
Consumer Goods	-0.09%	-0.61%	-0.50%	+0.64%	-1.62%	+0.38%	3.88%	1.66%	3.34%	+0.04%	+0.11%	+0.23%	5.8	5.3	5.6
Consumer Services	-0.42%	-1.29%	-1.23%	-1.13%	-1.63%	-0.67%	4.47%	1.96%	3.80%	+0.10%	+0.24%	+0.18%	8.1	5.8	8.8
Financials	-0.26%	-0.63%	-0.70%	+1.81%	+0.31%	+1.97%	3.84%	1.71%	3.96%	+0.12%	+0.18%	+0.17%	5.2	4.4	6.8
Health Care	-0.09%	-0.77%	-1.56%	+0.50%	-0.09%	-0.17%	3.97%	1.54%	3.73%	+0.05%	+0.16%	+0.16%	7.5	5.9	12.3
Industrials	-0.34%	-0.65%	-0.76%	-0.01%	-0.18%	+1.52%	4.10%	1.48%	3.66%	+0.08%	+0.17%	+0.13%	7.2	4.9	8.4
Insurance	-0.25%	-1.17%	-0.58%	+0.80%	+0.17%	+1.40%	4.44%	3.25%	4.84%	+0.05%	+0.25%	+0.16%	7.6	6.0	7.0
Non-Financials	-1.05%	-1.01%	-1.21%	-1.69%	-1.39%	-0.35%	4.56%	1.83%	3.93%	+0.14%	+0.20%	+0.18%	7.2	5.4	8.6
Oil & Gas	-3.46%	-2.32%	-1.02%	-5.32%	-2.58%	+0.57%	5.54%	2.16%	3.44%	+0.45%	+0.42%	+0.19%	6.8	5.8	6.8
Technology	+0.00%	-0.85%	N/A	+0.44%	-0.38%	N/A	3.90%	1.42%	N/A	+0.04%	+0.14%	N/A	6.9	7.2	N/A
Telecommunications	-0.73%	-0.81%	-1.21%	-0.35%	-0.68%	-0.19%	4.79%	1.89%	4.20%	+0.13%	+0.16%	+0.19%	8.4	5.5	8.4
Utilities	-0.68%	-0.78%	-1.31%	-1.65%	-0.52%	-0.42%	4.58%	1.79%	4.08%	+0.10%	+0.17%	+0.17%	8.2	5.3	9.5
High Yield Liquid High Yield	-2.29%	-2.45%	-0.64%	-5.03%	+0.23%	+4.85%	8.11%	5.30%	6.11%	+0.41%	+0.67%	+0.35%	4.3	3.5	3.6
Convertible CVBX	-1.24%	-0.44%	+1.29%	+0.07%	+6.03%	+2.76%	0.91%	5.79%	7.62%	+0.27%	+0.11%	-0.13%	6.6	4.4	5.6
Contingent Convertible	-0.41%	-0.44%	+1.29%	+5.72%	+6.03%	+2.76%	7.12%	5.79%	7.62%	+0.13%	+0.11%	-0.13%	4.8	4.4	5.6

Source: Markit

Table 6: December global corporate bond best price performance

Best performers

	Ticker	Issue	Sector	Country	CCY	Liq score	12/31 price	Change	% change	One year low	Date	One year high	Date
Americas													
1	CFGL-INC	CFG Investment S.A.C. 9.75 7/2019	Consumer Goods	PER	USD	2	49.00	+16.00	+48.5%	32.00	11/27/15	98.25	8/11/15
2	COMMCHO	Community Choice Financial Inc. 10.75 5/2019	Financials	USA	USD	4	25.75	+5.25	+25.6%	15.15	11/23/15	67.50	3/23/15
3	BANCOBT	Banco BTG Pactual S.A., Cayman Islands Branch 5.75 9/2022	Financials	BRA	USD	1	70.42	+10.42	+17.4%	37.62	12/3/15	94.00	7/7/15
4	MOTSOL	Motorola Solutions, Inc. 4 9/2024	Technology	USA	USD	2	98.06	+11.07	+12.7%	86.26	12/22/15	104.49	1/30/15
5	HSCI-Fin	Hexion U.S. Finance Corp. 9 11/2020	Basic Materials	USA	USD	1	38.50	+3.90	+11.3%	33.55	12/2/15	82.00	5/21/15
EMEA													
1	INTSAT-Lux	Intelsat (Luxembourg) S.A. 7.75 6/2021	Telecom Services	LUX	USD	1	46.65	+7.65	+19.6%	39.00	11/30/15	100.50	2/17/15
2	SOCGEN	Societe Generale 6 12/2099	Financials	FRA	USD	2	102.00	+7.53	+8.0%	89.00	1/19/15	102.48	11/18/15
3	BACR-Bank	Barclays Bank Plc 3/2038	Financials	GBR	GBP	3	60.49	+4.21	+7.5%	47.00	3/20/15	60.67	12/9/15
4	ALTICEU	Altice US Finance I Corporation 5.375 7/2023	Consumer Services	FRA	USD	2	100.37	+4.12	+4.3%	94.50	9/28/15	101.37	12/3/15
5	STORKT	Stork Technical Services Holdco B.V. 11 8/2017	Industrials	NLD	EUR	2	102.31	+4.03	+4.1%	83.00	2/17/15	103.58	12/10/15
APAC													
1	QCOM	Qualcomm Incorporated 4.8 5/2045	Technology	CHN	USD	1	88.44	+5.17	+6.2%	81.70	11/11/15	101.77	5/15/15
2	HONGKIN	Hong Kong International (Qingdao) Company Limited 5.95 2/2025	Industrials	CHN	USD	3	101.06	+4.38	+4.5%	94.25	11/9/15	102.30	12/11/15
3	YANCINT	Yancoal International Resources Development Co., Limited 5.73 5/2022	Energy	CHN	USD	1	89.00	+2.25	+2.6%	83.75	11/16/15	93.25	4/3/15
4	SENSAT	Sensata Technologies B.V. 5 10/2025	Utilities	CHN	USD	3	96.25	+1.50	+1.6%	92.75	10/2/15	103.25	4/28/15
5	KOEXP	Korea Expressway Corporation 4.25 3/2027	Industrials	KOR	KRW	4	120.97	+1.86	+1.6%	115.32	5/13/15	121.87	10/8/15

Source: Markit

Table 7: December global corporate bond worst price performance

Worst performers

Ticker	Issue	Sector	Country	CCY	Liq score	12/31 price	Change	% change	One year low	Date	One year high	Date
Americas												
1 NRLENE	NRL Energy Investments Ltd. 8.25 4/2018	Energy	CAN	CAD	3	10.00	-30.00	-75.0%	10.00	12/31/15	83.00	1/26/15
2 NINEWES	Nine West Holdings, Inc. 8.25 3/2019	Consumer Goods	USA	USD	2	20.00	-34.00	-63.0%	20.00	12/31/15	84.75	2/20/15
3 CALIRES	California Resources Corporation 6 11/2024	Energy	USA	USD	2	30.57	-29.31	-48.9%	29.75	12/28/15	95.25	5/6/15
4 MEMORPR	Memorial Production Partners Lp 7.625 5/2021	Energy	USA	USD	1	29.78	-28.50	-48.9%	28.00	12/25/15	99.88	5/5/15
5 DNR	Denbury Resources Inc. 5.5 5/2022	Energy	USA	USD	1	32.31	-29.69	-47.9%	32.00	12/22/15	96.81	5/19/15
EMEA												
1 ESPSAN	Banco Espirito Santo, S.A. 4.75 1/2018	Financials	PRT	EUR	2	10.00	-83.41	-89.3%	10.00	12/31/15	104.39	3/11/15
2 WASTITA	Waste Italia S.P.A. 10.5 11/2019	Industrials	ITA	EUR	3	30.00	-21.50	-41.7%	30.00	12/31/15	92.00	3/31/15
3 PLTMPL-IntFin	Portugal Telecom International Finance B.V. 5.242 11/2017	Telecommunications Services	PRT	EUR	2	67.00	-37.85	-36.1%	67.00	12/31/15	106.15	1/2/15
4 NAVMH	Navios Maritime Holdings Inc. 7.375 1/2022	Industrials	GRC	USD	2	49.50	-27.00	-35.3%	49.00	12/25/15	94.25	3/4/15
5 PLTMPL-IntFin	Portugal Telecom International Finance B.V. 5 11/2019	Telecommunications Services	PRT	EUR	2	55.00	-27.00	-32.9%	50.00	12/11/15	104.92	1/2/15
APAC												
1 PACIAND	Pacific Andes Resources Development Limited 8.5 7/2017	Consumer Goods	HKG	SGD	2	19.84	-10.16	-33.9%	18.68	12/29/15	95.95	1/14/15
2 ANTOOIL	Anton Oilfield Services Group 7.5 11/2018	Energy	CHN	USD	1	34.00	-10.00	-22.7%	32.00	10/2/15	84.00	1/5/15
3 MIEHOL	MIE Holdings Corporation 7.5 4/2019	Energy	CHN	USD	2	43.00	-12.00	-21.8%	42.00	12/23/15	80.00	6/2/15
4 VDR	Vedanta Resources Plc 8.25 6/2021	Basic Materials	IND	USD	1	57.75	-16.00	-21.7%	57.00	12/23/15	103.00	6/25/15
5 HONGGRO	Honghua Group Limited 7.45 9/2019	Energy	CHN	USD	1	40.00	-9.00	-18.4%	35.00	10/5/15	68.25	5/19/15

Source: Markit

Sovereigns

French sovereign CDS was the best performer in the G7 and globally, on a spread percentage basis, as it tightened 1.7bps (-6.2%) to close the month at 25.8bps (**Table 8**). German CDS reached a new one year tightest spread of 12.6bps during the month. Canadian CDS reached a new one-year wide of 26.5bps on December 16th, but tightened to 26.0bps to close the month unchanged. United Kingdom CDS was the worst performer amongst the G7, widening 1.7bps on the month.

Belgium and Austrian CDS amongst the best performers in December

Belgium and Austrian CDS were the best performers on the month, tightening 5.8% and 5.3%, respectively, with the former reaching a new one year best level of 2015 (**Table 9**). Two concerning points with the CDS data is that liquidity in APAC appears to be waning, as indicated by only a handful of countries had a Markit liquidity score of 2 or better in December and that the bottom five best performers all widened during the month, albeit at a slower rate than the broader CDS market.

Commodity producing countries dominated the worst performers in CDS and bonds

Commodity producing countries were the worst performers during the month, with Venezuela (+30.8%), South Africa (+26.2%), Russia (+13.7%), Brazil (+11.4%), and Mexico (+10.6%) the worst CDS performers on the month. This was mirrored in the sovereign bond market (**Table 11**), with USD denominated Bolivarian Republic of Venezuela 12.75 8/2022 -12.2% and ZAR denominated Republic of South Africa 8.75 1/2045 -9.5% being the worst performers in their respective regions.

APAC sovereign bond best performers were the strongest across every region

The best performers in APAC improved over 3% on average, albeit all were dominated in their local currency. This is compared to the Americas and EMEA, which only improved an average of 1.9% and 1.5%, respectively. CNY denominated People's Republic of China 3.99 5/2065 was the best performer globally, improving 6.4% on the month.

Table 8: December G7 industrialised countries ranked by percent change in CDS spreads

			12/31 10yr bond yield	CDS change	12/31 CDS	% change	One year tight	Date	One year wide	Date
1	FRTR	France	0.97%	-1.7	25.8	-6.2%	25.7	12/24/15	52.1	1/21/15
2	JAPAN	Japan	0.24%	-2.1	49.7	-4.0%	34.0	8/18/15	72.7	1/6/15
3	CAN	Canada	1.40%	+0.0	26.0	-	18.2	2/9/15	26.5	12/16/15
4	DBR	Germany	0.63%	+0.0	13.5	-	12.6	12/24/15	17.7	2/11/15
5	ITALY	Italy	1.59%	+2.4	97.5	+2.6%	91.6	12/9/15	155.6	7/7/15
6	USGB	United States	2.27%	+1.0	20.5	+5.1%	14.3	9/18/15	22.4	11/3/15
7	UKIN	United Kingdom	1.96%	+1.7	18.5	+10.1%	15.2	9/30/15	21.9	4/15/15

Source: Markit

Table 9: December liquid sovereign 5yr CDS best and worst spread performance²

			Liq Score	Change	12/31 spread	% change	One year tight	Date	One year wide	Date
Best Performers										
1	FRTR	France	1	-2	26	-6.2%	26	12/24/15	52	1/21/15
2	BELG	Belgium	1	-2	34	-5.8%	34	12/3/15	51	1/21/15
3	AUST	Austria	2	-1	23	-5.3%	22	1/2/15	31	6/29/15
4	JAPAN	Japan	2	-2	50	-4.0%	34	8/18/15	73	1/6/15
5	AUSTLA	Australia	2	-1	40	-1.8%	30	3/6/15	56	9/29/15
6	DBR	Germany	2	+0.02	13.5	+0.1%	12.6	12/24/15	17.7	2/11/15
7	CHILE	Chile	2	+1	126	+0.7%	78	6/18/15	153	9/29/15
8	KAZAKS	Kazakhstan	2	+6	286	+2.0%	213	5/18/15	342	1/7/15
9	TURKEY	Turkey	2	+6	267	+2.1%	176	1/15/15	323	9/29/15
10	ITALY	Italy	2	+2	97	+2.6%	92	12/9/15	156	7/7/15
Worst Performers										
1	VENZ	Venezuela	1	+1397	5937	+30.8%	3395	5/8/15	8219	1/22/15
2	SOAF	South Africa	1	+69	331	+26.2%	187	2/26/15	343	12/11/15
3	RUSSIA	Russia	2	+37	306	+13.7%	250	11/19/15	627	1/30/15
4	BRAZIL	Brazil	2	+50	489	+11.4%	194	1/23/15	533	9/28/15
5	MEX	Mexico	2	+16	170	+10.6%	101	2/27/15	187	9/28/15
6	PHILIP	Philippines	2	+10	110	+10.0%	80	3/2/15	143	9/29/15
7	CHINA	China	2	+9	109	+8.7%	80	3/2/15	135	9/29/15
8	COLOM	Colombia	2	+18	238	+8.1%	132	3/2/15	262	12/11/15
9	MALAYS	Malaysia	3	+13	182	+7.5%	104	1/1/15	238	9/29/15
10	THAI	Thailand	3	+9	136	+7.0%	98	7/17/15	172	9/29/15

Source: Markit

Table 10: December sovereign bond best price performance

Best performers

Ticker	Issue	CCY	Liq score	12/31 price	Change	% change	12/31 yield	One year low	Date	One year high	Date
Americas											
1 CAN	Canada 2.75 12/2064	CAD	1	119.19	+4.74	+4.1%	2.26%	108.36	6/10/15	130.27	1/30/15
2 BRAZIL	Federative Republic of Brazil 6 8/2022	BRL	2	2654.67	+75.11	+2.9%	-	2459.92	9/24/15	2712.80	7/22/15
3 CHILE	Republic of Chile 3.1 1/2040	CLF	5	121.09	+1.84	+1.5%	-	118.00	7/6/15	127.41	3/3/15
4 COLOM	Republic of Colombia 4.75 2/2023	COP	3	106.33	+0.57	+0.5%	-	104.70	9/30/15	113.04	1/30/15
5 BOLV	Plurinational State of Bolivia 5.95 8/2023	USD	2	107.25	+0.50	+0.5%	4.89%	100.50	1/16/15	107.50	12/11/15
EMEA											
1 LEBAN	Lebanese Republic 7.05 11/2035	USD	4	99.50	+2.50	+2.6%	7.34%	96.75	11/17/15	100.00	12/21/15
2 LATVIA	Republic of Latvia 5.25 6/2021	USD	1	114.38	+1.63	+1.4%	2.75%	111.50	7/1/15	116.25	4/9/15
3 NGERIA	Federal Republic of Nigeria 15.1 4/2017	NGN	4	108.35	+1.51	+1.4%	9.75%	96.80	2/17/15	110.90	11/19/15
4 CYPRUS	Republic of Cyprus 4.25 11/2025	EUR	2	103.76	+1.14	+1.1%	3.92%	102.18	11/23/15	104.01	12/22/15
5 MOROC	Kingdom of Morocco 4.25 12/2022	USD	1	99.12	+0.87	+0.9%	4.54%	98.25	11/30/15	105.88	2/5/15
APAC											
1 CHINA	People's Republic of China 3.99 5/2065	CNY	4	105.43	+6.38	+6.4%	4.03%	94.41	9/1/15	105.58	12/30/15
2 TGB	Taiwan, Province of China 2.25 8/2045	TWD	3	111.95	+5.25	+4.9%	1.95%	101.65	9/15/15	112.14	12/29/15
3 JAPAN	Japan 1.4 3/2055	JPY	1	100.17	+3.52	+3.6%	1.51%	92.25	6/8/15	100.35	12/28/15
4 KOREA	Republic of Korea 3 12/2042	KRW	2	115.53	+3.70	+3.3%	2.40%	101.42	1/6/15	116.43	10/29/15
5 THAI	Kingdom of Thailand 3.775 6/2032	THB	3	110.12	+3.31	+3.1%	3.24%	101.25	6/30/15	110.12	12/31/15

Source: Markit

Table 11: December sovereign bond worst price performance

Worst performers

Ticker	Issue	CCY	Liq score	12/31 price	Change	% change	12/31 yield	One year low	Date	One year high	Date
Americas											
1 VENZ	Bolivarian Republic of Venezuela 12.75 8/2022	USD	1	45.45	-6.34	-12.2%	29.07%	36.50	1/21/15	57.75	5/8/15
2 BRAZIL	Federative Republic of Brazil 7.125 1/2037	USD	2	86.45	-9.01	-9.4%	7.56%	83.97	12/21/15	128.00	1/26/15
3 BLZE	Belize 5 2/2038	USD	3	69.37	-3.88	-5.3%	15.19%	67.50	12/23/15	76.00	6/24/15
4 COLOM	Republic of Colombia 5 6/2045	USD	2	83.87	-4.25	-4.8%	5.85%	82.25	12/16/15	108.50	2/3/15
5 ELSALV	Republic of El Salvador 7.65 6/2035	USD	2	85.55	-4.20	-4.7%	8.75%	85.49	12/17/15	109.00	2/4/15
EMEA											
1 SOAF	Republic of South Africa 8.75 1/2045	ZAR	3	85.47	-8.99	-9.5%	9.04%	78.35	12/11/15	111.04	1/29/15
2 DBR	Federal Republic of Germany 0.1 4/2046	EUR	3	101.05	-10.31	-9.3%	-	100.55	12/30/15	111.59	11/2/15
3 ZAMBIA	Republic of Zambia 8.97 7/2027	USD	2	78.63	-7.87	-9.1%	9.26%	75.75	12/14/15	97.25	7/31/15
4 UKIN	United Kingdom of Great Britain and Northern Ireland 0.125 3/2068	GBP	3	157.30	-14.48	-8.4%	-	139.70	3/10/15	184.45	8/24/15
5 GREP	Gabonese Republic 6.95 6/2025	USD	2	79.50	-6.50	-7.6%	9.18%	78.50	12/16/15	100.75	6/25/15
APAC											
1 PHILIP	Republic of the Philippines 3.625 3/2033	PHP	4	81.46	-4.85	-5.6%	4.80%	81.46	12/31/15	101.33	2/3/15
2 SRILAN	Democratic Socialist Republic of Sri Lanka 5.35 3/2026	LKR	5	68.48	-3.66	-5.1%	9.70%	66.05	10/27/15	76.94	1/5/15
3 CHINA	People's Republic of China 4.1 5/2045	CNY	3	95.50	-3.19	-3.2%	4.18%	95.02	8/31/15	100.28	8/14/15
4 SRILAN	Democratic Socialist Republic of Sri Lanka 6.25 10/2020	USD	1	96.25	-3.13	-3.1%	6.40%	95.75	12/15/15	106.18	1/30/15
5 BHREIN	Kingdom of Bahrain 6 9/2044	USD	2	77.50	-2.12	-2.7%	7.78%	74.50	12/16/15	99.50	2/27/15

Source: Markit

Municipal bonds

December capped off a phenomenal year for the municipal bond market compared with most other markets. Munis appeared to completely shun the global macro-economic distress that plagued the broader equity and bond sectors. The sector concluded its fifth consecutive year of declines in defaults, with the limited volatility mainly driven by the Puerto Rico municipal bond crisis. Fundamentals held up strong during the year, as tax revenues continued to improve, local governments continue to look to ways to cut costs, and demographic trends continue to improve. On December 4th, President Obama signed the Fixing America's Surface Transportation Act (FAST) into law, which could benefit the various transportation revenue bond sectors, as it will provide \$305 billion to states over five years to support the improvement of a broad spectrum of transportation infrastructure.

Puerto Rico makes general obligation bond payment, but defaults on PRIFA issues

Puerto Rico Commonwealth honoured its most senior GO debt by making its January debt service payments in full. This resulted in a rally for Puerto Rico general obligation bonds, with the 8% 2035 maturity trading as high as \$73.25 (+0.7% versus year-end) on January 5th.

However, Puerto Rico's Infrastructure Finance Authority (PRIFA) missed its January 1st debt payment. According to the trustee for PRIFA's series 2005-B and all 2006 bonds, there was not sufficient funds from PRIFA to make the payments. The Authority was downgraded to default on January 5th 2016 based on the missed payments. However, insurers Ambac and FGIC will make the \$10.3 million and \$6.4 million, respectively, on the debt service payments for the portion of 2005-C bonds that they insure. PRIFA's Special Tax Revenue 2006 5% 7/2020 issue was the worst performing revenue bond in December (**Table 13**), ending the month at 22.39 (-43.4%).

Table 12: December municipal revenue bond best price performance**Best performers**

	Issuer	Issue	Liq score	12/31 price	Change	% change	One year low	Date	One year high	Date
1	Massachusetts St Wtr Res Auth	General Revenue Refunding - 2007-B 5.25 8/2035	5	133.12	2.76	+2.1%	125.21	6/10/15	138.50	1/30/15
2	Maryland St Health & Higher Edl Facs Auth Rev	Revenue - Medlantic/Helix Issue 1998-A 5.25 8/2038	3	121.54	2.51	+2.1%	112.61	6/10/15	128.71	1/30/15
3	Dallas Fort Worth Tex Intl Arpt Rev	Joint Revenue Improvement - 2013-C 4.75 11/2045	5	121.21	2.43	+2.0%	111.14	6/3/15	131.83	1/30/15
4	California Edl Facs Auth Rev	Revenue - Stanford University 2013 U-3 5 6/2043	4	133.25	2.43	+1.9%	121.56	6/10/15	142.92	1/30/15
5	Massachusetts St Health & Edl Facs Auth Rev	Revenue - Boston College Issue 2001 M-2 5.5 6/2035	4	131.59	2.38	+1.8%	120.40	5/25/15	133.29	2/2/15
6	Clifton Tex Higher Ed Fin Corp Ed Rev	Education Revenue - Uplift Education 2014-A 4.6 12/2049	3	100.36	1.71	+1.7%	93.15	7/29/15	101.11	1/5/15
7	Massachusetts Bay Transn Auth Mass Sales Tax Rev	Senior Sales Tax Current Interest Refunding - 2007 A-1 5.25 7/2033	3	132.58	2.18	+1.7%	121.12	5/25/15	136.60	2/2/15
8	Delaware Valley Pa Regl Fin Auth Loc Govt Rev	Local Government Revenue - 2002 5.75 7/2032	3	124.37	1.69	+1.4%	117.36	6/10/15	126.97	1/13/15
9	Wayne Cnty Mich Arpt Auth Rev	Airport Revenue - Detroit Metropolitan Wayne County Airport 2015 5 12/2030	3	114.64	1.21	+1.1%	111.49	11/12/15	115.32	12/17/15
10	California St Univ Rev	Systemwide Revenue - 2015- A 5 11/2047	3	115.81	1.19	+1.0%	111.53	7/20/15	116.36	12/11/15

Source: Markit

Table 13: December municipal revenue bond worst price performance**Worst performers**

	Issuer	Issue	Liq score	12/31 price	Change	% change	One year low	Date	One year high	Date
1	Puerto Rico Comwith Infrastructure Fing Auth Spl	Special Tax Revenue - 2006 5 7/2020	3	22.39	-17.16	-43.4%	22.30	12/23/15	69.17	4/8/15
2	Puerto Rico Comwith Hwy & Transn Auth Transn Rev	Transportation Revenue Refunding - 2007-N 5.5 7/2026	3	20.02	-13.73	-40.7%	19.99	12/28/15	56.76	6/4/15
3	Puerto Rico Comwith Govt Dev Bk	Senior Notes - 2010-C 5.4 8/2019	3	27.77	-8.97	-24.4%	27.77	12/31/15	72.11	1/6/15
4	State Pub Sch Bldg Auth Pa Lease Rev	School Lease Re - The School District Of Philadelphia Project 20 5 4/2030	5	104.91	-2.09	-2.0%	104.91	12/31/15	112.22	1/30/15
5	Puerto Rico Comwith Aqueduct & Swr Auth Rev	Revenue (Senior Lien) - 2008-A 6 7/2038	2	67.50	-1.32	-1.9%	64.68	7/3/15	76.50	2/10/15
6	Central Puget Sound Wash Regl Tran Auth Sales Tax & Motor	Sales Tax And Motor Vehicle Excise Tax - 1999 5.25 2/2021	3	115.10	-2.05	-1.7%	115.08	12/16/15	120.63	1/29/15
7	Massachusetts St Port Auth Rev	Revenue Refunding - 2010- B 5 7/2021	3	115.33	-1.91	-1.6%	113.94	5/25/15	120.00	1/29/15
8	Lafayette La Pub Impt Sales Tax	Public Improvement Sales Tax Refunding - 2015 5 5/2020	5	114.94	-1.75	-1.5%	113.64	1/2/15	119.50	4/6/15
9	Sacramento Cnty Calif Ctfs Partn	Refunding Certificates Of Participation - 2010 5.75 2/2030	3	113.35	-1.52	-1.3%	109.59	6/10/15	115.31	12/11/15
10	Metropolitan Transn Auth N Y Rev	Transportation Revenue - 2012-E 5 11/2017	3	106.95	-1.07	-1.0%	106.92	12/30/15	111.40	1/16/15

Source: Markit

Securitised products

The year-end liquidity doldrums in the securitised markets continued in December, with the Fed's first rate increase in almost 10 years doing little to breathe enthusiasm into the market. The 'January effect' that has consistently led to rallies across securitised products in the past appeared to skip this January. Liquidity did improve after the holidays, but the entire sector has been unable to overcome the headwinds from the record sell-off in global equity markets that began on the first trading day of 2016.

On the bright side, only the CLO sector is directly impacted by the continued descent of energy and commodity prices and the expected uptick in defaults. However, all sectors will be negatively impacted by wider corporate credit spreads and real estate markets will feel pressure from regional pockets of deteriorating unemployment driven by decreased corporate profits.

Agency MBS market held up well post Fed increase

The Fed rate increase did little to shake the agency MBS market, as the Fed reiterated plans to make future rate increases gradual and over an extended time period. Specified pool pay-ups increased in December (**Table 14**), with loan balance stories amongst the best performers due to expectations of slower rate increases. <125 LTV HARP pools were the worst in anticipation of the origination of a replacement product after the 2017 expiration of the program.

2015 total CLO issuance second highest in history

US CLO issuance closed 2015 at almost \$98 billion, which is second only to the record \$124 billion issued in 2014. The market is expecting issuance to decline by \$30 billion in 2016, with the decline in supply plus principal run-off being a positive for spreads if leverage loan defaults do not increase substantially and if those defaults can be isolated to just energy and basic material sectors. Bid/ask spreads continue to be at the widest levels in recent history, with 2.0 mezzanine paper spreads continuing to come under increased pressure.

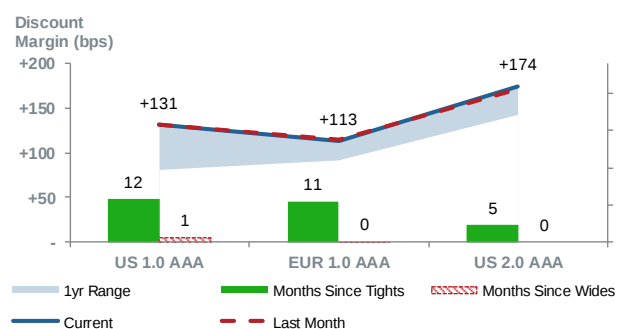
CLO spreads continued to come under pressure in December (**Figure 11**), with both EUR 1.0 and US 2.0 AAAs hitting L+113bps and L+174bps, respectively, which is their widest level of 2015. US BBBs also reach new wides for the year, with 1.0 BBBs at L+348bps and 2.0 at L+540bps.

Spreads for weaker non-agency credits continue to come under significant pressure

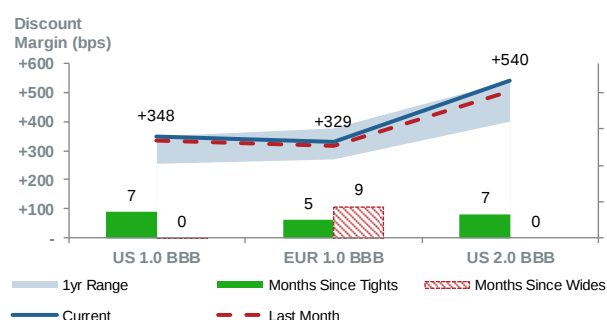
Non-agency MBS trading volume was light for most of December, with spreads continuing to come under pressure to varying degrees. Investors continued to focus on higher credit quality bonds like prime hybrids, versus higher yielding weaker credits like subprime and option ARM pass-throughs. According to NY Fed primary dealer holdings data, non-agency MBS holdings declined \$811 million (-6%) in December, which is 30% below the peak holdings of \$17.4 billion reported in mid-June.

Figure 11: US and European CLO AAA/BBB spread summary

AAA



BBB



Source: Markit

Table 14: Fannie Mae / Freddie Mac 30yr specified pools pay-ups in ticks (1/32 points)

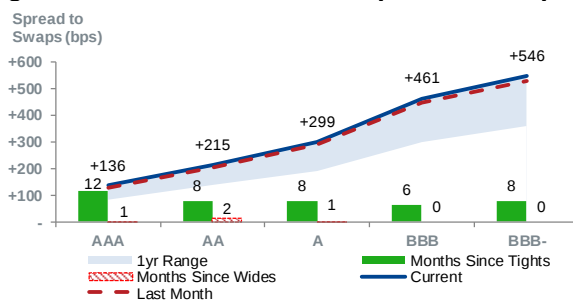
Coupon	December 2015						Change vs November 2015					
	3	3.5	4	4.5	5	5.5	3	3.5	4	4.5	5	5.5
LLB (85K)	0-16	0-24	1-10	2-05	2-28	2-10	+0-01	+0-01	-0-01	+0-02	+0-28	+0-18
MLB (110K)	0-13	0-16	1-02	1-27	2-05	2-04	+0-02	+0-01	0-00	0-00	-0-01	+0-02
HLB (150K)	0-09	0-12	0-22	1-11	1-22	0-29	-0-04	0-00	-0-01	-0-01	+0-15	+0-02
New Prod	0-02	0-04	0-06	0-10	0-18	0-00	+0-02	-0-03	+0-02	-0-03	0-00	0-00
Low FICO	0-06	0-04	0-07	0-16	0-15	1-12	+0-01	+0-02	-0-01	-0-01	-0-03	+0-15
Investor	0-03	0-05	0-07	0-12	0-17	1-16	-0-02	+0-01	+0-01	+0-02	-0-01	-0-10
MHA <90	0-04	0-06	0-07	0-11	0-20	2-08	+0-02	+0-02	+0-02	0-00	-0-03	-0-04
MHA <95	0-15	0-07	0-08	0-20	0-28	0-21	-0-01	+0-01	-0-01	+0-05	+0-10	-0-02
MHA <100	0-11	0-03	0-09	0-22	0-24	1-06	0-00	0-00	0-00	+0-01	+0-02	-0-01
MHA <105	0-17	0-06	0-13	0-15	0-26	2-05	0-00	0-00	-0-02	-0-01	+0-04	0-00
<125 LTV	0-02	0-06	0-30	1-16	2-10	2-05	-0-03	-0-03	-0-06	-0-04	-0-14	+0-07
125+ LTV	0-31	0-08	0-18	2-04	2-09	3-07	0-00	-0-01	-0-01	0-00	0-00	0-00

Source: Markit

Table 15: Fannie Mae / Freddie Mac 2015 production agency CMO spreads - 30yr WAM 4.0% coupon

	Spread to Treasuries (bps)	Month-over-month change (bps)
Sequential		
2-yr	+65	+10
5-yr	+65	+10
10-yr	+80	-10
PAC		
2-yr	+75	-10
5-yr	+75	-5
10-yr	+100	+5

Source: Markit

Figure 12: CMBS credit curve spread to swaps

Source: Trepp

Table 16: Global consumer ABS spread summary

	Current (bps)	MoM change (bps)	1yr tight	Date	1yr wide	Date
US Credit Cards - Fixed-Rate						
2-3yr AAA US Swaps	+46	-	+24	5/8/15	+47	11/16/15
4-5yr AAA US Swaps	+58	+2	+35	4/1/15	+70	10/14/15
US Credit Card - Floating-Rate						
2-3yr AAA US LIBOR DM	+39	-	+25	5/13/15	+40	11/16/15
4-5yr AAA US LIBOR DM	+62	-	+36	1/15/15	+62	11/5/15
European Credit Card - Floating-Rate						
AAA EUR LIBOR DM	+35	-20	+35	12/1/15	+55	11/19/15
US Prime Auto - Fixed-Rate						
0-2yr AAA EDSF	+38	-	+19	5/13/15	+38	12/15/15
2+-yr AAA US Swaps	+48	-	+25	4/7/15	+51	11/2/15
European Prime Auto Loan - Floating-Rate						
AAA EUR LIBOR DM	+51	-1	+26	3/4/15	+53	12/30/15
US Subprime Auto - Fixed-Rate						
1-2-yr AAA EDSF	+80	+3	+45	7/21/15	+80	12/28/15
2+yr AAA US Swaps	+93	+1	+48	6/15/15	+97	11/5/15
US Equipment - Fixed-Rate						
2+yr AAA US Swaps	+64	+10	+43	6/17/15	+65	12/21/15
European Equipment - Floating-Rate						
A EUR LIBOR DM	+151	+9	+115	6/10/15	+182	6/30/15
US FFELP Student Loans - Floating-Rate						
2-4yr AAA 3mo US LIBOR DM	+105	+10	+41	2/27/15	+105	12/30/15
10+yr AAA 3mo US LIBOR DM	+159	+4	+93	5/11/15	+159	12/29/15

Source: Markit

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