

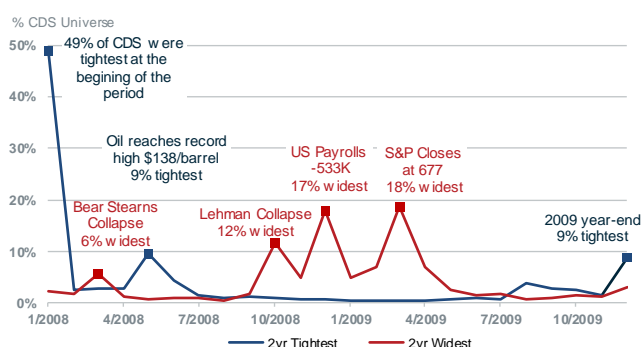
Global fixed income focus – September 2015

The global fixed income markets failed to get any respite in September after the summer’s unusual levels of volatility, driven by the Greek crisis at the beginning of the summer and the more significant surprise devaluation of the yuan by China in early August. The negative economic reports out of China and extreme swings in the Shanghai Composite Index led to renewed concerns over the country’s financial slowdown having a direct impact on global economic growth and equity market stability. Fixed income markets were lower across the board in September but still outperformed equities. The September FOMC meeting was the primary focus of the fixed income markets for most of the month, with the decision to not raise rates triggering an atypical rally in both equities and bonds, which quickly dissipated over the following week as the market began to view the Fed’s inaction as an indication of its concerns over US economic growth.

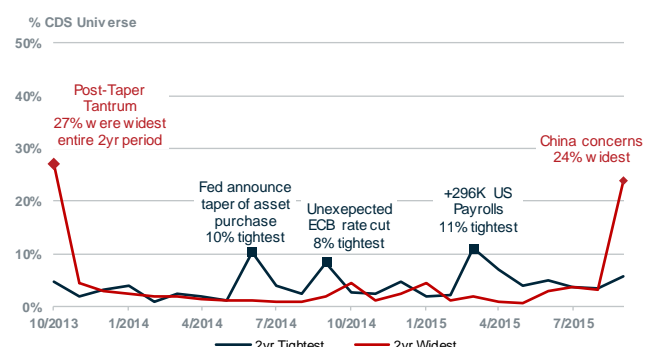
- 24% of global CDS reached new two-year wides in September, largely driven by concerns out of China and the Fed’s rate inaction at the September meeting. We explore specific time periods during the financial crisis when clusters of CDS reached new wide levels due to one or more significant monthly events.
- The Markit iBoxx USD Leveraged Loan index (MiLLi) returned -0.76% in September, but still outperformed the iBoxx \$ Liquid High Yield index by more than 200bps on the month and 473bps year-to-date (see **Table 8: September corporate bond US and European iBoxx indices performance**). The data indicates that loan prices in the media sector have not yet shown the same degree of weakness as CDS spreads for that same sector.
- Oil continued to decline sharply on the heels of anticipated lower Chinese demand for all commodities, with CDS and loan spreads in the energy sector being wider this month, but remaining close to the middle of their one year ranges.
- Municipal bond spread data indicates that spreads to treasuries for select 5yr state general obligation bonds generally had a negative correlation to most single A-rated CDS spread curves.
- Credit Risk Transfer (CRT) bonds continue to be the most widely quoted two-way market among all credit securitised products, but dealer activity appears to be waning. We analysed trends in two-way dealer round lot markets on CRT bonds and found that M2 activity peaked in May and has tapered off sharply since then. We also examined the trends in two-way market volumes and bid/ask spreads during the very volatile months of August and September.

Figure 1: Monthly percentage of global CDS widest/tightest levels during a two-year period

“Great Recession” 2008 – 2009



October 2013 – September 2015



Source: Markit

Historical CDS data indicates a notable increase in market fear in September

There are various metrics that indicate short and long term market fear and optimism, with CDS spread movements still being one of the better datasets for these types of indicators. CDS market liquidity has

declined significantly due to effects of increased regulation since the Great Recession, making more dealers pare back or completely eliminate trading exposure to the product, but they are still one of the main hedging tools to insure against corporate default risk. Daily CDS spread movements and the basis between the reference cash

Table 1: Sectors most impacted on months with high percentages of CDS that hit new two year widest levels

	September 2015		December 2008		March 2009	
	2yr widest	% of sector	2yr widest	% of sector	2yr widest	% of sector
Energy	2.9%	45.6%	1.4%	24.2%	0.8%	14.3%
Basic Materials	2.2%	32.6%	1.2%	15.5%	2.0%	25.8%
Telecommunications Services	1.4%	28.8%	1.0%	21.9%	0.4%	9.6%
Utilities	1.9%	24.4%	1.3%	15.6%	0.9%	11.7%
Financials	5.3%	22.7%	2.1%	10.0%	4.0%	19.5%
Consumer Services	2.4%	21.2%	2.7%	20.6%	2.0%	15.8%
Government	1.9%	20.9%	1.2%	15.4%	1.6%	20.8%
Industrials	2.4%	20.7%	2.4%	21.2%	2.4%	21.2%
Consumer Goods	2.2%	19.9%	2.4%	18.9%	2.7%	21.4%
Healthcare	0.6%	16.8%	1.0%	25.2%	0.4%	9.4%
Technology	0.6%	15.7%	0.8%	18.4%	0.8%	17.7%
	Total: 23.9%	Average: 24.5%	Total: 17.4%	Average: 18.8%	Total: 18.1%	Average: 17.0%

Source: Markit

bonds are followed closely by most fixed income investors, but simultaneously looking at the entire CDS market over a longer time horizon can also provide valuable clues of broader market sentiment.

Daily tightening or widening of CDS spreads can provide a useful indication of market sentiment for an issuer or sector on a given day, but the usefulness of the data is amplified when you combine it with the global CDS universe and look back at least two years. In the above charts, we aggregated CDS daily closing spread data to compare the very volatile and fear filled 2008-2009 period with October 2013-present. Both charts use the entire 2,600+ CDS universe at the time and examine what percentage of the universe reached either new wides or tights over the course of those two years. To make the charts easier to read, we rolled up everything into months, but it was not surprising how well sharp increases in the count of new tights/wides on a given day coincided perfectly with a major market event on that day.

One just has to be careful when reviewing the data on a rolling two year period, as the chart will change significantly on days with a major market event, but only subtly on a less volatile day in the market. For example, when running this same analysis during a one year period that ended on August 31st 2015, 16% of the CDS universe reached new one year wides during the month, which was the highest percentage of that two year period at the time and potentially foreshadowed the even worse September. However, when the analysis was rolled forward a month to October 2013 through September 2015, the August percentage was only 3.2%, as it was significantly overshadowed by the current month's spreads.

The data in **Figure 1** indicates that the 24% of global CDS that reached new wides in September is a significant number during a two year time horizon and a comparable magnitude to various "high fear" months in 2008 and 2009, where there were multiple instances when over 10% reached two-year wides in one month. The data is in no way indicating that today's markets are anywhere near as distressed as in the worst days of 2009, but does potentially indicate that we have reached an elevated level of fear in the credit market not seen yet over the past two years. It's not a very fair comparison given the severe market distress and lack of liquidity in 2008-2009, but the 24% of new wides this past month is slightly higher than the 19% of CDS that reached new wides in March 2009 when the S&P closed at 677 (-56% from peak at the time) and 18% in December 2008 after the release of the non-farm payrolls report indicating 533k jobs lost the previous month.

It should be no surprise that the energy and basic materials sectors were among the sectors that widened the most in September (see **Table 1**). It is interesting to note that when comparing this September to the very distressed periods of December 2008 and March 2009, data indicates that the percentage of the sector that reached new wides was more evenly distributed across all the sectors in those periods. March 2009 had the lowest average sector exposure at 17% and marked the slowdown of the widening of energy sector CDS, with that month being especially important since it marked the bottom of the financial crisis

One interesting irony of the two time periods was that in 2008-2009, there was a sharp decline in US economic growth, with strong growth in China's economy, a strong European economy and record high

energy prices in 2008, compared to almost the complete opposite scenario today. Over the coming months, we will continue to monitor and further dissect this metric to determine which market events are significant in the eyes of the CDS market, as well as provide more granular sector and regional level indicators.

Leveraged loans

Leveraged loans were resilient in August, but succumbed to macro pressures and widened across sectors and ratings in September. The combination of continued strong demand from the CLO market and anticipation of a light new loan issuance pipeline have left the sector as one of the few fixed income sectors that are still positive this year, with the MiLLi +1.1% as of September 30th.

Spreads were wider across almost every sector and credit curve, with the already battered European and North American energy group being the only sector to not reach a new one year wide at any rating category. According to **Table 4**, the European BBB- technology tightened the most at 6bps better than August, with only a few other sectors tightening a very modest 1bps-2bps.

Basic material sector widens below one year wides, while its CDS continues to reach new wides

Basic materials loan sector spreads to Libor fared much better than CDS in August, as the impact of sharp declines in global commodities were more apparent in the CDS market. However, according to **Figure 2**, the basic materials CDS sector curve spreads hit another new one-year wide in September, while the equivalent loan curve was wider and most rating groups remained slightly below the widest levels of the year. It is worth noting that the number of basic material loan sector constituents is much higher and more diversified than the CDS sector curve and the recent resiliency of loans spreads does potentially highlight the more favourable technical landscape for loans.

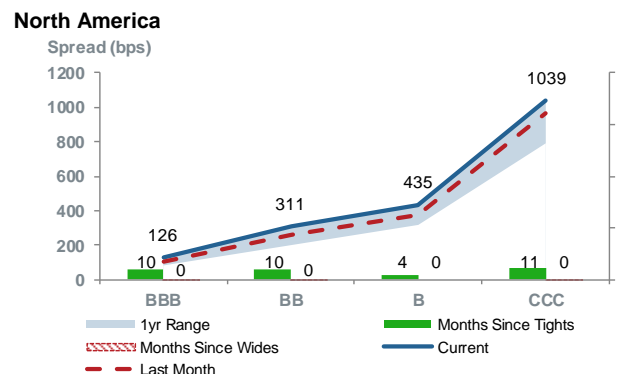
Media loan prices appear unaffected by broader media sell-off

On August 4th, Disney cut its earnings growth target for its cable business, which sent shockwaves through the equities of media companies and resulted in a 9.2% decline in Disney's stock the next day. The lower growth in its cable business has increased concerns over declining subscription growth as more consumers look to replace their cable television with online alternatives. The impact was very clear in August, as four out of the five of the worst performing CDS were in the media sector.

We reviewed 20 US loan issues from various cable media companies, and the price declines were very modest compared to the price action in the equity and CDS markets, with prices for those loans down an average of only 0.5% since July 31st. Charter Comm Operating 4/13 TLF, Mediacom Broadband 5/13 TLH, UPC Financing 4/13 (USD) AH TL and Liberty Cablevision 7/14 TL were among the weakest of the group, as they were approximately 1.2% lower on the month. The subdued price action likely reflects both the higher seniority of the loan debt and the current strong technicals supporting loan prices. We note that Walt Disney and Time Warner, which were the worst performing CDS in the Americas in August, reversed course in September and are now among the best performing CDS this month (**Table 5**: September liquid 5yr corporate CDS best spread performance).

Figure 2: North American basic materials CDS and loan sector curves

CDS credit sector curve steepens in September



Source: Markit

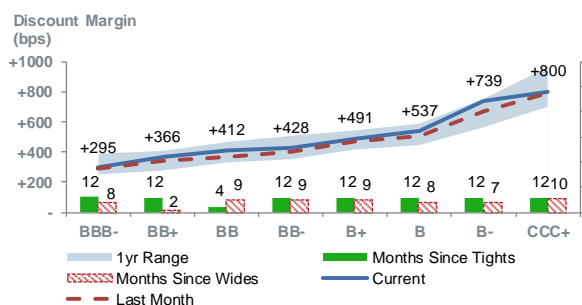
Loan credit sector curve widened in line with CDS, but several rating categories remain below one year wides



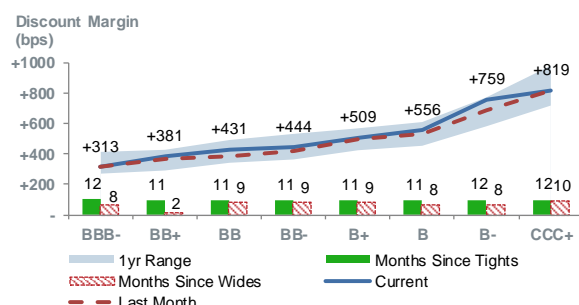
Source: Markit

Figure 3: Energy loan credit sector curves is wider, but remains mid-range

North America



Europe



Source: Markit

Source: Markit

Seven out of ten of the worst performers were from the energy sector in North America

Already distressed North America energy loans dominated the global worst performers in September, as oil prices rallied slightly from the six year lows reached in August. Loans issued by the oil and gas exploration and production companies American Energy Marcellus, Vantage Drilling and Paragon Offshore declined over 30% in September after another very difficult month in the global energy markets.

Weight Watchers 4/13 Cov-Lite TLB2 was the best performer on the month at +8.9% on the heels of its second month of strong performance in the equity market (peaked at +24% on September 21st from its September low) after it announced in early August that it beat Q2 earnings estimates and was revising its full year guidance higher. Nine West Holdings, which had been put on ratings watch negative by Moody's in early June, declined sharply ahead of its owner Sherson Group's August 20th appearance in bankruptcy court, but had started to rally shortly after the announcement that Nine West has acquired most of the business operations of Sherson Group. Their 4/14 Cov-Lite Unsecured Guaranteed TL loan was the second best performer in the Americas in September, as it rallied 4 points (+7.6%) on the month.

European consumer goods and services dominated the best performers, while the regions' declines in energy loans was not as severe as North America

According to **Table 3**, Vivarte 10/14 Super Senior TL loan issue increased the most (+11.1%) in Europe after the late September announcement that it will be closing the La Halle store as part of its restructuring announced this past spring. Cortefiel 9/12 Extended PIK TLB1 was +4.9% on the month, partially driven by the announcement that CVC, PAI Partners and Permira hired Goldman Sachs to find buyer for the clothing retailer.

The energy company Pacific Drilling's 5/13 TL and the specialist in the rental of commercial and industrial

vehicles Fraikin 2/07 (EUR) Holdco TL closed slightly over 18% lower in September. Pacific Drilling's decline is likely driven by overall concerns in the energy sector and an analyst's downgrade of its equity. All energy issues were down less than 20% on the month, with Endeavour 10/14 TL declining a modest 4.3% on the month.

Loan sector spreads were wider globally, with North America slightly wider than Europe

Loans sectors were wider across almost every rating category in September (see **Table 4**). BBB- technology loans were among the very few categories that tightened (NA -1bp and EU -6bps), while energy is wider alongside anticipation of lower demand for oil versus the prior month and most rating categories are still not near the widest levels reported this past winter (see **Figure 3**). B- rated sectors widened the most across all sectors, with North America widening more than every European equivalent.

Table 2: September North American loans best and worst price performance

North America

	LXID	Loan Name	Sector	Country	Liq score	9/30 price	Perc change	One year low	Date	One year high	Date
Best Performers											
1	LX128907	Weight Watchers 4/13 Cov-Lite TLB2	Consumer Services	USA	1	54.38	+8.9%	46.50	3/2/15	77.94	12/1/14
2	LX135814	Nine West 4/14 Cov-Lite Unsecured Guaranteed TL	Consumer Goods	USA	4	56.90	+7.6%	52.50	8/25/15	92.92	10/15/14
3	LX124057	Arch Coal (5/12) TLb	Energy	USA	1	56.25	+5.5%	52.40	8/24/15	90.57	10/1/14
4	LX131939	Smile Brands 8/13 TLB	Industrials	USA	2	69.79	+3.5%	66.17	7/13/15	97.50	10/14/14
5	LX143728	Murray Energy 3/15 Cov-Lite TLB2	Energy	USA	1	77.47	+3.5%	70.33	8/24/15	99.02	5/8/15
6	LX135620	Nine West 4/14 Cov-Lite TL	Consumer Goods	USA	3	81.50	+3.0%	78.17	8/25/15	97.83	5/6/15
7	LX126129	Getty Images 10/12 Cov-Lite TLB	Consumer Services	USA	1	64.65	+2.5%	61.55	9/14/15	95.25	11/13/14
8	LX139894	MModal 7/14 TL	Technology	USA	5	91.75	+1.7%	90.08	8/26/15	99.50	10/3/14
9	LX137932	Rovi 7/14 Cov-Lite TLB	Technology	USA	4	97.60	+1.6%	94.50	8/25/15	100.08	5/12/15
10	LX137645	Arizona Chemical 6/14 2nd Lien TL	Basic Materials	USA	4	100.38	+1.4%	97.25	2/2/15	100.38	9/30/15
Worst Performers											
1	LX138432	American Energy Marcellus 7/14 Cov-Lite 2nd Lien TL	Energy	USA	4	10.67	-59.0%	10.67	9/30/15	98.67	10/1/14
2	LX136428	Millennium Laboratories 4/14 Cov-Lite TLB	Healthcare	USA	3	30.38	-37.8%	30.38	9/30/15	100.59	3/31/15
3	LX133875	Vantage Drilling 11/13 TL	Energy	CYM	2	32.25	-35.8%	32.25	9/30/15	96.00	10/8/14
4	LX138205	Paragon Offshore 7/14 Cov-Lite TLB	Energy	CYM	4	39.38	-31.0%	37.75	9/25/15	93.58	10/31/14
5	LX132457	Fieldwood 9/13 2nd Lien TL	Energy	USA	1	27.50	-27.2%	27.10	9/28/15	100.09	10/1/14
6	LX136541	Frac Tech International 4/14 Cov-Lite TL	Energy	USA	2	30.30	-27.0%	30.30	9/30/15	99.98	10/7/14
7	LX129883	Alpha Natural Resources 5/13 TLB	Energy	USA	1	43.55	-19.3%	43.55	9/30/15	89.38	10/2/14
8	LX130228	Quicksilver Resources 6/13 Cov-Lite 2nd Lien TL	Energy	USA	2	38.20	-17.9%	38.20	9/30/15	91.25	10/7/14
9	LX133189	99 Cents Only Stores 10/13 Cov-Lite TLB2	Consumer Services	USA	1	79.44	-16.2%	79.06	9/29/15	100.34	4/13/15
10	LX118871	TXU/TCEH 4/11 Non-Extended TLB	Utilities	USA	1	37.13	-15.8%	37.13	9/30/15	73.11	10/1/14

Source: Markit

Table 3: September European loans best and worst price performance

Europe

	LXID	Loan Name	Sector	Country	Liq score	9/30 price	Perc change	One year low	Date	One year high	Date
Best Performers											
1	LX139578	Vivarte 10/14 Super Senior TL	Consumer Goods	FRA	2	105.50	+11.1%	77.73	2/3/15	107.63	10/3/14
2	LX126190	Cortefiel 9/12 Extended PIK TLB1	Consumer Services	ESP	2	82.75	+4.9%	64.10	10/20/14	83.05	9/23/15
3	LX132213	Consolis 8/13 ORA 1 PIK TL	Consumer Goods	FRA	4	23.83	+2.1%	22.75	9/29/15	35.00	6/23/15
4	LX118614	Sisal 10/06 TLB2	Consumer Services	ITA	3	96.00	+1.6%	89.88	1/8/15	97.08	10/3/14
5	LX146780	AVR 7/15 Holdco PIK TL	Industrials	NLD	5	54.60	+1.4%	53.83	8/31/15	58.17	7/20/15
6	LX141083	Corialis 10/14 (EUR) Cov-Lite TL	Consumer Goods	GBR	2	98.85	+0.9%	90.00	1/26/15	100.00	6/11/15
7	LX137333	Deoleo 6/14 TL	Consumer Goods	ESP	2	88.25	+0.8%	82.50	9/4/15	97.50	4/23/15
8	LX131858	BMC Software 8/13 (EUR) TL	Technology	IRL	1	94.97	+0.6%	94.08	7/27/15	100.61	6/2/15
9	LX146944	Amedes Holding 8/15 TLB	Healthcare	DEU	1	99.00	+0.6%	97.78	8/10/15	99.13	9/25/15
10	LX139858	Delek 8/14 2nd Lien TL	Consumer Services	NLD	3	98.00	+0.5%	92.33	1/7/15	98.53	6/10/15
Worst Performers											
1	LX129817	Pacific Drilling 5/13 TL	Energy	LUX	1	58.89	-18.3%	58.89	9/30/15	96.85	10/7/14
2	LX059053	Fraikin 2/07 (EUR) Holdco TL	Consumer Services	FRA	3	56.83	-18.2%	55.17	9/29/15	87.67	12/19/14
3	LX137914	PagesJaunes 6/14 (EUR) A7 TL	Technology	FRA	3	66.21	-15.1%	66.10	9/24/15	87.33	10/1/14
4	LX135384	Seadrill Partners 2/14 TL	Energy	GBR	1	60.33	-11.5%	60.32	9/29/15	96.15	10/7/14
5	LX135963	Petroleum Geo-Services 3/14 Cov-Lite TLB	Energy	NOR	4	73.88	-11.3%	73.50	9/29/15	96.15	10/1/14
6	LX122688	Tronox (2/12) TL	Basic Materials	NLD	1	87.08	-7.6%	86.50	9/29/15	100.40	4/13/15
7	LX136501	SkillSoft 4/14 Cov-Lite TL	Technology	LUX	2	89.67	-6.2%	89.67	9/30/15	99.94	4/28/15
8	LX134782	HC Starck 12/13 (EUR) 1 TLE	Basic Materials	DEU	2	92.07	-6.0%	92.07	9/30/15	99.89	5/29/15
9	LX141502	Endeavour 10/14 TL	Energy	NLD	5	66.13	-4.3%	66.13	9/30/15	100.33	10/14/14
10	LX136503	SkillSoft 4/14 Cov-Lite 2nd Lien TL	Technology	LUX	4	85.00	-4.3%	85.00	9/30/15	96.42	4/28/15

Source: Markit

Table 4: 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	+19	+38	+62	+41	+36	+44	+87	+23
	EU	+15	+34	+59	+37	+32	+41	+84	+21
	Change in NA-EU	+4	+4	+3	+4	+5	+4	+3	+3
Consumer Goods	NA	+11	+29	+53	+32	+28	+36	+78	+14
	EU	+5	+24	+49	+27	+22	+31	+74	+11
	Current NA-EU	+5	+5	+4	+5	+6	+5	+4	+4
Consumer Services	NA	+9	+27	+51	+30	+26	+34	+77	+13
	EU	+4	+22	+47	+25	+20	+29	+73	+9
	Current NA-EU	+5	+5	+4	+5	+6	+4	+4	+3
Energy	NA	+5	+23	+47	+26	+22	+30	+73	+9
	EU	-1	+17	+42	+20	+15	+24	+68	+4
	Current NA-EU	+6	+6	+5	+6	+7	+5	+5	+4
Financials	NA	+16	+35	+59	+37	+33	+41	+84	+20
	EU	+11	+29	+54	+32	+27	+36	+80	+16
	Current NA-EU	+5	+5	+4	+5	+6	+5	+4	+4
Healthcare	NA	+3	+22	+46	+24	+20	+28	+71	+7
	EU	-2	+17	+41	+19	+14	+23	+67	+3
	Current NA-EU	+5	+5	+4	+5	+6	+5	+4	+4
Industrials	NA	+15	+34	+57	+36	+32	+40	+83	+19
	EU	+9	+28	+52	+30	+26	+35	+78	+14
	Current NA-EU	+6	+6	+5	+6	+6	+5	+5	+4
Technology	NA	-1	+17	+41	+20	+16	+24	+67	+3
	EU	-6	+12	+37	+15	+10	+19	+62	-1
	Current NA-EU	+5	+5	+4	+5	+6	+4	+4	+4
Telecommunication Services	NA	+8	+27	+51	+30	+25	+33	+76	+12
	EU	+4	+22	+47	+25	+20	+29	+72	+9
	Current NA-EU	+5	+5	+4	+5	+5	+4	+4	+3
Utilities	NA	+10	+29	+53	+32	+27	+35	+78	+14
	EU	+5	+23	+48	+26	+21	+30	+74	+10
	Current NA-EU	+6	+6	+5	+5	+6	+5	+5	+4

Source: Markit

Credit default swaps

The entire front end of the US and European corporate CDS credit curves reached new one year wides for the second consecutive month in September (see **Figure 4** and **Figure 5**), and Japan reached new wides for the first time this month. Below investment grade credits widened in sync with turmoil in the broader markets, but B and CCC rated sectors are still a fair distance from the year's widest levels. The last week of the month was generally the widest point for CDS, as most sectors tightened slightly on the last day of the month/quarter.

Basic materials across every region hit new one year wides across the curve, with the exception of Japanese B and CCC rated groups in the sector, as the sharp devaluation of the yuan earlier in August and a slowdown in China's manufacturing directly pressuring global commodity prices. AAA to BB North American consumer goods sectors reached new one year wides in September, while Europe and Japan only reached new wides for AAA, BBB and BB rating clusters.

Americas and EMEA top performers were a mix, while APAC dominated by Japanese industrials

The America's top performers were dominated by financial firms like insurance companies Chubb and Allstate and REIT ERP Operating Limited Partnership (see **Table 5**). Chubb tightened 2bps to 12bps, partially driven by the insurer ACE Limited announcing in August that it will be buying a 70% stake in Chubb Corporation.

The best performer in September in the Americas, on a percentage basis, was Walt Disney Corp, ending the month 5bps tighter and closing at 27bps. As mentioned earlier, the announcement of Disney's cut to its earnings growth target for its cable business sent cable media company equities lower and CDS wider in August. Time Warner, Viacom, 21st Century Fox, and Walt Disney were all in the bottom five of August CDS performance from a spread percentage basis.

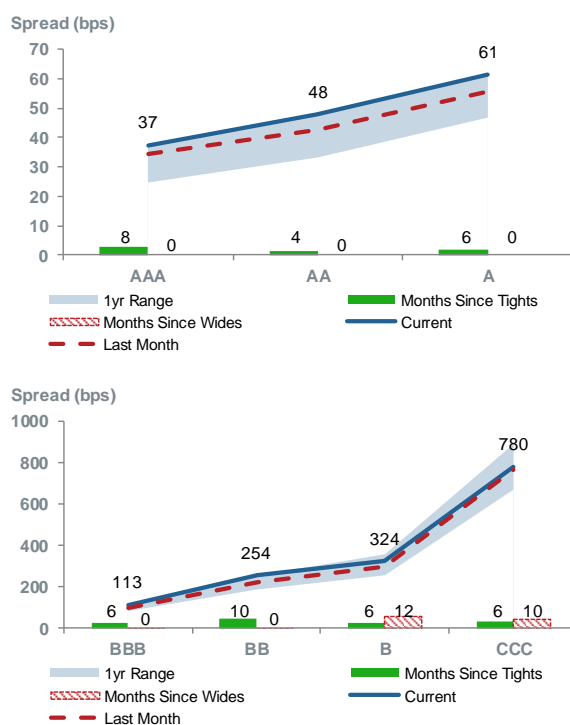
All of APAC's best performers were wider on the month, with Japanese transportation and logistics company Hankyu Hanshin Holdings widening the least at +4bps to close at 35bps after its equity was as much as +4% (outperforming the Nikkei) before tapering off and ending the month slightly lower the last week of the month.

Energy only took one spot on the worst performers list

CDS is the only fixed income sector among loans and corporates where only one energy related issue made it onto a North American worst performer list this

month, but that can be partially due to the already wide energy spread denominator making the high spread percentage change criteria more difficult to achieve. American chemical company Olin was the worst performer in the Americas, widening 230bps to close at 414bps after its acquisition of a unit of Dow Chemicals was formally approved by shareholders and additional equity is scheduled to be issued to facilitate the financing of the transaction.

Figure 4: Global CDS sector spread summary



Source: Markit

A slowdown in China and overall global steel demand drove steel companies US Steel and Switzerland's vertically integrated Glencore onto their respective region's list, with US Steel widening 500bps to close at 1306bps and Glencore at +313bps to 835bps. Glencore's stock declined almost 30% on September 28th on concerns that its high debt level could mean that equity value could be significantly diminished. Glencore did recoup most of its losses in the equity markets within a week, while the CDS only recovered modestly due to market speculation that the company could potentially go private through a leveraged buyout, which would benefit the equity but further leverage their balance sheet and negatively affect their debt.

German automaker Volkswagen AG dominated the news for most of September after a car emissions study by West Virginia University engineering students indicated that, while driving on open roads, VW diesel

emissions were much higher than US government standards and were potentially manipulated during official testing via the engine's computer. VW CDS widened 190bps on the month to close at 267bps, as the company is expected to reserve over \$6bn in capital to fund potential fines and equipment recalls.

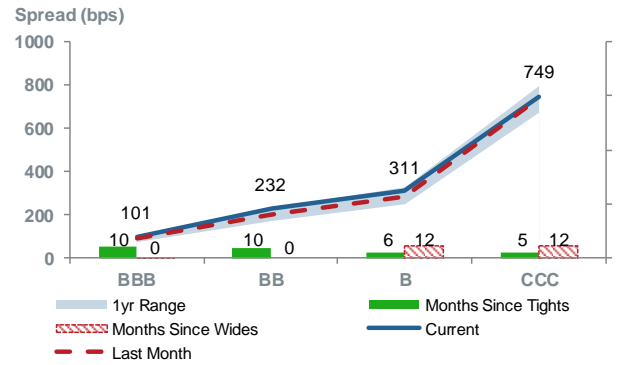
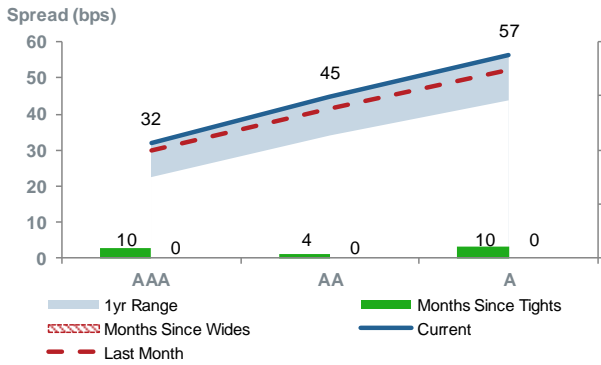
Year-to-date BBB-rated CDS correlation indices indicates no negative correlation across sectors

Global correlation matrices indicated that CDS spreads were all positively correlated to varying degrees since October 2014 (see **Table 7**). Energy was generally the least correlated sector versus all others in North America, Europe, and Japan.

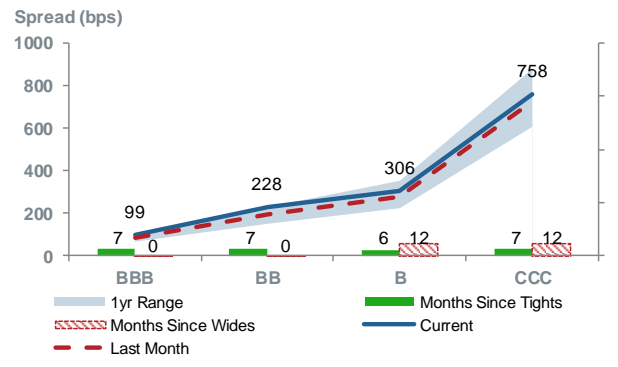
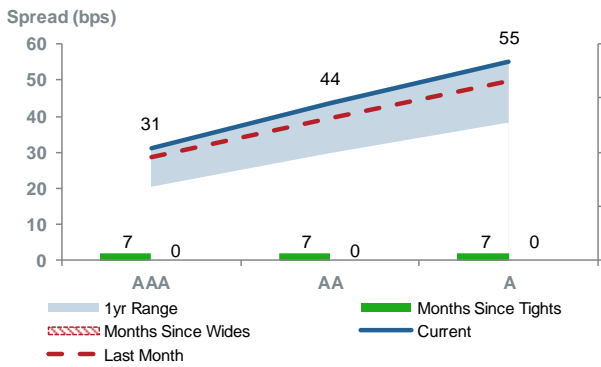
Excluding the government sector, there were a few very positive correlations that stood out in each region. In North America, the consumer goods and consumer services sectors reported the highest correlation at 97%, while the European technology sector reported a 98% or higher correlation with the consumer goods, consumer services, healthcare and industrials sectors. In Japan, industrials indicated a 99% correlation with consumer goods and healthcare.

Figure 5: September regional CDS sector spread summary

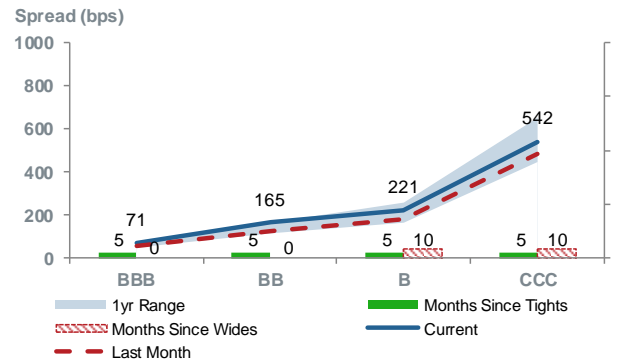
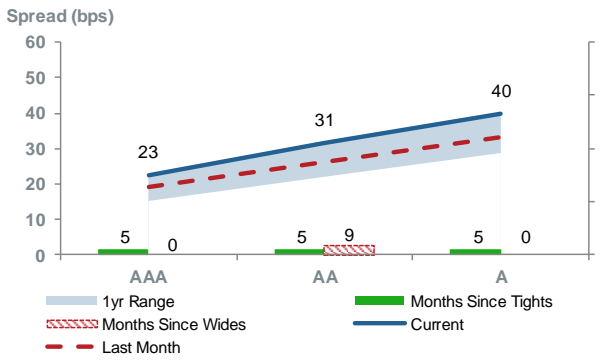
North America



Europe



Japan



Source: Markit

Table 5: September liquid 5yr corporate CDS best spread performance¹

Best performers

	Ticker	Company	Sector	Country	Liq score	9/30 spread	Change	Perc change	One year tight	Date	One year wide	Date
Americas												
1	DIS	Walt Disney Co	Consumer Services	USA	1	27	-5	-15.9%	14	4/20/15	39	8/24/15
2	CB	Chubb Corp	Financials	USA	2	12	-2	-15.1%	12	9/30/15	27	10/1/14
3	TW	Time Warner Inc	Consumer Services	USA	2	71	-10	-12.3%	35	4/21/15	87	8/24/15
4	ALL	Allstate Corp	Financials	USA	2	27	-3	-10.8%	22	12/19/14	40	7/8/15
5	EQR-ERPOperLP	ERP Oper Ltd Partnership	Financials	USA	2	46	-5	-10.0%	44	4/15/15	66	10/2/14
EMEA												
1	OTE	Hellenic Telecom Org SA	Telecom Services	GRC	2	423	-59	-12.2%	184	10/6/14	1031	7/7/15
2	CAWILD	Cable Wireless Ltd	Telecom Services	GBR	2	227	-31	-12.0%	121	3/27/15	297	11/7/14
3	VINCI	Vinci	Industrials	FRA	2	52	-6	-9.9%	50	9/18/15	88	10/16/14
4	TATELN	Tate & Lyle Plc	Consumer Goods	GBR	2	85	-9	-9.8%	76	4/13/15	104	10/16/14
5	ACE	ACE Ltd	Financials	CHE	2	24	-2	-7.2%	15	1/27/15	38	7/8/15
APAC												
1	HHHI	Hankyu Hanshin Hldgs Inc	Consumer Services	JPN	2	35	+4	+14.4%	25	5/6/15	35	12/16/14
2	FUJITS	Fujitsu Ltd	Technology	JPN	2	48	+6	+14.5%	24	4/27/15	48	9/30/15
3	ANAHOL	ANA Holdings Inc	Industrials	JPN	2	75	+10	+14.6%	61	5/20/15	129	10/24/14
4	FOSTGRO	Fosters Group Pty Ltd	Consumer Goods	AUS	2	53	+8	+17.1%	39	5/27/15	53	9/30/15
5	SUMIRD	Sumitomo Rlty & Dev Co Ltd	Financials	JPN	2	73	+11	+18.1%	42	4/27/15	73	9/30/15

Source: Markit

¹ 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.

Table 6: September liquid 5yr corporate CDS worst spread performance¹

Worst performers

Ticker	Company	Sector	Country	Liq score	9/30 spread	Change	Perc change	One year tight	Date	One year wide	Date	
Americas												
1	OLN	Olin Corp	Basic Materials	USA	2	414	+230	+124.9%	138	3/27/15	484	9/28/15
2	SPRICOM	Sprint Comms Inc	Telecom Services	USA	2	877	+427	+94.8%	309	10/3/14	877	9/30/15
3	X	Utd Sts Stl Corp	Basic Materials	USA	1	1306	+500	+62.0%	265	10/29/14	1306	9/30/15
4	GPS	GAP Inc	Consumer Services	USA	2	152	+56	+58.4%	70	4/13/15	152	9/30/15
5	APC	Adarko Petroleum Corp	Energy	USA	2	196	+72	+57.9%	69	5/6/15	196	9/30/15
EMEA												
1	VW	Volkswagen AG	Consumer Goods	DEU	2	267	+190	+248.7%	42	2/26/15	297	9/29/15
2	PLTMPL-IntFin	Portugal Telecom Intl Fin B V	Telecom Services	NLD	2	1883	+1010	+115.6%	255	12/5/14	2045	9/29/15
3	GENP	Rallye	Consumer Services	FRA	1	835	+389	+87.1%	193	12/5/14	873	9/28/15
4	GLCORE	Glencore Intl AG	Basic Materials	CHE	2	679	+313	+85.7%	128	11/28/14	882	9/28/15
5	SUNRICO	Sunrise Comms Hldgs SA	Telecom Services	LUX	2	260	+116	+80.5%	92	4/10/15	284	10/16/14
APAC												
1	SHIMIZ	Shimizu Corp	Industrials	JPN	2	53	+11	+27.2%	36	4/29/15	53	9/30/15
2	OBACRP	OBAYASHI Corp	Industrials	JPN	2	48	+9	+22.9%	34	4/29/15	50	10/17/14
3	NECORP	NEC Corp	Technology	JPN	2	60	+11	+22.6%	40	12/8/14	61	10/17/14
4	TAISEI	TAISEI Corp	Industrials	JPN	2	49	+9	+21.2%	35	4/29/15	53	10/17/14
5	KAJIMA	Kajima Corp	Industrials	JPN	2	58	+10	+20.6%	41	4/24/15	63	10/17/14

Source: Markit

Table 7: October 2014 – September 2015 5yr BBB CDS sector spread correlation² by region

North America BBB	BM	CG	CS	EN	FN	GT	HC	IN	TE	TS	UT
Basic Materials (BM)	100%	80%	77%	85%	92%	95%	52%	69%	56%	94%	96%
Consumer Goods (CG)	80%	100%	97%	48%	71%	85%	90%	96%	92%	80%	79%
Consumer Services (CS)	77%	97%	100%	41%	69%	85%	92%	96%	94%	82%	76%
Energy (EN)	85%	48%	41%	100%	73%	76%	16%	37%	17%	69%	79%
Financials (FN)	92%	71%	69%	73%	100%	92%	43%	62%	46%	96%	96%
Government (GT)	95%	85%	85%	76%	92%	100%	65%	80%	66%	97%	96%
Healthcare (HC)	52%	90%	92%	16%	43%	65%	100%	95%	97%	59%	52%
Industrials (IN)	69%	96%	96%	37%	62%	80%	95%	100%	95%	74%	71%
Technology (TE)	56%	92%	94%	17%	46%	66%	97%	95%	100%	61%	54%
Telecom Services (TS)	94%	80%	82%	69%	96%	97%	59%	74%	61%	100%	95%
Utilities (UT)	96%	79%	76%	79%	96%	96%	52%	71%	54%	95%	100%

European BBB	BM	CG	CS	EN	FN	GT	HC	IN	TE	TS	UT
Basic Materials (BM)	100%	81%	81%	79%	93%	94%	67%	74%	70%	95%	90%
Consumer Goods (CG)	81%	100%	99%	37%	84%	92%	97%	98%	98%	84%	94%
Consumer Services (CS)	81%	99%	100%	37%	86%	93%	97%	98%	98%	87%	95%
Energy (EN)	79%	37%	37%	100%	59%	62%	20%	29%	22%	63%	54%
Financials (FN)	93%	84%	86%	59%	100%	95%	74%	80%	76%	98%	95%
Government (GT)	94%	92%	93%	62%	95%	100%	84%	89%	85%	97%	98%
Healthcare (HC)	67%	97%	97%	20%	74%	84%	100%	99%	99%	74%	87%
Industrials (IN)	74%	98%	98%	29%	80%	89%	99%	100%	98%	80%	92%
Technology (TE)	70%	98%	98%	22%	76%	85%	99%	98%	100%	76%	88%
Telecom Services (TS)	95%	84%	87%	63%	98%	97%	74%	80%	76%	100%	95%
Utilities (UT)	90%	94%	95%	54%	95%	98%	87%	92%	88%	95%	100%

Japanese BBB	BM	CG	CS	EN	FN	GT	HC	IN	TE	TS	UT
Basic Materials (BM)	100%	82%	81%	87%	93%	93%	71%	77%	71%	95%	86%
Consumer Goods (CG)	82%	100%	98%	54%	91%	94%	97%	99%	97%	84%	95%
Consumer Services (CS)	81%	98%	100%	49%	87%	93%	98%	98%	98%	87%	90%
Energy (EN)	87%	54%	49%	100%	80%	76%	39%	50%	37%	75%	72%
Financials (FN)	93%	91%	87%	80%	100%	96%	82%	88%	81%	91%	95%
Government (GT)	93%	94%	93%	76%	96%	100%	88%	93%	87%	94%	96%
Healthcare (HC)	71%	97%	98%	39%	82%	88%	100%	99%	99%	78%	89%
Industrials (IN)	77%	99%	98%	50%	88%	93%	99%	100%	97%	81%	94%
Technology (TE)	71%	97%	98%	37%	81%	87%	99%	97%	100%	78%	86%
Telecom Services (TS)	95%	84%	87%	75%	91%	94%	78%	81%	78%	100%	83%
Utilities (UT)	86%	95%	90%	72%	95%	96%	89%	94%	86%	83%	100%

Source: Markit

² Correlation is determined using Pearson Product-Moment Correlation method. 100% correlation coefficient indicates perfect correlation, 0% no correlation, and -100% indicates a perfectly inverse correlation.

Global corporate bonds

Only the USD denominated Markit iBoxx Corporate Bond index was positive (+0.5%) in September, with GBP almost unchanged and the EUR index down 0.7% on the month (see **Table 8**). The sell-off in bonds is still modest compared to the declines in global equity indices, which were near -3% for the S&P 500, Nasdaq, and FTSE, -6% for DAX and -8% for Nikkei in September, as a result of volatility in China's equity market, inaction by the Fed toward the latter part of the month and weaker economic reports out of Europe.

High yield and basic materials were the worst performing iBoxx sectors on the month

iBoxx Liquid HY indices were weaker across the globe in September at -3.1% for USD, -2.6% for EUR and -1.3% for GBP denominated indices, with only the GBP index positive on the year at +2.2%. The commodity focused basic materials sector was the worst performers on the month, as would be expected due to the continued decline in commodity prices. The basic materials sector returned -5.3% for GBP, -4.0% for EUR, and -1.8% for USD.

Greek issues dominated EMEA corporates

Every top performer out of Europe was in the financial sector (see **Table 9**), with Greek banks taking four places on the list. ERB Hellas Plc 4.25 06/2018 (+18.7%), NBG Finance Plc 4.375 04/2019 (+17.8%), Piraeus Group Finance Plc 5 03/2017 (+12.3%) and Alpha Credit Group Plc 3.375 06/2017 (+11.4%) were among the best performers globally after July's fiscal resolution between the ECB and Greek government.

Americas bottom five mostly energy related and all down more than 34% in September

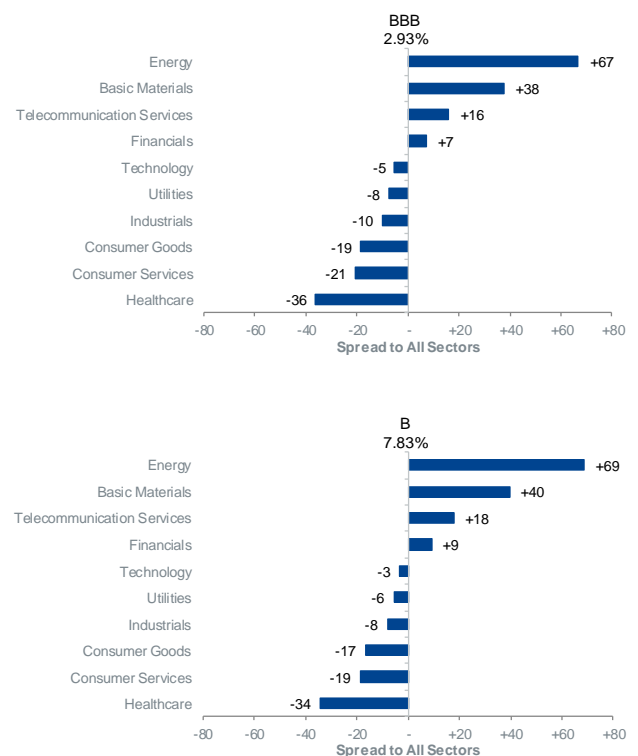
Energy companies dominated the worst performers in the Americas (see **Table 10**), with Odebrecht Offshore Drilling Finance Limited 6.75 10/2022 (-56.1%), Linn Energy, Llc 7.75 2/2021 (-41.4%), Berry Petroleum Company 6.375 9/2022 (-35.0%) and Magnum Hunter Resources Corporation 9.75 5/2020 (-34.5%) on the month.

Spanish energy, telecommunications, transportation and environmental company Abengoa Finance, S.A.U. 6 3/2021 issue ended the month at 40.5 (-35.7%). The company announced in August that it would be issuing equity to pay off debt, which is usually viewed as a positive for bond holders, but the news was not enough to stop the decline in prices for the issue.

US BBB and B corporate bond sector curves indicate that healthcare is the lowest yielding sector in September

Corporate bond sector curve data (see **Figure 6**) indicates that healthcare was the tightest sector in September when compared to the broader universe of bonds with the same ratings. The spread between healthcare and energy, which was the highest yielding sector for both rating categories, was 103bps for BBB-rated bonds and 105bps for B-rated bonds.

Figure 6: 5yr US BBB and B sector spreads to entire rating category



Source: Markit

Table 8: September corporate bond US and European iBoxx indices performance

Index	Total Return						Yield						Duration		
	Month			YTD			Current			Month			\$	€	£
	\$	€	£	\$	€	£	\$	€	£	\$	€	£			
Corporates	+0.50%	-0.74%	-0.09%	-0.12%	-1.88%	-0.43%	4.19%	1.94%	3.93%	-0.05%	+0.17%	+0.04%	6.5	5.0	7.9
Corporates AAA	+1.09%	+0.50%	+0.96%	+0.04%	-1.28%	+1.57%	3.54%	1.49%	2.92%	-0.09%	-0.05%	-0.05%	8.6	6.9	14.3
Corporates AA	+1.07%	+0.03%	+0.57%	+1.14%	-1.40%	+0.20%	3.46%	1.39%	3.30%	-0.12%	+0.03%	-0.04%	6.2	5.3	9.0
Corporates A	+0.75%	-0.41%	-0.02%	+0.76%	-1.60%	-0.52%	3.68%	1.63%	3.83%	-0.08%	+0.10%	+0.03%	6.1	5.1	8.6
Corporates BBB	+0.06%	-1.30%	-0.32%	-1.39%	-2.27%	-0.51%	4.86%	2.43%	4.25%	-0.00%	+0.29%	+0.08%	6.9	4.8	6.9
Banks	+0.45%	-0.24%	+0.18%	+1.46%	-0.89%	+0.77%	3.59%	1.59%	3.82%	-0.06%	+0.09%	+0.01%	4.7	4.2	6.4
Basic Materials	-1.81%	-4.00%	-5.29%	-4.58%	-6.36%	-8.00%	5.56%	2.70%	4.75%	+0.27%	+0.79%	+0.77%	6.7	5.1	7.3
Consumer Goods	+0.52%	-1.83%	-0.33%	+0.20%	-3.57%	-0.66%	3.83%	1.96%	3.30%	-0.04%	+0.33%	+0.12%	6.1	5.4	5.3
Consumer Services	+1.19%	-0.52%	+0.30%	-1.14%	-2.39%	-0.91%	4.36%	1.99%	3.70%	-0.10%	+0.11%	-0.01%	8.2	5.8	8.5
Financials	+0.65%	-0.47%	+0.12%	+1.43%	-1.21%	+0.65%	3.70%	1.92%	3.97%	-0.09%	+0.15%	+0.03%	5.1	4.5	6.9
Health Care	+1.17%	-0.42%	+0.51%	-0.06%	-1.47%	-0.51%	3.91%	1.72%	3.68%	-0.11%	+0.08%	-0.02%	7.6	6.0	12.3
Industrials	+0.82%	-0.10%	+0.54%	-0.02%	-0.99%	+0.62%	3.96%	1.55%	3.65%	-0.07%	+0.03%	-0.04%	7.1	4.7	8.1
Insurance	+1.17%	-2.04%	-0.56%	+0.51%	-2.89%	-0.28%	4.37%	3.55%	4.85%	-0.10%	+0.44%	+0.14%	7.7	5.9	7.1
Non-Financials	+0.41%	-0.94%	-0.23%	-1.03%	-2.38%	-1.13%	4.39%	1.95%	3.91%	-0.04%	+0.18%	+0.05%	7.3	5.4	8.5
Oil & Gas	-0.61%	-1.07%	+0.27%	-2.37%	-2.85%	+0.15%	5.03%	2.15%	3.37%	+0.08%	+0.19%	-0.00%	7.1	5.9	6.9
Technology	+0.94%	+0.38%	N/A	+0.31%	-1.72%	N/A	3.72%	1.54%	N/A	-0.10%	-0.04%	N/A	6.8	7.1	N/A
Telecommunications	+0.75%	-0.37%	+0.11%	-1.02%	-1.80%	-1.34%	4.72%	2.01%	4.22%	-0.05%	+0.09%	+0.03%	8.4	5.6	8.5
Utilities	+0.76%	-0.56%	-0.48%	-0.56%	-1.61%	-1.40%	4.35%	1.93%	4.09%	-0.07%	+0.12%	+0.07%	8.3	5.3	9.5
High Yield Liquid High Yield	-3.05%	-2.60%	-1.31%	-3.61%	-1.05%	+2.19%	7.68%	5.58%	6.37%	+0.69%	+0.87%	+0.57%	4.3	3.8	3.8
Convertible CVBX	-2.63%	-2.39%	+1.29%	-3.20%	+2.80%	+2.76%	1.50%	6.28%	7.62%	+0.63%	+0.68%	-0.13%	5.3	4.5	5.6
Contingent Convertible	-2.79%	-2.39%	+1.29%	+1.41%	+2.80%	+2.76%	7.65%	6.28%	7.62%	+0.61%	+0.68%	-0.13%	4.9	4.5	5.6

Source: Markit

Table 9: September global corporate bond best price performance

Best performers

Ticker	Issue	Sector	Country	CCY	Liq score	9/30 price	Change	Perc change	One year low	Date	One year high	Date
Americas												
1 PDV	Petroleos de Venezuela, S.A. 5.125 10/2016	Energy	VEN	USD	1	68.95	12.40	+21.9%	41.60	12/16/14	75.60	5/13/15
2 REN	Resolute Energy Corporation 8.5 05/2020	Energy	USA	USD	1	42.50	6.49	+18.0%	27.50	3/20/15	100.75	10/1/14
3 TEMBEC-Inds	Tembec Industries Inc. 9 12/2019	Consumer Goods	CAN	USD	2	75.00	10.25	+15.8%	64.50	8/25/15	102.00	5/1/15
4 AMERENAA	American Energy - Permian Basin, Llc 7.375 11/2021	Energy	USA	USD	1	58.50	5.50	+10.4%	51.00	8/24/15	92.27	10/6/14
5 AFFON-AFI	Affinion Group, Inc. 7.875 12/2018	Consumer Services	USA	USD	1	73.50	5.75	+8.5%	59.00	4/1/15	83.25	10/3/14
EMEA												
1 ERBH	ERB Hellas Plc 4.25 06/2018	Financials	GRC	EUR	2	38.00	6.00	+18.7%	22.00	7/9/15	95.20	10/1/14
2 HSH	HSH Nordbank Ag 02/2017	Financials	DEU	EUR	1	78.00	12.00	+18.2%	66.00	8/31/15	87.25	3/4/15
3 NATGRE-NGBFin	NBG Finance Plc 4.375 04/2019	Financials	GRC	EUR	2	53.00	8.00	+17.8%	22.00	7/9/15	95.00	10/1/14
4 PIRB-PGF	Piraeus Group Finance Plc 5 03/2017	Financials	GRC	EUR	1	41.00	4.50	+12.3%	23.00	7/9/15	100.00	10/1/14
5 ALPHBK-CrGrPlc	Alpha Credit Group Plc 3.375 06/2017	Financials	GRC	EUR	1	63.50	6.50	+11.4%	27.00	7/9/15	95.49	10/1/14
APAC												
1 FANTHOL	Fantasia Holdings Group Co., Limited 10.75 01/2020	Financials	CHN	USD	2	93.25	5.50	+6.3%	59.00	1/15/15	94.75	5/25/15
2 QILUINT	Qilu International Finance (BVI) Company Limited 6.25 09/2017	Financials	CHN	CNY	1	97.00	5.00	+5.4%	91.00	9/10/15	100.10	6/4/15
3 YINGDGA	Yingde Gases Investment Limited 8.125 04/2018	Basic Materials	CHN	USD	2	84.50	3.50	+4.3%	76.00	1/19/15	104.12	10/24/14
4 FMG06	FMG Resources (August 2006) Pty Ltd 8.25 11/2019	Basic Materials	AUS	USD	1	80.25	3.25	+4.2%	71.00	7/27/15	104.88	10/23/14
5 APS	Neptune Orient Lines Limited 4.65 09/2020	Industrials	SGP	SGD	4	96.00	3.50	+3.8%	92.50	9/7/15	101.68	7/20/15

Source: Markit

Table 10: September global corporate bond worst price performance

Worst performers

Ticker	Issue	Sector	Country	CCY	Liq score	9/30 price	Change	Perc change	One year low	Date	One year high	Date
Americas												
1 ODEBOFF	Odebrecht Offshore Drilling Finance Limited 6.75 10/2022	Energy	BRA	USD	1	25.00	-32.00	-56.1%	25.00	9/30/15	105.00	10/6/14
2 LINN	Linn Energy, Llc 7.75 02/2021	Energy	USA	USD	1	23.00	-16.25	-41.4%	23.00	9/30/15	103.22	10/3/14
3 OISA	OI S.A. 5.75 02/2022	Telecom Services	BRA	USD	1	45.00	-27.50	-37.9%	45.00	9/30/15	97.22	10/6/14
4 BPETRO	Berry Petroleum Company 6.375 09/2022	Energy	USA	USD	1	32.50	-17.50	-35.0%	32.50	9/30/15	98.77	10/3/14
5 MHRHT	Magnum Hunter Resources Corporation 9.75 05/2020	Energy	USA	USD	1	45.00	-23.75	-34.5%	45.00	9/30/15	105.75	10/3/14
EMEA												
1 ABENGF	Abengoa Finance, S.A.U. 6 03/2021	Industrials	ESP	EUR	2	40.50	-22.50	-35.7%	26.00	9/22/15	101.37	10/7/14
2 PLTMPL-IntFin	Portugal Telecom International Finance B.V. 4.625 05/2020	Telecom Services	PRT	EUR	2	58.00	-30.16	-34.2%	55.00	9/28/15	104.80	12/5/14
3 GRUPOIS	Grupo Isolux Corsan Finance B.V. 6.625 04/2021	Industrials	ESP	EUR	2	37.25	-17.75	-32.3%	37.25	9/30/15	98.50	10/6/14
4 GLCORE-FinEur	Glencore Finance (Europe) S.A. 6 04/2022	Basic Materials	CHE	GBP	1	84.21	-24.18	-22.3%	77.88	9/29/15	118.63	3/25/15
5 NORSSKO	Norske Skog Holding As 8 02/2021	Basic Materials	NOR	EUR	3	43.50	-11.50	-20.9%	43.50	9/30/15	77.50	2/26/15
APAC												
1 OFFSGRO	Offshore Group Investment Limited 7.5 11/2019	Energy	IND	USD	1	31.50	-14.75	-31.9%	31.50	9/30/15	93.10	10/1/14
2 PACIAND	Pacific Andes Resources Development Limited 8.5 07/2017	Consumer Goods	HKG	SGD	2	65.00	-29.00	-30.9%	50.00	9/15/15	99.75	10/6/14
3 ANTOOIL	Anton Oilfield Services Group 7.5 11/2018	Energy	CHN	USD	2	32.00	-13.50	-29.7%	32.00	9/30/15	103.00	10/27/14
4 ROLTAME	Rolta Americas Llc 8.875 07/2019	Technology	IND	USD	1	42.50	-15.50	-26.7%	42.50	9/30/15	101.50	10/2/14
5 INDOEN	Indo Energy Finance B.V. 7 05/2018	Energy	IDN	USD	2	47.50	-16.25	-25.5%	47.50	9/30/15	95.75	10/30/14

Source: Markit

Sovereigns

UK sovereign CDS was the best performer on a spread percentage basis in the G7 for September, as it tightened 2.6bps to close the month at 15.2bps (see **Table 11**). United States and France were the only other G7 countries that tightened (0.5bps and 0.1bps, respectively) compared to August. Japan was the best performer in August, but succumbed to overall weakness in the region and widened 11.2bps in September to close the month at 48.4bps.

Four countries reach new one year tight levels

The top four best performers, Denmark, UK, Finland, and the Netherlands, all reached new one year tight levels in September; tightening 4bps, 3bps, 3bps and 1bp, respectively (see **Table 12**).

APAC countries dominate worst performers list

Every worst performer reached a new one year wide in September, with the exception of Japan (see **Table 12**). Malaysia and Brazil were the worst performers on the month, as the continued devaluation of their currencies to historically low levels continues to increase inflation and weigh heavily on their economies. Brazil's downgrade by S&P to BB+ coupled with a downward revision to GDP expectations (to -2.44% vs -1.49%

previously) led to additional widening intra month. The Brazilian economy appears to be heading towards its largest GDP contraction in almost 25 years.

Greek and Russian cash bonds the best performers globally

EUR denominated Hellenic Republic 3 2/2033 at +9.0% and USD Russian Federation 4.875 9/2023 at +5.5% were the best performers on the month globally (see **Table 13**). Republic of the Philippines 9.5 12/2028 was the best performing APAC issue at +3.9% on the month.

The worst performers in Americas and EMEA were solely Latin American and African countries' bonds

Commodity dependent countries in Latin America and Africa dominated the worst performers list, with USD denominated Federative Republic of Brazil 10.25 1/2028 at -20.8% and Republic of Zambia 8.97 7/2027 at -13.0% the worst performers in the Americas and EMEA (see **Table 14**). Republic of Indonesia 6.1 2/2037 was the worst performer out of APAC at -7.2% on the month, as its currency reached a new 17 year low vs. USD on September 29th.

Table 11: September G7 industrialised countries ranked by changes in CDS spreads

			9/30 10yr bond yield	CDS change	9/30 CDS	Perc change	One year tight	Date	One year wide	Date
1	UKIN	United Kingdom	1.64%	-2.6	15.2	-14.6%	15.2	9/30/15	22.5	10/16/14
2	USGB	United States	2.05%	-0.5	16.5	-3.2%	14.3	9/18/15	21.4	9/23/14
3	FRTR	France	0.90%	-0.1	32.8	-0.4%	28.7	6/3/15	57.0	10/16/14
4	DBR	Germany	0.59%	+0.3	14.7	+2.2%	13.2	9/18/15	21.5	10/21/14
5	ITALY	Italy	1.71%	+7.2	121.8	+6.3%	99.3	1/26/15	161.2	12/16/14
6	CAN	Canada	1.45%	+3.0	25.0	+13.7%	18.2	2/9/15	38.4	10/10/13
7	JAPAN	Japan	0.32%	+11.2	48.4	+30.1%	34.0	8/18/15	73.4	12/16/14

Source: Markit

Table 12: September liquid sovereign 5yr CDS best and worst spread performance¹

			Liq Score	9/30 spread	Change	Perc change	One year tight	Date	One year wide	Date
Best Performers										
1	DENK	Denmark	2	15	-4	-19.8%	15	9/18/15	26	10/17/14
2	UKIN	United Kingdom	1	15	-3	-14.6%	15	9/30/15	23	10/16/14
3	FINL	Finland	2	20	-3	-12.4%	18	9/17/15	32	10/27/14
4	NETHRS	Netherlands	2	16	-1	-4.5%	16	9/18/15	26	10/27/14
5	RUSSIA	Russia	1	358	-9	-2.5%	238	10/30/14	627	1/30/15
6	AUST	Austria	2	28	-0	-1.7%	22	12/5/14	31	6/29/15
7	BELG	Belgium	2	41	-1	-1.6%	39	8/10/15	58	10/20/14
8	IRELND	Ireland	2	50	-1	-1.4%	47	3/6/15	69	10/16/14
9	FRTR	France	1	33	-0	-0.4%	29	6/3/15	57	10/16/14
10	PORTUG	Portugal	2	175	+3	+1.6%	119	3/11/15	234	7/7/15
Worst Performers										
1	MALAYS	Malaysia	1	234	+63	+37.0%	82	12/8/14	238	9/29/15
2	BRAZIL	Brazil	1	471	+126	+36.6%	147	10/30/14	533	9/28/15
3	JAPAN	Japan	2	48	+11	+30.1%	34	8/18/15	73	12/16/14
4	AUSTLA	Australia	2	56	+12	+26.8%	30	3/6/15	56	9/29/15
5	CHILE	Chile	1	146	+26	+21.6%	69	10/31/14	153	9/29/15
6	MEX	Mexico	1	176	+31	+21.5%	78	10/31/14	187	9/28/15
7	TURKEY	Turkey	1	309	+50	+19.3%	155	12/2/14	323	9/29/15
8	KOREA	South Korea	1	79	+12	+18.8%	46	5/18/15	82	9/29/15
9	THAI	Thailand	1	168	+26	+18.7%	82	12/8/14	172	9/29/15
10	INDON	Indonesia	1	270	+42	+18.6%	131	3/2/15	274	9/29/15

Source: Markit

Table 13: September sovereign bond best price performance

Best performers

Ticker	Issue	CCY	Liq score	9/30 price	Change	Perc change	9/30 yield	One year low	Date	One year high	Date
Americas											
1 GUATEM	Republic of Guatemala 4.875 2/2028	USD	2	96.50	+2.00	+2.1%	5.49%	94.00	8/26/15	105.75	2/18/15
2 USGB	United States of America 5.375 2/2031	USD	1	138.83	+2.66	+2.0%	2.53%	132.48	6/26/15	146.46	1/30/15
3 JAMAN	Jamaica 7.875 7/2045	USD	2	99.75	+1.50	+1.5%	8.08%	95.75	8/25/15	101.25	9/21/15
4 MEX	United Mexican States 7.5 4/2033	USD	2	134.00	+1.05	+0.8%	4.72%	132.00	8/26/15	145.85	2/3/15
5 CHILE	Republic of Chile 6 1/2032	CLP	5	115.14	+0.56	+0.5%	4.66%	111.44	10/10/14	119.74	1/30/15
EMEA											
1 GREECE	Hellenic Republic 3 2/2033	EUR	1	60.47	+4.98	+9.0%	8.80%	30.51	7/8/15	64.69	10/6/14
2 RUSSIA	Russian Federation 4.875 9/2023	USD	1	100.75	+5.25	+5.5%	5.58%	82.35	12/16/14	102.50	4/9/15
3 NGERIA	Federal Republic of Nigeria 14.2 3/2024	NGN	3	95.50	+3.66	+4.0%	15.98 %	86.50	2/17/15	109.66	10/1/14
4 HUNGAA	Hungary 5.5 6/2025	HUF	2	117.98	+4.42	+3.9%	3.81%	106.81	10/1/14	124.71	1/28/15
5 SPAIN	Kingdom of Spain 4 10/2064	EUR	3	119.74	+4.41	+3.8%	3.36%	104.37	10/23/14	156.55	3/16/15
APAC											
1 PHILIP	Republic of the Philippines 9.5 12/2028	PHP	5	157.05	+5.89	+3.9%	4.37%	148.83	4/15/15	161.06	2/23/15
2 SIGB	Republic of Singapore 2.75 4/2042	SGD	2	96.88	+2.69	+2.9%	3.07%	92.87	9/10/15	107.68	2/3/15
3 KOREA	Republic of Korea 2.75 12/2044	KRW	2	108.03	+2.74	+2.6%	2.49%	96.80	5/7/15	108.77	4/10/15
4 CHINA	People's Republic of China 3.7 6/2026	CNY	5	105.02	+1.60	+1.5%	3.32%	96.51	10/8/14	105.02	9/30/15
5 AUSTLA	Commonwealth of Australia 2.75 6/2035	AUD	2	93.41	+1.32	+1.4%	3.30%	86.23	6/11/15	100.41	4/15/15

Source: Markit

Table 14: September sovereign bond worst price performance

Worst performers

Ticker	Issue	CCY	Liq score	9/30 price	Change	Perc change	9/30 yield	One year low	Date	One year high	Date
Americas											
1 BRAZIL	Federative Republic of Brazil 10.25 1/2028	USD	2	80.00	-21.00	-20.8%	10.10%	75.00	9/25/15	111.80	4/30/15
2 URUGAY	Oriental Republic of Uruguay 4 7/2030	USD	4	73.79	-10.51	-12.5%	---	73.77	9/29/15	106.90	10/20/14
3 COSTAR	Republic of Costa Rica 5.625 4/2043	USD	2	72.50	-8.50	-10.5%	7.22%	72.50	9/30/15	90.50	4/15/15
4 ELSALV	Republic of El Salvador 7.65 6/2035	USD	2	86.50	-9.25	-9.7%	8.08%	86.50	9/30/15	110.75	12/4/14
5 VENZ	Bolivarian Republic of Venezuela 9.25 5/2028	USD	2	33.75	-3.00	-8.2%	27.06%	29.55	8/24/15	65.30	10/2/14
EMEA											
1 ZAMBIA	Republic of Zambia 8.97 7/2027	USD	2	80.00	-12.00	-13.0%	8.30%	80.00	9/30/15	97.25	7/31/15
2 RPGANA	Republic of Ghana 8.125 1/2026	USD	2	82.00	-7.25	-8.1%	7.29%	82.00	9/30/15	101.75	10/9/14
3 KENY	Republic of Kenya 6.875 6/2024	USD	2	89.75	-6.88	-7.1%	7.40%	89.75	9/30/15	108.00	11/24/14
4 GREP	Gabonese Republic 6.95 6/2025	USD	3	83.75	-6.00	-6.7%	8.51%	83.75	9/30/15	100.75	6/29/15
5 IVYCST	Republic of Cote d'Ivoire 6.375 3/2028	USD	2	88.38	-5.13	-5.5%	5.02%	88.00	9/29/15	102.50	4/10/15
APAC											
1 INDON	Republic of Indonesia 6.1 2/2037	IDR	4	65.75	-5.10	-7.2%	9.25%	65.75	9/30/15	85.33	2/5/15
2 CHINA	People's Republic of China 4.3 10/2044	CNY	5	99.35	-7.23	-6.8%	3.92%	98.83	9/28/15	106.58	8/31/15
3 SRILAN	Democratic Socialist Republic of Sri Lanka 5.35 03/2026	LKR	5	67.57	-4.75	-6.6%	9.59%	66.91	9/1/15	78.72	10/22/14
4 BHREIN	Kingdom of Bahrain 6 9/2044	USD	2	83.75	-2.75	-3.2%	7.10%	82.25	8/24/15	103.48	10/30/14
5 MALAYS	Malaysia 4.254 5/2035	MYR	3	91.29	-2.58	-2.7%	4.73%	91.29	9/30/15	100.00	7/10/15

Source: Markit

Municipal bonds

September was a relatively uneventful month in the municipal bond market, as the market focused more on interest rates and the robust new issue pipeline in light of limited new information on Detroit and Chicago debt issues that have dominated the news for most of the year. A potential Fed lift-off in 2015, despite the very weak September payroll report, continued to put pressure on longer maturity securities. Fed rate actions at either of the two remaining FOMC meetings and the upcoming election year's various primaries and debates will likely create some volatility in the municipal bond market going into 2016.

Puerto Rico takes center stage again in September

Puerto Rico bonds continue to be one of the top distressed sectors in the municipal market, as the Commonwealth continues to work with creditors to restructure its \$72bn debt burden. On Wednesday September 9th, Puerto Rico's Working Group released a plan that included local policy reforms, changes to health care funding and tax policies for economic development. It was concluded that even after implementation of the Fiscal & Economic Growth Plan (FEGP), the Commonwealth will be unable to meet all of its debt service requirements as currently scheduled. With a projected \$13bn funding shortfall over the next five years, public debt is not sustainable at current levels and restructuring is inevitable, according to Governor Alejandro Garcia Padilla.

Puerto Rico issue the worst performing revenue bond issues in September

The Puerto Rico Commonwealth Highway & Transportation Authority Transportation Revenue Refunding - 2004-I 4.2 07/2019 was the worst performer on the month at -6.3% (see **Table 16**). Northeast US municipalities dominated the list with two New Jersey issues, and issues from Massachusetts and Connecticut also on the list.

Top two best performers were PR power revenue transactions

The month's two best revenue bond performers were the Power Revenue 2010-XX 5.25 7/2035 and 2010-AAA 5.25 7/2027 issued by Puerto Rico Electric Power Authority Power Revenue, ending the month +12.6% and +11.6%, respectively. The remainder of the list was dominated by three fuel tax issues from Arizona, Washington State and California.

Correlation analysis of select 5yr GOs indicates limited spread correlation across states

We analysed historical spreads to 5yr treasuries over the past year for select state GO 4.0%-5.0% coupon bonds maturing in five years to determine if there were any strong correlations between the states (see **Table 17**). The data indicates relatively low correlation across the selected states, with the exception of the spread movements between Tennessee and Utah issues reporting a near 100% correlation. There are multiple technical and fundamental factors influencing that correlation, but the most likely explanation is that they are both AAA-rated in trade similarly. It may not be weighing very heavily on the price correlation, but it is interesting to note that both states depend on revenue mainly from the administrative and support services sector based on BLS data and both saw a higher than average increase in the percentage of higher income families (\$100k+ per annum family income) migrated to the state in 2012-2013 (TN +0.58% and UT +0.50%) based on IRS data. Although less statistically significant, UT and TN 5yr GO spreads were also somewhat negatively correlated (near -60% correlation) to the NY GO issue.

Muni correlation analysis vs US corporate CDS highlights retail disconnect from corporate markets

Data indicates spreads to treasuries for the same set of 5yr state GOs generally had a negative correlation to most North America single A-rated CDS spread curves (see **Table 19**). The negative correlation was most pronounced for the only two retail states in the analysis, Virginia and Hawaii. The negative correlations were of varying degrees, with none being significantly strong, but the data does highlight how spreads for the GO sample set typically tightened when US corporate CDS spreads were widening this year. Illinois was the only issue that had consistent positive correlation across all CDS categories, which is not surprising given how concerns over the state's pension liabilities has led to wider spreads this year, as CDS were also widening. Another interesting point was that oil laden Alaska had almost no correlation to the energy CDS sector and finance centric New York had a negative correlation to the CDS financials curve.

Table 15: September municipal revenue bond best price performance

Best performers

	Issuer	Issue	Liq score	9/30 price	Change	Perc change	One year low	Date	One year high	Date
1	Puerto Rico Elec Pwr Auth Pwr Rev	Power Revenue - 2010-XX 5.25 07/2035	2	64.75	+7.25	+12.6%	46.96	10/20/14	68.50	9/2/15
2	Puerto Rico Elec Pwr Auth Pwr Rev	Power Revenue - 2010-AAA 5.25 07/2027	3	64.75	+6.74	+11.6%	49.24	10/23/14	68.00	9/2/15
3	Salt Verde Finl Corp Sr Gas Rev Ariz	Senior Gas Revenue - 2007 5 12/2037	1	111.03	+2.74	+2.5%	107.12	7/14/15	120.26	2/3/15
4	Connecticut St Health & Edl Facs Auth Rev	Revenue - Quinnipiac University 2015-L 5 07/2025	4	118.35	+2.18	+1.9%	114.58	9/16/15	118.35	9/30/15
5	Washington St	Motor Vehicle Fuel Tax General Obligation Refunding - R-2015-F 5 07/2030	4	119.48	+2.09	+1.8%	114.71	6/10/15	120.32	4/6/15
6	New York St Dorm Auth Revs Non St Supported Debt	St. John'S University Insured Reven - St. John'S University 2007 5.25 07/2025	3	123.10	+2.15	+1.8%	118.27	6/10/15	126.82	1/29/15
7	Nebraska Pub Pwr Dist Rev	Power Revenue - 2015 A-1 5 01/2033	5	115.33	+2.01	+1.8%	111.24	6/10/15	119.65	1/30/15
8	Virginia College Bldg Auth Va Edl Facs Rev 21st Centy College &	Educational F - 21st Century College And Equipment Programs 2015 5 02/2029	5	118.57	+2.03	+1.7%	114.62	6/9/15	119.80	4/14/15
9	Virginia St Res Auth Clean Wtr Rev	Clean Water State Revolving Fund Revenue - 2014-B 5 10/2025	5	123.10	+2.04	+1.7%	119.24	6/9/15	127.70	1/30/15
10	M-S-R Energy Auth Calif Gas Rev	Gas Revenue - 2009-C 6.5 11/2039	3	135.26	+1.45	+1.1%	126.86	5/20/15	142.67	1/20/15

Source: Markit

Table 16: September municipal revenue bond worst price performance**Worst performers**

	Issuer	Issue	Liq score	9/30 price	Change	Perc change	One year low	Date	One year high	Date
1	Puerto Rico Comwith Hwy & Transn Auth Transn Rev	Transportation Revenue Refunding - 2004-I 4.2 07/2019	3	62.40	-4.21	-6.3%	62.02	9/7/15	74.31	4/14/15
2	New Jersey St Transn Tr Fd Auth	Transportation Program - 2014-Aa 4.25 06/2044	2	94.31	-3.01	-3.1%	92.20	9/16/15	102.82	1/28/15
3	Massachusetts St Dev Fin Agy Rev	Revenue - Simmons College Issue 2006-H 5.25 10/2033	3	114.27	-1.94	-1.7%	112.32	6/10/15	121.69	1/30/15
4	New Orleans La Wtr Rev	Water Revenue And Refunding - 2014 5 12/2044	3	108.73	-1.63	-1.5%	107.16	6/10/15	114.71	1/28/15
5	Louisiana St Gas & Fuels Tax Rev	Gasoline And Fuels Tax Revenue Refunding - 2015-A 5 05/2041	4	113.18	-1.65	-1.4%	111.66	9/16/15	120.47	1/30/15
6	Tampa Fla Rev	Revenue And Revenue Refundi - The University of Tampa Project 20 5 04/2026	5	114.63	-1.67	-1.4%	112.69	9/11/15	118.30	4/14/15
7	Michigan Fin Auth Rev	Detroit Water and Sewerage Department Water Supply 2014 D-6 5 07/2034	3	107.25	-1.48	-1.4%	101.88	10/1/14	109.78	4/6/15
8	Regional Transn Auth Ill	General Obligation - 2000a 6.5 07/2030	4	131.75	-1.81	-1.4%	131.08	9/23/15	145.50	1/29/15
9	New Jersey St Tpk Auth Tpk Rev	Turnpike Revenue - 2012-B 5 01/2028	2	113.91	-1.56	-1.3%	110.20	6/26/15	117.72	1/29/15
10	Stamford Conn Wtr Pollution Ctl Sys & Fac Rev	Water Pollution Control System And Facility Revenue - 2013-A 5.5 08/2038	5	118.95	-1.44	-1.2%	114.09	6/10/15	121.99	1/30/15

Source: Markit

Table 17: Select state general obligation bond October 2014 - September 2015 spread to 5yr UST correlation³

4.0-5.0% Coupon 2020 Maturity	AK	CT	GA	HI	IL	LA	MS	NY	PA	TN	UT	VA	WI
Alaska St 4.0 8/2020	100%	43%	23%	47%	17%	63%	29%	27%	21%	14%	9%	66%	41%
Connecticut St 5.0 4/2020	43%	100%	-10%	31%	64%	73%	71%	-26%	2%	81%	79%	70%	11%
Georgia St 5.0 1/2020	23%	-10%	100%	58%	7%	25%	3%	21%	78%	-12%	-17%	32%	33%
Hawaii St 5.0 6/2020	47%	31%	58%	100%	-20%	47%	13%	32%	61%	7%	0%	68%	26%
Illinois St 4.0 9/2020	17%	64%	7%	-20%	100%	47%	68%	-34%	4%	63%	65%	25%	22%
Louisiana St 5.0 5/2020	63%	73%	25%	47%	47%	100%	71%	6%	27%	61%	55%	76%	21%
Mississippi St 5.0 10/2020	29%	71%	3%	13%	68%	71%	100%	-1%	14%	72%	71%	45%	25%
New York St 4.0 3/2020	27%	-26%	21%	32%	-34%	6%	-1%	100%	13%	-57%	-61%	14%	59%
Pennsylvania St 5.0 4/2020	21%	2%	78%	61%	4%	27%	14%	13%	100%	9%	4%	26%	13%
Tennessee St 5.0 5/2020	14%	81%	-12%	7%	63%	61%	72%	-57%	9%	100%	99.6%	36%	-29%
Utah St 5.0 7/2020	9%	79%	-17%	0%	65%	55%	71%	-61%	4%	99.6%	100%	30%	-31%
Virginia St 5.0 6/2020	66%	70%	32%	68%	25%	76%	45%	14%	26%	36%	30%	100%	45%
Wisconsin St 5.0 5/2020	41%	11%	33%	26%	22%	21%	25%	59%	13%	-29%	-31%	45%	100%

Source: Markit

³ All correlations are determined using Pearson Product-Moment Correlation method. 100% correlation coefficient indicates perfect correlation, 0% no correlation, and -100% indicates a perfectly inverse correlation.

Table 18: Core NAICS employment sectors by select states and 2012-2013 high income family inflow/outflows

Top Q4 2014 wage sources by sector*			2012-2013 \$100K+ family income tax filings inflow/outflow
	Primary	Secondary	
Alaska	Support activities for mining	Oil and gas extraction	-2.30%
Connecticut	Securities, commodity contracts, investments	Insurance carriers and related activities	-0.59%
Georgia	Administrative and support services	Merchant wholesalers, durable goods	+0.19%
Hawaii	Accommodation	Administrative and support services	+0.23%
Illinois	Administrative and support services	Hospitals	-0.83%
Louisiana	Specialty trade contractors	Hospitals	-0.26%
Mississippi	Transportation equipment manufacturing	Administrative and support services	-0.24%
New York	Securities, commodity contracts, investments	Hospitals	-1.02%
Pennsylvania	Management of companies and enterprises	Hospitals	-0.23%
Tennessee	Administrative and support services	Hospitals	+0.59%
Utah	Administrative and support services	Specialty trade contractors	+0.50%
Virginia	Administrative and support services	Management of companies and enterprises	-0.48%
Wisconsin	Management of companies and enterprises	Hospitals	-0.19%

*Excluding professional & technical services and ambulatory health care services, because both ranked in the top two for almost all of the above states.

Source: BLS, IRS

Table 19: State GO 4.0-5.0% coupon 2020 maturity 2015 one year correlation of spread to 5yr UST vs North American A-rated CDS spreads³

North America A-rated CDS	State GO 4.0-5.0% Coupon 2020 Maturity												
	AK	CT	GA	HI	IL	LA	MS	NY	PA	TN	UT	VA	WI
Basic Materials	-39%	-15%	11%	-64%	35%	-20%	13%	-47%	-19%	44%	35%	-55%	-44%
Consumer Goods	-17%	-22%	18%	-57%	37%	-11%	15%	3%	-15%	3%	-6%	-42%	6%
Consumer Services	-23%	-21%	18%	-60%	45%	-18%	16%	-1%	-16%	3%	-4%	-42%	15%
Energy	-38%	-16%	-2%	-41%	3%	-21%	8%	-42%	-6%	42%	36%	-51%	-64%
Financials	-40%	5%	-5%	-69%	54%	-11%	19%	-64%	-29%	57%	54%	-48%	-49%
Government	-44%	-8%	4%	-69%	48%	-19%	25%	-39%	-22%	41%	35%	-53%	-27%
Healthcare	-11%	-26%	8%	-50%	34%	-17%	14%	28%	-19%	-23%	-28%	-32%	39%
Industrials	-17%	-21%	11%	-56%	41%	-13%	23%	13%	-15%	-5%	-10%	-37%	24%
Technology	-6%	-29%	22%	-48%	36%	-11%	15%	24%	-9%	-19%	-24%	-31%	36%
Telecom Services	-42%	-1%	4%	-72%	57%	-18%	23%	-55%	-27%	49%	44%	-50%	-30%
Utilities	-36%	6%	4%	-62%	50%	-7%	27%	-50%	-23%	55%	48%	-43%	-38%

Source: Markit

Securitised products

The first half of the month was relatively quiet after August's volatility subsided and market participants remained on the side line ahead of the ABS East Conference and the FOMC meeting. Uncertainty ahead of the FOMC meeting and overall weakness in global credit spreads led to both a downtick in securitised products trading volume and spreads on the lowest rated and most distressed securities were noticeably wider for the entire month. The Fed's inaction led to further spread widening for the remainder of the month across credit products, with modest widening in senior securities as well.

Non-agency spread volatility continues to increase and trading volume was lower during the month, with DNTs on larger lists continuing to hover higher than usual. US CLO issuance came in at slightly below \$4bn in September, which is the lowest level since January 2014.

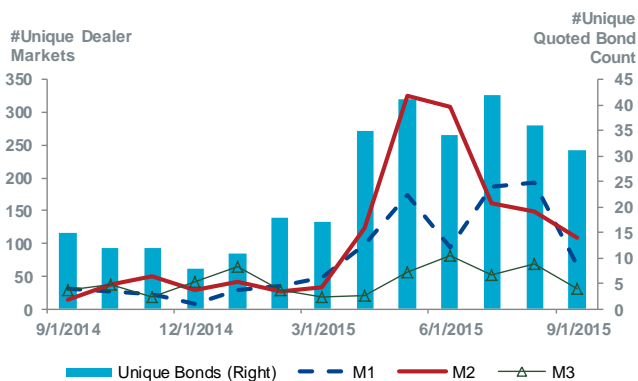
Volkswagen corporate concerns carried over into its auto ABS bonds. There appeared to be more concern with the direct corporate credit risk to its one outstanding dealer floor plan issue versus the auto loan deals, as the emissions violations may lead to diesel cars remaining on the lot unsold, with senior floating-rate VWALT floor plan bonds approximately 15bps wider on the month.

CMBS are first US securitised product to show signs of weakness this year

The commercial mortgage backed security (CMBS) market started to show signs of spread deterioration this summer. Over the course of the year, spreads were mostly flat for the first half of the year, with AAA spreads in the area of swaps +85bps and BBB- in the area of swaps +355bps until modest widening began in mid June according to Trepp data. AAA spreads

Figure 7: CRT MBS count of unique daily two-way dealer markets

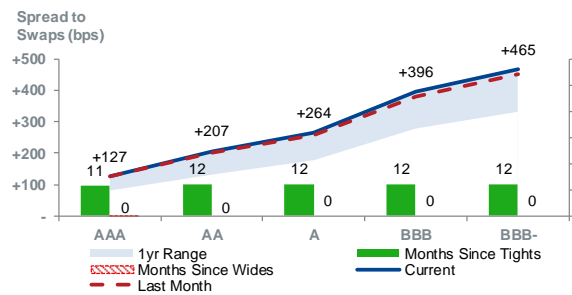
Monthly totals by class and unique quoted monthly bond count



Source: Markit

widened abruptly to approximately swaps +100bps and BBB- to swaps +400bps in late June/early July. Spreads came under more pressure at the beginning of August and the pace of deterioration slowed in September, as AAAs widened only 2bps and BBB- another 16bps since last month to new one year wides during the month (see **Figure 8**). There are several potential drivers of the spread widening, but there has been no clear sign of overall fundamental weakness in the sector. Some drivers of the more recent widening is just overall weakening in global corporate spreads, potentially weaker underwriting standards and less dealer liquidity as they reposition themselves going into a potentially volatile Q4.

Figure 8: CMBS credit curve spread to swaps

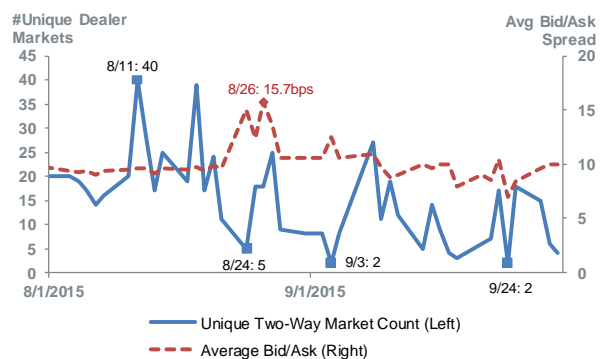


Source: Trepp

CRT two-way dealer market quotes continue to grow

Two-way dealer markets on individual securitised bonds are much less common than in the corporate bond and CDS markets, given the smaller average issue (tranche) sizes and the heterogeneous nature of bonds within the securitised products universe. Over the past year, CRT bonds issued by Fannie Mae and Freddie Mac have become the dominant mortgage

Figure 9: M1, M2, and M3 round lot markets and avg market bid/ask spread in August and September



credit flow trading product, as multiple dealers are often making two-way markets on the same bond in a given day.

CRT M2s dominate dealer two-way markets

We analysed the quote volume trends of several thousand unique parsed CRT dealer markets over the past year to get a better understanding of market dynamics and liquidity (see **Figure 7**). We defined a unique two-way market quote as: 1) a unique bid and ask level during one day; 2) bid and ask size of \$5m or more; 3) for a specific CRT bond; and 4) from a specific dealer. For instance if STACR 2015-DNA2 M2 was quoted 230/220 5MM x 5MM five times by dealer one on September 5th, it would count as one unique quote for that day. We understand that this method will understate volume on more volatile days, when market levels can retrace to earlier times in the day with the same exact bid/ask, but we believe this is still a sound method for gauging liquidity in this market. There is also a potential bias during times when dealer CRT inventory is light, and they would not be able to offer a two-way market.

The data indicates that not only has the volume of uniquely quoted round lot CRT markets increased fivefold in the past year, but the number of distinct quoted securities has also doubled. Some of this increase can be attributed to growth in the total bonds outstanding from the steady new issuance in the sector in 2015, but it also appears to represent improving liquidity from the dealer community. M2 tranches dominate the volume of quoted markets until July, peaking at over 300 total unique daily markets in May. Since the Greek crisis and the turmoil out of China that followed, M2 quote volumes were surpassed by M1s in July and August, with M3 quote volumes declining in July after reaching peaks in June of over 80 unique daily quotes that month. Two-way markets dropped precipitously in September, with quote volumes dropping for all three tranches close to the April levels.

M1, M2 and M3 two-way market quote count dropped precipitously and bid/ask widened on August 24th

The graph on the right side of **Figure 7** shows how much the August 24th sharp sell-off in the global equity markets affected the CRT market, as quote counts went from a peak of 40 on August 11th to only five quotes on August 24th and the average bid/ask spread widened from slightly less than 10bps for most of the month to 15bps that day. It is also worth noting that CAS 2014-C02 1M1 was the most quoted market in all of securitised products (see **Table 21**), with 49 unique two-way daily markets on the month.

Over the past year, Tuesday was the most active day of the week with almost 750 daily unique markets. Friday was the least active weekday, with about 470

daily unique markets, but it also had the tightest average bid/ask at 9.6bps.

Table 20: One year M1, M2 and M3 CRT market activity and average bid/ask spread by day

	Count of unique daily markets	Average bid/ask spread
Monday	511	9.8
Tuesday	749	9.8
Wednesday	609	10.0
Thursday	564	9.9
Friday	467	9.6

Source: Markit

Table 21: Top five most frequently quoted CRT bonds in September

	Count of unique daily round lot markets
STACR 2015-DNA2 M2	25
CAS 2013-C01 M1	23
STACR 2014-HQ1 M2	19
CAS 2014-C04 1M1	12
STACR 2014-DN2 M3	11

Source: Markit

Table 22: Fannie Mae / Freddie Mac 30yr specified pools pay-ups in ticks (1/32 points)

Coupon	September 2015						Change vs August 2015					
	3.0	3.5	4.0	4.5	5.0	5.5	3.0	3.5	4.0	4.5	5.0	5.5
LLB (85K)	0-16	0-29	1-14	2-06	2-19	1-30	+0-02	-0-03	+0-03	-0-07	+0-10	-0-04
MLB (110K)	0-14	0-23	1-13	1-29	2-05	2-09	+0-04	-0-04	-0-01	-0-02	+0-11	+0-07
HLB (150K)	0-13	0-14	1-01	1-16	1-17	0-30	+0-03	-0-02	-0-09	+0-02	+0-09	-0-16
New Prod	0-01	0-03	0-07	0-10	0-00	0-00	0-00	0-00	+0-01	+0-02	0-00	0-00
Low FICO	0-25	0-03	0-08	0-13	0-19	1-29	+0-06	-0-01	-0-01	-0-01	+0-03	+0-06
Investor	0-11	0-08	0-06	0-11	0-20	1-25	+0-04	+0-01	-0-01	+0-01	-0-01	0-00
MHA <90	0-07	0-06	0-06	0-12	0-27	2-12	-0-01	+0-01	-0-03	-0-02	+0-03	+0-08
MHA <95	0-06	0-05	0-09	0-18	0-19	0-28	+0-01	+0-01	-0-03	-0-02	+0-02	-0-29
MHA <100	0-12	0-06	0-08	0-21	0-26	1-03	+0-01	-0-04	-0-01	+0-03	+0-07	-0-13
MHA <105	0-24	0-08	0-16	0-18	0-28	2-07	+0-03	-0-01	+0-06	-0-09	+0-02	+0-10
<125 LTV	0-03	0-10	1-07	1-28	3-02	2-14	+0-01	-0-04	-0-02	-0-04	0-00	0-00
125+ LTV	0-26	0-12	1-04	2-05	1-30	3-16	0-00	-0-03	-0-01	0-00	+0-13	+0-26

Source: Markit

Table 23: Fannie Mae / Freddie Mac 2015 production agency CMO spreads - 30yr WAM 4.0% coupon

	Spread to Treasuries (bps)	August-July change (bps)
Sequential		
2-yr	+70	-
5-yr	+60	-
10-yr	+85	-5
PAC		
2-yr	+85	-
5-yr	+95	+10
10-yr	+90	+5

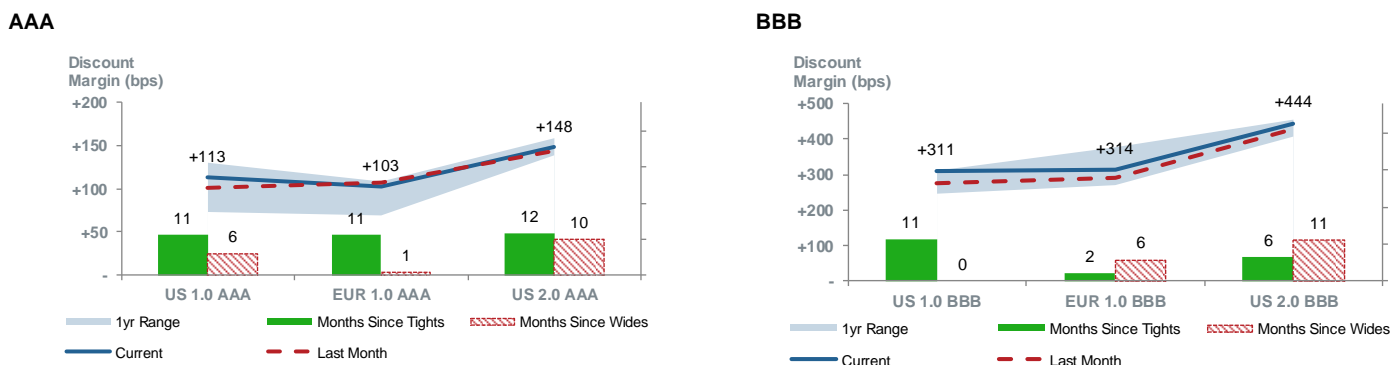
Source: Markit

Table 24: 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	+33.3	+4.8	+22.6	10/13/14	+33.3	9/30/15
4-5yr AAA US Swaps	+56.2	+6.9	+35.0	4/1/15	+61.5	10/1/14
US Credit Card - Floating-Rate						
2-3yr AAA US LIBOR DM	+31.6	+2.9	+21.9	10/6/14	+31.6	9/30/15
4-5yr AAA US LIBOR DM	+56.3	+4.2	+34.3	10/14/14	+56.3	9/30/15
European Credit Card - Floating-Rate						
AAA EUR LIBOR DM	+37.5	-	+31.3	11/3/14	+64.4	10/14/14
US Prime Auto - Fixed-Rate						
0-2yr AAA EDSF	+35.1	+2.0	+13.0	10/1/14	+35.1	9/30/15
2+-yr AAA US Swaps	+47.7	+2.8	+21.8	10/1/14	+47.7	9/30/15
European Prime Auto Loan - Floating-Rate						
AAA EUR LIBOR DM	+48.2	+18.4	+25.6	3/4/15	+48.2	9/30/15
US Subprime Auto - Fixed-Rate						
1-2-yr AAA EDSF	+70.3	+4.5	+36.1	10/3/14	+70.3	9/30/15
2-3+yr AAA US Swaps	+90.7	+12.1	+48.3	6/15/15	+90.7	9/30/15
US Equipment - Fixed-Rate						
2+yr AAA US Swaps	+53.0	+5.3	31.8	10/1/14	+53.0	9/30/15
European Equipment - Floating-Rate						
A EUR LIBOR DM	+174.0	+35.2	+109.4	12/29/14	+181.8	6/30/15
US FFELP Student Loans - Floating-Rate						
2-4yr AAA 3mo US LIBOR DM	+90.5	+1.5	+36.4	11/7/14	+91.3	9/10/15
10+yr AAA 3mo US LIBOR DM	+157.3	+1.6	+89.9	12/3/14	+157.4	9/24/15

Source: Markit

Figure 9: US and European CLO AAA/BBB spread summary



Source: Markit

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