ALLIANCEBERNSTEIN®

March 2020

Market Update – Daily Fixed Income Trading Liquidity Update 27 March 2020

In the current markets, volatility is at an extreme level and liquidity has become significantly reduced across many fixed income instruments including government bond markets. Liquidity management has been a heightened focus for AllianceBernstein for years, as we recognized the reduced liquidity in the marketplace after the 08-09 financial crisis. We view liquidity management as a business imperative.

In an effort to provide timely updates for our clients on fixed income market trading liquidity, we have developed the following update, aggregated from our traders towards the end of the New York trading day.

Sector	Liquidity Trading Comment	Bid-Ask Spreads
US Treasuries	• The open-ended bond purchase program enacted by the Fed is having a positive effect on liquidity and market functionality. The Fed bought $75bln per day across the curve all week. This allowed dealers to reduce their bloated balance sheets. • Rate volatility (as measured by 3m10y volatility) has moved 25% lower on the week – a function of the monetary and fiscal stimulus; along with easing in the demand and strength of the US dollar. • Treasuries rallied with the curve "bull flattening" on March 27 as equities closed weaker and corporate bond new issues pushed swap spreads wider. • There was good "two-way" trading in the market, compared with the heavy skew toward selling long end bonds of the past several weeks. • Most US Treasury buying comes during the Fed operations. Long bonds continue to sell off after the Fed 20- to 30-year maturity purchase operations end at 2pm in NY. • Depth in the US Treasury cash bond market remains poor, down by 80-90% over the last few weeks in on-the-run bonds vs. normal market conditions. Moving large blocks of Treasuries takes more time than usual. • While still relatively liquid in most contracts, depth in the Treasury futures market is also much lower vs historical averages. Trading in "ultra" contracts is challenging.	Bid-offer spreads in the most liquid on-the-run benchmark cash US Treasuries have widened by 2-3x vs normal market conditions. Off-the-run Treasury bonds may trade significantly wider than on-the run bonds.
Investment Grade (IG) Corporates	**US IG** • Despite weaker macro tone, US IG cash bonds were well supported on March 27, outperforming CDS	US IG spreads are generically 5-6x wider vs normal market

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	indexes and equities. • New issue supply was $11 bn on March 27, taking totals for the week- and month-to-date to $99bn and $200 bn respectively, both records. • Supply was more heavily weighted to BBB names and concessions rose, but demand remained strong for higher-quality issuers. • Credit curves remain flat but short-maturity bonds continued to normalize as we saw strong demand in short maturities. • Bid/ask spreads remain at wide levels, amid continued heightened volatility. **European IG** • Central bank action has helped stabilize the euro denominated markets—particularly intermediate- and longer-maturity bonds eligible for QE purchase. • European IG finally began to follow the US market and saw supply this week. Although much of the supply came with large concessions, deals were multiple times oversubscribed. • This primary market issuance also helped improve the secondary market which became more liquid in pockets and the market felt as if a clearing level had been reached. • In the AT1 (subordinated financial) market, bonds continue to outperform the macro picture as technicals seem reasonable. While there was some profit taking given the sharp moves higher in prices, the overall picture remains stable.	conditions AT1/Preferreds are 5-6x wider vs normal market conditions
High Yield (HY) Corporates	**US HY** • The tone of high yield in recent weeks has been tied to equities—with high yield closely following equities moves. • But despite equity weakness throughout the day, issuer performance was mixed (some up, some down, some unchanged) but roughly unchanged on March 27. • Investors seem to have built cash buffers, which, combined with ETF buying (ETFs trading rich to NAV), helped to support the market despite macro weakness. • Bid-ask spreads remain elevated, albeit a little tighter for higher-quality issuers. Unlike the investment-grade market there has been no new issue supply, so trading must be done via the secondary market which can be challenging.	High yield spreads are 2 to 3x wider than normal times for BB and B securities and 3 to 5x wider for CCC CDX HY bid/ask is 4-5x vs normal conditions.

<table>
<tr><th>Sector</th><th>Liquidity Trading Comment</th><th>Bid-Ask Spreads</th></tr>
<tr><td></td><td>European HY
Daily sentiment follows equities and the iTraxx Crossover index
Dealer liquidity is minimal and not likely to improve as participants continue to shift to work from home/disaster recovery locations.
Overall liquidity remains challenged in both directions (bid/offer) as investor conviction levels are not high and sentiment is skittish around macro moves.
However, relative to last week, there is more broad-based stability in the markets for high quality BB-rated bonds and the TMT sector.
Bid/ask spreads are still wide, but there is a less panicked tone. Sellers are primarily funding outflows or building up cash balances/reducing risk in the anticipation of further outflows/volatility, but outflows appear to have slowed (although remain negative), and cash balances have been built up. The selling pressure we saw from ETFs has also significantly reduced
CDX HY
CDX HY traded with a weaker tone on March 27. Synthetics underperformed cash bonds as investors put hedges back on.</td><td></td></tr>
<tr><td>Emerging-Market Debt (EMD)</td><td>Hard Currency EM
In HY EM, there has been a clear dispersion between oil exporters and non-oil exporters, with exporters underperforming as oil prices fell
Liquidity and price transparency have improved in sovereigns and quasi sovereigns, albeit still significantly below average. Liquidity in EM corporates remains very challenged; most trading has been in sovereigns and quasi-sovereigns
Local Currency EM
For the most part, Local EM prices are tracking macro risk and the moves in currencies.
Liquidity has moved towards normalization</td><td>Bid/ask spreads have tightened from last week’s levels:

EM IG sovereigns are 2.5x wider vs normal market conditions

EM HY sovereigns are 3x wider vs normal market conditions

EM IG corporates are 3x wider vs normal market conditions

EM HY corporates are 5x wider vs normal market conditions</td></tr>
<tr><td>Securitized</td><td>CMBS
The last new issue in the CMBS market priced March 11th. In the secondary market, the tone is slowly</td><td></td></tr>
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	showing signs of improvement. On March 27, despite weakness in stock markets, CMBS/CMBX performed well and finished the day mostly higher across vintages • Bids have been strong for the AAA-rated part of the CMBS capital structure, and spreads have tightened. There is minimal liquidity for mezzanine classes, but investors are beginning to express interest amid the rally in AAAs. • Bid/ask spreads remain elevated: A-rated and BBB-rated bonds are roughly 5x wider vs normal conditions, and BB-rated are roughly 7x wider. • Liquidity exists in the CMBX market, volumes are elevated, and bid/ask spreads are approaching historical levels. Flows felt orderly and the "short squeeze" in CMBX.6 A abated. **ABS** • While volumes are low, some depth has returned to the AAA-rated ABS market. Demand has been focused in higher-quality, shorter average life ABS, with limited trading in lower-quality tranches. • While new issues have been sidelined by the market volatility, we expect that TALF 2.0 should help re-start the new-issue market as TALF 1.0 did during the Great Recession. • Secondary market spreads on "benchmark" bonds saw initial signs of tightening this week. AAA 3-year fixed-rate prime auto ABS and credit card ABS compressed by 50bp and 20bp respectively, on the week, to end at level of swaps +150bp and swaps +180bp. Collateral types that are most directly tied to the virus—such as aircraft, fleet auto (rental car), dealer floorplan auto, subprime auto and unsecured consumer loan—have not participated in the tightening. For example, subprime auto ABS widened 50 to 100 bps on negative credit concerns. **CRTs** • Trading in the CRT market has been significantly challenged, partly because of the challenges in the repo/commercial paper market. • Prices have declined meaningfully amid unknowns about the mortgage market and fears of forced liquidations from REITs and hedge funds. • We have begun to see more "two-way" trading flow in seasoned investment-grade and below-investment-grade last cash flow (lower tranche) bonds	

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	• Discount margin spreads are still at very wide levels – multiple times their pre-crisis levels, but have narrowed a bit – tightening has been most pronounced for seasoned (earlier vintage) investment-grade last cash flow bonds but there has been modest tightening in newer vintage last cash flow bonds as well. Equity tranches have more challenged liquidity with limited trading. Bid/ask remains wide at roughly 2-3x normal. **Legacy Non-Agency RMBS** • Legacy RMBS continues to trade through the recent crisis. Since January spreads have widened from ~ 200bps to now > 1000 bps, but demand for the sector never really faded. **CLOs** • After challenged liquidity in recent weeks, trading has improved in AAA-rated tranches. Liquidity in lower-quality tranches remains challenged. Bid/ask spreads remain 2-3x wider relative to typical levels. **Agency MBS** • We have seen tightening in Agency MBS spreads vs US Treasuries since the Fed announced it would purchase $50bln per day as part of their QE • Bid/ask spreads vary by coupon, with 30-year, 3% coupons in line with historical bid/ask spreads, but higher coupons trading 2-6x higher vs pre-crisis levels	
Money Market	• The “frozen” commercial paper (CP) market saw some signs of thawing. Most paper trading was primarily overnight or one-week term, and mainly high-quality issuers, and the improvement is only modest. • Prime fund outflows for the month-to-date have been $146 billion, while government money market have seen large inflows - $690 billion month-to-date. This has increased the need for repo, Treasuries, and GSE (government-sponsored enterprise, i.e., Fannie Mae and Freddie Mac) issues • T-bills yields ended the week in negative territory, despite an increase in supply. It is easy to sell government securities but not much to buy at positive yields. Looking ahead, the Treasury is expected to fund the majority of the $2trn stimulus package in short maturities which could push yields wider. That could be compounded if risk sentiment	

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	shifts and investors move out of government money market funds. • Repo from dealers remains a thin market, either not offered or offered at negative rates. Intraday liquidity remains poor. Money market funds are instead sourcing from the Fed reverse repo facility where possible – with subscriptions climbing to $211 billion over the past week, and consensus indicating it may rise to $500 billion at quarter end. (Past historical high was $474 billion in December 2015). • 1- month LIBOR set higher at 0.989%; 3-month LIBOR rose to 1.45%. Recent rises in LIBOR levels reflect short-term funding stresses.	
US Municipals	• Tone in the municipal market continued to be firm on March 27, but with lighter volumes vs the previous day. • Many market participants stayed on the sidelines in anticipation of the new issue calendar opening up after two weeks of little-to-no issuance. • One new deal (NY State Environmental Facilities Corp) came to market with strong demand (9x oversubscribed) • Liquidity in high yield municipals remains challenged, but the tone was a bit better today (Mar 27) as buyers emerged looking to take risk again • Odd-lot liquidity is still significantly reduced vs several weeks ago, but improved vs last week and earlier this week. Larger odd-lots (100k+) were 1-2 points below bid-side evaluations; smaller odd-lots were 1-4 points below.	
Canadian Market	**Federal** • Liquidity is best in benchmark issues for block sizes of <=CAD15m; very limited liquidity in off-the-run, high coupon bonds **Provincial** • Liquidity is best in benchmark bonds from Quebec, Ontario and British Columbia, but concessions can be high; very limited liquidity in oil-generating provinces (Newfoundland, Alberta, Saskatchewan) amid sharp decline in Western Canadian Select oil price • Most dealers will not bid on off-the-run, high coupon provincial issues **IG Corporates** • Limited liquidity; many dealers forced to reduce balance sheet inventories, so unable to provide bids	Federal: bid/ask typically +1 to +2bp; can be more depending on volatility Provincial: +3 to +5bp or more on size < CAD 10m

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	in many sectors. • Trading on an agency basis for high-beta issuers. However, market has improved in telco and bank sectors. • Liquidity limited even in higher-quality, senior bank deposit notes **Real Return Bonds (RRBs)** • Trading "by appointment", similar to private placement market	