ALLIANCEBERNSTEIN®

April 2020

Market Update – Daily Fixed Income Trading Liquidity Update 2 April 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 (purchasing $60bln per day across the curve) is having a positive effect on liquidity and market functionality. • April 2 was a quiet day in the Treasury market. Rate volatility continues to fall and there continues to be good "two-way" trading in the market. • The Treasury Refunding announcement came out on April 2. Auction sizes were raised by $2bn for 3-year ($40bn) and $1bn for 10-year ($25bn) and 30-year ($17bn). This supply comes to market April 7, 8, and 9 respectively. These increases are pulled forward to fund the Covid-19 related fiscal stimulus. • Most US Treasury buying comes during the Fed operations. Long bonds continue to trade poorly after the Fed 20- to 30-year maturity purchase operations end at 2pm in NY. • Depth in the US Treasury cash bond market has improved and is about 80% of pre-crisis levels in on-the-run bonds. Large blocks of Treasuries still trade with a liquidity premium. • 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 for on-the-run benchmark 2- through 10-year US Treasury notes has improved significantly and are in line with pre-crisis conditions. For the 30-year note, bid/ask is ~2.5x wider vs pre-crisis. Off-the-run Treasury bonds still trade significantly wider than on-the run bonds, but bid/offer has compressed.
Investment Grade (IG) Corporates	**US IG** • US IG cash bonds traded with a mixed tone on April 2, amid another heavy new issue supply day. • $32 billion in new issues priced, including a $19bn, 5-tranche deal from T-Mobile. Today's deals were 2.5x oversubscribed, compared to 4.1x for the week.	US IG spreads are generically 4-5x wider vs normal market conditions AT1/Preferreds are 4-5x

<table>
<tr><th>Sector</th><th>Liquidity Trading Comment</th><th>Bid-Ask Spreads</th></tr>
<tr><td></td><td>Credit curves remain flat but short-maturity bonds continued to normalize as we saw strong demand in short maturities.
Bid/ask spreads remain wider than pre-crisis levels. Odd-lot liquidity was challenged, but not to the same extent seen a couple weeks ago.
European IG
The European IG market continues to see heavy supply, which has come with large concessions, and deals have been multiple times oversubscribed.
We see a continuation of last week's theme, that primary market issuance also helped improve the secondary market where liquidity continues to improve, although volumes are light.
In the AT1 (subordinated financial) market, prices moved higher given a firmer macro tone and a statement from the head of the ECB supervisory board clarifying there were no plans to order banks to suspend AT1 coupons. Liquidity in 2 to 5m size trades remained intact for the major European banks.
REIT Preferreds
Liquidity in the REIT preferred market is limited under more normal conditions and has become significantly challenged amid the current crisis.
Dealers are not providing balance sheet capacity to support the market and so trades must be done on an agency basis; trading is therefore limited.
On April 2, trading volume continued to be very light relative to the 20-day average.</td><td>wider vs normal market conditions</td></tr>
<tr><td>High Yield (HY) Corporates</td><td>US HY
The tone of high yield in recent weeks has been tied to equities—with high yield closely following equities moves.
April 2 was the slowest day in the past two weeks with markets roughly unchanged.
We are beginning to see life in the new issue market, with 3 new issues coming to market on April 2 with books 4-8x oversubscribed.
Bid/ask spreads remained unchanged
European HY
Daily sentiment continues to follow equities and the iTraxx Crossover index, however cash bonds have started to outperform the index, particularly in down markets and in higher-quality credits.</td><td>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.</td></tr>
</table>

Sector	Liquidity Trading Comment	Bid-Ask Spreads
	• With equity markets under material pressure, investors that had been putting cash to work in the HY market paused. The market was down, but selling pressure was not overwhelming, with much of the trading seemingly focused on larger-cap issuers. • Encouragingly, hedge fund investors did not seem to be putting on shorts in any meaningful size despite the macro weakness. • Dealer liquidity is minimal and has deteriorated as more participants shift to work from home locations. Dealer balance sheet usage is increasingly restricted with most trades >2million needing to be done on an agency basis. • Overall liquidity remains challenged in both directions (bid/offer) as investor conviction levels are not high and sentiment is skittish around macro moves. • 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 underperformed cash bonds again on April 2. Synthetics were barely up on the day, despite the largest-ever percent increase in spot oil prices. Volumes and participation remain as low as we have seen them since credit spreads were at their tight levels a couple months ago.	
Emerging-Market Debt (EMD)	**Hard Currency EM** • EM followed the global macro risk tone—as has been the case over the last few weeks—and was softer on April 2. • EM continues to exhibit dispersion between oil exporters and non-oil exporters, with exporters underperforming amid weak Brent crude prices. • IG sovereign credit came under pressure today as the recent beta-adjusted outperformance vs HY reversed. • 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	Bid/ask spreads have tightened from last week's levels: EM IG sovereigns are 1.5x wider vs normal market conditions EM HY sovereigns are 2x wider vs normal market conditions EM IG corporates are 3x wider vs normal market

Sector	Liquidity Trading Comment	Bid-Ask Spreads
	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	conditions EM HY corporates are 5x wider vs normal market conditions
Securitized	**CMBS** • In the past two days, the CMBS market was characterized by a wave of selling throughout the capital stack. Conduit AAA through BBB, CMBS IO, and single asset/single borrow bonds were for sale all day. Money managers and insurance companies took advantage of the liquidity to sell positions in AAA- through A-rated securities. • Despite the supply of bonds out for the bid, spreads held in well. A-rated bonds, which have generated little investor demand recently, traded at fair valuations. Liquidity is gradually making its way down the capital stack which helps with price discovery in the secondary market. However, we have not seen a new issue since the beginning of March. • Bid/ask spreads remain elevated: AAA-rated spreads have moderated and are roughly 2x wider vs normal conditions. BBB-rated bonds are roughly 5x wider vs normal conditions, and BB-rated are roughly 7x wider. • Liquidity in the CMBX market continues to improve and bid/ask spreads are narrowing. Series 6 BBB-, considered one of the most liquid mezzanine tranches, now generally trades within a 1.0-1.5 point wide market. Under normal conditions this is as tight as 0.25-0.50 points. However, this is a marked improvement from the 3-5 point wide markets we saw just last week. **ABS** • After seven straight days of tightening, the ABS market showed signs of fatigue on April 2 and spreads on 2-year AAA-rated credit card and prime auto ABS spreads pushed wider. • While senior bonds softened, subordinated bonds firmed up a bit. For example, subprime auto BB-rated bonds cleared with $70-80 prices or yields of 8-11%. • Secondary markets remain the only source of supply. While new issues have been sidelined by the market volatility, we expect that TALF 2.0 should	

Sector	Liquidity Trading Comment	Bid-Ask Spreads
	help re-start the new-issue market as TALF 1.0 did during the Great Recession. But it may not begin until May/June and details remain light. Until the primary market reopens, paydowns will drive secondary market demand. **CRTs** • Trading in the CRT market has been significantly challenged, partly because of the challenges in the repo/commercial paper market. • But we have seen better trading conditions in the past several days, with improvement in ability to both buy and sell. • There was a softer tone in the CRT market on April 2, in line with broader risk markets. But there was still good two-way flow and bid/ask spreads remained roughly 2x normal levels. • Discount margin spreads are still several times their pre-crisis levels. **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** • Bid/ask spreads on AAA-rated bonds are approaching normal levels (~1 point); mezzanine bid/ask remains ~3x wider relative to typical levels. • As with other risk assets, the tone in the CLO market weakened on April 2 and spreads widened. **Agency MBS** • Bid/ask spreads vary by coupon, with low coupon (2.5%) TBAs back to historical averages, and the rest of the coupon stack trading much wider, at 2-6x higher vs pre-crisis levels	
Money Market	• As we begin the second quarter, liquidity has started to improve in the money markets with increased repo availability, a flood of Treasury and agency issuance, and more pockets of liquidity in commercial paper (CP). • The Treasury auctioned $220 billion in Treasury bills on April 2. • Prime fund outflows appear to have subsided. Most prime funds are running their 30% or 7-day liquidity buckets over 40%, which many were in danger of	

<table>
<tr><th>Sector</th><th>Liquidity Trading Comment</th><th>Bid-Ask Spreads</th></tr>
<tr><td></td><td>breaching just days ago.
• The Fed reverse repo facility (RRP) for money market funds saw $183 bln in subscriptions on April 2, down somewhat from the prior day.
• 1-month LIBOR set lower at 0.98 % and 3-month set lower at 1. 37%. Recent rises in LIBOR levels reflect short-term funding stresses, but we expect LIBOR to continue setting lower as dealer balance sheets open up and the Fed programs see increased usage.</td><td></td></tr>
<tr><td>US Municipals</td><td>• Tone in the municipal market—both high grade and high yield—continued to be weak on April 2.
• Volumes were light. The softer tone this week brought out some buyers, but few offerings. A couple of competitive deals priced on April 2.
• Liquidity in high yield municipals remains challenged, although more high yield bonds traded on April 2 compared with recent days.
• Odd-lot liquidity is still significantly reduced vs several weeks ago. Many odd-lots did not find a bid; those that did traded 4-15 points below bid-side evaluations. For context, high grade odd-lots typically trade 0.10-1 points below bid-side evaluations under more normal market conditions.</td><td></td></tr>
<tr><td>Canadian Market</td><td>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 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</td><td>Federal: bid/ask typically +1 to +3bp; can be more depending on volatility

Provincial: +2 to +5bp or more on size < CAD 10m</td></tr>
</table>

Sector	Liquidity Trading Comment	Bid-Ask Spreads
	Real Return Bonds (RRBs) • Trading "by appointment", similar to private placement market	

The above is provided for informational purposes only. All information is unaudited and subject to change. Nothing provided herein is intended to be used for the purposes of making investment decisions.

The information contained here reflects the views of AllianceBernstein L.P. or its affiliates and sources it believes are reliable as of the date of this publication. AllianceBernstein L.P. makes no representations or warranties concerning the accuracy of any data. There is no guarantee that any projection, forecast or opinion in this material will be realized. **Past performance does not guarantee future results.** The views expressed here may change at any time after the date of this publication. This document is for informational purposes only and does not constitute investment advice. AllianceBernstein L.P. does not provide tax, legal or accounting advice. This information should not be construed as sales or marketing material or an offer or solicitation for the purchase or sale of any financial instrument, product or service sponsored by AllianceBernstein or its affiliates.

Note to US Mutual Fund Readers: Investors should consider the investment objectives, risks, charges and expenses of the Fund/Portfolio carefully before investing. For copies of our Prospectus or summary Prospectus, which contain this and other information, visit us online at www.alliancebernstein.com or contact your AB representative. Please read the Prospectus and/or summary Prospectus carefully before investing. AllianceBernstein Investments, Inc. (ABI) is the distributor of the AB family of mutual funds. ABI is a member of FINRA and is an affiliate of AllianceBernstein L.P., the manager of the funds.

Note to Readers in Canada: AllianceBernstein provides its investment-management services in Canada through its affiliates Sanford C. Bernstein & Co., LLC and AllianceBernstein Canada, Inc.

Note to Readers in Europe: This information is issued by AllianceBernstein Limited, 50 Berkeley Street, London W1J 8HA, it is for marketing purposes. Registered in England, No. 2551144. AllianceBernstein Limited is authorised and regulated in the UK by the Financial Conduct Authority (FCA) FRN 147956. **Additional Note to Readers in Austria and Germany**: Local paying and information agents: Austria—UniCredit Bank Austria AG, Rothschildplatz 1, 1020 Vienna; Germany—ODDO BHF Aktiengesellschaft, Bockenheimer Landstrasse 10, 60323 Frankfurt am Main.

Note to Readers in Switzerland: This document is issued by AllianceBernstein Schweiz AG, Zürich, a company registered in Switzerland under company number CHE-306.220.501. AllianceBernstein Schweiz AG is authorised and regulated in Switzerland by the Swiss Financial Market Supervisory Authority (FINMA) as a distributor of collective investment schemes. Swiss Representative & Swiss Paying Agent: BNP Paribas Securities Services, Paris, Succursale de Zürich. Registered office: Selnaustrasse 16, 8002 Zürich, Switzerland, which is also the place of performance and the place of jurisdiction for any litigation in relation to the distribution of shares in Switzerland. The Prospectus, the KIIDs, the Articles or management regulations, and the annual and semi-annual reports of the concerned fund may be requested without cost at the offices of the Swiss representative.

Note to Readers in Japan: This document has been provided by AllianceBernstein Japan Ltd. AllianceBernstein Japan Ltd. is a registered investment-management company (registration number: Kanto Local Financial Bureau no. 303). It is also a member of the Japan Investment Advisers Association; the Investment Trusts Association, Japan; the Japan Securities Dealers Association; and the Type II Financial Instruments Firms Association. The product/service may not be offered or sold in Japan; this document is not made to solicit investments.

Note to Readers in Australia and New Zealand: This document has been issued by AllianceBernstein Australia Limited (ABN 53 095 022 718 and AFSL 230698). Information in this document is intended only for persons who qualify as "wholesale clients," as defined in the Corporations Act 2001 (Cth of Australia) or the Financial Advisers Act 2008 (New Zealand), and is general in nature and does not take into account any person's objectives, financial situation or needs.

Note to Readers in Hong Kong: This document is issued in Hong Kong by AllianceBernstein Hong Kong Limited (聯博香港有限公司), a licensed entity regulated by the Hong Kong Securities and Futures Commission. This document has not been reviewed by the Hong Kong Securities and Futures Commission.

Note to Readers in Singapore: This document has been issued by AllianceBernstein (Singapore) Ltd. ("ABSL", Company Registration No. 199703364C). ABSL is a holder of a Capital Markets Services Licence issued by the Monetary Authority of Singapore (MAS) to conduct regulated activity in fund management and dealing in securities. AllianceBernstein (Luxembourg) S.à r.l. is the management company of the portfolio and has appointed ABSL as its agent for service of process and as its Singapore representative. This document has not been reviewed by the Monetary Authority of Singapore.

Note to Readers in Vietnam, the Philippines, Brunei, Thailand, Indonesia, China, Taiwan and India: This document is provided solely for the informational purposes of institutional investors and is not investment advice, nor is it intended to be an offer or solicitation, and does not pertain to the specific investment objectives, financial situation or particular needs of any person to whom it is sent. This document is not an advertisement and is not intended for public use or additional distribution.

AllianceBernstein is not licensed to, and does not purport to, conduct any business or offer any services in any of the above countries.

Note to Readers in Malaysia: Nothing in this document should be construed as an invitation or offer to subscribe to or purchase any securities, nor is it an offering of fund management services, advice, analysis or a report concerning securities. AllianceBernstein is not licensed to, and does not purport to, conduct any business or offer any services in Malaysia. Without prejudice to the generality of the foregoing, AllianceBernstein does not hold a capital markets services license under the Capital Markets & Services Act 2007 of Malaysia, and does not, nor does it purport to, deal in securities, trade in futures contracts, manage funds, offer corporate finance or investment advice, or provide financial planning services in Malaysia.

Note to UK Readers: For Investment Professional use only. Not for distribution to individual investors.