Municipals Weekly

A mid-year check in on our forecasts

Industry Overview

30 June 2023

Municipals
United States

Key takeaways

- We review the muni market's 1H23 versus our forecasts. Spread view on track. Revised rates and issuance targets achievable.
- YTD defaults through June total $993mn, up 44% y/y. If current default speeds hold, 2023 defaults could total $1.8bn-$1.9bn.
- We identify large CUSIPs with cheap YTW spreads on a short, long and intermediate term basis using z-scores.

1H23 in review

The 1H23 muni rates rally was good, though the Fed's resurgence in February and May kept the rally range bound. Our revised target of 1.65% for the 10-year AAA by year-end should be achievable as long as the Fed ends its tightening cycle in 3Q23. We maintain that credit spreads will be little changed for the year. 1H23 issuance volumes of long-term munis is only $172bn; as long as muni rates do not stay high for too long during the 2H23, better new money issuance and accelerated refunding activity may still bring the yearly total close to our revised target of $400bn for the year.

Largest CUSIPs with the cheapest spread

We analyzed over 1,000 CUSIPs with face value of $100mn or more to identify those with both the cheapest and richest spreads to the AAA index (U0A1) using z-scores.

Jun-23 default & distress

First-time payment defaults totaled $34mn in June, bringing YTD defaults to $993mn (up 44% y/y). There was no first-time distressed debt reported for the month. While we maintain our $1.7bn-$2.1bn default forecast for 2023, we note that current default speeds – which are moderately higher than 2022's – show defaults could end 2023 around $1.8bn-$1.9bn.

Key figures: issuance, returns, spreads & fund flows

Supply: MTD issuance through 28 June totals $31.3bn, up 23% y/y; YTD issuance of $167.5bn is down 21% y/y. YTD issuance is 86% tax-exempt and 11% taxable; 76% is new money and 24% is refundings. **Returns:** For the week ending 28 June, the Muni Master index (U0A0) returned 0.23%, outperforming govies, corporates and taxables. The Muni High Yield index (U0HY) returned 0.50%. U0HY is now outperforming U0A0 for the YTD (3.29% vs 3.08%), marking a reversal of U0A0's outperformance relative to U0HY that persisted since regional banking problems came to the fore in mid-March. By rating, BBBs' returns for the week were again strongest at 0.36%; by sector, Health's 0.54% is strongest. Taxables' return for the week was 0.07%. **Spreads:** For the week ending 28 June, IG spreads narrowed 1bp to 25bp while HY spreads narrowed 2bp to 201bp. **Flows:** For the week ending 28 June, all municipal bond fund outflows were $0.03bn; IG outflows were $0.25bn, while HY inflows were $0.22bn. Money market fund inflows were $0.07bn for the week.

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Recent Municipals Research

Monthly Municipal ESG Monitor: May 2023 23 June 2023

Municipals Weekly: Front end richens, back end cheapens 23 June 2023

Municipals Educational Series: State and local tax treatment of municipal bonds, by state 16 June 2023

Municipals Educational Series: Primer on premium bonds 16 June 2023

Municipals Weekly: Range bound through July 09 June 2023

Timestamp: 30 June 2023 07:30AM EDT

Exhibit 1: Strategic and tactical views & key forecasts
Buy long duration high grade bonds, especially 4% coupons

Strategic views
• Overweight: (1) 15-30yr part of the curve, particularly 4% coupon bonds; (2) AMT bonds*
• Neutral: BBBs and high yield
• Underweight: (1) the territories; (2) small private colleges; (3) rural, single-facility hospitals
Tactical views
• TXMB/C0A0 spread to fall to -70bp during tightening cycle
• Position for 10/30 curve flattening and stable credit spreads in 2H23
• 4% coupon bracket to benefit more in a rally
• Swap long-end muni taxables for long-end tax-exempts
Key forecasts
• 2023 issuance to total \$400bn; \$320bn of new money and \$80bn of refundings
• 2023 principal redemptions to total \$402bn and coupon payments \$161bn. Cumulative fund inflows of \$40-\$60bn
• 1/30 slope to fall to 65bp, driven by 10/30 AAA flattening, with slope falling to 50bp range
• 10yr AAA rates to reach 1.65% area; 30yr to 2.20%. 10yr muni/Tsy ratio range of 70%-90% and 30yr 85%-100%
• Muni Master index to return 11.5% in 2023; taxable muni index 12.5%

Note: *If the holder is certain they are not subject to the AMT under current tax law.
Source: BofA Global Research

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Market views & strategies

1H23 in review

As the 1H23 winds down, we reflect here on what the muni market has gone through during the half versus our forecasts, including those which we revised.

We came into the new year with the Fed in a pivot mode. Investors largely expected the Fed to complete its tightening program with two more 25bp rate hikes by March 2023. Meanwhile, most economists expected a modest recession to begin in 2Q23. Neither of those turned out to be the case. Despite several regional bank failures in March, the Fed did three 25bp rate hikes by May and communicated only a “skip” at the June FOMC meeting. By now, it is likely that the Fed will hike again – potentially multiple times – based on a surprisingly-resilient labor market, solid GDP growth and a slower-than-expected decline of inflation.

The muni market rates rally in the 1H23 turned out to be strong, but more volatile than we anticipated at the end of last year. Nearly all of the rally was done by January, building on the strong momentum from the final two months of 2022. The 10-year muni AAA rates did fall through our **original yearly target of 2.20%**, but could not hit our revised and more aggressive target of 2.00% for 1H23. The failure to hit our 1H23 target of 2.00% can be attributed mostly to the surprising resurgence of the Fed after successfully managing regional bank failures.

As for our revised 2023 yearly target of 1.65% for 10-year muni AAA rates, we see no need to modify at this point. Hawkish Fed is generally good for managing inflation. As such. We remain bullish for the year. The risk that this revised target level cannot be achieved this year would come from if the Fed extends its tightening program beyond September 2023. Tightening into the 4Q would imply that the Fed is not confident inflation will fall to its desired target if it ends rate hikes in 3Q.

As for the AAA muni curve flattening, the 1s30s slope did go lower than we expected. However, we are surprised that all of the flattening came from 1 to 10-year part of the curve. Indeed, the deep inversion of the 1s10s AAA curve is unique throughout the entirety of the muni market’s history. Historical patterns tell us that the muni AAA curve should continue to flatten even through the first few months of the new Fed easing cycle, though more flattening should come from 10s30s part of the curve.

Muni credit spreads started the year at reasonably wide levels as the market traded on recession expectations for 2Q23. The strong January rates rally helped narrow spreads, but when the regional bank problem came to the fore, muni credit spreads widened significantly. By now, almost all of that widening retraced, and all index credit spreads are narrower now than at the beginning of the year.

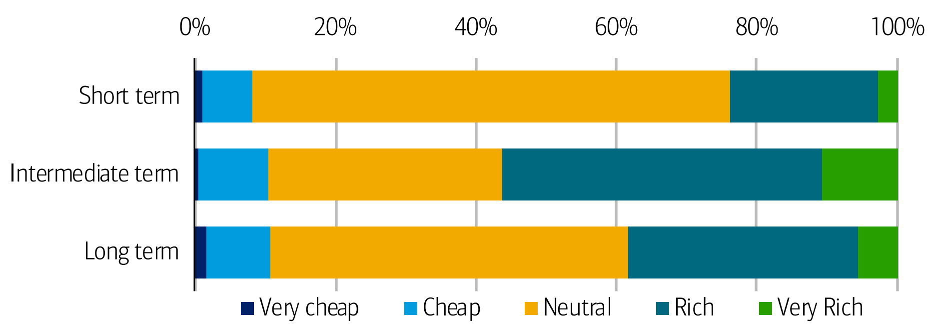
We forecasted that credit spreads would end the year more-or-less unchanged. We do not see any need to revise that stance. The risk of much narrower spreads would come from inflation falling faster in 2H23, the Fed ending its tightening program and the economy avoiding a recession. The risk of much wider credit spreads would come from the economy entering a recession earlier than what the market currently prices in.

Our original forecast for 2023 issuance proved too high. By now, our revised issuance target of $400bn even looks a little high as well. 1H23 issuance of long-term bonds is only approximately $172bn. Lower-than-expected issuance is principally attributed to issuers' reluctance to do more new financing in a higher rates environment. The only other time issuers' new money issuance volume was impacted by high rates was in 2000; new money issuance volumes did not see clear declines during Fed tightening cycles in 2004-2006 and 2016-2018. For 2H23, as long as muni rates do not stay high for too long, our revised issuance target for the year should still be possible. As we discussed in our last Municipals Weekly, the range bound behavior of muni and Treasury rates during the 1H23 is not sustainable. A downside break of this range behavior should bring more new money issuance as well as accelerated refunding issuance.

Identifying large CUSIPs with the cheapest spreads

11,823 of the 20,398 bonds included in the ICE BofA Muni Master Index (U0A0) as of 27 June have been included in the index for the last 3 years. Of those, 1,104 have face values of $100mn or more, for a total face value of $187.6bn. We reviewed these large CUSIPs' YTW spreads to the ICE BofA AAA US Municipal Securities Index (U0A1) to identify which have cheap or rich spreads using z-scores. As usual, we consider a z-score to be rich or cheap based on the following: if z-score is >2, then we consider it "very cheap"; if the score is >1 but <2, then we consider it "cheap"; if it falls between -1 and 1, then we consider it "neutral"; if the z-score is <-1 but >-2, then we consider it "rich"; and lastly, if it is <-2, then we consider it "very rich". Our benchmark for short-term (ST) z-scores is the 3-month average; for intermediate (IT) z-scores it is the 1-year average; and for long-term (LT) z-scores, it is the 3-year average.

Exhibit 2: % of face value we identified with Rich/Cheap YTW spreads on a ST, IT and LT basis
Large CUSIPs' YTW spreads skew rich/very rich



Source: BofA Global Research, ICE Data Indices, LLC

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As Exhibit 2 shows, these bonds' YTW spread is largely neutral on a short-term basis, but skews much more rich on an intermediate basis. Still, there are bonds with cheap spread, and in Exhibit 3 below, we show the 50 CUSIPs with both the cheapest and richest spreads based on our z-score analysis on each of a short, intermediate and long term basis. Note that some CUSIPs are among the 50-cheapest or richest based on a short-, intermediate- and/or long-term basis. For example, the Los Angeles Department of Water and Power's YTW spread for CUSIP 544495D7 (5s of 2043) is among the 50 cheapest by z-score on a short, intermediate and long term basis; meanwhile, Minnesota's YTW spread on appropriation-backed CUSIP 604146CH (5s of 2043) is the richest by z-score on a short, intermediate and long term basis.

Exhibit 3: CUSIPs we identified with the cheapest and richest spread z-scores on a short, intermediate and long term basis

Cheapest on a ST basis total $7.0bn of face value; $6.9bn of face on an IT basis; and, $7.7bn of face on a LT basis

	Short term	Intermediate term	Long term
Cheapest	246352GF; 4424365T; 64971WM6; 8827236V; 66285WNJ; 544495H7; 882667AG; 66285WNK; 646136ES; 66285WNL; 373271AA; 13063DBU; 882667AH; 917393AX; 6461396S; 544495D7; 544495H6; 544495L3; 452252LH; 842471AY; 44244CGS; 64966MHL; 13063CX3; 13034AE7; 13063C6D; 167593RH; 13063C4R; 57582NUZ; 452252PF; 13063C8T; 70914PQ4; 13063DFY; 67765QGT; 97712DQT; 646136EU; 677660UZ; 650035U2; 6461395V; 13063C4S; 167593RG; 13032UNG; 365418BX; 13032UUN; 89602RCK; 452252PH; 44244CGT; 452252PE; 231266MK; 64990FVY; 40934TAS	917393AX; 6461394Y; 6461394X; 29270CP9; 6461394Z; 6461394W; 6461395C; 6461395B; 66285WNJ; 70914PB5; 70914PJ9; 575579HC; 917567AY; 576000WY; 70914PYR; 6461395D; 454898TX; 7962532D; 64577BKK; 882667AG; 66285WNK; 362762LE; 13032UAR; 088281B3; 650009G3; 047870NF; 798111BZ; 57583UK3; 574193PD; 70914PP9; 155048BB; 626207Q4; 546475RL; 882667AH; 235241RW; 650035T9; 546475RG; 574193MY; 544495H7; 700387DM; 167560QX; 373271AA; 64966MP9; 13063CQT; 66285WSE; 594612DG; 84129NHL; 70914PB6; 452252JD; 544495D7	66285WSE; 544495D7; 544495H7; 544495H6; 176553HB; 544495L3; 549364AE; 66285WSF; 882667AG; 700387DM; 574193PC; 13063CJU; 658256L9; 64972GSB; 7962532D; 880443BT; 882667AH; 64711RLY; 6461394W; 57582P7B; 92778VBK; 57582PAE; 64971Q8J; 594612DG; 74265LA5; 917567AY; 64990BFN; 870487CG; 64966MP7; 64971Q8V; 64971WNM; 052414PU; 798111BA; 882723SV; 64971WNC; 6461394X; 29270CP9; 54438CTB; 880443EE; 13063CFT; 54438CTC; 594615FV; 154872AT; 70914PYQ; 00037CVN; 13068LNA; 25476FNT; 072024TY; 57582RGV; 54438CTD
Richest	604146CH; 13032UFP; 576528CY; 66285WLT; 59259YM6; 613520LA; 44420RBE; 79766DRH; 56035DBW; 79575EAS; 64972GBX; 64972GBW; 64972GCE; 64972GRF; 64972GDE; 576528DT; 44420RBG; 59259NS9; 79766DEU; 73358WWY; 64990GZS; 118217CX; 13063DFR; 64461XFV; 59447TUJ; 956622N9; 5444357P; 267045GX; 64990GZR; 118217CW; 744387AD; 55374SAJ; 55374SAF; 55374SAC; 249182LN; 709224ZD; 52480GDW; 249182LW; 574218T3; 73358WZH; 246579ER; 759136TJ; 249182LV; 547804AE; 6461364Y; 19668QLE; 709224K5; 880443EE; 38611TCB; 59333PZ9	604146CH; 64972GBX; 64972GBW; 64972GRF; 64972GDE; 64972GCE; 118217CX; 167736ZQ; 118217CW; 646136R2; 59259NS9; 646136R9; 646136R8; 79575EAS; 547804AE; 25477GRX; 64990GZR; 249182LW; 544445CZ; 392274X4; 56035DBW; 79467BBL; 709224K5; 592250DN; 419794A5; 64461XFV; 153476GE; 64970HEW; 392274X3; 59447TUJ; 396649EW; 592250DM; 956622N9; 38611TCB; 574193MZ; 38611TCC; 59447TUH; 13032UDT; 544445ER; 79575EAR; 487694SS; 13048VCA; 51771FAU; 249182LN; 592250CZ; 249182LV; 6461364Y; 592250CK; 154871CP; 41423PAX	604146CH; 64972GBX; 64972GBW; 64972GDE; 64972GRF; 64972GCE; 167736ZQ; 13063DVC; 13063DUD; 13063DVD; 725894KJ; 531127AC; 592643BP; 13063DVE; 13063DUC; 64966QKD; 345105HX; 25477GPP; 022555UL; 544445PS; 64972GSP; 13063DTM; 64972GUE; 64972GSQ; 25477GRX; 407272W2; 64990FPW; 66285WBZ; 786005C9; 246579GC; 969275QQ; 66285WCA; 66285WBY; 118217CW; 64972GJZ; 57582RVX; 64990CQE; 66285WBX; 71883RQQ; 67760HKE; 91514AEV; 64972GWF; 91514AJV; 64990C6P; 13063DUR; 13063DKE; 57604THJ; 64577BL6; 130179SD; 155048DL

Note: To be read from left to right, top to bottom. For example, for the 50 cheapest CUSIPs based on short-term z-scores, 246352GF is the cheapest among the group with the highest z-score while 40934TAS is the least cheap. For the 50 richest CUSIPs based on short-term z-scores, 604146CH is the richest among the group with the lowest (or, most negative) z-score, while 59333PZ9 is the least rich. This screen is not a recommended list either individually or as a group of bonds. Investors should consider the fundamentals of the borrowers and their own individual circumstances/objectives before making any investment decisions

Source: BofA Global Research, ICE Data Indices, LLC

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Performance

IG munis outperform this week, but now lag HY for YTD

Exempt IG munis returned 23bp this week, outperforming govies and corporates by 20bp and 15bp, respectively. They also outperformed taxables by 16bp. Still, exempt muni IG underperformed HY this week, which returned 50bp. HY is now outperforming exempt IG for the YTD – IG's total returns have bested HY's on a YTD basis since mid-March when pressures with the regional banks first arose.

Exhibit 4: Municipal total returns (%) monitor, as of 28 June 2023

Exempt IG munis outperformed govies, corporates and taxables, but underperformed HY this week

Index	Ticker	1d	1wk	MTD	1mo	3mo	YTD	1yr
Govt Master	G0A0	0.271	0.028	-0.168	0.937	-0.335	2.192	-0.512
Corporate Master	C0A0	0.297	0.079	0.526	1.675	1.054	3.481	2.714
IG munis	**U0A0**	**0.040**	**0.227**	**1.142**	**1.899**	**0.504**	**3.075**	**3.885**
AAA	U0A1	0.003	0.184	1.045	1.824	0.189	2.456	3.137
AA	U0A2	0.041	0.214	1.109	1.844	0.305	2.735	3.720
A	U0A3	0.054	0.244	1.150	1.899	0.780	3.599	4.354
BBB	U0A4	0.058	0.359	1.608	2.533	1.696	5.013	4.969
1-3yr	U1A0	-0.001	0.114	0.545	0.780	-0.023	1.047	1.225
3-7yr	U2A0	0.032	0.183	0.800	1.282	-0.411	1.402	2.002
7-12yr	U3A0	0.010	0.196	0.948	1.501	-0.208	2.163	4.431
12-22yr	U4A0	0.047	0.236	1.212	2.071	0.836	3.782	5.052
22+yr	U5A0	0.079	0.325	1.730	2.971	1.510	5.182	5.112
HY munis	**U0HY**	**0.050**	**0.495**	**1.561**	**2.185**	**1.257**	**3.292**	**2.881**
Non-rated	U0NR	0.017	0.512	1.950	2.783	2.876	5.122	4.723
General Obligation	**U0AG**	**0.023**	**0.167**	**1.038**	**1.734**	**0.088**	**2.501**	**3.422**
AAA	UGA1	0.028	0.171	1.093	1.879	0.048	2.086	2.505
AA	UGA2	0.021	0.170	1.040	1.731	0.072	2.380	3.564
A	UGA3	0.026	0.135	0.829	1.392	-0.174	2.151	3.347

Exhibit 4: Municipal total returns (%) monitor, as of 28 June 2023

Exempt IG munis outperformed govies, corporates and taxables, but underperformed HY this week

Index	Ticker	1d	1wk	MTD	1mo	3mo	YTD	1yr
BBB	UGA4	0.016	0.144	1.326	1.813	1.554	6.583	6.270
State	U0AA	0.017	0.151	0.919	1.515	-0.067	2.305	3.316
Local	U0AB	0.030	0.186	1.179	1.995	0.272	2.735	3.534
Revenue	**U0AR**	**0.046**	**0.248**	**1.178**	**1.955**	**0.644**	**3.269**	**4.045**
AAA	URA1	-0.015	0.194	1.011	1.784	0.291	2.727	3.609
AA	URA2	0.050	0.234	1.140	1.896	0.411	2.895	3.793
A	URA3	0.057	0.254	1.180	1.947	0.862	3.705	4.438
BBB	URA4	0.061	0.376	1.629	2.589	1.722	4.581	4.671
Airport	U0AV	0.079	0.320	1.189	1.932	0.916	4.058	4.601
Education	U0AE	0.056	0.257	1.232	2.062	0.466	3.130	4.082
Health	U0HL	0.175	0.537	1.922	2.715	1.497	1.901	0.561
Hospital	U0AH	0.066	0.322	1.464	2.473	0.725	3.469	4.465
Industrial Development Rev	U0ID	0.133	0.421	1.463	2.153	1.651	4.915	5.499
Leases, COPs & Appropriations	U0AL	0.040	0.211	1.066	1.738	0.267	2.534	3.491
Miscellaneous	U0AM	0.030	0.182	1.093	1.794	0.005	2.399	3.239
Multi-family Housing	U0AU	0.031	0.332	1.335	2.175	0.224	2.999	2.389
Pollution Control	U0AQ	0.029	0.331	1.123	1.754	0.394	2.287	3.156
Power	U0AP	0.032	0.196	0.928	1.541	0.466	2.485	3.144
Single-family Housing	U0AS	0.045	0.259	1.154	1.830	-0.277	1.636	1.691
Tax Revenue	U0TX	0.035	0.226	1.127	1.927	0.502	3.206	4.235
Tobacco	U0TB	0.013	0.417	1.132	1.886	1.232	4.232	5.509
Toll & Turnpike	U0TL	0.042	0.161	1.287	2.035	0.870	3.480	4.507
Transportation - other	U0AT	0.026	0.258	1.122	1.969	0.718	4.174	4.899
Utilities - other	U0UT	0.050	0.212	0.896	1.407	1.192	2.924	3.097
Water & Sewer	U0AW	0.028	0.187	1.074	1.808	0.495	2.856	3.466
Taxable	**TXMB**	**0.325**	**0.069**	**0.472**	**1.798**	**1.328**	**5.104**	**1.366**
Build America Bonds	BABS	0.311	0.061	0.736	2.113	1.400	4.902	1.447
VRDOs	**VRDO**	**0.011**	**0.078**	**0.253**	**0.296**	**0.601**	**1.039**	**1.869**
Daily reset	VRDD	0.011	0.078	0.246	0.296	0.560	0.932	1.647
Weekly reset	VRDW	0.011	0.077	0.256	0.296	0.624	1.095	1.987

Source: ICE Data Indices, LLC

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Among the IG rating indexes, BBBs were the strongest performing rating bracket for the week, with 36bp of returns. That marks the fifth consecutive week of BBB's performing best, and 12th in the last 14 weeks. AAAs were the weakest performing bracket with 18bp of returns for the week. Revenue bonds outperformed GOs by 8bp this week, led by BBB and single-A revenue bonds that outperformed their GO counterparts by 23bp and 12bp, respectively. Among the muni bond sectors, the Health sector had the strongest week, with 54bp of returns. For the YTD, Industrial Development Revenue's 492bp of returns are the strongest. Again, the longest maturities performed best for the week: the 22+yr index returned 33bps. That is about 21bp better than the 1-3yr maturity index's returns. MTD, the 22+yr index is outperforming by 119bp, and 389bp for the YTD.

In Exhibit 5, we review YTD total returns by state and rating. For AAA-rated debt, the 3.54% returns on NV-issued paper are strongest, followed by 3.12% on NY-issued paper. For AA-rated debt, the 6.00% returns on VT-issued paper are strongest, followed by 5.40% returns on WY-issued paper. For A-rated debt, the 6.00% returns on ME-issued paper are strongest, followed by 5.36% returns on NY-issued paper. For BBB-rated debt, the 9.40% returns on DC-issued paper are strongest, followed by 7.53% returns on IL-issued paper. The weakest returns overall are on BBB-rated debt issued in ME, followed by -0.13% returns on BBB-rated debt issued in WV.

Exhibit 5: YTD total returns by state and rating bracket (as of 28 June 2023)

Strongest returns by state and rating for the YTD are BBB bonds issued in DC at 9.40%; weakest are BBBs issued in ME at -1.50%

State	AAA	AA	A	BBB	State	AAA	AA	A	BBB	State	AAA	AA	A	BBB
AL	0.91	2.42	2.74	2.71	KY	1.57	3.89	2.68	3.02	ND		2.39	4.19	1.10
AK		2.07	3.77	6.46	LA	1.35	2.14	2.41	3.37	OH	1.43	2.26	3.55	3.30
AZ	1.85	1.89	3.05	3.32	ME		1.95	6.24	-1.50	OK	2.37	2.38	1.90	2.56
AR		3.92	2.72	3.20	MD	1.41	2.62	3.00	6.79	OR	1.67	2.65	3.48	4.97
CA	2.79	2.60	3.06	4.08	MA	2.60	2.64	2.80	3.59	PA	1.64	2.48	3.44	5.54

Exhibit 5: YTD total returns by state and rating bracket (as of 28 June 2023)

Strongest returns by state and rating for the YTD are BBB bonds issued in DC at 9.40%; weakest are BBBs issued in ME at -1.50%

State	AAA	AA	A	BBB	State	AAA	AA	A	BBB	State	AAA	AA	A	BBB
CO	1.90	3.18	4.23	5.30	MI	1.05	2.89	2.54	5.44	RI		2.47	0.80	2.36
CT	1.45	1.88	3.11	3.94	MN	0.91	2.34	3.60	3.05	SC	2.29	3.44	4.18	2.89
DE	1.01	2.47	1.98	0.31	MS	1.17	1.43	0.36	3.82	SD	0.98	0.58	4.23	
DC	1.34	2.75	4.09	9.40	MO	0.57	1.99	4.61	2.53	TN	1.19	2.37	3.79	2.75
FL	2.15	3.80	3.64	3.64	MT	1.35	2.36	2.41	4.71	TX	2.76	2.76	3.11	3.78
GA	2.14	2.42	3.97	3.53	NE	1.07	3.33	2.73		UT	1.06	1.00	4.32	
HI	0.68	1.57	3.49	4.20	NV	3.54	2.41	2.51	1.73	VT		6.00	3.26	
ID		4.04	2.08	2.54	NH	0.81	3.37	3.49	3.18	VA	2.39	2.16	3.52	6.40
IL	1.58	2.82	3.02	7.53	NJ	1.78	2.71	4.16	5.02	WA	1.74	2.12	2.41	5.74
IN	1.55	2.40	2.23	3.66	NM	1.22	1.30	3.94	0.47	WV		4.83	2.89	-0.13
IA	1.50	2.15	2.38	6.41	NY	3.12	3.34	5.36	4.91	WI	1.52	2.15	2.99	4.27
KS	2.33	1.49	2.04		NC	1.81	2.51	1.98	4.47	WY		5.40	2.29	

Source: ICE Data Indices, LLC

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Muni IG and HY spreads tightened w/w

Muni IG spreads narrowed 1bp w/w to 25bps, while muni HY spreads narrowed 2bp to 201bp and are om the 70th percentile of their 52-wk wide. Non-rated spreads widened 1bp w/w to 212bp. GO spreads tightened 1bp overall w/w, though BBB GO spreads widened 1bp. Revenue bond spreads also narrowed 1bp w/w. Among muni IG revenue bond sectors, Leases, COPs & appropriations, and Pollution Control narrowed 3bp w/w.

Exhibit 6: Muni YTW spread monitor as of 28 June 2023

IG spreads tighten w/w overall while HY spreads narrowed 2bp

	52wk				Current	Change from				Current as %		
	Tights	Wides	T-1wk	T-1d	6/28/23	Tights	Wides	T-1wk	T-1d	of 52wk range	Price	Yield
Investment Grade	**24**	**39**	**26**	**26**	**25**	**1**	**-14**	**-1**	**-1**	**7**	**101**	**3.59**
AA	5	20	6	6	5	0	-15	-1	-1	0	102	3.39
A	56	79	58	59	57	1	-22	-1	-2	4	99	3.91
BBB	94	142	115	116	114	20	-28	-1	-2	42	94	4.48
High Yield	**153**	**222**	**203**	**202**	**201**	**48**	**-21**	**-2**	**-1**	**70**	**94**	**5.35**
Non-rated	194	298	211	214	212	18	-86	1	-2	17	64	5.46
General Obligation	**-9**	**1**	**-7**	**-7**	**-8**	**1**	**-9**	**-1**	**-1**	**10**	**102**	**3.26**
AA	-15	-1	-13	-12	-13	2	-12	0	-1	14	101	3.21
A	-15	29	12	14	12	27	-17	0	-2	61	104	3.46
BBB	40	122	71	73	72	32	-50	1	-1	39	97	4.06
State	-28	-12	-24	-23	-24	4	-12	0	-1	25	106	3.10
Local	11	19	12	12	11	0	-8	-1	-1	0	97	3.45
Revenue	**35**	**51**	**37**	**37**	**36**	**1**	**-15**	**-1**	**-1**	**6**	**100**	**3.70**
AA	13	29	14	15	13	0	-16	-1	-2	0	102	3.47
A	60	83	62	63	62	2	-21	0	-1	9	99	3.96
BBB	104	147	119	119	117	13	-30	-2	-2	30	93	4.51
Airport	61	96	67	67	65	4	-31	-2	-2	11	103	3.99
Education	14	42	19	19	18	4	-24	-1	-1	14	103	3.52
Health	107	174	145	145	144	37	-30	-1	-1	55	93	4.78
Hospital	69	94	73	74	73	4	-21	0	-1	16	99	4.07
Industrial Development Rev	88	130	94	94	92	4	-38	-2	-2	10	100	4.26
Leases, COPs & Appropriations	1	20	4	2	1	0	-19	-3	-1	0	102	3.35
Miscellaneous	1	13	9	9	8	7	-5	-1	-1	58	99	3.42
Multi-family Housing	65	90	87	87	86	21	-4	-1	-1	84	92	4.20
Pollution Control	30	58	47	45	44	14	-14	-3	-1	50	100	3.78
Power	20	39	30	31	30	10	-9	0	-1	53	102	3.64
Single-family Housing	59	89	88	88	86	27	-3	-2	-2	90	96	4.20
Tax Revenue	7	30	9	9	8	1	-22	-1	-1	4	100	3.42
Tobacco	7	78	16	15	14	7	-64	-2	-1	10	101	3.48
Toll & Turnpike	33	50	35	36	35	2	-15	0	-1	12	98	3.69
Transportation - other	33	62	36	36	35	2	-27	-1	-1	7	99	3.69
Utilities - other	55	105	78	79	77	22	-28	-1	-2	44	102	4.11
Water & Sewer	16	41	16	16	16	0	-25	0	0	0	103	3.83

Note: YTW spread to the ICE BofA AAA US Municipal Securities Index (U0A1).

Source: BofA Global Research, ICE Data Indices, LLC

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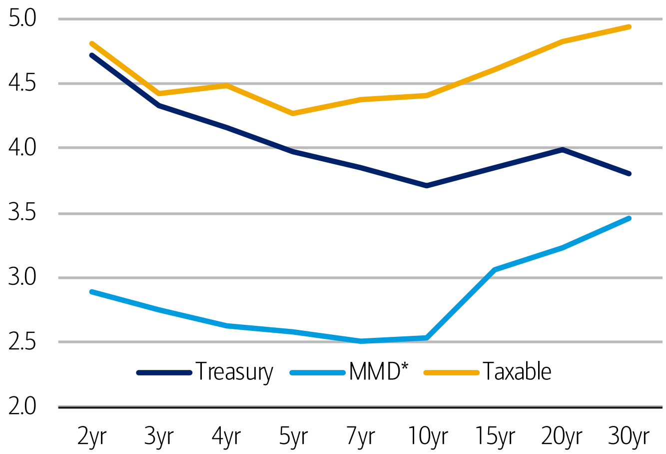
Curve

Curve shifts down 2bp on avg w/w

The AAA MMD curve richened 2bp w/w on average, and richened by 19bp m/m. For the week, the 1s5s slope inverted a further 2bp w/w to -43bp and is 107bp flatter than it was one year ago; the 5s10s slope undid some inversion, by 2bp to -5bp and is 58 bp flatter than it was one year ago; 10s20s and 20s30s slope were flat at 71bp and 22bp respectively. Investors should continue to position for a flattener led by the back end.

Exhibit 7: AAA GO muni, Treasury and taxable yield curves (%)
Tsy, cheapened while MMD and taxable richened on average w/w



Note: *MMD AAA GO yield curve. As of 28 June 2023.
Source: BofA Global Research, Refinitiv, Bloomberg

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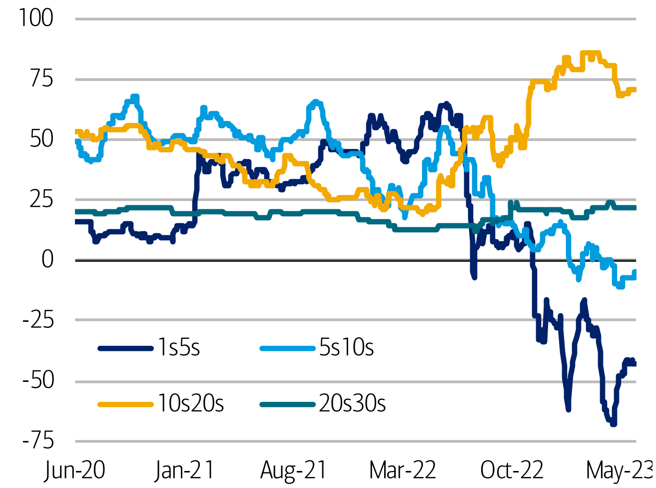
Exhibit 8: Curve slope (bp)
The 10s20s and 20s30s slope were flat w/w



Source: Refinitiv

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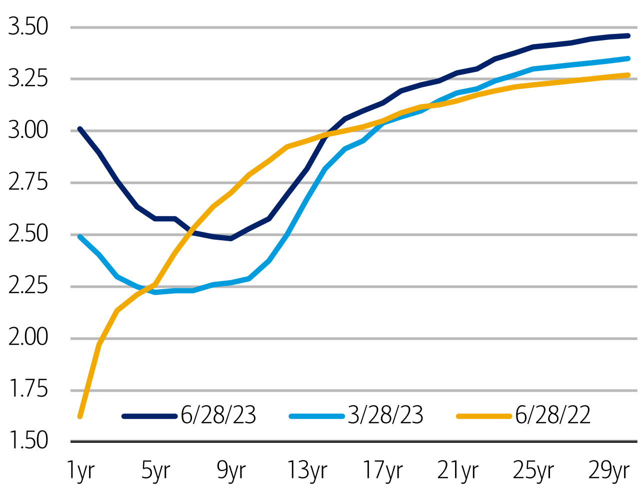
Exhibit 9: AAA GO municipal curve movement (%)
AAA is richer than one year ago between 7yr and 14yr



Source: Refinitiv

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Supply & demand

YTD issuance totals $167bn, down 21% y/y

MTD issuance as of 28 June 2023 totals $31.3bn, up 23 % y/y. YTD issuance of $167.5bn is down 21% y/y. Thus far, 76% of YTD issuance is new money, while 24% is refundings. New money volumes are down 22% y/y while refunding volumes are down 16%.

Exhibit 10: Issuance summary ($mn)

YTD issuance of $167.5bn is down 21% y/y; new money down 22% y/y and refundings down 16%

	Month-to-date			Year-to-date		
	6/28/23	6/28/22	y/y % Δ	6/28/23	6/28/22	y/y % Δ
Total	**31,321.1**	**25,555.9**	**23%**	**167,490.5**	**210,731.8**	**-21%**
New Money	25,746.7	20,719.8	24%	127,026.1	162,355.9	-22%
Total Refunding	5,574.4	4,836.1	15%	40,464.4	48,375.9	-16%
Advanced refunding	0.0	12.0	-	1,380.9	1,268.3	9%
Unknown refunding	5,308.5	4,344.9	22%	37,384.8	42,594.0	-12%
Current & Forward refunding	265.9	479.2	-45%	1,698.7	4,513.7	-62%
Insured	2,337.1	1,329.8	76%	13,838.9	16,689.7	-17%
Fixed Rate	25,971.9	23,232.9	12%	148,557.3	197,224.5	-25%
Variable Rate Long	4,704.6	1,246.5	277%	13,671.8	7,472.6	83%
Variable Rate Short	578.4	1,011.2	-43%	4,712.1	4,108.4	15%
Zero Coupon	66.1	20.2	227%	261.3	471.8	-45%
Linked Rate	0.0	45.0	-100%	270.0	1,138.7	-76%
Convertible	0.0	0.0	-	18.1	315.9	-94%
Variable rate no put	-	-	-	-	-	-
Tax Exempt	27,815.4	22,773.6	22%	144,847.1	167,811.9	-14%
Taxable	2,735.4	2,110.4	30%	18,698.9	33,234.4	-44%
Alternate Minimum Tax	770.3	671.9	15%	3,950.4	9,685.5	-59%
General Purpose	8,684.5	5,899.5	47%	42,797.5	53,363.0	-20%
Education	7,125.5	6,847.6	4%	47,947.5	55,025.3	-13%
Utilities	3,490.7	4,127.0	-15%	22,823.3	26,589.0	-14%
Housing	3,399.7	3,493.5	-3%	14,994.9	15,899.9	-6%
Electric Power	2,409.2	693.6	247%	7,980.5	7,585.6	5%
Transportation	2,215.9	2,077.4	7%	15,538.4	25,550.1	-39%
Healthcare	1,636.3	1,441.9	13%	6,360.2	17,004.8	-63%
Public Facilities	996.9	189.2	427%	2,702.8	3,891.7	-31%
Environmental Facilities	738.5	264.9	179%	1,857.3	1,351.2	37%
Development	624.0	521.2	20%	4,494.3	4,471.3	1%
Muni-backed corporates	925.2	695.5	33%	3,221.7	11,382.6	-72%

Note: Long-term bonds only. Reflects any data revisions by Refinitiv or Bloomberg.
Source: BofA Global Research, Refinitiv, Bloomberg

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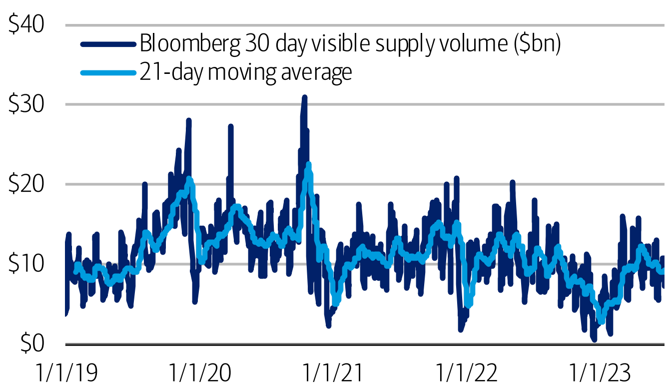
Exhibit 11: Bloomberg 30-day visible supply ($bn)

30-day visible supply was $7.3bn as of 29 June 2023



Note: Data as of 29 June 2023.
Source: Bloomberg

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Exhibit 12: 2023 gross issuance, redemption forecasts vs actuals ($bn)

Gross issuance forecast of $400bn vs $564bn of prin. & cpn. redemptions

	Issuance		Prin. & cpn redemptions	
Month	**Forecast**	**Actual**	**Forecast**	**Actual**
January	$23	$23	$42	$39
February	20	20	45	42
March	32	32	39	36
April[1]	29	33	32	29
May	33	27	45	45
June	43	31*	65	
July	31		59	
August	36		62	
September	34		37	
October	45		40	
November	34		41	
December	39		56	-

Note: Totals may not add up due to rounding. Data as of 28 June 2023. January-March data are actuals. [1]Monthly issuance forecasts revised from April onward.
Source: BofA Global Research, Refinitiv, Bloomberg

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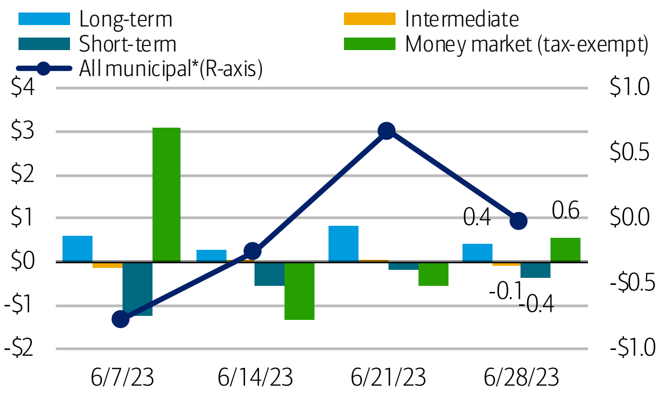
Mutual fund outflows total $0.03bn; ETF inflows $0.08bn

Mutual fund flows were negative this week, with outflows totaling $0.03bn, coming mostly from short-term funds. There were $0.25bn of outflows from investment grade funds against $0.22bn of inflows into high yield funds. YTD, investment grade outflows total $8.7bn versus $0.7bn of inflows into high yield. ETF fund flows were positive for the week, totaling almost $0.08bn. Overall, our flow strength indicator measured by the 2-year trailing z-score suggests this week's flow strength was normal.

Exhibit 13: Flows by maturity brackets ($bn)
Muni outflows of $0.03bn, money market inflows of $0.57bn



Note: ETFs included. All Municipal = LT+INT+ST. Data includes both weekly and monthly reporting funds as of 28 June 2023.
Source: Refinitiv Lipper

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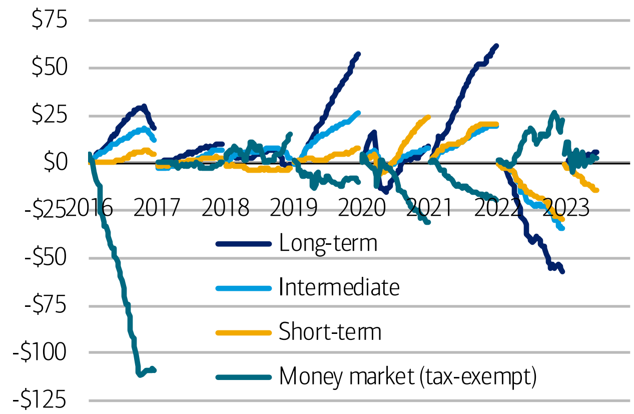
Exhibit 14: YTD cumulative flows ($bn)
2023 flow: LT: $6.1bn, INT: $0.6bn, ST: -$14.8bn, MM: $2.8bn



Note: ETFs included. Data includes both weekly and monthly reporting funds as of 28 June 2023.
Source: Refinitiv Lipper

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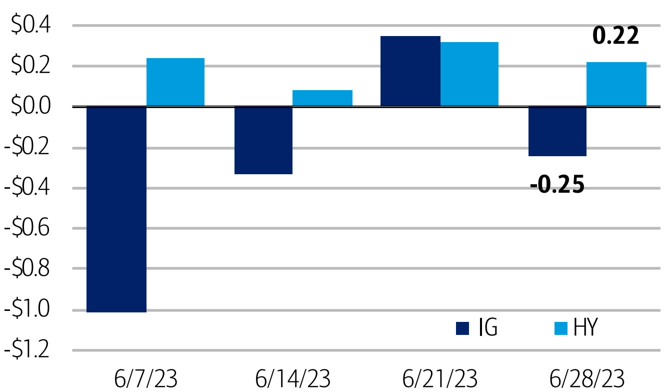
Exhibit 15: IG vs HY muni fund flows ($bn)
IG outflows of $0.25bn vs $0.22bn of HY inflows for the wk of 28 Jun



Note: ETFs included. Data includes both weekly and monthly reporting funds as of 28 June 2023.
Source: Refinitiv Lipper

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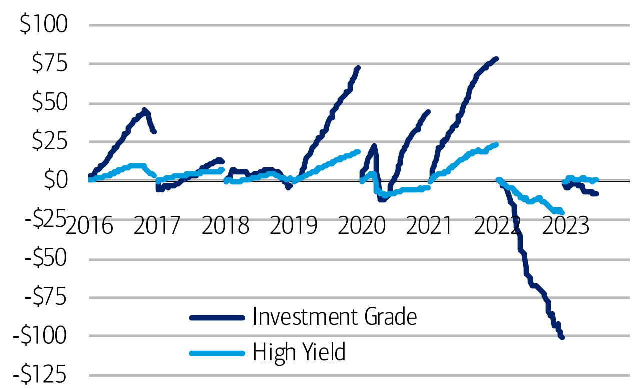
Exhibit 16: Year-to-date cumulative flows ($bn)
2023 flow: IG: -$8.7bn, HY: $0.7bn



Note: ETFs included. Data includes both weekly and monthly reporting funds as of 28 June 2023.
Source: Refinitiv Lipper

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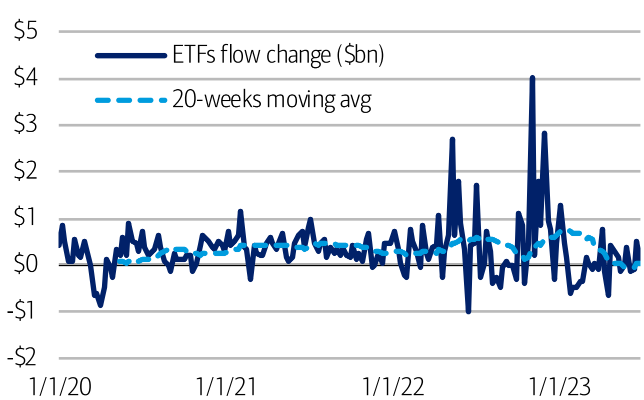
Exhibit 17: Municipal ETF fund flows ($bn)
ETF inflows were $0.08bn for the week of 28 June 2023



Note: ETFs included. Data includes both weekly and monthly reporting funds as of 28 June 2023.
Source: Refinitiv Lipper

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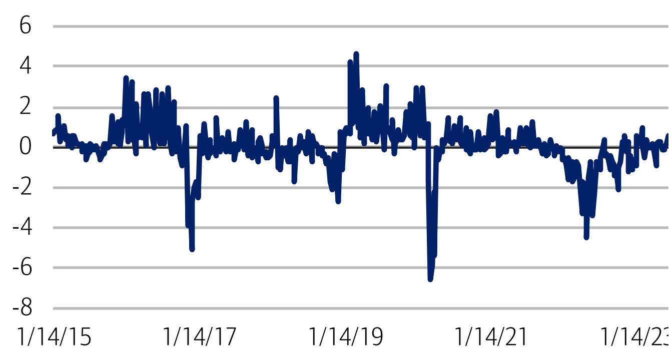
Exhibit 18: Flow strength indicator
Flow strength was Normal with 0.28 z-score for the week of 28 Jun



Note: The flow strength indicator is measured by 2-year trailing z-score (a positive or negative number does not necessarily suggest buying or selling). ETFs included. Data includes both weekly and monthly reporting funds as of 28 June 2023.
Source: Refinitiv Lipper

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Relative value

Ratios neutral, curves largely very flat on long-term basis

We screen the muni market for parts of the curve, sectors and ratings that are rich or cheap. Muni/Treasury ratios are Neutral on both a short-term and long-term basis. Meanwhile, the 10s30s slope is Steep while other slopes are Very Flat on a long-term basis. On a short-term basis, the 10s30s is Flat while others are Neutral.

Exhibit 19: Rich/cheap analysis of MMD*/Treasury ratios as of 28 June 2023
The muni market Neutral on both a ST and LT basis

Maturity	Current Tsy	Muni/Tsy	MMD R/C (short-term)	3 mo. max	3 mo. min	3 mo. avg	MMD R/C (long-term)	3 year max	3 year min	3 year avg
3yr	4.335%	63.7%	Neutral	75.0%	55.5%	65.5%	Neutral	164.2%	26.7%	68.0%
5yr	3.972%	65.0%	Neutral	74.0%	57.6%	66.3%	Neutral	150.6%	39.3%	67.0%
10yr	3.712%	68.2%	Neutral	72.9%	59.7%	67.2%	Neutral	141.4%	54.7%	79.8%
30yr	3.803%	91.0%	Neutral	92.3%	85.0%	89.7%	Neutral	119.9%	63.5%	89.3%

Note: *MMD AAA GO yield curve. R/C = Rich/Cheap Note the benchmark for short-term is the 3-month average and for long-term is the 3-year average. Rich/cheap is based on z-scores: if z-score is >2, then "Very Cheap"; if >1 but <2, then "Cheap"; if between -1 and 1, then "Neutral"; if <-1 but >-2, then "Rich"; if <-2, then "Very Rich".
Source: BofA Global Research, Refinitiv, Bloomberg

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Exhibit 20: Rich/cheap analysis of MMD* slopes (bp) as of 28 June 2023
The 10s30s curve is Steep on LT basis while the rest are Very Flat/Flat on a LT basis

Slope	Current slope	Slope S/F (short-term)	3 mo. max	3 mo. min	3 mo. avg	Slope S/F (long-term)	3 year max	3 year min	3 year avg
1/5s	-43	Neutral	-25	-68	-46	Flat	65	-68	18
1/10s	-48	Neutral	-20	-74	-49	Very Flat	120	-74	55
10/30s	93	Flat	108	90	100	Steep	108	32	66
1/30s	45	Neutral	86	26	51	Very Flat	170	26	120

Note: *MMD AAA GO yield curve. S/F = Steep/Flat Note the benchmark for short-term is the 3-month average and for long-term is the 3-year average. Rich/cheap is based on z-scores: if z-score is >2, then "Very Cheap"; if >1 but <2, then "Cheap"; if between -1 and 1, then "Neutral"; if <-1 but >-2, then "Rich"; if <-2, then "Very Rich".
Source: BofA Global Research, Refinitiv, Bloomberg

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Screening for cheap OAS

At the 7-12yr part of the curve, Single-A Health, BBB Lease COPs & Appropriation, AAA Utilities and Single-A Utilities' OAS are Cheap. At the 22+yr part of the curve, AAA Higher Education is Very Cheap; Single-A Health, BBB Health, AAA Local GO, AAA Lease COPs & Appropriation and Single-A Pollution Control sectors' OAS are Cheap. Conversely, BBB Utilities' OAS at the 22+yr part of the curve to be Very Rich.

Exhibit 21: Rich/cheap analysis of 7-12yr indexes' OAS (bp)
Single-A Health's current OAS of 136bp at 7-12yrs is currently Cheap against its 3yr OAS average of 71bp

	Current OAS				Rich/cheap analysis				3yr OAS average			
Sector	AAA	AA	A	BBB	AAA	AA	A	BBB	AAA	AA	A	BBB
Airports		36	28	34		N	N	N		40	44	85
Higher Education	-14	-12	35		R	N	N		-5	3	55	
GO Local	-5	2	49	111	N	N	N	N	2	15	52	137
GO State	-13	-13	52	0	N	N	N	R	-2	3	49	140
Health		-15	136	154		R	C	N		30	71	113
Hospital		18	36	100		N	N	N		24	53	107
IDR		39	79	87		N	N	N		49	62	96
Leases COPS & Appr.		3	37	236		N	N	C		17	46	121
Pollution Control	-5		83		N		N		1		84	
Power	-24	-14	24		R	N	N		4	1	31	
Tax Revenues	-4	-1	60	126	N	N	N	N	13	14	61	141
Tobacco			38				N				60	
Toll & Turnpike		21	16	101		N	N	N		27	32	95
Transportation - Other	16	8	53	84	N	N	N	N	7	23	82	111
Utilities - Other	0	10	85		C	N	C		-3	5	46	
Water & Sewer	-18	-12	9	110	R	N	N	N	1	-1	23	117

Note: Data as of 27 June 2023. Only includes non-prerefunded bonds. Benchmark is 3-yr avg
Source: ICE Data Indices, LLC

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Exhibit 22: Rich/cheap analysis of 22yr+ indexes' OAS (bp)

AAA Higher Education's current OAS of 47bp at 7-12yrs is currently Cheap against its 3yr OAS average of 18bp

	Current OAS				Rich/cheap analysis				3yr OAS average			
Sector	**AAA**	**AA**	**A**	**BBB**	**AAA**	**AA**	**A**	**BBB**	**AAA**	**AA**	**A**	**BBB**
Airports		40	32	6		N	N	N		34	38	42
Higher Education	47	0	32	116	VC	N	N	N	18	-1	30	86
GO Local	7	9	15	63	C	N	N	N	-11	4	31	108
GO State	-6	-7		0	N	N		R	-25	-15		109
Health		-29	83	214		N	C	C		-1	37	104
Hospital		26	40	83		N	N	N		10	32	63
IDR			71	84			N	N			55	83
Leases COPS & Appr.	18	5	45	50	C	N	N	N	-6	0	40	69
Pollution Control			52				C				11	
Power		2	32	91		N	N	N		-4	22	55
Tax Revenues	16	12	67	81	N	N	N	N	10	10	64	94
Tobacco				102				N				87
Toll & Turnpike			17	43			N	N			21	57
Transportation - Other		0	28	75		N	N	N		18	54	67
Utilities - Other		12	42	0		N	N	VR	-9	-7	29	76
Water & Sewer	-12	-8	16		N	N	N		-17	-9	9	

Note: Data as of 27 June 2023. Only includes non-prerefunded bonds. Benchmark is 3-yr avg

Source: ICE Data Indices, LLC

BofA GLOBAL RESEARCH

MWIs in the cheap space

Our market width indicator (MWI) – which measures muni sectors' recent market momentum by calculating the percentage of a sectors' CUSIPs whose current yields-to-worst are below their moving 20-week average – shows that most sectors' MWIs increased w/w and remain in the Cheap/Underpriced space. The ETM, Pre-re and Single-Family Housing sectors' MWIs are the lowest. W/w, the Airport, Health, Industrial Development Rev and Tobacco sector' MWIs increased the most.

Exhibit 23: MWIs – sector momentum (%) as of 27 June 2023

Most the sectors had increases over the past week

Sector	MWI	w/w Δ	Sector	MWI	w/w Δ
U0A0 Index	**24.8%**	**6.0%**	Miscellaneous	16.7%	3.2%
ETM	4.4%	0.0%	Multi-Family Housing	15.6%	3.7%
GO - Local	26.3%	5.1%	Pollution Control	14.6%	7.3%
GO - State	16.7%	4.7%	Power	15.9%	4.3%
Pre-Re	0.8%	-0.2%	Single Family Housing	8.9%	3.1%
Airport	32.4%	14.8%	Tax revenue	29.4%	4.9%
Education	23.2%	5.2%	Tobacco	44.6%	12.0%
Health	36.1%	19.5%	Toll & Turnpike	35.5%	6.8%
Hospitals	30.2%	11.2%	Transportation	31.8%	5.2%
Industrial Development Rev	49.0%	14.3%	Utilities - Other	33.2%	4.8%
Leasing COPS & Appropriations	21.8%	4.3%	Water & Sewer	27.0%	6.1%

Source: BofA Global Research, ICE Data Indices, LLC

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Trade activity

Most actively traded CUSIPs for the week

The most actively traded CUSIP over the last week by total volume was 73358XJJ2, totaling $117.0mn. These are newly-issued Port Authority of New York and New Jersey bonds, due in 2053. By trades it was 39239MAU6, totaling 321 trades. These are newly-issued Greater Texoma Utility Authority bonds due in 2053.

Exhibit 24: Most actively traded muni CUSIPs over the week ending 28 June 2023

39239MAU6 was the most frequently traded CUSIP. [1]Last trade

CUSIP	Short name	ST	Coupon	Maturity	Issue	Price[1]	Yield[1]	Size[1] (000s)	Spread	# of trades	Volume ($mn)
73358XJJ2	PORT AUTH NY NJ-240	NY	5.000	07/15/53	06/28/23	110.666	3.72	50	24	111	117.0
516372UB3	LANSING MI	MI	4.125	06/01/48	06/29/23	97.876	4.26	245	84	153	101.7
452151LF8	IL ST TXB-PENSION	IL	5.100	06/01/33	06/12/03	98.672	5.27	5M+	156	32	74.1
39239MAU6	GTR TEXOMA UTIL AUTH	TX	4.375	10/01/53	07/11/23	98.520	4.46	440	98	321	72.3
402207AD6	GULF COAST INDL DEV	TX	4.400	11/01/41	12/06/12	100.000	--	5M+	0	19	61.2
850269GC9	SPRINGDALE-B	AR	4.250	08/01/53	08/10/23	99.964	4.25	20	77	80	60.7
762494SU7	RIALTO UNIF SCH DIST	CA	4.000	08/01/52	07/11/23	99.998	4.00	150	52	167	49.3
59334DLV4	MIAMI-DADE CO WTR&SWR	FL	4.000	10/01/49	11/06/19	96.231	4.24	25	79	118	47.7
45204FAH8	IL ST FIN AUTH-C	IL	4.300	08/15/49	04/30/20	100.000	--	5M+	0	12	47.0
45506DTQ8	INDIANA ST FIN AUTH R	IN	5.250	02/01/37	05/21/15	103.508	3.49	235	10	128	46.6
072024YE6	BAY AREA TOLL AUTH-A	CA	2.800	04/01/55	03/21/23	100.000	--	2000	0	14	46.1
54627RAM2	LA LOCAL GOVT ENVRN-A	LA	4.145	02/01/33	05/19/22	96.965	4.54	5M+	83	13	44.7
850269GB1	SPRINGDALE-B	AR	4.125	08/01/50	08/10/23	97.500	4.28	250	82	29	44.0
64966JE77	NEW YORK-G6-ADJ	NY	4.240	04/01/42	04/05/12	100.000	--	5M+	0	18	43.5
797400PF9	SAN DIEGO CNTY CA REG	CA	5.000	04/01/26	07/13/23	106.008	2.69	100	-8	26	41.2
362832BQ9	GAINESVILLE PENSION-B	FL	5.420	10/01/33	03/20/03	100.975	5.29	5M+	157	47	40.0
20775DTS1	CT HLTH&EDU FACS AUTH	CT	3.650	07/01/42	07/01/16	100.000	--	5M+	0	10	39.3
88046KES1	TN ST HSG DEV AGY	TN	4.700	07/01/53	07/25/23	100.000	4.70	5	122	160	35.0
118217CZ9	BUCKEYE OH TOBACCO-B2	OH	5.000	06/01/55	03/04/20	94.100	5.39	150	191	35	33.5
79766DSB6	SAN FRANCISCO ARPT 20	CA	4.000	05/01/50	09/10/19	94.790	4.33	4000	87	14	33.2

Source: Bloomberg

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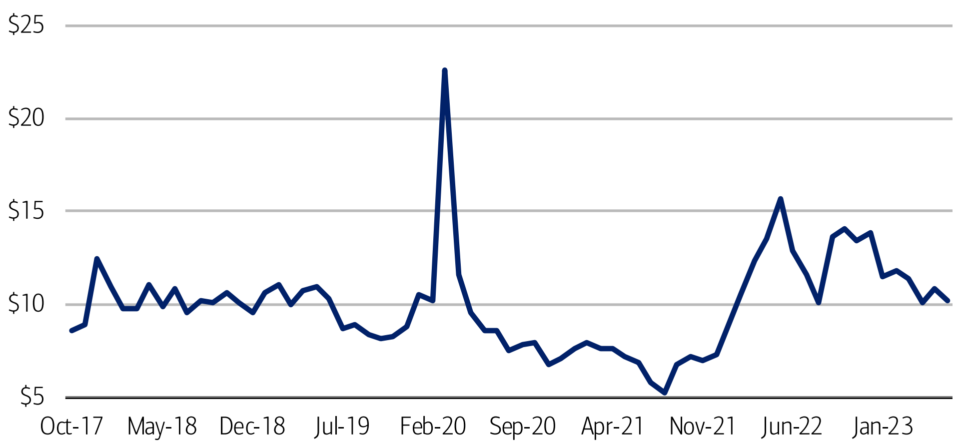
Avg daily secondary trading $10.2bn MTD in June

June's average daily secondary trading volume continued to climb from earlier-month lows, standing at $10.3bn as of 28 June. While that is only 5% or so below May's average, it is 20% lower vs June 2022's average. MTD, about $195bn of muni bond par value traded.

Exhibit 25: Daily avg secondary trading volume ($bn; as of 28 June 2023)

Jun-23 MTD daily avg volume of $10.3bn down 5% vs May-23's daily average



Source: BofA Global Research, Bloomberg

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Credit corner

State & local governments

While improved vs Apr-23, May-23 median collection growth still negative

May state collection medians weakened as more states reported, continuing to be weighed down by personal income taxes. For the 42 states reporting May collections thus far, we see median overall y/y growth of -4.2%. While both corporate and sales tax collections are up on median y/y (8.9% and 1.9%, respectively), personal income tax collections are down 5.6% on median. Regionally, we see the weakest y/y aggregate collection growth in the Southeast (-9.8%), followed by the Mid Atlantic (8.0%). We see the strongest growth in the Great Lakes (4.7%), followed by New England (4.5%).

Kentucky upgraded one notch to A+ by S&P with stable outlook

After being upgraded by Fitch in May, Kentucky's issuer credit rating was upgraded one notch to A+ from A by S&P on 29 June with a stable outlook. Per S&P, the upgrade reflects S&P's view of the commonwealth's "commitment and execution to strengthen its budgetary flexibility and long-term financial stability," which the rating agency expects "will continue in the current and future budget cycles." The upgrade is supported by KY's strong pension funding, continued structural balance, governance over budgetary expenditures and economic tailwinds across the commonwealth. S&P cautions, however, that the rating could be lowered if KY misses revenue projections, pension funding costs rise faster than anticipated, or budgetary constraints arise.

Judge Swain caps PREPA bondholder claims at $2.4bn; appeal in the works

On Monday, Judge Swain capped PREPA bondholders' unsecured net revenue claim at roughly $2.4bn. That equates to roughly 30% of outstanding PREPA debt, and just 43% of what the FOMB's original plan of adjustment for PREPA suggested the authority could pay bondholders. Judge Swain relied on the FOMB's expert's estimation of the amount of net revenues that could be available to pay on the bonds is the "is the most appropriate model as it contemplates a net revenue stream that is set to be derived and paid through a method that should be relatively affordable for ratepayers, reflects the impact of system maintenance and improvements that will be required to keep the system generating revenues over a lengthy period, and includes a present value discount factor for the time value of money and general market perceptions of risk." However, she also ruled that that expert's discount rate of 6.5% did not "adequately represent certain economic risk factors associated with the projected cashflows that could be generated by ratepayers," and instead used her own 7% discount rate. She also employed an additional "20% reduction for risks associated with the appointment of a receiver." That ruling caused bonds due in 2032 to fall to a price of 32 from the past month's average of nearly 60, per a *Bloomberg* report citing its data. While the FOMB released a statement welcoming Judge Swain's ruling, unsurprisingly, bondholders have already said they planned to appeal it. In a 27 June status report, bondholders said that, "[t]o the extent the Court is not inclined to permit interlocutory review, the Court should promptly resolve the pending motion to dismiss the counterclaims and set a firm, short deadline for the disposition of the outstanding lien perfection issues. And to facilitate a proper and efficient resolution of these matters, this Court should defer setting a new confirmation schedule on a new plan that has yet to be filed until after the First Circuit has ruled on the request for expedited review. Once the appellate schedule is known, this Court can then assess the best way to harmonize the proceedings before it with those that will soon be before the First Circuit. In the alternative, the Court should require that any new plan preserve Bondholders' appellate rights as of its effective date that cannot be waived by the Board. It would also afford Bondholders and other interested parties an opportunity to review what the new plan provides, and what is contained in the underlying data (or new judgments based on that data) to help inform the scope of discovery and experts that may be needed." Judge Swain said, however, that she is "not inclined to put a pause" on the case. Additionally, bondholders argue that the FOMB "is statutorily … required to file a new disclosure statement and to re-solicit votes with respect to any materially modified plan." Otherwise, we highlight: (a) TSA balances of $8.1bn as of 16 June were up $130mn w/w, and are now 13.2% above adopted liquidity plan levels, and (b) FYTD General Fund collections through 16 June of $12.7bn that are up 3.2% vs adopted liquidity plan levels.

Higher rates set to push ANPLs down for third straight year – Moody's

Moody's projects that if "mid-June market conditions hold" adjusted net pension liabilities (ANPLs) would decline for the third straight FY. Per Moody's: "[h]igher interest rates are pushing total liabilities down, and a market surge in recent weeks has lifted investment returns to near or slightly above most retirement systems' targets." All told, they project state and local government ANPLs will fall 14% y/y in FY23 to roughly $3.4tn. As a frame of reference, ANPLs exceeded $6tn in FY20. Net pension liabilities –

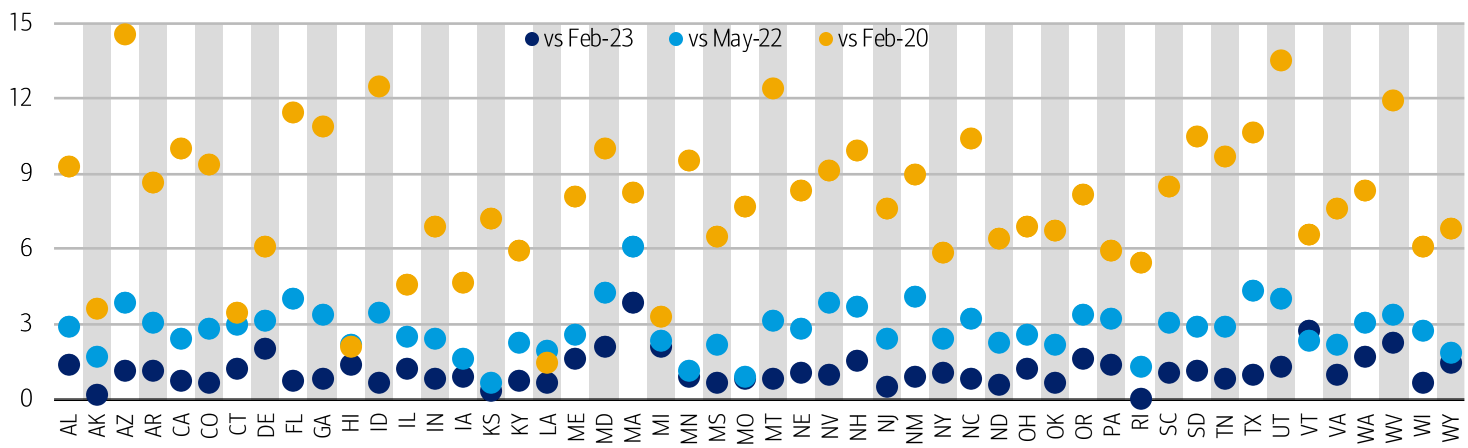
those based on GASB accounting rules – should finish the year relatively flat. Looking forward, Moody's still believes negative cash flow will still constrain public pensions' asset accumulation – despite stronger pension contributions – but that pension systems' "[e]xposure to a severe asset loss is the most significant pension risk". While higher interest rates provided an environment in which systems could shift from "riskier assets … toward high-grade fixed-income securities similar in duration and amount to their projected pension benefit outflows," systems have yet to materially do so.

No states' coincident index value declined over last 3 mos – Philly Fed

The Philadelphia Fed released state coincident index levels for May on 23 June. Those indexes combine nonfarm payrolls, average hours worked for manufacturing and production workers, unemployment rates and deflated wage and salary disbursements to "summarize current economic conditions in a single statistic." The data shows that no states' index level declined over the last three months – the second consecutive month that each state's index level increased. Over the last three months, MA's 3.87% index level increase was largest while RI's 0.07% was smallest. The median increase over the last three months was 1.02%. Over the last 12 months, each states' index level is higher (MA's 6.13% is largest), as are all states' vs February 2020, the last pre-pandemic month (AZ's 14.60% increase is largest). See Exhibit 26.

Exhibit 26: Percent change in Philadelphia Fed's May-23 state coincident indexes vs Feb-20, May-22 and Feb-23 (%)

Over the last 3 months, no states' coincident index level declined. MA strongest growth over last 3 months, with index climbing 3.9%



Source: BofA Global Research, Philadelphia Federal Reserve Bank

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Where labor demand is still strongest – the Dakotas

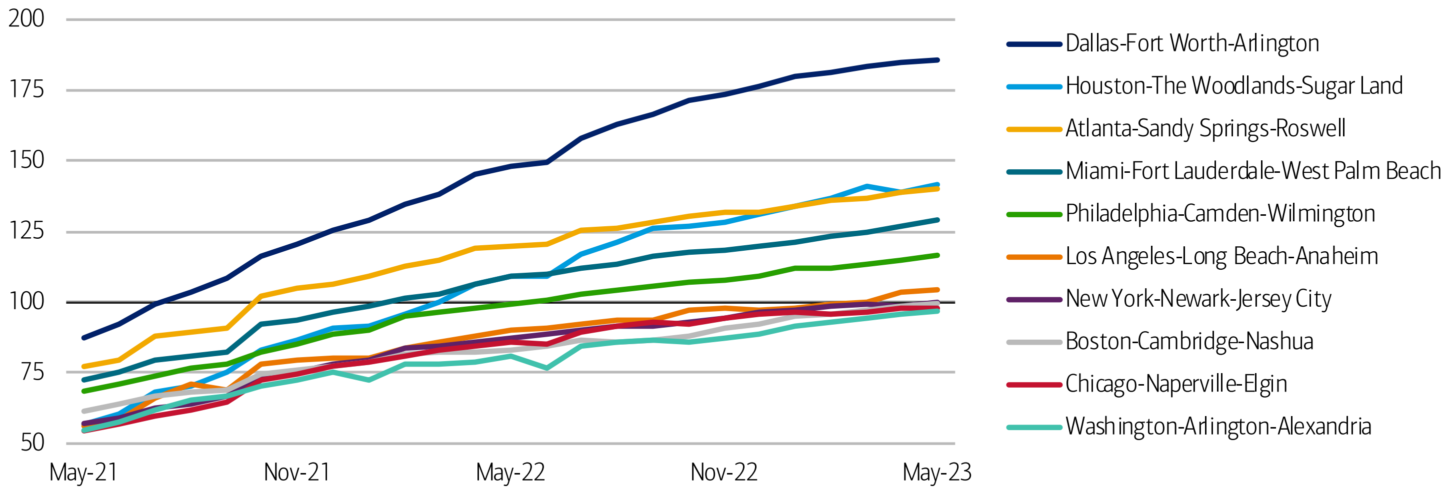
The Bureau of Labor Statistics released its state-level JOLT report covering April 2023 on 21 June. Comparing that report's job opening data versus unemployed levels for that month by state allows us to see where labor demand is highest. As of April, there are 3.2 job openings for every 1 unemployed person in SD and ND – the highest ratios among the states. They are followed by both MT and NE, each with 3.1 job openings per unemployed, and NH and WI with their 2.8 job openings per unemployed person. At the other end of the spectrum is CA, NY, WA and NV, with just 1.2 openings per unemployed person, followed by CT and NJ (each at 1.3 job openings per unemployed). The state-level JOLT report also shows where the layoff and discharge rate (the number of layoffs and discharges as a percent of total employment) is highest across the country: that distinction goes to AK, with its rate of 4.3, compared to the US rate as of April 2023 of 1.0. The lowest rates were in DC (0.6), AL (0.7), and TX, PA, NY, HI, GA and CA (each at 0.8). DC and CT, each at 0.8. Note that FL's rate was 1.1 as of Apr-23.

NYC metro area's payrolls close in on 100% recovery

The 10-largest MSAs by seasonally adjusted May 2023 payrolls recovered, in the aggregate, 113.5% of jobs lost during the pandemic crisis, led by Dallas-Fort Worth-Arlington, TX's 185.7% payroll recovery; Washington-Arlington-Alexandria, DC-VA-MD-

WV MSA's 96.9% recovery is weakest among that group. The New York-Newark-Jersey City, NY-NJ-PA MSA's recovery is now just shy of 100%; the Los Angeles-Long Beach-Anaheim, CA MSA's recovery is 104.4%; and, Chicago-Naperville-Elgin, IL-IN-WI's is 97.9%. Overall, nonfarm payroll recoveries are led by The Villages, FL's 300.0% recovery and Logan, UT-ID's 266.0% recovery, followed by a number of other MSAs in Utah, Idaho and Texas. The lowest overall continues to be in Kokomo, IN at 20.0%, followed by Enid, OK at 38.9% and Lake Charles, LA at 45.0%.

Exhibit 27: Nonfarm payroll recovery of the 10 largest MSAs by May-23 payrolls (%)
The New York City MSA has nearly fully recovered jobs lost during the COVID-19 pandemic crisis



Source: BofA Global Research, Bureau of Labor Statistics

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Higher Education

Rising wages and investment losses could challenge institutions – Moody's

Wages across the higher education sector have climbed, per the 2022/23 American Association of University Professors Faculty Compensation Survey. Full-time faculty salaries at public schools increased 4.5%, while those at private independent institutions were up 3.8%. Religious affiliated institutions were up 2.7%. Increases in wages will result in increased ANPLs and adjusted net operating liabilities (NOLs). For 60% of public universities Moody's rates, "retirement benefits are a heavy burden for universities as combined ANPLs and adjusted NOLs exceed debt." Given widespread state control of pension and retirement plans, public universities do not maintain unilateral control over asset allocation. With allocation of pension and retirement assets tilted towards equities and alternative assets, public schools are most at risk in volatile markets. Contrary to public institution counterparts, private colleges and universities "tend not to offer defined-benefit retirement plans, freeing them from long-term pension liabilities. Instead, they largely have defined-contribution plans, which require the employee to shoulder the risk for investment performance," per Moody's.

Healthcare

YTD median hospital operating margin improves to 0.3% in May

Kaufman Hall's (KH) latest National Hospital Flash Report showed improvement in the YTD-23 median hospital operating margin to 0.3% through May vs 0.1% the prior month. Net operating revenue rose to 2% m/m with total expenses flat over the same period. For YTD-23 levels versus YTD-20 levels, revenues were up 27% and total expense 23%. Over that same period, inpatient and outpatient revenue were both up, 20% and 53% respectively, while total labor expense was up 21% and total non-labor expense 23%. KH noted that "operating margins continue to stand well below historical norms." Also notable is the YTD increase in the discharges, emergency room visits and total operating room time, as patients return to in patient care. However, KH stipulates that outpatient care revenue is "increasing at a much greater rate than revenue from inpatient care."

Airports

Moody's report shows passenger levels matching 2019

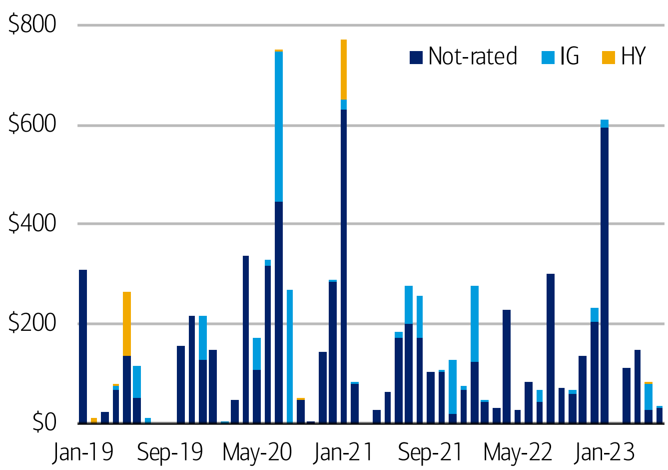
As summer travel season enters full swing, data from Moody's indicates that passenger traffic levels generally surpassed 2019 levels through 2023. And, for the first time since the onset of the pandemic, Moody's reports that most airports they track exceeded 2019 enplanements. During March – a popular time for spring break travel – 42 of the airports Moody's tracks exceeded March 2019 levels while 45 airports did not, "indicating that some airports remained capacity constrained during the spring travel peak." Tourist and vacation destinations, predominantly in the south, led the way in February and March of 2023. February 23 enplanements at Myrtle Beach, SC, Asheville, NC, and Austin, TX, were 150%, 136% and 130% of 2019 numbers, respectively. March saw the same three airports on top, with Austin at 133%, Asheville at 132% and Myrtle Beach at 129% of 2019 enplanements. Large international airports saw the largest y/y growth, with LaGuardia Airport up 41% in February 2023 y/y, while Huntsville, AL was up 26% y/y in March 2023. Moody's notes that at "eight of the top 15 international gateways, international recovery was stronger than domestic recovery in March," with San Francisco and Los Angeles two of the weakest.

Defaults, distress & HY

June-23 defaults total $34mn; no distress reported

First-time payment defaults totaled $34mn in June, bringing the YTD total to $993mn, up 44% y/y. June's defaults came from two borrowers: Kansas Masonic Home Obligated Group and Paradise Redevelopment Agency Successor. By rating at issue, 88% was unrated and 12% was investment grade. By sector, 84% was from the Nursing Home/Senior Living sector and 16% was from Tax Increment Financing sector. 90% of YTD defaults are within 2 years from when the first-time distress event was reported.

Exhibit 28: Monthly first-time defaults ($mn) by avg rating at issue
First-time defaults $34mn in June; YTD-23 totals $993mn, up 44% y/y



Note: We may revise data if Bloomberg revises its data.
Source: BofA Global Research, Bloomberg

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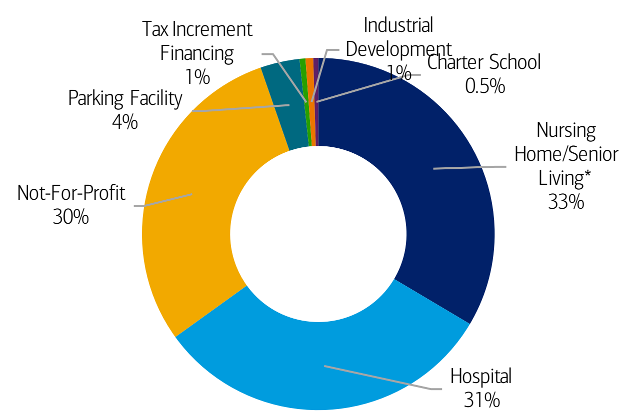
Exhibit 29: YTD-23 defaults by sector
Defaults concentrated in Nursing Home/Senior Living, Hospital sectors



Note: *Nursing Home/Senior Living includes CCRC, ASST Living, Nursing Home, and Independent Living Facilities. NFP = not-for-profit. The sequence above is based on average rank of breakdown by par value and by number of CUSIPs.
Source: BofA Global Research, Bloomberg

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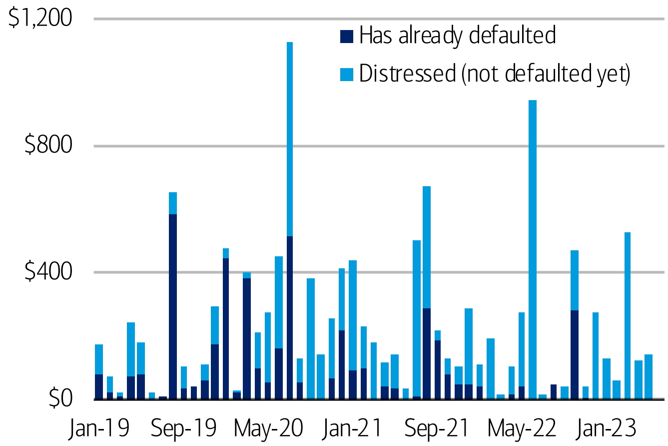
There was no first-time distressed debt (when the first distressed event that is not a default happens) reported in June; as a result, the YTD total remains at $981mn, which is down 40% y/y. The total cumulative first-time distressed debt since 2019 totals $12.8bn; of that, 35% defaulted while 7% exited distressed status. Going forward, we expect defaults emanating from this distress to be concentrated in the Nursing Home, Hospital, Student Housing and Industrial Development sectors. See Exhibit 31.

Exhibit 30: Monthly first-time distressed debt ($mn)
No first-time distressed reported in June; YTD totals $981mn, down 40% y/y



Note: We may revise data if Bloomberg revises its data.
Source: BofA Global Research, Bloomberg

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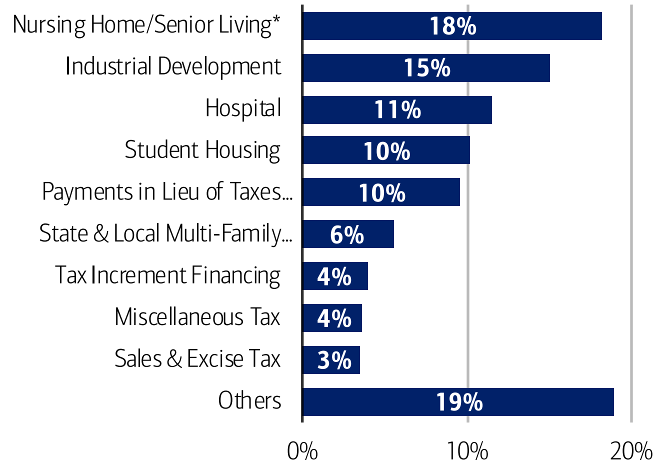
Exhibit 31: Sector cumulative distressed debt (not defaulted
Nursing Home tops cumulative distressed debt since 2019



Source: Bloomberg; BofA Global Research.

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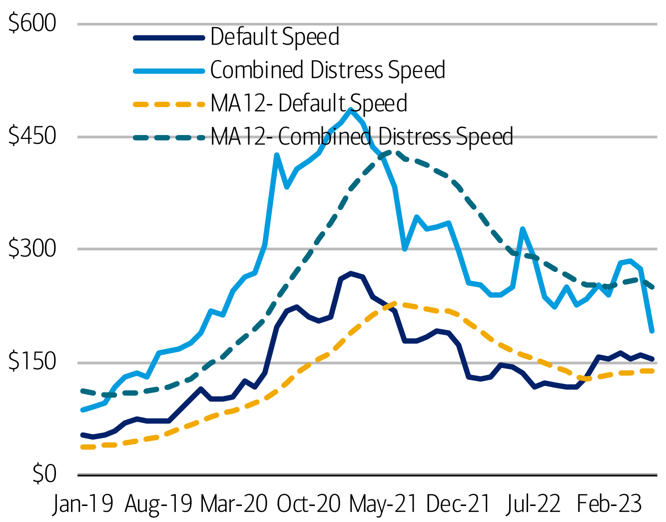
As noted in our [Municipals Year Ahead 2023](), we expect defaults to tick up some in 2023, with our original estimate for the year at $1.7bn-$2.1bn. We revisit default and distress speeds here. As of June, the overall default and distress speeds has slightly picked up in 1H23 after slowing significantly since 2021. Defaults are currently cumulating at $139mn-$156mn per month on average. If this continues, 2023 defaults would finish 2023 somewhere around $1.8bn-$1.9bn.

Exhibit 32: Overall default and distress speeds ($mn/month)
Overall default & distress speeds slightly pick up in 1H23



Source: BofA Global Research; Bloomberg.

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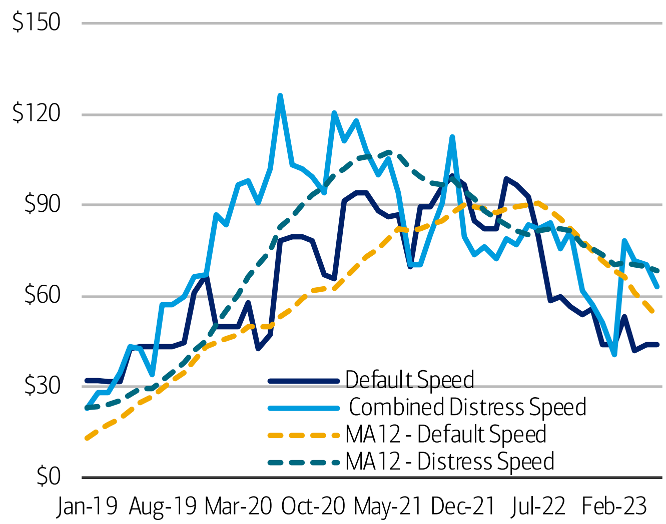
Exhibit 33: Nursing Home default and distress speeds ($mn/month)
Nursing Home default speed peaked in 3Q22 and slowed since



Source: BofA Global Research; Bloomberg.

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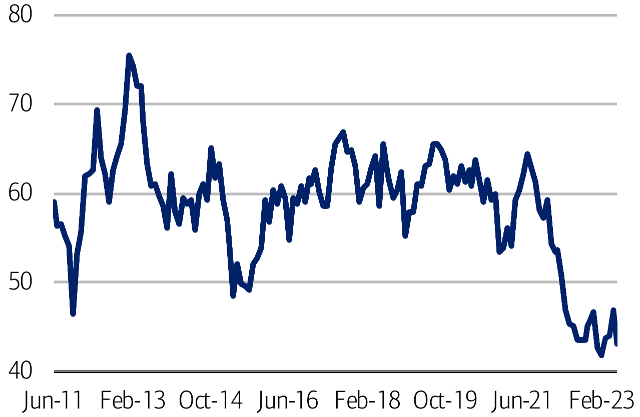
The Nursing Home/Senior Living sector continues to default in 2023, as we projected earlier; however, its default speed slowed since 3Q22.

Tracking: material credit events and Ch. 9 filings

For the week ending 28 June, our tracking of those Moody's-defined material credit events (MCEs) shows 6 postings, down 2 on a w/w basis, with the MTD total of 54 as of 28 June. See Exhibit 34. Meanwhile, we note there were no new Chapter 9 bankruptcy petitions filed for the week ending on 28 June and, as a result, it's been 36 days since the last bankruptcy petition was filed by Hazel Hawkins Memorial Hospital on 23 May 2023. Since 1982, the average period between bankruptcy filings is 52 days.

Exhibit 34: 6-mo mov avg of material credit events posted to EMMA

Filings posted to EMMA have decreased since last June



Note: Data as of 28 June 2023. Material credit events (MCE) reflect: 1. bankruptcy, insolvency, receivership or similar event, 2. financial obligation-event reflecting financial difficulties, 3. nonpayment related default, 4. principal/interest payment delinquency, 5. unscheduled draw on credit enhancement reflecting financial difficulties, and 6. unscheduled draw on debt service reserve reflecting financial difficulties.

Source: EMMA

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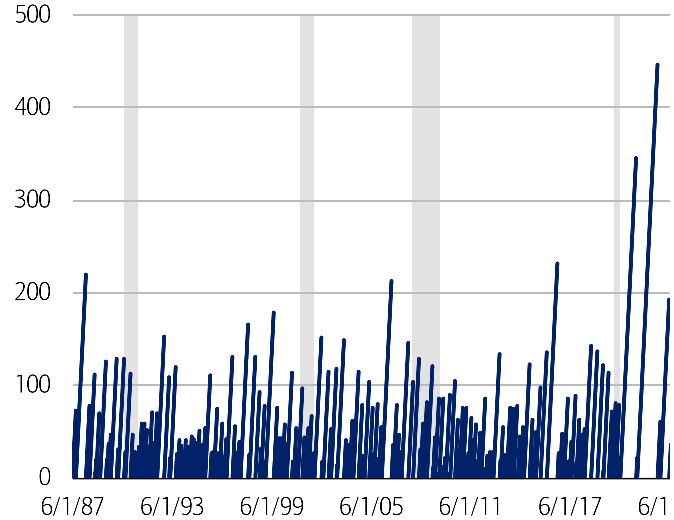
Exhibit 35: Calendar days since last Chapter 9 petition filed

36 days since Hazel Hawkins Memorial Hosp. filed Ch. 9 petition



Source: BofA Global Research, PACER, US Courts

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Cross currency equivalent yields

Taxable munis look attractive for most countries on a cross-currency equivalent basis, with only a few exceptions: 5-yr, 10-yr and 30-yr taxable munis remain less attractive for Italy; 5-yr and 10-yr taxable for Spain; 5yr for Japan: 5-yr and 10-yr taxable for South Korea.

Exhibit 36: Cross currency equivalent yields as of 29 June 2023

Taxable munis are attractive for foreign investors, though 5yr, 10yr and 30yr taxables are less so for Italy; 5yr and 10yr taxable for Spain; 5yr taxable for Japan; 5yr and 10yr taxables for South Korea

Country	Government bond yield (in investor country's currency)			Cross currency equivalent yield*						Can foreign investors buy?					
				US Treasury			US AAA taxable municipal bond			US Treasury			US AAA taxable municipal bond		
	5 year	10 year	30 year	5 year (4.138)	10 year (3.850)	30 year (3.909)	5 year (4.27)	10 year (4.41)	30 year (4.94)	5 year	10 year	30 year	5 year	10 year	30 year
Canada	3.750	3.365	3.176	3.962	3.684	3.831	4.094	4.244	4.856	Yes	Yes	Yes	Yes	Yes	Yes
United Kingdom	4.604	4.369	4.421	4.989	4.325	4.128	5.112	4.887	5.172	Yes			Yes	Yes	Yes
France	2.919	2.945	3.226	2.958	2.787	3.419	3.087	3.344	4.428	Yes		Yes	Yes	Yes	Yes
Germany	2.561	2.413	2.423	2.958	2.787	3.419	3.087	3.344	4.428	Yes	Yes	Yes	Yes	Yes	Yes
Italy	3.751	4.090	4.458	2.958	2.787	3.419	3.087	3.344	4.428						
Spain	3.250	3.401	3.835	2.958	2.787	3.419	3.087	3.344	4.428						Yes
Portugal	2.914	3.116	3.485	2.958	2.787	3.419	3.087	3.344	4.428	Yes			Yes	Yes	Yes
Netherlands	2.766	2.747	2.655	2.958	2.787	3.419	3.087	3.344	4.428	Yes	Yes	Yes	Yes	Yes	Yes
Switzerland	0.950	0.901	0.848	2.958	2.787	3.419	3.087	3.344	4.428	Yes	Yes	Yes	Yes	Yes	Yes
Japan	0.056	0.379	1.199	-0.338	-0.068	2.131	-0.210	0.479	3.084			Yes		Yes	Yes
Australia	3.832	3.898	4.211	4.411	4.590	4.251	4.543	5.150	5.291	Yes	Yes	Yes	Yes	Yes	Yes
South Korea	3.558	3.608	3.641	2.462	2.932	3.487	2.593	3.487	4.495						Yes
China	2.423	2.636	3.012	5.050	4.361	4.142	5.181	4.920	5.178	Yes	Yes	Yes	Yes	Yes	Yes
Taiwan	1.090	1.177	1.572	1.538	2.428	3.258	1.668	2.981	4.252	Yes	Yes	Yes	Yes	Yes	Yes
Singapore	3.054	3.000	2.318	3.602	3.559	3.774	3.734	4.117	4.796	Yes	Yes	Yes	Yes	Yes	Yes

Note: Cross currency equivalent yield is the yield for an international buyer to purchase US bond in dollar and convert back to its own country's currency.

Source: BofA Global Research, Bloomberg

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Acronyms

Exhibit 37: Common acronyms used in our Municipals reports
This list is subject to change

Acronym	Definition	Acronym	Definition	Acronym	Definition
1Q	First Quarter	HOSP	Hospital	PA	Pennsylvania
2Q	Second Quarter	HY	High Yield	PC	Pollution Control
3Q	Third Quarter	IA	Iowa	PL	Plains
4Q	Fourth Quarter	ICE	Intercontinental Exchange	PPFI	Milliman's Public Pension Funding Index
AIR	Airport	ICMA	International Capital Market Association	Ppt	Percentage point
AK	Alaska	ID	Idaho	PR	Puerto Rico
AL	Alabama	IDR	Industrial Development Revenue	PRE-RE	Pre-refunded
AMT	Alternative Minimum Tax	IG	Investment Grade	PRHTA	Puerto Rico Highway & Transportation Authority
Apr	April	IL	Illinois	PROMESA	Puerto Rico Oversight, Management, and Economic Stability Act
AR	Arkansas	IN	Indiana	PWR	Power
ARPA	American Rescue Plan Act	INT	Intermediate term	Q/Q	Quarter-over-quarter
Aug	August	Jan	January	QTD	Quarter-to-date
Avg	Average	Jun	June	R	Rich
AZ	Arizona	KS	Kansas	RI	Rhode Island
BEA	Bureau of Economic Analysis	KY	Kentucky	RM	Rocky Mountain
BLS	Bureau of Labor Statistics	LA	Louisiana	S&L	State and Local
BofA	Bank of America	LCA	Leases, COPs & Appropriations	S&P	Standard & Poor's
Bp	Basis points	LT	Long term	SC	South Carolina
BTN	Back-to-Normal Index	M	Mideast	SD	South Dakota
C	Cheap	M/M	Month-over-month	SE	Southeast
CA	California	MA	Massachusetts	Sep	September
CARES	Coronavirus Aid, Relief, and Economic Security Act	Mar	March	SFH	Single Family Housing
CB	Census Bureau	MD	Maryland	ST	Short term
CO	Colorado	ME	Maine	SW	Southwest
COPs	Certificates of Participation	MFH	Multi-Family Housing	T&T	Toll & Turnpike
CPI	Consumer Price Index	MI	Michigan	TAX	Tax Revenue
CT	Connecticut	MISC	Miscellaneous	TBCO	Tobacco
CUSIP	Committee on Uniform Security Identification Procedures	MMD	Municipal Market Data	TEU	Twenty-Foot Equivalent Units
DC	District of Columbia	MN	Minnesota	TN	Tennessee
DE	Delaware	MO	Missouri	TRAN	Transportation - other
Dec	December	MS	Mississippi	TSA	For Puerto Rico, Treasury Single Account; otherwise, Transportation Security Administration
EAI	Puerto Rico Economic Activity Index	MSA	Metropolitan Statistical Area	TX	Texas
EDU	Education	MT	Montana	US	United States
ESG	Environmental, Social, Governance	MTD	Month-to-date	USVI	US Virgin Islands
ETF	Exchange Traded Fund	N	Neutral	UT	Utah
ETM	Escrowed to Maturity	NASBO	National Association of State Budget Officers	UTL	Utilities - other
Feb	February	NC	North Carolina	VA	Virginia
Fed	Federal Reserve	ND	North Dakota	VC	Very Cheap
FEMA	Federal Emergency Management Agency	NE	Nebraska	VPIP	Value of construction put in place
FL	Florida	NED	New England	VR	Very Rich
FOMB	Financial Oversight & Management Board for Puerto Rico	NH	New Hampshire	VRDO	Variable Rate Demand Obligation
FW	Far West	NJ	New Jersey	VT	Vermont
FY	Fiscal year	NM	New Mexico	W&S	Water & Sewer
GA	Georgia	Nov	November	W/W	Week-over-week
GDP	Gross Domestic Product	NV	Nevada	WA	Washington
GL	Great Lakes	NY	New York	WI	Wisconsin
GO	General Obligation	OAS	Option Adjusted Spread	WV	West Virginia
GO-L	Local GO	Oct	October	WY	Wyoming
GO-S	State GO	OH	Ohio	Y/Y	Year-over-year
Govt	Government	OK	Oklahoma	YTD	Year-to-date
HI	Hawaii	OR	Oregon	YTM	Yield to Maturity
HLTH	Healthcare	P&C	Property & Casualty insurance company	YTW	Yield to Worst

Source: BofA Global Research

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