

Market Transparency Report

Monthly Guide to the U.S. Retail Fixed Income Markets

November 2022

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Overview

About the Market Transparency Report

The data and analysis contained in this monthly report are intended to provide transparency into the dynamics of the U.S. Fixed Income markets for retail investors. The report presents the important trends in the market, including trade volumes, most active issuers, yield/spread movements and buy/sell ratios. Retail trades are defined as odd-lot transactions under 100 bonds (i.e. less than \$100,000 par value). The retail market is much smaller than the institutional market on a par value basis, but it accounts for more than 2/3 of the trades that occur in the marketplace.

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Market Commentary

Monthly Change Table for November 2022

	Median Yield (bps)	Daily Trade Volume	Buy/Sell Ratio
Agency	26	10.7%	0.9
CD	50	19.5%	0.4
Corp	-11	1.5%	0.2
Municipal	-12	5.3%	-0.1
Treasury	26	4.6%	-2.9

For monthly security trend data, see slides 5, 6 and 7



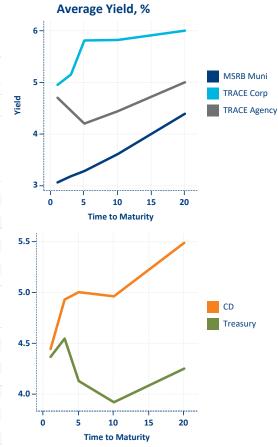
Yield Matrix

Average Yield, % for November 2022

			TTM			Median Maturity
Market	1	3	5	10	20	(Years)
MSRB Muni	3.1	3.2	3.3	3.6	4.4	9
TRACE Corp	5.0	5.2	5.8	5.8	6.0	2
TRACE Agency	4.7	4.5	4.2	4.5	5.0	1
CD	4.4	4.9	5.0	5.0	5.5	1
Treasury	4.4	4.6	4.1	3.9	4.3	1

Asset Class

Market	Category (Filtered)	Rating Key	1	3	5	10	20	Maturity
	, , ,	0 ,						(Years)
		AA	3.8	4.8	4.9			6
	Financial	A	4.9	4.9	4.8	5.0	5.7	1
	Financial	BBB	4.8	5.3	5.3	5.9	6.3	2
TRACE -		HY	6.1	7.9	8.5	10.1		5
Corp		AAA	1.9				4.8	7
согр		AA	4.1	4.3	3.6	5.3	5.1	10
	Non-Financial	A	4.3	4.7	4.9	4.8	6.3	3
		BBB	5.3	5.4	5.7	5.9	6.9	3
		HY	4.6	6.8	15.8	7.5	7.5	5
								Median
			1	3	5	10	20	Maturity (Years)
		AAA	2.9	3.1	3.1	3.5	4.0	7
		AA	3.0	3.1	3.2	3.6	4.3	8
	GO	Α	3.1	3.3	3.6	3.8	4.3	7
		BBB	3.8	4.2	4.4	4.9	5.1	13
MSRB		HY	4.5			5.6	5.8	13
Muni		AAA	3.0	3.1	3.2	3.4	4.1	8
		AA	3.1	3.2	3.3	3.6	4.3	10



Median

15

15

13

WA Yield = "Weighted Average Yield"

Source: TRACE, RTRS (MSRB's Real-time Transactional Reporting System) and Tradeweb Direct

- -The yields in each cell for Corporate/Agency/Municipal are the weighted average yield based on odd-lot customer buy transcations reported in TRACE/MSRB.
- -The yields in each cell for Treasury/CD are the weighted average yield based on buy transactions on the Tradeweb Direct Platform.

3.2

3.7

4.2

- -The weights are based on transaction size.
- -Yield summaries for Corporate and Agency exclude transactions in callable or floating-rate coupon bonds.

Α

BBB

HY

- -Yield summaries for Municipal exclude transactions in taxable bonds.
- -See appendix for the definition of maturity and rating buckets.

Revenue

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3.4

4.0

6.2

3.5

4.2

5.6



3.9

4.6

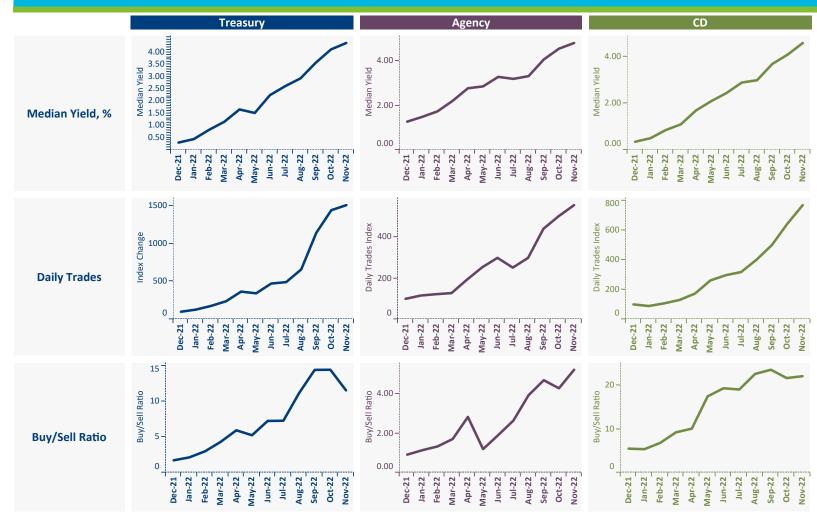
6.2

4.7

5.1

6.1

Treasury, Agency, CD Transaction Trend Summary



Daily Trades: First month = 100 Source: TRACE and Tradeweb Direct



⁻Treasury and CD are based on transactions on the Tradeweb Direct Platform. Median yields are based on all customer buy transactions.

⁻Agency is based on odd-lot customer transactions (<100M) reported in TRACE. Median yields are based on all odd-lot customer buy transactions.

Corporate Bonds: Odd-Lot Customer Transaction Trend Summary



Daily Trades: First month = 100 Source: TRACE and Tradeweb Direct



⁻Based on odd-lot customer transactions (<100M) reported in TRACE.

⁻Median yields and spreads are based on all odd-lot customer buy transactions...

Municipal Bonds: Odd-Lot Customer Transaction Trend Summary



Daily Trades: First month = 100

Source: RTRS (MSRB's Real-time Transaction Reporting System) and Tradeweb Direct



⁻Based on odd-lot customer transactions (<100M) reported in MSRB.

⁻Median yields and spreads are based on all odd-lot customer buy transactions.

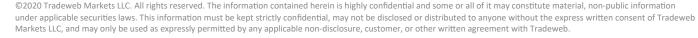
⁻Spread for each transaction is calculated against the Treasury yield for the same maturity.

Corporate Bonds: Top 20 Most Active Issuers

November 2022

Index	Ticker	Company	Rating Key (Med)	Issues Traded	% of Total Trades	Trades	Buy/Sell Ratio	Dollar Vol. Traded (MM)	1Y Yield (Buy)	3Y Yield (Buy)	5Y Yield (Buy)	10Y Yield (Buy)	20Y Yield (Buy)
1	GS	GOLDMAN SACHS	Α	1,073	3.3%	27,250	2.2	483	5.1	5.2	5.1	5.5	5.8
2	JPM	JP MORGAN CHASE	A	792	2.9%	24,148	1.4	443	4.7	4.8	5.2	5.8	5.7
3	BAC	BANK OF AMERICA	A	380	2.8%	23,503	2.2	472	4.7	5.6	5.3	5.5	5.6
4	С	CITIGROUP	BBB	702	2.7%	21,898	1.8	381	5.0	5.2	5.4	6.0	6.1
5	MS	MORGAN STANLEY	A	784	1.9%	15,403	1.8	274	4.9	5.1	5.1	5.5	5.8
6	WFC	WELLS FARGO	Α	148	1.8%	15,068	1.6	248	5.0	5.1	5.2	5.9	6.1
7	GM	GENERAL MOTORS FINANCIAL COMPANY INC	BBB	90	1.8%	14,659	3.1	297	5.5	5.8	5.9	6.3	6.7
8	CMCS	COMCAST	A	62	1.4%	11,682	1.4	156	4.8	5.1	5.3	5.0	5.5
9	USB	U S BANCORP MEDIUM TERM NTS- BOOK ENTRY	A	27	1.4%	11,488	4.5	89	4.7	4.8	4.7	5.2	
10	VZ	VERIZON	BBB	145	1.3%	11,102	1.4	150	5.0	4.7	5.0	5.4	5.9
11	AAPL	APPLE INC	AA	52	1.3%	10,560	1.8	175	4.5	4.4	4.3	4.4	5.0
12	ORCL	ORACLE CORP	BBB	37	1.1%	9,349	1.8	149	5.0	5.2	5.2	5.7	6.3
13	ВА	BOEING CO	BBB	53	1.1%	8,909	2.5	165	5.1	5.4	5.5	5.8	6.5
14	Т	AT&T	BBB	101	1.0%	8,152	1.3	122	5.1	5.2	5.0	5.4	5.9
15	RY	ROYAL BANK OF CANADA	Α	258	0.9%	7,836	2.9	145	5.0	5.2	5.3	5.2	
16	CVS	CVS CAREMARK CORP	BBB	39	0.9%	7,706	1.3	105	5.1	4.8	5.1	5.1	5.8
17	BRK	BERKSHIRE HATHAWAY	AA	150	0.9%	7,089	1.5	140	4.7	4.5	5.0	5.1	5.6
18	COF	CAPITAL ONE FINL CORP	BBB	29	0.8%	6,663	2.6	112	5.1	5.5	5.5		
19	DUK	DUKE ENERGY	BBB	116	0.8%	6,660	2.0	96	4.8	4.8	5.0	5.3	5.8
20	UNH	UNITEDHEALTH	Α	56	0.8%	6,584	2.8	131	4.6	4.6	4.8	4.9	5.3

Source: TRACE and Tradeweb Direct





⁻Based on odd-lot customer transactions (<100M) reported in TRACE.

⁻Issuer ratings are based on median rating of traded bonds from each issuer. Bond ratings are from Moody's and S&P.

Corporate Bonds: Top 20 Issuers with Highest Buy/Sell Ratio

November 2022

Index	Ticker	Company	Rating Key (Med)	Issues Traded	% of Total Trades	Trades	Trades (Buy)	Trades (Sell)	Buy/Sell Ratio	Dollar Vol. Traded (MM)	1Y Yield (Buy)	3Y Yield (Buy)	5Y Yield (Buy)	10Y Yield (Buy)	20Y Yield (Buy)
1	CGMHI	Null	Α	64	0.3%	2,499	2,485	14	177.5	58	5.1	5.3	5.5		
2	CE	CELANESE US HLDGS LLC	BBB	8	0.5%	3,895	3,454	441	7.8	77	6.0	6.6	6.8	7.0	
3	MAR	MARRIOTT INTL INC NEW	BBB	20	0.3%	2,820	2,493	327	7.6	52	5.1	5.2	5.3	5.8	
4	LNC	LINCOLN NATL CORP IND	BBB	17	0.3%	2,587	2,210	377	5.9	56	4.9	5.1	5.3	6.1	6.6
5	PM	PHILIP MORRIS INTL INC	Α	27	0.5%	4,085	3,480	605	5.8	79	4.8	5.1	5.2	5.5	6.6
6	USB	U S BANCORP MEDIUM TERM NTS- BOOK ENTRY	Α	27	1.4%	11,488	9,401	2,087	4.5	89	4.7	4.8	4.7	5.2	
7	AEP	AMERICAN ELEC PWR CO INC	BBB	69	0.2%	2,034	1,634	400	4.1	43	5.3	5.2	5.2	5.5	6.1
8	EIX	EDISON MISSION	BBB	56	0.5%	4,122	3,283	839	3.9	74	5.0	5.4	5.6	5.5	6.1
9	ALLY	ALLY FINANCIAL	BBB	61	0.7%	5,383	4,265	1,118	3.8	99	5.7	6.0	6.6	7.1	
10	DFS	DISCOVER BK NEW CASTLE DEL	BBB	39	0.3%	2,105	1,661	444	3.7	43	5.6	5.7	5.8	6.4	
11	VIA	VIACOM INC NEW	BBB	27	0.3%	2,598	2,034	564	3.6	48	5.0	5.7	5.9	6.7	7.3
12	SAN	ABBEY NATL TREAS SVCS PLC	BBB	46	0.2%	1,941	1,496	445	3.4	49	5.2	5.7	5.7	6.3	
13	ETR	ENTERGY CORP NEW	Α	56	0.3%	2,181	1,655	526	3.2	45	5.1	5.1	5.2	5.4	5.8
14	GM	GENERAL MOTORS FINANCIAL COMPANY INC	BBB	90	1.8%	14,659	11,091	3,568	3.1	297	5.5	5.8	5.9	6.3	6.7
15	NEE	FPL GROUP CAP INC	BBB	57	0.7%	6,186	4,678	1,508	3.1	84	5.2	4.8	5.0	5.1	5.6
16	вмо	BANK MONTREAL MEDIUM TERM SR NTS BOOK EN	А	156	0.4%	3,611	2,707	904	3.0	67	5.1	5.4	5.3	5.4	
17	HPQ	HEWLETT PACKARD	BBB	21	0.6%	4,582	3,420	1,162	2.9	69	5.1	5.1	5.5	6.3	6.4
18	RY	ROYAL BANK OF CANADA	Α	258	0.9%	7,836	5,830	2,006	2.9	145	5.0	5.2	5.3	5.2	
19	TRP	TRANSCANADA PIPELINES LTD	BBB	31	0.2%	1,804	1,340	464	2.9	31	5.3	5.2	5.3	5.6	6.1
20	CAT	CATERPILLAR	Α	67	0.5%	3,888	2,886	1,002	2.9	76	4.7	4.8	4.6	4.5	5.3

Source: TRACE and Tradeweb Direct



⁻Based on odd-lot customer transactions (<100M) reported in TRACE.

⁻The top 20 issuers are selected among the top 100 most active issuers in odd-lot TRACE.

⁻Issuer ratings are based on median rating of traded bonds from each issuer. Bond ratings are from Moody's and S&P.

Corporate Bonds: Top 20 Issuers with Lowest Buy/Sell Ratio

November 2022

Index	Ticker	Company	Rating Key (Med)	Issues Traded	% of Total Trades	Trades	Trades (Buy)	Trades (Sell)	Buy/Sell Ratio	Dollar Vol. Traded (MM)	1Y Yield (Sell)	3Y Yield (Sell)	5Y Yield (Sell)	10Y Yield (Sell)	20Y Yield (Sell)
1	RDS	SHELL	AA	25	0.4%	3,134	1,286	1,848	0.70	46	4.9	4.5	5.1	5.0	5.3
2	V	VIVENDI	AA	12	0.2%	1,897	965	932	1.04	28		4.6	4.4	4.4	4.9
3	EDP	ENTERPRISE PRODS OPER LLC	BBB	33	0.4%	3,603	1,892	1,711	1.11	47	5.4	5.0	5.2	5.9	6.0
4	AMZN	AMAZON COM INC	AA	38	0.7%	6,195	3,325	2,870	1.16	104	4.6	4.7	4.5	4.6	4.9
5	CVS	CVS CAREMARK CORP	BBB	39	0.9%	7,706	4,282	3,424	1.25	105	5.2	4.9	5.1	5.1	5.8
6	MO	ALTRIA GROUP INC	BBB	23	0.5%	3,985	2,211	1,774	1.25	66	5.3	5.1	5.6	6.1	6.8
7	Т	AT&T	BBB	101	1.0%	8,152	4,528	3,624	1.25	122	5.0	5.1	5.0	5.4	5.9
8	BUD	ANHEUSER BUSCH INBEV WORLDWIDE INC	BBB	38	0.7%	5,534	3,166	2,368	1.34	64		4.8	4.8	4.8	5.6
9	DE	DEERE JOHN CAP CORP MEDIUM TERM NTS-BOOK	Α	59	0.6%	4,620	2,642	1,978	1.34	99	4.9	4.7	4.7	4.8	4.7
10	VZ	VERIZON	BBB	145	1.3%	11,102	6,377	4,725	1.35	150	4.7	4.7	4.9	5.4	6.1
11	JPM	JP MORGAN CHASE	Α	792	2.9%	24,148	14,060	10,088	1.39	443	4.9	4.8	5.1	6.3	5.8
12	CMCS	COMCAST	Α	62	1.4%	11,682	6,831	4,851	1.41	156	4.8	4.8	4.9	5.0	5.4
13	PEP	PEPSICO	Α	37	0.3%	2,352	1,379	973	1.42	43	4.8	4.5	4.4	4.5	4.9
14	HD	HOME DEPOT	Α	36	0.4%	3,712	2,192	1,520	1.44	65	4.7	4.6	4.5	4.7	5.2
15	MOX	XTO ENERGY INC	AA	21	0.3%	2,773	1,647	1,126	1.46	42	4.5	4.6	4.3	4.6	5.2
16	GILD	GILEAD SCIENCES INC	BBB	17	0.2%	1,919	1,146	773	1.48	35	5.2	4.8	4.8	4.9	5.4
17	ВК	BANK NEW YORK INC MEDIUM TERM SR NTS BOO	Α	50	0.5%	4,104	2,472	1,632	1.51	77	5.0	5.0	5.0	5.1	
18	BRK	BERKSHIRE HATHAWAY	AA	150	0.9%	7,089	4,303	2,786	1.54	140	5.1	4.8	4.3	5.0	5.6
19	WFC	WELLS FARGO	Α	148	1.8%	15,068	9,182	5,886	1.56	248	5.1	5.1	5.3	6.3	6.0
20	ANTM	Null	Α	31	0.5%	3,755	2,292	1,463	1.57	50		5.0	4.9	5.0	5.5

Source: TRACE and Tradeweb Direct



⁻Based on odd-lot customer transactions (<100M) reported in TRACE.

⁻The top 20 issuers are selected among top 100 most active issuers in odd-lot TRACE.

⁻Issuer ratings are based on median rating of traded bonds from each user. Bond ratings are from Moody's and S&P.

Corporate Bonds: Top 20 Most Bought Issues

November 2022

Index	Ticker	Company	Maturity	Rating Key (Med)	Coupon	Trades (Buy)	Trades (Sell)	Trades	Dollar Vol. Traded (MM)	Yield (Buy)	Yield (Sell)	Price (Buy)	Price (Sell)
1	USB	U S BANCORP MEDIUM TERM NTS- BOOK ENTRY	Jan-33	Α	2.677	5,796	89	5,885	15			82.5	81.7
2	GS	GOLDMAN SACHS	Nov-24	Α	5.700	3,577	125	3,702	80	5.5	5.3	100.4	100.7
3	BAC	BANK OF AMERICA	Jan-25	BBB	4.000	2,073	112	2,185	35	5.7	5.3	96.6	97.4
4	CMCS	COMCAST	Nov-25	Α	5.250	1,745	76	1,821	14	5.2	4.7	100.2	101.3
5	GM	GENERAL MOTORS FINANCIAL COMPANY INC	Oct-23	BBB	4.875	1,698	132	1,830	34	5.6	5.8	99.4	99.3
6	С	CITIGROUP	Oct-23	BBB	3.875	1,625	561	2,186	22	5.0	5.2	98.9	98.8
7	HPQ	HEWLETT PACKARD	Oct-25	BBB	4.900	1,590	465	2,055	16	5.1	5.2	99.5	99.3
8	ВА	BOEING CO	May-25	BBB	4.875	1,549	164	1,713	27	5.4	5.4	98.8	98.7
9	AAPL	APPLE INC	Nov-27	AA	3.000	1,459	369	1,828	11	4.3	4.4	94.1	94.0
10	UTX	UNITED TECHNOLOGIES CORP	Aug-25	BBB	3.950	1,452	466	1,918	11	4.7	4.8	98.1	97.9
11	WFC	WELLS FARGO	Jul-27	BBB	4.300	1,452	380	1,832	22	5.2	5.3	96.1	95.9
12	CVS	CVS CAREMARK CORP	Mar-28	BBB	4.300	1,409	1,321	2,730	22	5.1	5.2	96.5	96.0
13	so	GEORGIA POWER CO	Jul-23	BBB	2.950	1,353	597	1,950	11	4.9	5.2	98.9	98.6
14	BAC	BANK OF AMERICA	Null	BBB	6.125	1,284	153	1,437	32			96.5	95.1
15	USB	U S BANCORP MEDIUM TERM NTS- BOOK ENTRY	Sep-24	Α	3.600	1,279	522	1,801	14	4.7	4.7	98.1	98.1
16	GS	GOLDMAN SACHS	Feb-26	Α	3.750	1,270	560	1,830	16	5.1	5.2	96.0	95.6
17	BP	ВР	Sep-25	Α	3.796	1,161	372	1,533	9	4.5	4.5	98.2	98.1
18	LNC	LINCOLN NATL CORP IND	Null	BBB	9.250	1,148	50	1,198	29			105.0	104.7
19	JPM	JP MORGAN CHASE	Jul-25	Α	3.900	1,106	501	1,607	16	4.6	4.7	98.3	98.1
20	GM	GENERAL MOTORS FINANCIAL COMPANY INC	Oct-25	BBB	6.125	1,103	108	1,211	24	6.0	5.7	100.3	100.9

Source: TRACE and Tradeweb Direct



⁻Based on odd-lot customer transactions (<100M) reported in TRACE.

⁻Ratings (AAA, AA, A, BBB, BB, B, C) are based on aggregate ratings from Moody's and S&P (when available).

Corporate Bonds: Top 20 Most Sold Issues

November 2022

Inde	x Ticker	Company	Maturity	Rating Key (Med)	Coupon	Trades (Buy)	Trades (Sell)	Trades	Dollar Vol. Traded (MM)	Yield (Buy)	Yield (Sell)	Price (Buy)	Price (Sell)
1	CVS	CVS CAREMARK CORP	Mar-28	BBB	4.300	1,409	1,321	2,730	22	5.1	5.2	96.5	96.0
2	MO	ALTRIA GROUP INC	Feb-26	BBB	4.400	264	1,128	1,392	10	5.1	5.1	97.9	98.0
3	BA	BOEING CO	Feb-26	BBB	2.196	353	1,114	1,467	22	5.5	5.6	90.6	90.3
4	CMCS	COMCAST	Oct-28	Α	4.150	1,064	1,014	2,078	19	4.9	5.0	96.1	95.9
5	VZ	VERIZON	Mar-27	BBB	4.125	490	995	1,485	16	4.7	4.8	97.6	97.5
6	CMCS	COMCAST	Feb-30	Α	2.650	56	880	936	9	5.0	5.4	86.1	83.5
7	GS	GOLDMAN SACHS	Mar-30	Α	3.800	724	818	1,542	14	5.5	5.5	89.8	89.7
8	WFC	WELLS FARGO	May-28	Α	3.584	170	811	981	6			92.6	92.3
9	DE	DEERE JOHN CAP CORP MEDIUM TERM NTS-BOOK	Mar-24	Α	2.600	41	807	848	17	4.8	4.9	97.2	97.1
10	GM	GENERAL MOTORS FINANCIAL COMPANY INC	Oct-28	BBB	5.000	263	739	1,002	12	5.9	6.0	95.4	94.9
11	BUD	ANHEUSER BUSCH INBEV WORLDWIDE INC	Jun-30	BBB	3.500	939	728	1,667	12	5.1	4.8	90.2	91.9
12	BAC	BANK OF AMERICA	Sep-49	BBB	6.100	422	693	1,115	16	6.2	6.3	97.7	97.3
13	Т	AT&T	Dec-33	BBB	2.550	409	672	1,081	6	5.4	5.3	76.6	77.3
14	JPM	JP MORGAN CHASE	Dec-29	Α	4.452	289	651	940	6			94.5	94.3
15	С	CITIGROUP	Jan-28	BBB	3.887	271	641	912	6			93.9	93.7
16	AMZN	AMAZON COM INC	Jun-30	AA	1.500	322	638	960	5	4.6	4.6	80.4	80.7
17	RDS	SHELL	Sep-26	AA	2.500	246	622	868	5	4.5	4.5	93.2	93.1
18	MS	MORGAN STANLEY	Jul-28	Α	3.591	195	600	795	4			91.9	91.7
19	so	GEORGIA POWER CO	Jul-23	BBB	2.950	1,353	597	1,950	11	4.9	5.2	98.9	98.6
20	С	CITIGROUP	Oct-23	BBB	3.875	1,625	561	2,186	22	5.0	5.2	98.9	98.8

Source: TRACE and Tradeweb Direct



⁻Based on odd-lot customer transactions (<100M) reported in TRACE.

⁻Ratings (AAA, AA, A, BBB, BB, B, C) are based on aggregate ratings from Moody's and S&P (when available).

Appendix

Maturity

We consider the following maturity ranges for maturity buckets. TTM is Time to Maturity in years.

1Y: 0.5 <= TTM <= 1.5 3Y: 2 <= TTM <= 4 5Y: 4 < TTM <= 6 10Y: 7.5 <= TTM <= 12.5 20Y: 15 <= TTM <=25

Rating

Rating buckets (AAA, AA, A, BBB, HY) in yield matrix are based on agggregate ratings from Moody's and S&P (when available).

For Corporate, we only consider transactions in bonds that are rated by both rating agencies.

- -Corporate AAA: Bonds rated AAA by both rating agencies.
- -Corporate AA: Bonds rated AA by both rating agencies.
- -Corporate A: Bonds rated A by both rating agencies.
- -Corporate BBB: Bonds rated BBB by both rating agencies.
- -Corporate High Yield: Bonds rated High Yield by both rating agencies.

(Transactions in corporate bonds that are rated as AA by one agency and as A by another agency are excluded.)

- -Municipal AAA: Bonds rates AAA by both rating agencies, or AAA by one agency and not rated by another agency.
- -Municipal AA: Bonds rated AA by both rating agencies, or AA by one agency and not rated by another agency.
- -Municipal A: Bonds rated A by both rating agencies, or A by ones agency and not rated by another agency.
- -Municipal BBB: Bonds rated High Yield by both rating agencies, or BBB by one agency and not rated by another agency.
- -Municipal High Yield: Bonds rated High Yield by both rating agencies, or High Yield by one agency and not rated by another agency.

(Transactions in municipal bonds that are rated as AA by one agency and as A by another agency are excluded.)

(Transactions in municipal bonds that are rated as AA by one agency and not rated by the other agency are included.)



Disclosures

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