

Market Transparency Report

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

March 2019

www.tradeweb.com

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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 March 2019

	Median Yield (bps)	Daily Trade Volume	Buy/Sell Ratio
Agency	-7	-0.4%	-0.2
CD	0	2.7%	-0.2
Corp	-13	-7.2%	-0.1
Municipal	-20	-2.3%	-0.3
Treasury	1	-0.8%	-0.9

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

Yield Matrix

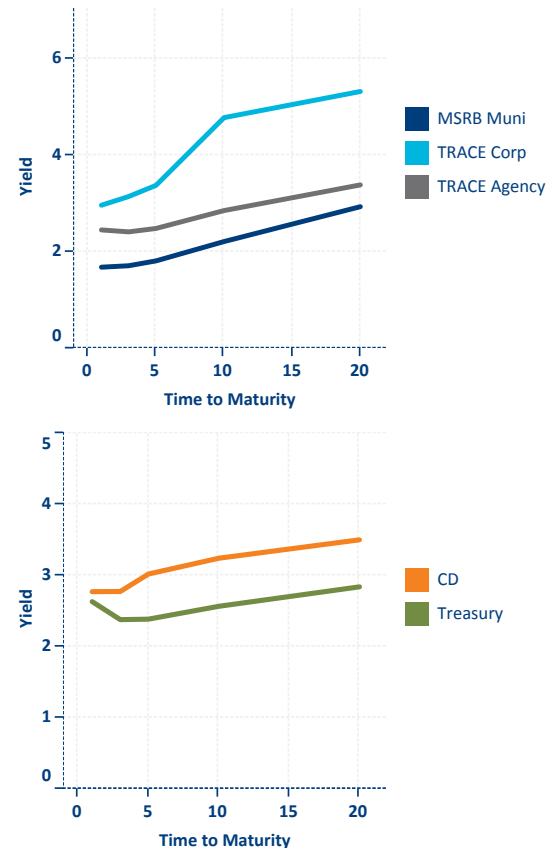
Average Yield, % for March 2019

Market	TTM					Median Maturity (Years)
	1	3	5	10	20	
MSRB Muni	1.7	1.7	1.8	2.2	2.9	11
TRACE Corp	3.0	3.1	3.4	4.8	5.3	3
TRACE Agency	2.5	2.4	2.5	2.9	3.4	3
CD	2.8	2.8	3.0	3.3	3.5	1
Treasury	2.5	2.4	2.4	2.6	2.8	0

Asset Class

Market	Category (Filtered)	Rating Key	1	3	5	10	20	Median Maturity (Years)
TRACE Corp	Financial	AA	2.6	2.6	2.9	3.0		2
		A	2.6	2.9	3.1	3.5	4.2	3
		BBB	3.2	3.5	3.7	4.2	5.3	5
		HY	2.8	3.9	4.3	8.2	6.1	4
		AAA	2.3	1.3	2.3	3.2	3.8	2
	Non-Financial	AA	2.5	2.5	2.8	3.5	3.9	2
		A	2.6	2.8	3.0	3.6	4.3	3
		BBB	3.0	3.8	4.0	5.2	6.1	8
		HY	8.5	7.8	7.6	9.4	19.2	8
MSRB Muni	GO	AAA	1.6	1.6	1.7	2.0	2.9	9
		AA	1.6	1.7	1.7	2.1	2.9	10
		A	1.7	1.8	2.0	2.3	3.2	8
		BBB	2.3	2.4	2.8	3.4	3.8	9
		HY	2.5	3.9	6.6	4.0	4.2	13
		AAA	1.6	1.7	1.7	2.1	2.7	8
	Revenue	AA	1.7	1.7	1.7	2.1	2.7	11
		A	1.8	1.8	1.9	2.3	2.9	14
		BBB	2.2	2.3	2.4	3.0	3.5	15
		HY	4.8	3.7	5.2	5.1	5.1	15

Average Yield, %



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 transactions 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.

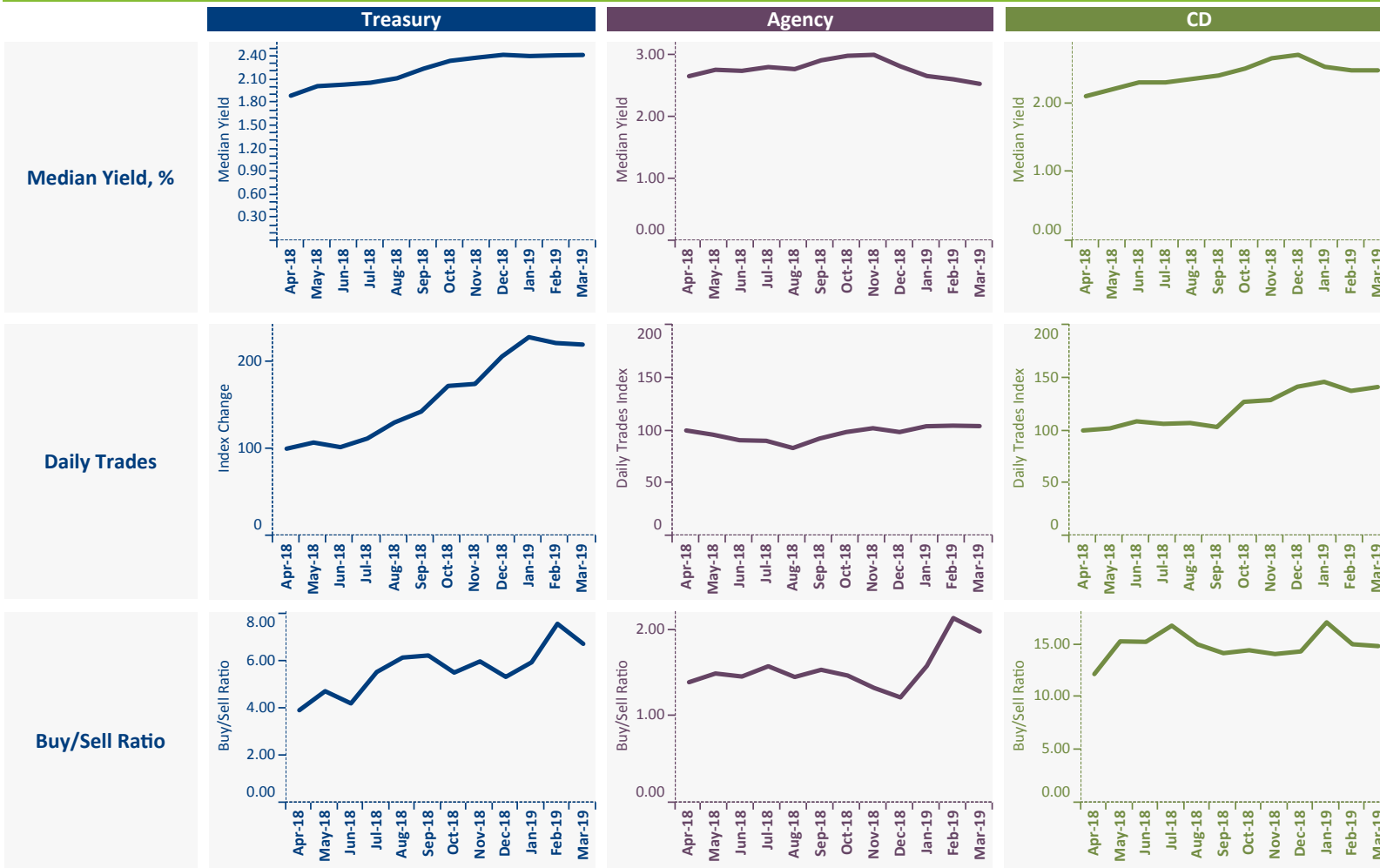
-The weights are based on transaction size.

-Yield summaries for Corporate and Agency exclude transactions in callable or floating-rate coupon bonds.

-Yield summaries for Municipal exclude transactions in taxable bonds.

-See appendix for the definition of maturity and rating buckets.

Treasury, Agency, CD Transaction Trend Summary



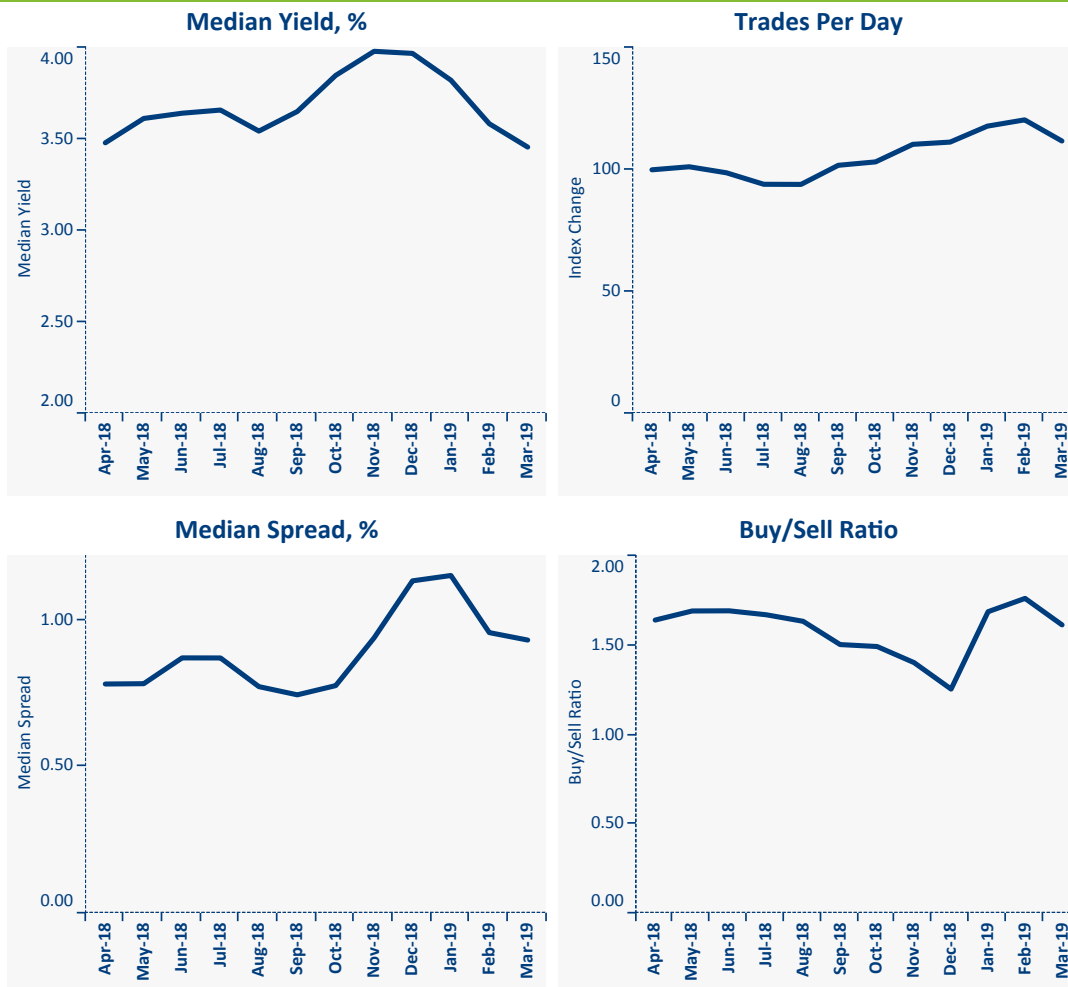
Daily Trades: First month = 100

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



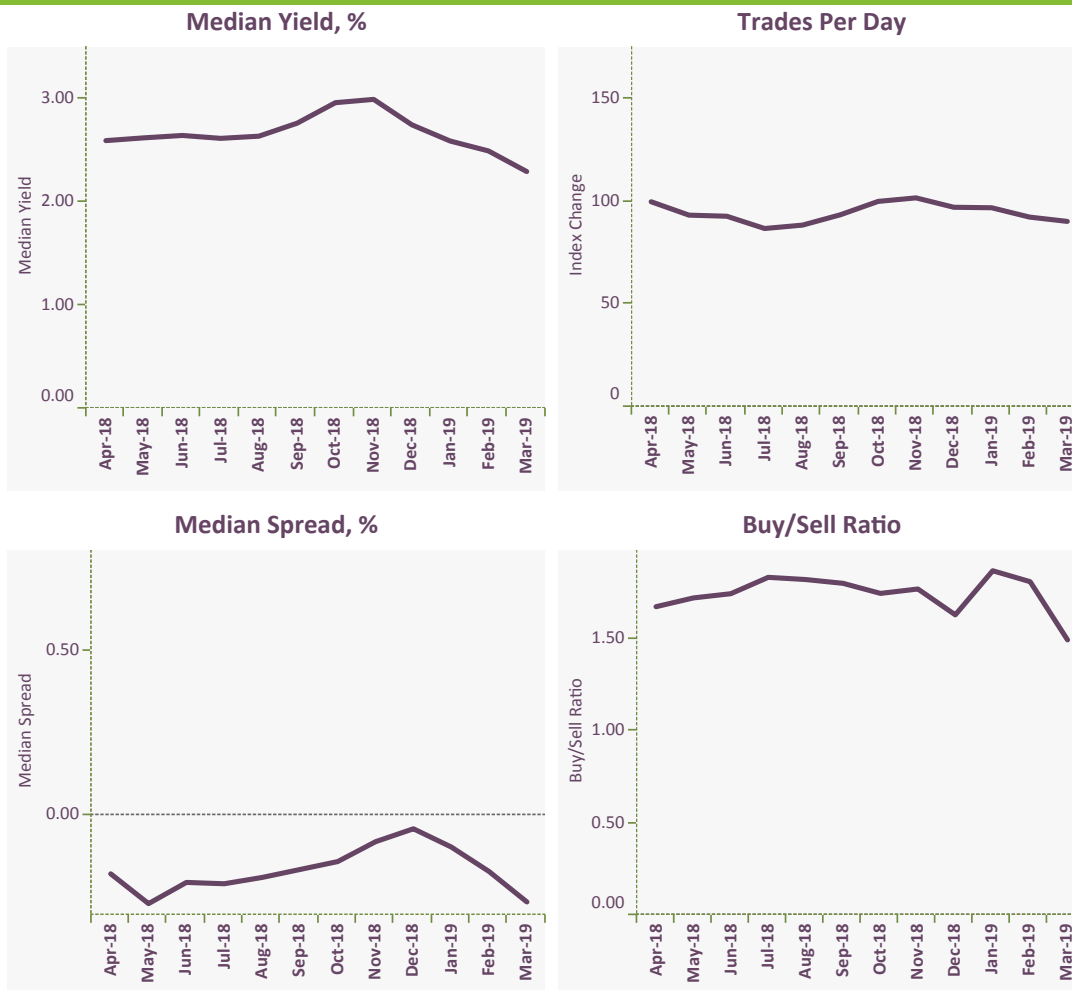
Daily Trades: First month = 100

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.

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Corporate Bonds: Top 20 Most Active Issuers

March 2019

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	BBB	921	3.2%	16,826	1.6	350	2.8	3.1	3.5	3.9	4.7
2	JPM	JP MORGAN CHASE	A	585	2.9%	15,312	1.5	325	2.7	2.9	3.2	3.6	4.3
3	C	CITIGROUP	BBB	420	2.5%	13,194	1.6	296	2.7	3.0	3.3	4.1	4.3
4	BAC	BANK OF AMERICA	A	412	2.4%	12,670	1.8	291	2.7	2.9	3.4	3.8	4.2
5	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	BBB	332	2.2%	11,456	1.4	229	3.0	3.5	3.9	4.9	5.3
6	WFC	WELLS FARGO	A	229	2.0%	10,362	1.6	230	2.7	2.9	3.2	3.6	4.4
7	T	AT&T	BBB	97	1.8%	9,584	1.6	199	2.7	3.0	3.5	4.1	5.0
8	MS	MORGAN STANLEY	BBB	924	1.8%	9,499	1.3	216	2.8	3.0	3.4	4.0	4.4
9	GM	GENERAL MOTORS FINANCIAL COMPANY INC	BBB	88	1.8%	9,353	4.1	199	3.1	3.4	4.1	5.0	6.1
10	F	FORD	BBB	257	1.6%	8,359	5.3	194	3.0	3.8	5.1	5.8	6.6
11	AAPL	APPLE INC	AA	52	1.3%	6,685	1.5	147	2.5	2.6	2.8	3.2	3.8
12	BRK	BERKSHIRE HATHAWAY	A	155	1.1%	5,758	1.7	136	2.9	2.7	2.9	4.3	5.1
13	CVS	CVS CAREMARK CORP	BBB	43	1.0%	5,436	2.5	123	2.9	3.1	3.5	4.1	4.9
14	PEMX	PETROLEOS MEXICANOS	BBB	42	0.9%	4,744	1.7	146	3.3	4.9	5.4	6.6	7.2
15	VZ	VERIZON	BBB	131	0.9%	4,639	0.9	96	2.7	2.7	3.0	3.7	4.3
16	AXP	AMERICAN EXPRESS	BBB	41	0.9%	4,570	1.6	104	2.7	2.9	3.2	3.2	4.1
17	CMCS	COMCAST	A	59	0.8%	4,301	1.6	94	2.7	2.8	3.1	3.5	4.2
18	BUD	ANHEUSER BUSCH INBEV WORLDWIDE INC	BBB	46	0.8%	4,200	2.1	85	2.6	2.9	3.2	3.9	4.8
19	ORCL	ORACLE CORP	AA	29	0.8%	4,072	1.4	81	2.5	2.7	2.9	3.3	3.9
20	MSFT	MICROSOFT CORP	AAA	39	0.8%	4,049	1.4	90	2.4	2.5	2.6	3.0	3.6

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

March 2019

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	NWL	NEWELL RUBBERMAID INC	BBB	11	0.3%	1,724	1,563	161	9.7	38	3.0	3.6	4.6		6.2
2	F	FORD	BBB	257	1.6%	8,359	7,037	1,322	5.3	194	3.0	3.8	5.1	5.8	6.6
3	GM	GENERAL MOTORS FINANCIAL COMPANY INC	BBB	88	1.8%	9,353	7,508	1,845	4.1	199	3.1	3.4	4.1	5.0	6.1
4	MO	ALTRIA GROUP INC	BBB	21	0.5%	2,719	2,140	579	3.7	63	2.8	3.0	3.4	4.5	5.5
5	FDX	FEDEX CORP	BBB	24	0.2%	1,271	999	272	3.7	26	2.7	3.0	3.1	3.6	4.8
6	PSEC	PROSPECT CAP CORP INTERNOTES BOOK ENTRY	BBB	174	0.4%	2,134	1,673	461	3.6	37	3.4	5.0	6.4	6.1	6.7
7	EIX	EDISON MISSION	BBB	34	0.6%	2,971	2,287	684	3.3	65	3.7	3.5	3.5	4.9	4.9
8	ABBV	ABBVIE INC	BBB	16	0.6%	3,079	2,349	730	3.2	70	2.8	3.0	3.3	4.1	4.9
9	BBBY	BED BATH & BEYOND INC	BBB	3	0.3%	1,681	1,267	414	3.1	22			5.4		7.7
10	TWX	TIME WARNER	BBB	27	0.3%	1,429	1,059	370	2.9	25		3.1	3.4	3.9	5.0
11	AMGN	AMGEN INC	A	31	0.5%	2,835	2,079	756	2.8	61	2.7	2.9	3.2	3.7	4.7
12	SAN	ABBEY NATL TREAS SVCS PLC	BBB	38	0.3%	1,779	1,298	481	2.7	48	3.0	3.4	3.1	4.5	
13	CI	CIGNA CORP	BBB	31	0.4%	1,969	1,422	547	2.6	39	2.9	3.0	3.2	3.9	5.0
14	VOD	VODAFONE	BBB	14	0.3%	1,397	1,008	389	2.6	41		3.1	3.6	4.4	5.2
15	COF	CAPITAL ONE FINL CORP	BBB	33	0.7%	3,533	2,544	989	2.6	78	2.8	3.1	3.5	4.1	
16	QCOM	QUALCOMM	A	11	0.4%	1,891	1,350	541	2.5	44	2.7	3.1	3.3	3.6	4.6
17	CVS	CVS CAREMARK CORP	BBB	43	1.0%	5,436	3,860	1,576	2.5	123	2.9	3.1	3.5	4.1	4.9
18	WAG	WALGREEN CO	BBB	9	0.3%	1,369	963	406	2.4	27	2.8	3.0	3.6		4.6
19	AIG	AIG	BBB	30	0.3%	1,780	1,241	539	2.3	39	2.8	3.1	3.5	4.1	4.8
20	GT	GOODYEAR TIRE & RUBBER	BB	5	0.3%	1,406	969	437	2.2	31	2.5		4.9	6.0	

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

March 2019

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	CS	CREDIT SUISSE	N/R	364	0.2%	1,185	357	828	0.43	22	3.1	3.1	3.6	4.6	
2	ACT	ALLERGAN	BBB	10	0.3%	1,554	517	1,037	0.50	27	3.1	3.6	3.9		5.0
3	CTL	CENTURYLINK	B	33	0.5%	2,612	1,051	1,561	0.67	61	4.3	4.9	6.0	8.2	9.0
4	EDP	ENTERPRISE PRODS OPER LLC	BBB	33	0.2%	1,295	592	703	0.84	28	3.0	3.0	3.3	3.5	4.7
5	PTRB	PETROBRAS	BB	24	0.8%	4,023	1,882	2,141	0.88	157		3.9	4.6	5.9	6.6
6	VZ	VERIZON	BBB	131	0.9%	4,639	2,198	2,441	0.90	96	2.8	2.8	3.1	3.8	4.4
7	RY	ROYAL BANK OF CANADA	AA	228	0.4%	1,921	921	1,000	0.92	44	2.7	2.8	3.1	4.1	4.5
8	DIS	DISNEY WALT CO NEW MEDIUM TERM NTS BOOK	A	40	0.2%	1,296	635	661	0.96	29	2.7	2.7	3.9	3.1	4.1
9	XRX	XEROX CORP	BB	11	0.2%	1,221	629	592	1.06	26	3.9	4.6	5.3		7.2
10	BP	BP	A	52	0.6%	3,320	1,718	1,602	1.07	65	2.9	2.9	3.1	3.5	
11	FTR	FRONTIER COMMUNICATIONS CORP	C	25	0.3%	1,721	890	831	1.07	24	11.1	22.1	22.5	17.9	16.5
12	KMI	KINDER MORGAN ENERGY PARTNERS L P	BBB	62	0.4%	1,871	975	896	1.09	40	3.1	3.2	3.5	5.1	5.3
13	PNC	PNC FDG CORP	BBB	34	0.3%	1,394	745	649	1.15	30	2.8	2.9	3.2	3.4	
14	USB	U S BANCORP MEDIUM TERM NTS- BOOK ENTRY	A	31	0.4%	2,073	1,109	964	1.15	41	2.8	2.9	3.1	3.3	
15	DUK	DUKE ENERGY	BBB	104	0.4%	1,912	1,036	876	1.18	48	2.9	2.9	3.3	3.4	4.1
16	HPQ	HEWLETT PACKARD	BBB	17	0.4%	1,910	1,035	875	1.18	43		3.2	4.8	5.2	5.7
17	HBC	HSBC	N/R	436	0.6%	3,248	1,812	1,436	1.26	64	3.1	3.1	3.4	5.0	4.5
18	PEP	PEPSICO	A	34	0.3%	1,659	924	735	1.26	38	2.7	2.6	2.7	3.2	3.9
19	STX	SEAGATE HDD CAYMAN	BBB	6	0.2%	1,230	687	543	1.27	29		4.2	5.2	5.8	6.8
20	V	VIVENDI	AA	8	0.2%	1,240	693	547	1.27	26		2.6		3.1	3.5

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

March 2019

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	GM	GENERAL MOTORS FINANCIAL COMPANY INC	Jul-20	BBB	3.200	1,570	68	1,638	20	3.1	3.1	100.1	100.1
2	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	Null	BBB	5.000	1,309	988	2,297	36	5.3	5.4	93.8	93.0
3	NEE	FPL GROUP CAP INC	Mar-79	BBB	5.650	1,277	654	1,931	7			25.0	25.0
4	BBBY	BED BATH & BEYOND INC	Aug-34	BBB	4.915	1,087	200	1,287	14	7.7	7.8	75.4	74.2
5	F	FORD	Dec-26	BBB	4.346	1,024	149	1,173	29	5.6	5.8	92.4	91.2
6	BAC	BANK OF AMERICA	Dec-48	BBB	5.875	977	81	1,058	31	5.9	6.0	100.0	98.7
7	WFC	WELLS FARGO	Null	BBB	0.000	714	236	950	21	5.6	5.7	99.4	97.1
8	TWX	TIME WARNER	Feb-27	BBB	3.800	674	40	714	10	3.9	4.1	99.6	98.1
9	AMGN	AMGEN INC	May-24	A	3.625	653	59	712	13	3.2	3.2	102.0	101.9
10	ECPG	ENCORE CAP GROUP INC	Mar-21	N/R	2.875	647	8	655	9	6.8	6.7	92.9	92.9
11	PSEC	PROSPECT CAP CORP INTERNOTES BOOK ENTRY	Mar-25	BBB	6.375	587	1	588	10	6.4	6.8	99.9	98.2
12	BAC	BANK OF AMERICA	Aug-24	BBB	4.200	579	180	759	14	3.6	3.7	102.8	102.6
13	C	CITIGROUP	Apr-25	BBB	3.300	562	55	617	13	3.4	3.5	99.2	99.0
14	JPM	JP MORGAN CHASE	Null	BBB	6.000	502	171	673	9	5.8	5.8	103.6	103.3
15	NWL	NEWELL RUBBERMAID INC	Nov-23	BBB	5.000	500	14	514	10	4.7	5.0	100.7	100.0
16	GT	GOODYEAR TIRE & RUBBER	May-26	BB	5.000	488	195	683	15	5.8	5.9	95.4	94.6
17	LM	LEGG MASON INC	Oct-22	N/R	6.750	488		488	9	7.1		99.0	
18	EIX	EDISON MISSION	Apr-20	BBB	2.125	484	48	532	11	3.7	4.1	98.3	98.0
19	BAC	BANK OF AMERICA	Jan-23	A	3.300	482	168	650	14	3.1	3.1	100.9	100.7
20	PTRB	PETROBRAS	Jan-28	BB	5.999	461	293	754	32	5.7	5.9	102.0	101.0

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

March 2019

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	GE	GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	Null	BBB	5.000	1,309	988	2,297	36	5.3	5.4	93.8	93.0
2	ACT	ALLERGAN	Mar-22	BBB	3.450	105	733	838	13	3.4	3.6	100.2	99.7
3	OMI	OWENS & MINOR INC NEW	Dec-24	B	4.375	150	670	820	4	12.3	14.7	68.1	60.7
4	NEE	FPL GROUP CAP INC	Mar-79	BBB	5.650	1,277	654	1,931	7			25.0	25.0
5	JPM	JP MORGAN CHASE	Null	BBB	5.300	325	579	904	13	5.2	5.2	101.7	101.3
6	GS	GOLDMAN SACHS	Null	BB	5.375	209	489	698	12	5.3	5.3	101.3	100.9
7	PTRB	PETROBRAS	Mar-24	BB	6.250	112	474	586	24	4.6	4.6	107.5	107.3
8	T	AT&T	Feb-22	BBB	3.000	325	400	725	8	3.0	3.0	100.0	100.0
9	VZ	VERIZON	Nov-24	BBB	3.500	302	386	688	8	3.1	3.2	101.7	101.5
10	EIX	EDISON MISSION	Null	BB	6.250	96	376	472	9	6.4	6.3	98.2	98.5
11	AAPL	APPLE INC	May-23	AA	2.400	432	370	802	18	2.7	2.8	98.7	98.6
12	JPM	JP MORGAN CHASE	Oct-26	A	2.950	333	367	700	6	3.5	3.5	96.4	96.3
13	C	CITIGROUP	Null	BB	6.300	231	361	592	12	6.2	6.2	101.5	101.1
14	CBL	CBL & ASSOCS LTD PARTNERSHIP	Dec-26	BB	5.950	179	349	528	9	10.5	10.8	76.4	74.8
15	GPS	GAP	Apr-21	BBB	5.950	116	321	437	9	3.5	3.7	104.3	103.9
16	VZ	VERIZON	Sep-23	BBB	5.150	223	311	534	10	2.9	3.0	109.3	109.1
17	ORCL	ORACLE CORP	Nov-27	AA	3.250	270	307	577	6	3.3	3.3	99.5	99.4
18	PTRB	PETROBRAS	Jan-28	BB	5.999	461	293	754	32	5.7	5.9	102.0	101.0
19	WFC	WELLS FARGO	Oct-26	A	3.000	128	286	414	8	3.6	3.7	96.3	95.6
20	AVP	AVON PRODS INC	Mar-23	B	7.000	170	278	448	10	8.4	8.7	95.5	94.2

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: $0.5 \leq TTM \leq 1.5$
 3Y: $2 \leq TTM \leq 4$
 5Y: $4 < TTM \leq 6$
 10Y: $7.5 \leq TTM \leq 12.5$
 20Y: $15 \leq TTM \leq 25$

Rating

Rating buckets (AAA, AA, A, BBB, HY) in yield matrix are based on aggregate 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 rated 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 one 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

This report represents certain customer trades in securities that have been reported by dealers to FINRA's Trade Reporting and Compliance Engine ("TRACE"), and the Municipal Securities Rulemaking Board ("MSRB"). The report does not necessarily reflect all transactions that were effected on dates noted. There is the possibility of errors or delays in the trade submission process. Prices for transactions vary with market conditions and can be affected by trade size and other factors. The information provided has been obtained from sources deemed to be reliable, however Tradeweb Direct does not guarantee the accuracy of the information contained in this report.

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