

CRTx®

Credit Risk Transfer Return Tracking Index

www.markfontanilla.com/crtx-index

CRTx® Index Data Suite:

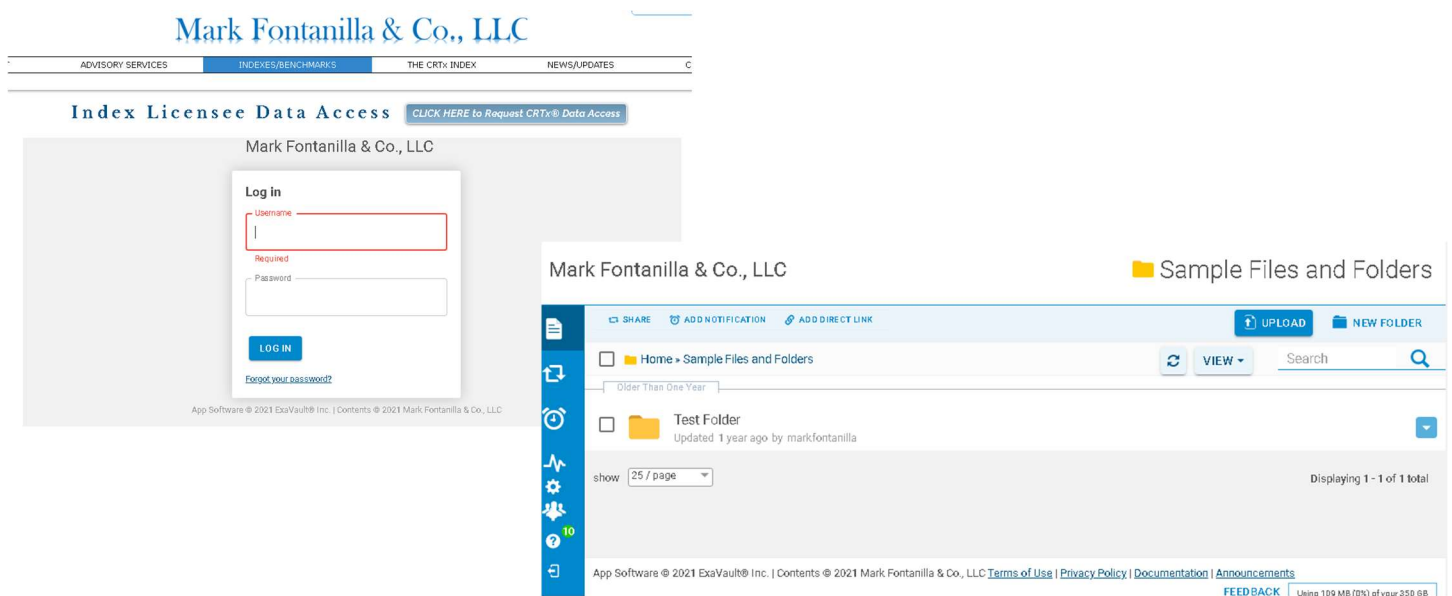
Right-To-Use License Options -
*Standard Reports, File Layouts, Glossaries,
& Sample Sets*

(Updated: Effective 5/31/2022)*

CRTx® Data Suite: Client Access

Client Data Files can be accessed 2 ways:

1. MFCo Client Data Portal



2. Secure File Transfer Protocol (SFTP) or FTP File Server Location

- a. Clients will have their own secure password-authenticated SFTP/FTP location for “pull” file access of CRTx® Index data files.

CRTx® Daily Return Summary (Email Distribution)*Availability:* Daily on each Index calculation day.*Sample Release*

CRTx® (Credit Risk Transfer Return Tracking Index) Return Summary											
		RETURNS									
		Index	Period						Annualized		
		Level	Daily	Wkly	Mthly	MTD	QTD	YTD	1-YR	3-YR	As of Date
		vs. Date	12-30-21	12-23-21	11-30-21	11-30-21	9-30-21	12-31-20	12-31-20	12-31-18	
CRTx® Aggregate		163.17	0.02%	0.00%	0.30%	0.30%	0.63%	5.86%	5.86%	4.79%	12-31-21
Upper Mezzanine		123.73	0.00%	0.01%	0.03%	0.03%	0.21%	0.82%	0.82%	2.35%	12-31-21
Lower Mezzanine		173.44	0.01%	-0.02%	0.16%	0.16%	0.49%	3.88%	3.88%	3.60%	12-31-21
Subordinate		238.61	0.03%	0.03%	0.51%	0.51%	0.86%	10.73%	10.73%	7.25%	12-31-21
Upper Mezzanine	2022		-	-	-	-	-	-	-	-	12-31-21
	2021	100.69	0.00%	0.01%	0.03%	0.03%	0.21%	0.69%	-	-	12-31-21
	2020	102.51	0.00%	0.01%	0.08%	0.08%	0.19%	0.77%	0.77%	-	12-31-21
	2019		-	-	-	-	-	-	-	-	12-31-21
	2018	108.58	0.00%	-0.02%	0.09%	0.09%	0.30%	1.02%	1.02%	2.14%	12-31-21
	2017	112.38	0.00%	-0.03%	-0.01%	-0.01%	0.21%	0.95%	0.95%	2.09%	12-31-21
	2016		-	-	-	-	-	-	-	-	12-31-21
	2015		-	-	-	-	-	-	-	-	12-31-21
	<=2014		-	-	-	-	-	-	-	-	12-31-21
Lower Mezzanine	2022		-	-	-	-	-	-	-	-	12-31-21
	2021	103.41	0.01%	0.04%	0.11%	0.11%	0.18%	3.41%	-	-	12-31-21
	2020	101.00	0.01%	-0.04%	0.17%	0.17%	0.23%	2.62%	2.62%	-	12-31-21
	2019	112.95	0.01%	0.02%	0.14%	0.14%	0.32%	2.88%	2.88%	-	12-31-21
	2018	115.54	0.00%	0.04%	0.34%	0.34%	0.63%	4.60%	4.60%	5.24%	12-31-21
	2017	130.66	0.01%	-0.02%	0.08%	0.08%	0.63%	4.23%	4.23%	3.98%	12-31-21
	2016	148.30	0.01%	-0.16%	0.00%	0.00%	0.35%	3.52%	3.52%	2.42%	12-31-21
	2015	138.04	0.01%	-0.04%	0.22%	0.22%	0.53%	2.91%	2.91%	2.30%	12-31-21
	<=2014	167.90	0.01%	-0.04%	0.30%	0.30%	0.98%	6.10%	6.10%	3.38%	12-31-21
Subordinate	2022		-	-	-	-	-	-	-	-	12-31-21
	2021	107.14	0.01%	0.07%	0.97%	0.97%	0.49%	7.14%	-	-	12-31-21
	2020	96.73	0.04%	-0.07%	0.12%	0.12%	0.79%	10.81%	10.81%	-	12-31-21
	2019	131.64	0.07%	0.14%	0.46%	0.46%	0.42%	11.41%	11.41%	-	12-31-21
	2018	127.47	0.00%	0.05%	0.38%	0.38%	0.38%	8.33%	8.33%	9.19%	12-31-21
	2017	157.90	0.01%	0.06%	0.31%	0.31%	1.93%	11.21%	11.21%	5.93%	12-31-21
	2016	197.54	0.03%	0.10%	0.78%	0.78%	1.85%	11.96%	11.96%	4.41%	12-31-21
	2015	208.87	0.02%	-0.35%	0.24%	0.24%	0.72%	4.79%	4.79%	2.60%	12-31-21
	<=2014										12-31-21

CRTx® Index Rebalancing Report (PDF/Email Distribution)

Availability: Monthly on the business day after the last business day of each month.

Sample Release (Page 1/Cover)





CRTx®

Credit Risk Transfer Return Tracking Index

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12/31/2020 Index Rebalancing Update

CRTx® Aggregate Index: December/2020

Highlights

The CRTx® Aggregate finished 2020 strong, ending December up 1.91% MoM, and Q4 positive by 4.16%, while closing out the year with a relatively modest, but meaningful 2.26% YTD total return. The COVID-19 pandemic's extraordinary stress on the CRT market in Q1, where the CRTx® Aggregate lost nearly 25%, and the sector's subsequent recovery, lagged other rates and credit sectors substantially, but the rebound in market values, credit performance, issuance, and market technicals all helped benchmark GSE CRT end 2020 on a number of positive notes. The CRTx® Aggregate Index starts 2021 at \$47.7 billion in market value (vs \$49.7 billion at the beginning of January) across 230 constituents.

- o In a continuing reversal of Q1's fallout across the CRT complex, Index gains were led through Q4 and YTD by solid market value improvements and relatively low credit loss realizations in SUBs (B-classes), which in aggregate finished +9.70% Q4, but -3.44% YTD. Intrinsic risk is certainly much higher at the bottom of the capital structure right now, specifically for pre-COVID vs. COVID era deals, but losses have been contained and DQs are improving.
- o Elsewhere in the complex, UMEZZ (i.e. M1s), showed the least amount of volatility through the COVID crisis, and have returned slightly better than carry at 3.01% YTD in aggregate as newer, higher-margin COVID M1s replaced older M1s in the float.
- o Aggregate LMEZZ (M2s) closed 2020 up a modest 1.91% overall as seasoned 2013-2017 issues, especially early fixed severity "Type I" deals, commensurately lagged newer issues. With all pre-COVID actual loss deals unanimously failing DQ tests, pre-COVID M2 principal windows have lengthened, and the associated reference pools are carrying higher DQs/forbearances vs. cleaner COVID-era new issues, but CEs have stabilized/improved.

Dec 2020 CRTx® Agg Tot Ret	+191 bps
Price Attribution	+157 bps
Paydown Attribution	+0 bps
Cpn Accr&Pmt Attribution	+34 bps
Excess Return	+190 bps
Volatility (Annualized)	1.28%
UPB Paydown %	1.21%
QTD Total Return	4.16%
YTD Total Return	2.26%

CRTx® Rebalancing For Jan 2021	
As of 12/31/2020	
January 2021 Aggregate Constituency (w/MoM Δ):	
• Beg. UPB (\$B):	\$47.15 +0.5%
• Beg. Market Value (\$B):	\$47.72 +2.0%
• Constituents:	230 +2
• WAvg Constituent Value:	101.22 +1.54 pb
• WAvg Constituent Coupon:	3.92% -1 bps

Index (+) Entries* & (-) Exits

(+ STACR 2020-DNA6 M1/M2/B1/B2

(-) STACR 2014-HQ2 M2

(-) STACR 2015-HQ2 M2

* 1.66% of Beg. Aggregate Index Market Value

CRTx® Mkt Val Breakdown 1/2021				
Deal Vintage	Aggregate	UMEZZ	LMEZZ	SUB
All	100%	5.2%	67.2%	27.6%
2020	23.9%	4.8%	10.4%	8.8%
2019	15.1%	0.0%	9.1%	6.0%
2018	16.1%	0.1%	11.3%	4.7%
2017	18.0%	0.3%	13.2%	4.5%
2016	11.9%	0.0%	9.9%	2.0%
2015	7.1%	0.0%	5.4%	1.7%
<=2014	7.8%	0.0%	7.8%	0.0%

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CRTx® Constituent File

Availability: Released on the last business day of the month (.xls file format)

Glossary & Layout

CONSTITUENT FILE			
Element Name	Description	Type	Format
Sequence	Index entry sequence number.	ALPHA-NUMERIC	X(4)
Class	Individual security class name.	ALPHA-NUMERIC	X(30)
CUSIP	Unique 9-Digit alphanumeric security identifier.	ALPHA-NUMERIC	X(9)
Shelf	Issuer shelf name acronym.	ALPHA-NUMERIC	X(20)
Pool_Type	Reference pool collateral type: LLTV (Low Loan to Value), HLTV (High Loan to Value).	ALPHA-NUMERIC	X(10)
Tranche_Type	First-level Sub-Index categorization: UMEZZ (Upper Mezzanine), LMEZZ (Lower Mezzanine), SUB (Subordinate).	ALPHA-NUMERIC	X(10)
Deal_Vintage	Year of deal issuance.	NUMERIC	9999
Valuation Month Weighting	Monthly constituent market value weighting in index.	NUMERIC	9999.99999999

Sample Data

Sequence	1	2	3	4	5	6	7	8	9	10
Class	STACR 2013-DN1 M1	STACR 2013-DN1 M2	CAS 2013-C01 M1	CAS 2013-C01 M2	STACR 2013-DN2 M1	STACR 2013-DN2 M2	CAS 2014-C01 M1	CAS 2014-C01 M2	STACR 2014-DN1 M1	STACR 2014-DN1 M2
CUSIP	3137G0AA7	3137G0AB5	30711XAA2	30711XAB0	3137G0AC3	3137G0AD1	30711XAC8	30711XAD6	3137G0AK5	3137G0AL3
Shelf	STACR	STACR	CAS	CAS	STACR	STACR	CAS	CAS	STACR	STACR
Pool Type	LLTV	LLTV	LLTV	LLTV	LLTV	LLTV	LLTV	LLTV	LLTV	LLTV
Tranche Type	UMEZZ	LMEZZ	UMEZZ	LMEZZ	UMEZZ	LMEZZ	UMEZZ	LMEZZ	UMEZZ	UMEZZ
Deal Vintage	2014	2014	2014	2014	2014	2014	2014	2014	2014	2014
1/1/2015	0.01689380	0.02531842	0.02334800	0.03060363	0.01644940	0.03258053	0.02752222	0.03191281	0.01872132	0.02993733
2/1/2015	0.01653839	0.02510174	0.02268256	0.03078485	0.01598361	0.03271725	0.02684673	0.03260844	0.01854249	0.03035645
3/1/2015	0.01333736	0.02095269	0.01845555	0.02577721	0.01287751	0.02780969	0.02181217	0.02726594	0.01517331	0.02531948
4/1/2015	0.01243317	0.01978273	0.01737978	0.02434383	0.01205826	0.02612723	0.02066603	0.02570366	0.01442764	0.02416604
5/1/2015	0.01141040	0.01871482	0.01603238	0.02296315	0.01104458	0.02503224	0.01912706	0.02452003	0.01346956	0.02278927
6/1/2015	0.01030440	0.01741653	0.01450873	0.02154548	0.00998221	0.02315969	0.01738940	0.02283723	0.01246289	0.02111618

CRTx® Daily File

Availability: Released daily on Index Valuation days (.xls file format)

Glossary & Layout

DAILY FILE			
ELEMENT NAME	DESCRIPTION	TYPE	FORMAT
PART 1: DAILY INDEX VALUES			
Valuation Date	Day of Index calculations.	DATE	M/D/YYYY
AGG	CRTx® Aggregate Index level (daily).	NUMERIC	9999.99999999
UMEZZ	Upper Mezzanine Sub-Index level (daily).	NUMERIC	9999.99999999
LMEZZ	Lower Mezzanine Sub-Index level (daily).	NUMERIC	9999.99999999
SUB	Subordinate Sub-Index level (daily).	NUMERIC	9999.99999999
UMEZZ/LMEZZ	Upper/Lower Mezzanine Sub-Index level (daily).	NUMERIC	9999.99999999
LMEZZ/SUB	Lower Mezzanine/Subordinate Sub-Index level (daily).	NUMERIC	9999.99999999
CAS	CAS Sub-Index level (daily).	NUMERIC	9999.99999999
STACR	STACR Sub-Index level (daily).	NUMERIC	9999.99999999
LLTV	Low LTV Sub-Index level (daily).	NUMERIC	9999.99999999
HLTV	High LTV Sub-Index level (daily).	NUMERIC	9999.99999999
UMEZZ DEAL VINTAGE SUB-INDEXES			
LMEZZ DEAL VINTAGE SUB-INDEXES			
SUB DEAL VINTAGE SUB-INDEXES			
PART 2: DAILY RETURN VALUES			
Valuation Date	Day of Index calculations.	DATE	M/D/YYYY
AGG	CRTx® Aggregate Index daily return (daily).	NUMERIC	99.99%
UMEZZ	Upper Mezzanine Sub-Index daily return (daily).	NUMERIC	99.99%
LMEZZ	Lower Mezzanine Sub-Index daily return (daily).	NUMERIC	99.99%
SUB	Subordinate Sub-Index daily return (daily).	NUMERIC	99.99%
UMEZZ/LMEZZ	Upper/Lower Mezzanine Sub-Index daily return (daily).	NUMERIC	99.99%
LMEZZ/SUB	Lower Mezzanine/Subordinate Sub-Index daily return (daily).	NUMERIC	99.99%
CAS	CAS Sub-Index daily return (daily).	NUMERIC	99.99%
STACR	STACR Sub-Index daily return (daily).	NUMERIC	99.99%
LLTV	Low LTV Sub-Index daily return (daily).	NUMERIC	99.99%
HLTV	High LTV Sub-Index daily return (daily).	NUMERIC	99.99%
UMEZZ DEAL VINTAGE SUB-INDEXES			
LMEZZ DEAL VINTAGE SUB-INDEXES			
SUB DEAL VINTAGE SUB-INDEXES			

Sample Data

Valuation Date	AGG	UMEZZ	LMEZZ	SUB	UMEZZ_LMEZZ	LMEZZ_SUB	CAS	STACR	LLTV
1/2/2015	107.63951462	103.19798837	111.59998065		107.63951462	111.59998065	104.06600363	108.99694476	107.62317686
1/5/2015	107.13515288	102.97959150	110.80562311		107.13515288	110.80562311	103.61870278	108.44289909	107.08026096
1/6/2015	106.67390988	102.77519305	110.08396001		106.67390988	110.08396001	103.20506113	107.94114270	106.58320216

Valuation Date	AGG	UMEZZ	LMEZZ	SUB	UMEZZ_LMEZZ	LMEZZ_SUB	CAS	STACR	LLTV
1/2/2015									
1/5/2015	-0.47%	-0.21%	-0.71%		-0.47%	-0.71%	-0.43%	-0.51%	-0.50%
1/6/2015	-0.43%	-0.20%	-0.65%		-0.43%	-0.65%	-0.40%	-0.46%	-0.46%

CRTx® Monthly Metrics File (*)

Availability - Released on the last business day of the month (.xls file format)

Glossary & Layout

MONTHLY METRICS FILE (1)			
ELEMENT NAME	DESCRIPTION	TYPE	FORMAT
Val_Dt	Applicable month-end of index constituency valuation (last business day of the respective Valuation Month).	DATE	M/D/YYYY
Index	Index/Sub-Index name within CRTx® Index Suite	ALPHA-NUMERIC	X(30)
MTDTotRet	Period total return percentage.	NUMERIC	99.99%
PriceRet	Period return percentage contributed by month-to-date constituent price changes.	NUMERIC	99.99%
AccrRet	Period return percentage contributed by month-to-date coupon accruals.	NUMERIC	99.99%
CPNRet	Period return percentage contributed by month-to-date coupon payments.	NUMERIC	99.99%
PaydownRet	Period return percentage contributed by month-to-date principal payments.	NUMERIC	99.99%
WritedownRet	Period return percentage contributed by month-to-date principal writedowns.	NUMERIC	99.99%
IntShortRet	Period return percentage contributed by month-to-date interest shortfalls.	NUMERIC	99.99%
BegConstituents	Number of index constituents for each respective valuation month.	NUMERIC	9999
BegUPB	Unpaid principal balance of all index constituent securities starting each respective valuation month.	NUMERIC	9(13).99
BegMktVal	Total cash market value of all index constituent securities starting each respective valuation month.	NUMERIC	9(13).99
BegWAvgSecMktVal	Weighted average security cash market value (price + accrued interest) starting each respective valuation month.	NUMERIC	999.99
BegWAvgCPNMargin	Weighted average security coupon rate starting each respective valuation month.	NUMERIC	9999
BegWAvgCPN	Weighted average security coupon margin (in bps) starting each respective valuation month.	NUMERIC	99.999
EndWAvgDM	Weighted average security discount margin (in bps) at end of each respective valuation month.	NUMERIC	9999
EndWAvgLife (2)*	Constituency weighted average life at end of each respective valuation month (available starting 5/2018).	NUMERIC	99.99
EndWAvgDur (2)*	Constituency weighted average modified duration at end of each respective valuation month (available starting 5/2018).	NUMERIC	99.99
EndWAvgCvx (2)*	Constituency weighted average convexity at end of each respective valuation month (available starting 5/2018).	NUMERIC	99.99
EndWAvgYld (2)*	Constituency weighted average yield at end of each respective valuation month (available starting 5/2018).	NUMERIC	99.99
EndIndexVal	Month-end index value (last business day of the respective Valuation Month).	NUMERIC	9999.99999999

** Due to a calculation convention change from the Index's security pricing/information source (Refinitiv), certain data elements, and all corresponding files, will reflect this change effective 5/31/2022 (history will NOT be back-filled).*

(1) A separate Monthly Metrics File is provided for the CRTx® Aggregate and each 1st-Level Sub-Index

(2) Calculation convention based on 1) static rates and 2) 10CPR/OCDR to the earlier of a) optional redemption date or b) maturity date, as of 5/31/2022 (Note: Prior to 5/31/2022, values were calculated to maturity date).

CRTx® Monthly Metrics File (continued)

Sample Data

Val_Dt	Index	MTDTotRet	PriceRet	AccrRet	CPNRet	PaydownRet	WritedownRet	IntShortRet	BegConstituents	BegUPB
5/31/2018	CRTx® AGG	0.34%	-0.07%	0.01%	0.42%	-0.03%	-0.0013%	-0.0001%	171	42241567665

BegMktVal	BegWAVgSecMktV	BegWAVgCPNMar	BegWAVgCPN	EndWAVgDM	EndWAVgLife	EndWAVgDur	EndWAVgCvx	EndWAVgYld	EndIndexVal
45959484313	108.8	360	5.50	165	4.87	3.91	0.26	4.26	141.07763220

CRTx® Index Desk Reference (PDF/Email/Portal Distribution)

Availability - Monthly on the business day after the last business day of each month.

Sample Index/Sub-Index Outputs (Standard Outputs)

CRTx® AGG (as of 10/6/20)

Month End/ Rebalancing Date	STARTING VALUES					M/E BASKET METRICS			M/E RETURN ATTRIBUTION					M/E RETURN METRICS			PERIODIC RETURNS			ANNUALIZED RETURN			
	Index Mkt Val (\$B)	Cl.	WA Mkt Px+ Accr	WA Cpn Margin	WA Cpn 351	WA Disc Margin	WA Life	WA Yield	Price Return	Cpn Accrual Return	CPN Pmt Return	Paydown Pmt Return	Write- down Return	Int Shortfall Return	Index Total Return	Excess Return	Volatility	Sharpe Ratio	MTD	QTD	YTD	1-YR	3-YR
1/31/2019	48.814	194	105.2	6.02	351	192	4.53	4.41	1.35%	0.02%	0.48%	-0.02%	-0.00015%	-0.0001%	1.82%	1.61%	2.65%	7.25	1.82%	1.82%	1.82%	3.07%	9.12%
2/28/2019	49.835	197	106.6	6.03	352	187	4.49	4.35	0.25%	-0.05%	0.49%	-0.02%	-0.0008%	-0.0001%	0.67%	0.48%	1.14%	5.58	0.67%	2.50%	2.50%	4.03%	9.79%
3/29/2019	51.194	203	106.6	6.00	351	200	4.49	4.35	-0.41%	0.02%	0.44%	-0.02%	-0.0010%	-0.0001%	0.03%	-0.17%	1.10%	-1.84	0.02%	2.52%	2.52%	4.27%	8.51%
4/30/2019	52.277	207	106.0	5.98	349	190	4.48	4.20	0.53%	0.02%	0.49%	-0.02%	-0.0012%	-0.0001%	1.01%	0.80%	0.77%	12.30	1.01%	1.01%	3.56%	4.44%	8.01%
5/31/2019	53.037	209	106.5	5.96	348	207	4.43	4.14	-0.65%	-0.03%	0.51%	-0.03%	-0.0016%	-0.0001%	-0.19%	-0.40%	1.49%	-3.06	-0.19%	0.81%	3.36%	3.89%	7.73%
6/28/2019	52.833	213	105.8	5.92	349	218	4.40	4.03	-0.13%	0.00%	0.44%	-0.03%	-0.0025%	-0.0001%	0.27%	0.09%	1.96%	0.59	0.27%	1.09%	3.64%	4.12%	7.87%
7/31/2019	52.160	209	105.7	5.91	350	215	4.38	3.99	0.16%	0.04%	0.47%	-0.03%	0.0003%	-0.0001%	0.64%	0.44%	2.01%	2.52	0.64%	0.64%	4.30%	4.00%	7.21%
8/30/2019	53.382	216	105.8	5.76	349	239	4.41	3.78	-0.64%	-0.03%	0.48%	-0.03%	-0.0012%	-0.0001%	-0.22%	-0.38%	2.51%	-1.75	-0.22%	0.42%	4.07%	2.93%	6.78%
9/30/2019	53.219	219	105.0	5.63	349	233	4.42	3.86	0.22%	0.01%	0.45%	-0.03%	-0.0016%	-0.0001%	0.65%	0.47%	1.40%	4.25	0.65%	1.07%	4.75%	3.23%	6.53%
10/31/2019	52.920	222	105.3	5.53	351	234	4.41	3.89	-0.07%	0.01%	0.44%	-0.03%	-0.0016%	-0.0001%	0.34%	0.18%	1.32%	1.57	0.34%	0.34%	5.11%	3.88%	6.78%
11/29/2019	53.606	228	105.2	5.33	351	232	4.52	3.79	0.11%	-0.03%	0.44%	-0.03%	-0.0010%	-0.0001%	0.48%	0.36%	0.96%	4.92	0.48%	0.83%	5.61%	4.82%	6.75%
12/31/2019	53.690	233	105.2	5.23	352	226	4.48	3.89	0.25%	0.01%	0.43%	-0.04%	-0.0015%	-0.0001%	0.65%	0.51%	0.55%	10.93	0.65%	1.48%	6.30%	6.30%	6.52%
1/31/2020	52.467	228	105.6	5.35	356	209	4.37	3.42	0.81%	-0.02%	0.45%	-0.04%	-0.0007%	-0.0001%	1.21%	1.08%	1.17%	11.01	1.21%	1.21%	1.21%	5.66%	6.34%
2/28/2020	53.579	232	106.4	5.20	354	224	4.47	3.32	-0.49%	-0.02%	0.39%	-0.04%	-0.0019%	-0.0001%	-0.16%	-0.28%	0.95%	-3.84	-0.16%	1.05%	1.05%	4.79%	6.12%
3/31/2020	55.278	240	105.6	5.11	348	1,088	4.55	10.97	-25.78%	0.03%	0.39%	-0.03%	-0.0014%	-0.0001%	-25.39%	-25.52%	39.15%	-8.35	-25.39%	-24.61%	-24.61%	-21.84%	-3.97%
4/30/2020	40.768	234	77.9	4.45	351	795	4.23	7.78	8.14%	-0.06%	0.53%	0.36%	-0.0007%	-0.0002%	8.97%	8.96%	13.06%	7.97	8.97%	8.97%	-17.85%	-15.68%	-1.77%
5/29/2020	42.820	229	84.0	4.03	355	622	4.07	6.28	6.39%	0.00%	0.39%	0.26%	-0.0008%	-0.0001%	7.03%	7.02%	4.16%	20.61	7.03%	16.62%	-12.08%	-9.72%	0.17%
6/30/2020	43.696	218	89.2	3.77	360	421	4.04	4.32	8.53%	0.02%	0.35%	0.13%	-0.0008%	-0.0001%	9.04%	9.03%	6.01%	16.53	9.04%	27.16%	-4.13%	-1.67%	2.65%
7/31/2020	45.227	214	96.8	3.83	365	492	4.25	4.89	-0.75%	-0.01%	0.35%	0.02%	-0.0009%	-0.0001%	-0.39%	-0.40%	2.29%	-2.01	-0.39%	-0.39%	-4.51%	-2.68%	2.13%
8/31/2020	44.843	217	96.1	3.87	370	415	4.56	4.49	1.28%	0.02%	0.32%	0.07%	-0.0009%	-0.0001%	1.69%	1.68%	1.31%	15.30	1.69%	1.29%	-2.89%	-0.81%	2.99%
9/30/2020	44.863	217	97.4	3.92	374	410	4.74	4.40	0.77%	-0.01%	0.35%	0.01%	-0.0007%	-0.0001%	1.11%	1.10%	0.73%	18.01	1.11%	2.41%	-1.82%	-0.37%	3.46%
10/30/2020	44.865	220	98.1	3.90	375														0.11%	0.11%	-1.71%	-0.32%	3.40%
11/30/2020																			-	-	-	-	-
12/31/2020																			-	-	-	-	-

CRTx® FXD1 (as of 10/6/20)

Month End/ Rebalancing Date	INDEX CONSTITUENT BASKET: MONTHLY STARTING VALUES					M/E BASKET METRICS			M/E RETURN ATTRIBUTION					M/E RETURN METRICS				PERIODIC RETURNS			ANNUALIZED RETURN	
	Index Mkt Val (\$B)	CL	WA Mkt P+ Accr	WA Cpn Margin	WA Cpn	WA Disc Margin	WA Life	WA Yield	Price Return	Cpn Accrual Return	Cpn Pmt Return	Payout Pmt Return	Write-down Return	Int Shortfall Return	Index Total Return	Excess Return	Volatility	Sharpe Ratio	MTD	QTD	YTD	1-YR
1/31/2019	3,629,606,975	12	108.1	6.33	382	129	3.44	3.72	0.48%	0.02%	0.49%	-0.03%	0.0000%	0.0000%	0.95%	0.75%	2.63%	3.40	0.95%	0.95%	1.91%	7.85%
2/28/2019	3,615,965,382	12	108.7	6.34	383	118	3.41	3.59	0.26%	-0.05%	0.50%	-0.03%	0.0000%	0.0000%	0.69%	0.50%	1.80%	3.67	0.68%	1.64%	3.20%	8.22%
3/29/2019	3,595,573,959	12	109.0	6.33	384	121	3.37	3.50	-0.21%	0.02%	0.45%	-0.03%	0.0000%	0.0000%	0.23%	0.03%	2.07%	0.20	0.23%	1.87%	3.29%	7.25%
4/30/2019	3,560,159,679	12	108.8	6.34	385	117	3.33	3.39	0.02%	0.02%	0.50%	-0.04%	0.0000%	0.0000%	0.50%	0.28%	1.03%	3.29	0.50%	0.50%	3.28%	6.69%
5/31/2019	3,530,292,322	12	108.9	6.34	386	127	3.28	3.29	-0.37%	-0.03%	0.53%	-0.04%	0.0000%	0.0000%	0.09%	-0.12%	1.42%	-0.95	0.09%	0.58%	2.47%	3.12%
6/28/2019	3,479,967,929	12	108.5	6.31	388	154	3.25	3.32	-0.93%	0.00%	0.45%	-0.05%	0.0000%	0.0000%	-0.53%	-0.71%	3.76%	-2.37	-0.53%	0.05%	1.92%	6.60%
7/31/2019	3,404,949,032	11	107.5	6.30	389	144	3.20	3.22	0.17%	0.05%	0.49%	-0.06%	0.0000%	0.0000%	0.65%	0.45%	5.13%	1.03	0.65%	0.65%	2.59%	5.75%
8/30/2019	3,369,777,070	11	107.8	6.17	390	181	3.15	3.16	-1.07%	-0.03%	0.51%	-0.06%	0.0000%	0.0000%	-0.65%	-0.82%	4.82%	-1.92	-0.65%	-0.01%	1.92%	5.28%
9/30/2019	3,288,010,831	11	106.6	6.06	391	175	3.12	3.23	0.18%	0.01%	0.47%	-0.06%	0.0000%	0.0000%	0.61%	0.43%	3.02%	1.79	0.61%	0.60%	2.53%	4.90%
10/31/2019	3,247,128,562	10	106.9	5.94	392	158	3.07	3.07	0.28%	0.01%	0.46%	-0.07%	0.0000%	0.0000%	0.69%	0.53%	2.24%	2.69	0.69%	0.69%	3.24%	5.30%
11/29/2019	3,209,987,089	10	107.2	5.75	393	153	3.03	2.93	0.08%	-0.03%	0.46%	-0.08%	0.0000%	0.0000%	0.43%	0.31%	2.01%	2.04	0.43%	1.13%	3.69%	5.40%
12/31/2019	3,162,555,107	10	107.3	5.65	394	154	2.99	3.08	-0.18%	0.02%	0.45%	-0.08%	0.0000%	0.0000%	0.21%	0.07%	1.60%	0.54	0.21%	1.34%	3.91%	5.14%
1/31/2020	3,109,539,098	10	107.2	5.74	395	133	2.94	2.60	0.50%	-0.02%	0.48%	-0.07%	0.0000%	0.0000%	0.89%	0.76%	2.92%	3.13	0.89%	0.89%	3.84%	4.83%
2/28/2020	3,079,428,592	10	107.7	5.62	396	132	2.90	2.36	-0.05%	-0.02%	0.42%	-0.07%	0.0000%	0.0000%	0.28%	0.17%	1.17%	1.87	0.28%	1.17%	3.43%	4.76%
3/31/2020	3,036,373,902	10	107.7	5.59	396	978	2.85	10.41	-19.17%	0.03%	0.42%	-0.07%	0.0000%	0.0000%	-18.79%	-18.92%	31.70%	-7.37	-18.79%	-17.84%	-16.19%	-2.51%
4/30/2020	2,416,150,858	10	86.8	4.92	397	1,223	2.77	12.36	-7.36%	-0.05%	0.52%	0.16%	0.0000%	0.0000%	-6.73%	-6.73%	30.83%	-2.56	-6.72%	-6.72%	-23.36%	-22.22%
5/29/2020	2,204,242,239	10	80.3	4.46	397	1,413	2.68	14.77	-3.13%	0.00%	0.45%	0.25%	0.0000%	0.0000%	-2.44%	-2.45%	27.36%	-1.01	-2.44%	-9.00%	-25.23%	-24.19%
6/30/2020	2,080,230,206	10	77.5	4.16	399	976	2.65	10.12	12.20%	0.03%	0.45%	0.49%	0.0000%	0.0000%	13.17%	13.16%	32.68%	4.49	13.17%	2.98%	-15.38%	-13.74%
7/31/2020	2,277,583,718	10	87.0	4.19	400	1,292	2.63	13.39	-7.25%	-0.02%	0.43%	0.35%	0.0000%	0.0000%	-6.49%	-6.50%	11.47%	-6.64	-6.49%	-6.49%	-20.87%	-19.85%
8/31/2020	2,037,526,227	9	80.4	4.19	402	839	2.58	8.75	11.11%	0.03%	0.42%	0.76%	0.0000%	0.0000%	12.31%	12.30%	15.73%	8.95	12.31%	5.02%	-11.13%	-9.40%
9/30/2020	2,185,866,775	9	89.5	4.20	403	780	2.53	8.04	1.89%	-0.02%	0.40%	0.36%	0.0000%	0.0000%	2.65%	2.64%	2.34%	13.35	2.65%	7.80%	-8.78%	-7.56%
10/30/2020	2,135,050,580	9	91.2	4.19	404													0.27%	0.27%	-8.53%	-7.58%	
11/30/2020																						
12/31/2020																						

CRTx® SUB ACT 2015 2016 (as of 10/6/20)

Month End/ Rebalancing Date	INDEX CONSTITUENT BASKET: MONTHLY STARTING VALUES					M/E BASKET METRICS			M/E RETURN ATTRIBUTION					M/E RETURN METRICS			PERIODIC RETURNS			ANNUALIZED RETURN			
	Index Mkt Val	WA Mkt Cl. P+Accr1	WA Cpn Margin3	WA Cpn Margin3	WA Disc Margin4	WA Life5	Yield5	Price Return6	Cpn Accrual Return	CPN Pmt Return	Payout Pmt Return8	Write-down Int Shortfall Return	Index Total Return	Excess Return9	Volatility10	Sharpe Ratio11	MTD	QTD	YTD	1-YR	3-YR		
1/31/2019	1,790,691,591	21	132.6	12.59	1008	494	9.10	7.58	-1.60%	0.03%	0.79%	0.00%	-0.0301%	-0.0027%	-0.81%	-1.02%	2.78%	-4.40	-0.81%	-0.81%	5.33%	19.71%	
2/28/2019	1,762,014,865	21	130.6	12.59	1008	494	9.02	7.57	-0.07%	0.03%	0.83%	0.00%	-0.0103%	-0.0029%	0.67%	-0.49%	0.89%	7.18	0.67%	-0.15%	-0.15%	4.34%	21.36%
3/29/2019	1,759,264,599	21	130.4	12.57	1008	495	8.67	7.38	-0.35%	0.03%	0.75%	0.00%	-0.0193%	-0.0029%	0.41%	0.21%	1.77%	1.44	0.41%	0.26%	0.26%	6.56%	21.61%
4/30/2019	1,753,253,758	21	129.9	12.57	1008	482	8.58	7.23	0.59%	0.03%	0.83%	0.00%	-0.0194%	-0.0029%	1.43%	1.21%	2.20%	6.57	1.43%	1.43%	1.69%	6.77%	27.71%
5/31/2019	1,763,722,683	21	130.7	12.56	1008	462	8.49	6.74	1.11%	-0.05%	0.88%	0.00%	-0.0354%	-0.0029%	1.90%	1.70%	2.62%	7.36	1.90%	3.36%	3.62%	9.36%	20.72%
6/28/2019	1,781,773,399	21	132.1	12.51	1008	454	8.41	6.45	0.44%	0.00%	0.73%	0.00%	-0.0413%	-0.0030%	1.13%	0.95%	1.83%	6.54	1.13%	4.53%	4.80%	9.56%	20.84%
7/31/2019	1,788,887,065	21	132.7	12.49	1008	449	8.12	6.38	-0.19%	0.08%	0.78%	0.00%	0.0164%	-0.0030%	0.69%	0.49%	0.89%	6.32	0.69%	0.69%	5.52%	9.27%	20.32%
8/30/2019	1,787,213,731	21	132.6	12.35	1008	449	8.03	5.86	0.27%	0.05%	0.83%	0.00%	-0.0246%	-0.0030%	1.02%	0.86%	0.87%	11.21	1.02%	1.72%	6.59%	9.55%	19.14%
9/30/2019	1,790,717,333	21	132.9	12.23	1008	481	7.95	6.33	-0.56%	0.03%	0.76%	0.00%	-0.0325%	-0.0030%	0.20%	0.02%	1.19%	0.22	0.20%	1.92%	6.80%	9.15%	16.94%
10/31/2019	1,780,594,431	21	132.2	12.10	1008	488	7.86	6.51	-2.06%	0.03%	0.76%	0.00%	-0.0303%	-0.0030%	-1.31%	-1.47%	6.53%	-2.56	-1.31%	-1.31%	5.41%	7.04%	15.54%
11/29/2019	1,743,783,687	21	129.5	11.90	1008	517	7.95	6.74	-0.08%	-0.05%	0.79%	0.00%	-0.0159%	-0.0031%	0.64%	0.51%	1.63%	4.17	0.64%	-0.68%	6.08%	6.63%	15.52%
12/31/2019	1,741,168,255	21	129.3	11.79	1008	476	7.69	6.49	1.56%	0.03%	0.78%	0.00%	-0.0244%	-0.0032%	2.35%	2.21%	1.68%	4.07	2.35%	1.65%	8.57%	8.57%	15.72%
1/31/2020	1,768,417,900	21	131.3	11.87	1008	506	7.60	6.46	0.21%	-0.02%	0.80%	0.00%	-0.0059%	-0.0031%	0.97%	0.85%	2.82%	3.61	0.97%	0.97%	0.97%	10.53%	14.90%
2/28/2020	1,771,477,484	21	131.6	11.74	1008	481	7.51	5.93	0.31%	-0.02%	0.72%	0.00%	-0.0463%	-0.0032%	0.76%	0.84%	1.22%	9.06	0.96%	1.94%	1.94%	10.84%	13.38%
3/31/2020	1,775,749,981	21	132.0	11.71	1008	1,856	7.43	19.45	-48.40%	0.07%	0.71%	0.00%	-0.0305%	-0.0032%	-47.65%	-47.78%	162.98%	-3.33	-47.65%	-46.64%	-46.64%	-42.21%	-8.71%
4/30/2020	1,96,932,758	21	68.2	11.03	1008	1,679	7.37	17.90	5.55%	-0.13%	1.48%	0.00%	-0.0127%	-0.0063%	6.87%	6.87%	18.72%	4.35	6.87%	6.87%	42.97%	-39.11%	-7.45%
5/29/2020	1,96,383,758	21	71.8	10.57	1008	1,440	7.24	15.21	6.32%	0.00%	1.18%	0.00%	-0.0217%	-0.0060%	7.47%	7.46%	16.52%	5.58	7.47%	14.86%	-38.71%	-35.80%	-5.21%
6/30/2020	1,027,200,312	21	76.4	10.25	1008	1,057	7.02	11.51	27.08%	0.08%	1.11%	0.00%	-0.0244%	-0.0057%	28.25%	28.23%	60.59%	4.96	28.24%	47.30%	-21.40%	-18.57%	0.39%
7/31/2020	1,305,899,984	21	97.1	10.27	1008	882	6.96	9.23	7.76%	-0.03%	0.99%	0.00%	-0.0243%	-0.0045%	8.64%	8.63%	19.74%	4.90	8.64%	8.64%	-14.60%	-12.13%	3.20%
8/31/2020	1,406,550,329	21	104.6	10.25	1008	888	6.89	9.40	0.46%	0.06%	0.79%	0.00%	-0.0225%	-0.0042%	1.28%	1.27%	1.25%	12.12	1.28%	10.03%	-13.51%	-11.91%	3.52%
9/30/2020	1,413,467,764	21	105.2	10.26	1008	833	6.81	8.81	2.66%	-0.02%	0.84%	0.00%	-0.0165%	-0.0042%	3.45%	3.44%	5.10%	7.98	3.45%	13.82%	-10.53%	-9.05%	5.87%
10/30/2020	1,450,395,179	21	107.9	10.23	1008														-0.81%	-0.81%	-11.26%	-9.99%	5.37%
11/30/2020																							
12/31/2020																							

Sample Monthly Mapping Update

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