

CRTx®

Credit Risk Transfer Return Tracking Index

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CRTx® Index Rebalancing Update

02/28/2023

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Return Roundup

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The CRTx® Aggregate posted a 1.53% total return for February, the 4th month in row of positive gains for the index...as a higher, more inverted curve helped ravage stocks and fixed rates, while the latest STACR tender, bull-flattening of the credit curve, and a negative supply technical helped buoy CRT sector performance...

Index Rebalancing Metrics

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The CRTx® March basket UPB drops -1.1% MoM to \$50.87B, with a total market value of \$50.67B. Constituent count rises to 327 securities from 125 deals as one class tenders out, while CAS 2023-R02 adds 4 tranches into the March 2023 Index basket... Benchmark GSE CRT float shrank -\$556M in February, or -1.08% MoM...

Latest Deal Performance

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CRT credit performance showed slight MoM DQ improvements in the February statements (based on STACR, CAS activity lags by 1 month, but tracks very closely). Seasoned DQ levels remained well-contained as 180+ bucket DQ #s/\$s continued to shrink. Newer deal total DQ changes were slightly mixed MoM, but still relatively low...

Relative Value Thoughts

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Cashflow yields/carry across the CRT complex still look relatively favorable vs. rating-equivalent IG/HY...current carry advantage to CRT's bigger floater coupons...Lower negative convexity disadvantage and shorter durations provide defense vs. curve vol...

CRTx® Index Summary Panels

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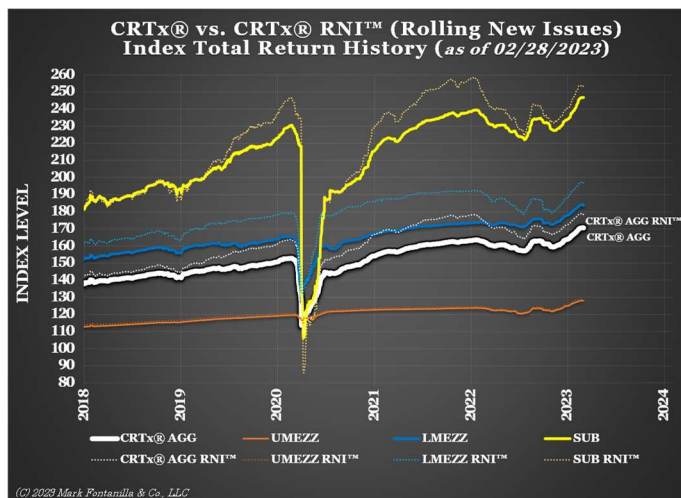
- CRTx® AGG Index Rebalancing Stats
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Additional Tables/Metrics

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- CRTx® Index Suite Total Return Performance: Month-End Matrix
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- Latest Deal Performance Metrics: CAS
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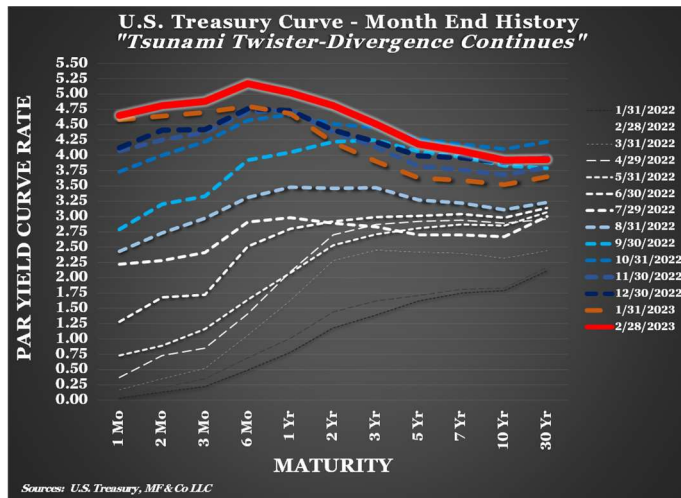
CRTx® & RNI™ Index Suites: Historical Levels



Sector Musings

Divergent "Tsunami Twister" Curve Swells Again

The rate complex sold off again, with the short end of the curve edging up as the Fed raised another 25bps in February, and forwards hint at the next hike. Meanwhile, note/bond yields rose by 30-60bps, making 2s/10s invert to -89bps at month-end. The divergent front-vs.-back "tsunami twister" curve continues to ravage valuations and funding costs. For example, the 6mth part of the curve is currently the high point at 5.17%, while the 10yr ended Feb. at 3.92% for a negative 125bps disparity. The twisted curve with localized vol continues to make risk/reward value challenging; looks like the market is going to have earn its money the old-fashioned way with carry as king, and CRT floaters right now have relatively big coupons, which may be getting bigger soon...



02/28/2023 Index Rebalancing Update (continued)

CRTx® Aggregate Index

Feb 2023 CRTx® AGG Tot Ret	+153 bps
Index Month-End Closing Value	170.53
Price Attribution	+82 bps
Paydown Attribution	+5 bps
Cpn Accr&Pmt Attribution	+66 bps
Writedown+Int Shortfall Attribution	-0.08 bps
Excess Return	+118 bps
Volatility (Annualized)	1.36%
UPB Paydown %	2.45%
QTD Total Return	4.00%
YTD Total Return	4.00%

CRTx® AGG Rebalancing For Mar 2023
As of 2/28/2023

March 2023 Aggregate Basket (w/MoM Δ):

• Beg. UPB (\$B):	\$50.87	-1.1%
• Beg. Market Value (\$B):	\$50.67	-0.5%
• Constituents:	327	+3
• WAvg Constituent Value:	99.62	+0.61 pts
• WAvg Constituent Coupon:	8.64%	+14 bps

Index (+) Entries* & (-) Exits

(+) CAS 2023-R02 1M1/1M2/1B1/1B2

(-) STACR 2016-HQA1 M3 (Tender Retirement)

* 1.40% of Beg. Index Market Value

CRTx® Mkt Val Breakdown: 3/2023 Basket				
Deal Yr	Aggregate	UMEZZ	LMEZZ	SUB
All	100.1%	26.0%	28.6%	45.4%
2023	2.8%	1.6%	0.8%	0.5%
2022	39.9%	21.0%	10.3%	8.7%
2021	22.7%	3.4%	7.8%	11.5%
2020	10.6%	0.0%	2.6%	8.0%
2019	6.3%	0.0%	0.5%	5.8%
2018	5.9%	0.0%	1.3%	4.6%
2017	4.9%	0.0%	1.4%	3.5%
2016	3.2%	0.0%	1.4%	1.8%
2015	2.1%	0.0%	1.0%	1.1%
<=2014	1.7%	0.0%	1.7%	0.0%

CRTx® RNI™ (Rolling New Issues) Agg. Index

Feb 2023 CRTx® RNI™ AGG Tot Ret	+85 bps
Index Month-End Closing Value	178.39
Price Attribution	+21 bps
Paydown Attribution	0 bps
Cpn Accr&Pmt Attribution	+64 bps
Writedown+Int Shortfall Attribution	+0 bps
Excess Return	+51 bps
Volatility (Annualized)	1.65%
UPB Paydown %	0.50%
QTD Total Return	3.40%
YTD Total Return	3.40%

CRTx® RNI™ AGG Rebalancing For Mar 2023
As of 2/28/2023

March 2023 Aggregate Basket (w/MoM Δ):

• Beg. UPB (\$B):	\$16.11	-12.3%
• Beg. Market Value (\$B):	\$16.35	-11.6%
• Constituents:	65	-5
• WAvg Constituent Value:	101.54	+0.79 pts
• WAvg Constituent Coupon:	8.62%	+24 bps

Index (+) Entries* & (-) Exits

(+) CAS 2023-R02 1M1/1M2/1B1/1B2

(-) CAS 2022-R02 2M1/2M2/2B1/2B2

(-) STACR 2022-DNA2 M1A/M1B/M2/B1/B2

* 4.34% of Beg. Index Market Value

CRTx® RNI™ Mkt Val Breakdown: 3/2023 Basket				
Deal Yr	Aggregate	UMEZZ	LMEZZ	SUB
All	100.0%	56.3%	26.1%	17.6%
2023	8.8%	4.9%	2.5%	1.4%
2022	91.2%	51.4%	23.6%	16.2%
2021	0.0%	0.0%	0.0%	0.0%
2020	0.0%	0.0%	0.0%	0.0%
2019	0.0%	0.0%	0.0%	0.0%
2018	0.0%	0.0%	0.0%	0.0%
2017	0.0%	0.0%	0.0%	0.0%
2016	0.0%	0.0%	0.0%	0.0%
2015	0.0%	0.0%	0.0%	0.0%
<=2014	0.0%	0.0%	0.0%	0.0%

02/28/2023 Index Rebalancing Update (continued)

Return Roundup

The CRTx® Aggregate posted a 1.53% total return for February, the 4th month in row of positive gains for the index. Benchmark GSE CRT was able to run counter to the red seen in broader markets over the month as a higher, more inverted curve helped ravage stocks and fixed rates, while the latest STACR tender, bull-flattening of the credit curve, and a negative supply technical helped buoy CRT sector performance.

02/28/2023		M/E RETURN ATTRIBUTION						Index Total Return
CRTx®	Price	CPN Accr.	CPN Pmt	Pay-down	Write-down Retun	Int Shortfall		
AGG	0.82%	-0.12%	0.78%	0.05%	-0.0002%	-0.0006%	1.53%	
UMEZZ	0.18%	-0.09%	0.61%	0.00%	0.0000%	0.0000%	0.69%	
LMEZZ	0.37%	-0.11%	0.69%	0.09%	0.0000%	0.0000%	1.05%	
SUB	1.47%	-0.14%	0.94%	0.06%	-0.0004%	-0.0013%	2.32%	
CRTx® RNI™	Price	CPN Accr.	CPN Pmt	Pay-down	Write-down Retun	Int Shortfall	Index Total Return	
AGG	0.21%	-0.12%	0.76%	0.00%	0.0000%	0.0000%	0.85%	
UMEZZ	0.06%	-0.10%	0.64%	-0.01%	0.0000%	0.0000%	0.59%	
LMEZZ	0.59%	-0.12%	0.79%	0.00%	0.0000%	0.0000%	1.26%	
SUB	0.14%	-0.16%	1.08%	0.00%	0.0000%	0.0000%	1.06%	

Similar to IG/HY, February’s sector positive returns in excess of carry benefitted from moderate spread firming, particularly in B-designated classes and M2s, as the lower part of the capital structure led the way.

The latest STACR tender gave some boost to aggregate returns, with the offer taking out \$989M in old M3s/B1s at a premium to par, helping seasoned paper outperform newer issues overall:

CRTx® vs. RNI™ Index Returns as of Feb. 2023

- **UMEZZ Index (M1 variants)**
 - + 0.69%/+ 0.59% MoM Feb
 - + 3.62%/+ 3.71% YoY Feb
- **LMEZZ Index (M2s/M3s)**
 - + 1.05%/+ 1.26% MoM Feb
 - + 5.94%/+ 3.51% YoY Feb
- **SUB Index (B1/B2/Bs)**
 - + 2.32%/+ 1.06% MoM Feb
 - + 5.69%/+ 3.06% YoY Feb

This also contributed to February’s favorable supply technicals, which saw a historically low issuance pace (1 CAS deal at \$709M), while normal paydowns remained very low given the single-digit CPR backdrop.

Index Rebalancing Metrics

The CRTx® March basket UPB drops -1.1% MoM to \$50.87B, with a total market value of \$50.67B. Constituent count rises to 327 securities from 125 deals as one class tenders out, while CAS 2023-R02 adds 4 tranches into the March 2023 Index basket.

Index Composition

For the March Index basket, composition shifts incrementally more towards the “wings” of the CRT credit curve, due in large part to the latest STACR tender retiring a substantial amount of seasoned M3 and B1 paper (see Sector Supply):

CRTx® AGG Breakdown by Market Value (March 2023 basket):

- 26.0% ↑ (vs 25.5% in Feb) - UMEZZ (M1/old M2s)
- 28.6% ↓ (vs 29.3% in Feb) - LMEZZ (M2/old M3s)
- 45.4% ↑ (vs 45.2% in Feb) - SUBs (B/B1/B2s)

The Index WAvg constituent cash market value improved +0.61 points MoM to \$99.62 (RNI™ AGG +0.79 points to \$101.54). Incrementally rising short rates prodded LIBOR/SOFR resets up again, increasing the Index-blended constituent coupon +14bps to 8.64% and effective carry to ~77bps to next reset.

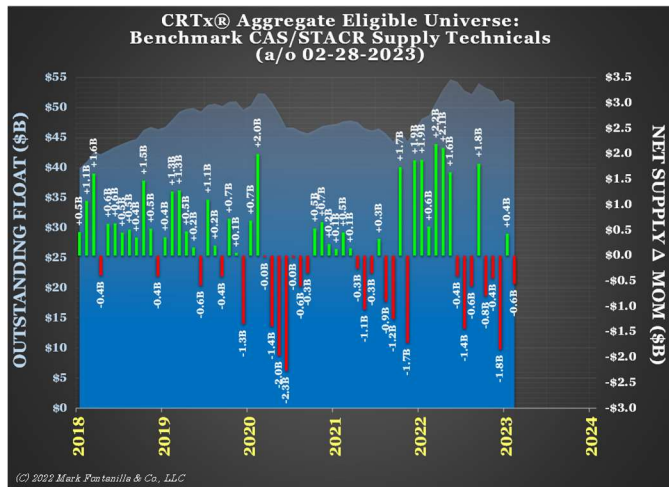
March basket average life/duration to optional-redemption edges out slightly to 3.36/2.67 years.

GSE CRT New Deal Pricing Margin & Orig. CE						
Close Date	Deal	LTW	Pricing Margin (bps) / Original CE (% pts)			
			M1 or M1A/M1B	M2	B1	B2
2022						
01/20	CAS 22-R01	L	100/2.30	190/1.45	315/0.85	600/0.25
01/21	STACR 22-DNA1	L	100/3.00 185/2.00	250/1.25	340/0.75	710/0.25
02/09	CAS 22-R02	H	120/2.45	300/1.55	450/0.90	765/0.35
02/11	STACR 22-DNA2	L	130/3.40 240/2.00	375/1.25	475/0.75	850/0.25
03/18	STACR 22-HQA1	H	210/3.75 350/2.60	525/1.25	700/0.75	1100/0.25
03/30	CAS 22-R03	L	210/2.15	350/1.25	625/0.75	985/0.25
04/08	CAS 22-R04	L	200/2.35	310/1.35	525/0.80	950/0.25
04/18	STACR 22-DNA3	L	200/3.60 290/2.00	435/1.25	565/0.75	975/0.25
05/11	CAS 22-R05	H	190/2.45	300/1.85	450/1.45	700/0.65
05/13	STACR 22-DNA4	L	220/3.60 335/2.00	525/1.25	625/0.75	1025/0.25
06/10	CAS 22-R06	L	275/2.50	385/1.45	635/0.85	1060/0.30
06/17	STACR 22-DNA5	L	295/3.60 450/2.05	675/1.25	750/0.75	1290/0.25
07/01	CAS 22-R07	L	295/2.55	465/1.60	680/1.00	1200/0.30
07/29	STACR 22-HQA2	H	265/3.00 400/2.00	600/1.25		
08/05	CAS 22-R08	L	255/2.55	360/1.90	560/1.10	
08/12	STACR 22-HQA3	H	230/3.00 355/2.00	535/1.25		
09/16	STACR 22-DNA6	L	215/3.60 370/2.20	575/1.30		
09/28	CAS 22-R09	H	250/2.80	475/1.90	675/1.25	
09/30	STACR 22-DNA7	L	250/3.50 500/2.55	700/1.50		
2023						
01/17	CAS 23-R01	L	240/2.90	375/1.75	510/1.50	
01/17	CAS 23-R02	L	230/2.80	335/2.00	555/1.25	790/0.60

02/28/2023 Index Rebalancing Update (continued)

Sector Supply

Benchmark GSE CRT float shrank -\$556M in February, or -1.08% MoM, to \$50.87B in UPB. With the latest STACR tender taking out more supply than the 2nd CAS deal of the year put in (including the 1st B2 in 7 months), net supply turned negative, making it 4 of the last 5 months with net supply declines. Versus February 12 months prior, float is net higher by +4.3%/\$2.1B.



2023's modest issuance pace continues, with just 2 CAS deals so far for Q1 totaling \$1.4B, the slowest Jan/Feb dollar volume in CRT history. Even though CPRs are at historic lows, the latest STACR tender retired \$989M, helping to create February's negative supply technical across most of the complex:

Feb. 2023 Index-eligible Net Supply & Current Float breakdown:

- **UMEZZ FEB net supply + \$0.215 B + 1.66% MoM**
 - **Float: \$13.1 B 25.8% of market**
 - Very slow recent-issue CPRs making M1s pay down sluggishly.
- **LMEZZ FEB net supply -\$0.471 B - 3.15% MoM**
 - **Float: \$14.5 B 28.5% of market**
 - \$522M in STACR M3 tender retirements well in excess of \$154M in new CAS M2s.
- **SUB FEB net supply -\$0.300 B - 1.27% MoM**
 - **Float: \$23.6 B 45.7% of market**
 - \$466M in seasoned STACR B1 tender retirements overwhelms the \$180M in new CAS B1/B2s.

CRTx® AGG (eligible universe as of 2/28/23)

Month End	Float ₁	BENCHMARK GSE CRT SUPPLY TECHNICALS (\$MM)				Net Supply ₁	% Δ MoM
		Gross Supply ₂	Pay-downs ₁	Write-downs ₁	Tenders ₁		
2018-Jan	39,939.51	900.00	434.89	.40	.00	+464.71	+1.18%
2018-Feb	41,017.07	1,494.06	416.25	.25	.00	+1,077.56	+2.70%
2018-Mar	42,628.56	1,992.02	380.11	.42	.00	+1,611.49	+3.93%
2018-Apr	42,241.57	.00	386.48	.51	.00	-386.99	-0.91%
2018-May	42,864.97	1,050.03	426.17	.45	.00	+623.40	+1.48%
2018-Jun	43,499.75	1,050.00	414.55	.67	.00	+634.78	+1.48%
2018-Jul	43,951.18	939.46	487.56	.47	.00	+451.43	+1.04%
2018-Aug	44,461.53	982.68	471.84	.49	.00	+510.35	+1.16%
2018-Sep	44,818.31	820.00	463.05	.18	.00	+356.78	+0.80%
2018-Oct	46,292.11	1,918.19	443.93	.46	.00	+1,473.80	+3.29%
2018-Nov	46,818.17	921.89	395.46	.36	.00	+526.06	+1.14%
2018-Dec	46,413.76	.00	404.16	.25	.00	-404.41	-0.86%
2019-Jan	46,772.85	714.00	354.36	.55	.00	+359.09	+0.77%
2019-Feb	48,032.92	1,600.30	339.91	.32	.00	+1,260.07	+2.69%
2019-Mar	49,316.49	1,610.43	326.50	.36	.00	+1,283.57	+2.67%
2019-Apr	49,790.89	857.33	382.45	.48	.00	+474.40	+0.96%
2019-May	49,953.47	615.00	451.76	.67	.00	+162.58	+0.33%
2019-Jun	49,366.80	.00	585.65	1.02	.00	-586.67	-1.17%
2019-Jul	50,468.73	1,786.82	684.96	-.08	.00	+1,101.93	+2.23%
2019-Aug	50,665.72	993.16	795.69	.48	.00	+196.99	+0.39%
2019-Sep	50,254.38	626.00	1,036.70	.64	.00	-411.34	-0.81%
2019-Oct	50,975.91	1,882.85	1,160.69	.63	.00	+721.53	+1.44%
2019-Nov	51,029.16	1,430.31	1,376.63	.42	.00	+53.25	+0.10%
2019-Dec	49,686.84	.00	1,341.71	.61	.00	-1,342.32	-2.63%
2020-Jan	50,375.85	1,827.24	1,137.97	.27	.00	+689.01	+1.39%
2020-Feb	52,372.79	3,041.29	1,043.58	.78	.00	+1,996.94	+3.96%
2020-Mar	52,342.28	1,006.00	1,035.91	.60	.00	-30.51	-0.06%
2020-Apr	50,951.32	.00	1,390.53	.43	.00	-1,390.96	-2.66%
2020-May	48,983.31	.00	1,967.51	.50	.00	-1,968.01	-3.86%
2020-Jun	46,718.91	.00	2,263.91	.49	.00	-2,264.40	-4.62%
2020-Jul	46,681.77	1,941.00	1,977.70	.44	.00	-37.14	-0.08%
2020-Aug	46,076.35	1,088.00	1,693.03	.39	.00	-605.42	-1.30%
2020-Sep	45,735.37	680.00	1,020.66	.31	.00	-340.98	-0.74%
2020-Oct	46,269.82	1,086.00	551.37	.18	.00	+534.45	+1.17%
2020-Nov	46,924.62	1,080.00	425.03	.16	.00	+654.80	+1.42%
2020-Dec	47,148.36	790.00	565.97	.30	.00	+223.74	+0.48%
2021-Jan	47,277.42	970.00	840.51	.43	.00	+129.06	+0.27%
2021-Feb	47,729.91	1,386.00	933.14	.38	.00	+452.49	+0.96%
2021-Mar	47,872.55	1,188.00	1,045.16	.20	.00	+142.64	+0.30%
2021-Apr	47,615.04	950.00	1,207.50	.02	.00	-257.51	-0.54%
2021-May	46,556.67	.00	1,058.11	.25	.00	-1,058.37	-2.22%
2021-Jun	46,213.56	550.00	892.87	.23	.00	-343.11	-0.74%
2021-Jul	46,542.26	1,186.00	857.10	.20	.00	+328.70	+0.71%
2021-Aug	45,645.02	.00	896.92	.32	.00	-897.24	-1.93%
2021-Sep	44,395.83	1,071.00	977.13	.08	1,342.98	-1,249.19	-2.74%
2021-Oct	46,136.81	2,686.01	944.99	.04	.00	+1,740.98	+3.92%
2021-Nov	44,428.70	1,276.00	893.50	.37	2,090.24	-1,708.11	-3.70%
2021-Dec	46,303.37	2,855.84	978.99	2.18	.00	+1,874.67	+4.22%
2022-Jan	48,187.25	2,859.26	974.26	1.13	.00	+1,883.88	+4.07%
2022-Feb	48,758.20	3,159.89	879.88	.58	1,708.47	+570.95	+1.18%
2022-Mar	50,947.78	3,057.61	867.66	.37	.00	+2,189.58	+4.49%
2022-Apr	53,065.96	2,984.38	865.97	.24	.00	+2,118.18	+4.16%
2022-May	54,707.01	2,471.03	829.79	.19	.00	+1,641.05	+3.09%
2022-Jun	54,305.82	2,176.38	689.16	.38	1,888.03	-401.19	-0.73%
2022-Jul	52,868.64	1,493.11	598.48	.17	2,331.64	-1,437.18	-2.65%
2022-Aug	52,267.27	1,166.30	509.11	.14	1,258.41	-601.37	-1.14%
2022-Sep	54,074.84	2,273.03	465.18	.28	.00	+1,807.57	+3.46%
2022-Oct	53,282.61	.00	474.53	.27	317.43	-792.23	-1.47%
2022-Nov	52,835.00	.00	447.47	.14	.00	-447.61	-0.84%
2022-Dec	50,991.58	.00	315.47	.51	1,527.44	-1,843.42	-3.49%
2023-Jan	51,422.35	730.75	299.95	.03	.00	+430.77	+0.84%
2023-Feb	50,866.59	709.14	276.08	.10	988.71	-555.76	-1.08%

1-Current Face
2-Original face issued based on CAS/STACR deal closing dates
Sources: FNMA, FHLMC, MF&Co

02/28/2023 Index Rebalancing Update *(continued)***Latest Deal Performance**

CRT credit performance showed slight MoM DQ improvements in the February statements (based on STACR, CAS activity lags by 1 month, but tracks very closely). Seasoned DQ levels remained well-contained as 180+ bucket DQ #s/\$s continued to shrink. Newer deal total DQ changes were slightly mixed MoM, but still relatively low (see page 10-13).

Credit

- STACR pre-COVID onset total DQs fell MoM (CAS reporting lags 1 month), with newer reference pools modestly mixed. 180+ bucket DQ #s/\$s still shrank MoM, but improvement is waning (single digits MoM). Reference pool writedowns and interest shortfalls still uneventful.
 - **DQ pipelines improved in Feb., after edging up in the Jan. statements.**
- CRTx® 1st Loss Sub-Index (1st loss Bs) writedowns/int. shortfalls for February:
 - **-2.5 bps hit to 1st Loss Sub-Index:**
 - **-2.6 bps to Fxd. Sev. Sub-Index component** (vs. -3.5 bps in Jan.)

Paydowns

- **The CRTx® AGG's 2.45% February UPB paydown+tender retirement percentage was higher vs. Jan. paydown-only level of 0.58%:**
 - **MTD CRTx® AGG return attribution from paydowns/tenders (incl. premiums): +5.4 bps**
- | Feb. Index Princ. Receipts | \$1,262M | 100% |
|-----------------------------------|-----------------|-------------|
| ◦ UMEZZ (Mostly M1s): | \$157M | 12% |
| ◦ LMEZZ (M2s/old M3s): | \$625M | 50% |
| ▪ <i>Tendered portion</i> | <i>\$523M</i> | |
| ◦ SUB (Bs/B1s/B2s): | \$479M | 38% |
| ▪ <i>Tendered portion</i> | <i>\$466M</i> | |
- **STACR factor speeds fell even further, about ~1 CPR on average**, with seasoned pre-COVID CPRs now in the 3- to 7-handle CPR area, while 2022 CPRs held in the 1- to 2-handle CPR range (CAS is tracking similarly on a 1-month lag).

Structure

- Class C/E keep inching up slowly due to much slower paydowns.
- February LIBOR resets +11bps, SOFR resets +17 bps MoM.

- No change in DQ tests as of February with 9 pre-COVID REMIC deals still failing their DQ triggers.
- Call Watch (% of original UPB remaining as of the Feb. statements):
 - STACR 2014-DN3 (10.95%)
 - STACR 2014-DN4 (11.04%)
 - STACR 2015-DN1 (11.04%)

Relative Value Thoughts**Current Themes:**

- The latest February investor statement releases show CRT credit performance holding at benign levels, while new issue and secondary spreads have moderately firmed.
- Supply technicals look to stay relatively better versus same time last year when record issuance flooded the market.
- With the curve twisting higher, fixed rate sectors have underperformed to lower dollar handles, while CRT floater prices have held in fundamentally better.

Cashflow yields/carry across the CRT complex still look relatively favorable vs. rating-equivalent IG/HY, and the same relative value themes persist:

- **Carry advantage – IG/HY secondary paper is still predominantly at deeper discount prices (~low to high \$80s) vs. floating CRT paper, giving a current carry advantage to CRT's bigger floater coupons**, stemming from the Fed's current tightening cycle. Carry is still king in the current environment.
- **Lower negative convexity disadvantage and shorter durations provide defense vs. curve vol** – With CPRs inching even lower to historic lows, CRT negative convexity risks across most of the complex have moderated, with both empirical and projected cashflow profiles moving closer to callable corporates on the amortization spectrum, but at shorter durations to optional redemption.

CRTx® Index Suite Total Return Performance: Month-End Matrix 02/28/2023

CRTx® (Credit Risk Transfer Return Tracking Index) Return Summary								
	Index Level	RETURNS						
		Period			Annualized		As of Date	
		MTD	QTD	YTD	1-YR	3-YR		
Aggregate	170.53	1.53%	4.00%	4.00%	5.50%	3.84%	2-28-23	
Upper Mezzanine	127.95	0.69%	2.41%	2.41%	3.62%	2.27%	2-28-23	
Lower Mezzanine	183.75	1.05%	3.25%	3.25%	5.94%	3.65%	2-28-23	
Subordinate	246.70	2.32%	5.38%	5.38%	5.69%	2.52%	2-28-23	
Upper/Lower Mezz.	161.91	0.88%	2.86%	2.86%	5.15%	3.54%	2-28-23	
Lower Mezz./Sub.	194.21	1.82%	4.54%	4.54%	6.12%	3.79%	2-28-23	
CAS	168.08	1.03%	3.12%	3.12%	6.36%	4.20%	2-28-23	
STACR	169.62	1.84%	4.54%	4.54%	4.83%	3.52%	2-28-23	
LLTV	169.78	1.49%	3.75%	3.75%	5.74%	3.83%	2-28-23	
HLTV	151.84	1.61%	4.50%	4.50%	5.03%	3.80%	2-28-23	
Upper Mezzanine	2023	100.86	0.86%	-	-	-	-	2-28-23
	2022	103.11	0.63%	2.49%	2.49%	3.54%	-	2-28-23
	2021	102.49	1.01%	1.88%	1.88%	1.91%	-	2-28-23
	2020		-	-	-	-	-	2-28-23
	2019		-	-	-	-	-	2-28-23
	2018		-	-	-	-	-	2-28-23
	2017		-	-	-	-	-	2-28-23
	2016		-	-	-	-	-	2-28-23
	2015		-	-	-	-	-	2-28-23
	<=2014		-	-	-	-	-	2-28-23
Lower Mezzanine	2023	101.24	1.24%	-	-	-	-	2-28-23
	2022	102.22	1.02%	3.85%	3.85%	4.69%	-	2-28-23
	2021	103.98	0.84%	3.74%	3.74%	1.65%	-	2-28-23
	2020	105.99	0.91%	2.04%	2.04%	4.82%	2.03%	2-28-23
	2019	118.31	0.53%	1.88%	1.88%	4.64%	3.50%	2-28-23
	2018	122.54	0.69%	3.02%	3.02%	5.81%	4.04%	2-28-23
	2017	138.09	0.68%	1.82%	1.82%	5.32%	3.61%	2-28-23
	2016	161.64	2.74%	3.19%	3.19%	8.15%	4.50%	2-28-23
	2015	149.38	1.13%	2.02%	2.02%	7.61%	3.75%	2-28-23
	<=2014	178.86	1.18%	2.40%	2.40%	6.49%	3.91%	2-28-23
Subordinate	2023	100.26	0.26%	-	-	-	-	2-28-23
	2022	101.75	0.83%	4.78%	4.78%	5.22%	-	2-28-23
	2021	103.36	2.67%	6.79%	6.79%	1.66%	-	2-28-23
	2020	100.18	3.46%	6.11%	6.11%	5.32%	0.42%	2-28-23
	2019	142.29	1.78%	3.90%	3.90%	8.36%	3.93%	2-28-23
	2018	138.04	2.62%	5.34%	5.34%	9.27%	3.95%	2-28-23
	2017	170.57	2.47%	4.61%	4.61%	8.17%	4.06%	2-28-23
	2016	215.26	2.83%	4.43%	4.43%	8.58%	3.82%	2-28-23
	2015	225.59	2.58%	3.62%	3.62%	7.29%	2.32%	2-28-23
	<=2014							2-28-23

CRTx® Index Suite Total Return Performance: Month-End Matrix 02/28/2023 (continued)

CRTx® RNI™ (Rolling New Issues*) Return Summary							
	Index Level	RETURNS					
		Period			Annualized		As of Date
		MTD	QTD	YTD	1-YR	3-YR	
Aggregate	178.39	0.85%	3.40%	3.40%	2.90%	3.04%	2-28-23
Upper Mezzanine	128.85	0.59%	2.45%	2.45%	3.71%	2.20%	2-28-23
Lower Mezzanine	196.31	1.26%	4.10%	4.10%	3.51%	3.18%	2-28-23
Subordinate	252.66	1.06%	5.01%	5.01%	3.06%	1.09%	2-28-23
LLTV	178.04	0.75%	3.21%	3.21%	3.51%	3.33%	2-28-23
HLTV	158.25	1.11%	3.92%	3.92%	1.51%	2.74%	2-28-23

* Most recently issued securities within a "rolling" 12-month window

CRTx® (Credit Risk Transfer Return Tracking Index) Return Summary							
	Index Level	RETURNS					
		Period			Annualized		As of Date
		MTD	QTD	YTD	1-YR	3-YR	
Special Sub-Indexes:							
Fxd Severity - Type I*	Custom Client Access Only	1.30%	2.55%	2.55%	6.23%	4.44%	2-28-23
Fxd Severity - Type II*		1.06%	2.43%	2.43%	7.75%	3.85%	2-28-23
Actual Loss		1.54%	4.05%	4.05%	5.40%	3.89%	2-28-23
CAS Fxd Severity - Type I*		0.46%	1.71%	1.71%	5.45%	3.88%	2-28-23
STACR Fxd Severity - Type I*		1.71%	2.96%	2.96%	6.59%	4.83%	2-28-23
CAS Fxd Severity - Type II*		0.94%	2.30%	2.30%	7.34%	3.81%	2-28-23
STACR Fxd Severity - Type II*		1.38%	2.79%	2.79%	8.90%	4.09%	2-28-23
CAS Act. Loss		1.04%	3.16%	3.16%	6.32%	4.28%	2-28-23
STACR Act. Loss		1.85%	4.58%	4.58%	4.74%	3.56%	2-28-23

* Type I - No Credit Event Relief Provisions For Natural Disaster/Casualty Events

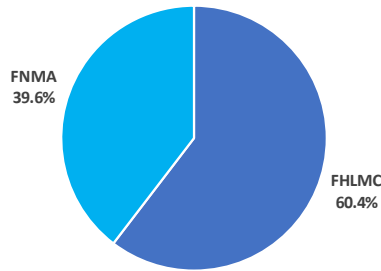
Type II - Some Credit Event Relief Provisions For Natural Disaster/Casualty Events

* CRTx® Aggregate Index and Sub Index Constituency

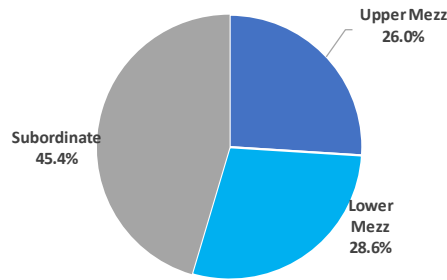
Aggregate	Upper Mezzanine	Lower Mezzanine	Subordinate	LLTV	HLTV
All Index-Eligible FNMA CAS shelf and FHLMC STACR shelf At-Issuance Classes	FNMA CAS Shelf: M1 Classes	FNMA CAS Shelf: M2 Classes	FNMA CAS Shelf: All B Classes	All Index-Eligible FNMA CAS shelf and FHLMC STACR shelf At-Issuance Classes from deals referencing Low Loan to Value (LLTV) loans	All Index-Eligible FNMA CAS shelf and FHLMC STACR shelf At-Issuance Classes from deals referencing High Loan to Value (HLTV) loans
	FHLMC STACR Shelf: M1 Classes (in M1/M2 structures) M1/M2 Classes (in M1/M2/M3 structures)	FHLMC STACR Shelf: M2 Classes (in M1/M2 structures) M3 Classes (in M1/M2/M3 structures)	FHLMC STACR Shelf: All B Classes		
	Vintage Sub Index constituency determined by deal/security closing year (except 2013/2014 which are grouped as "2014").				
RNI™ (Rolling New Issues) versions of the standard CRTx® Aggregate and Sub-Indexes have dynamic constituent baskets made up exclusively of the most recently issued securities within a "rolling" 12-month look-back window.					

CRTx® Index Basket History: Select Metrics As of 02/28/2023 Rebalancing

Sponsor % of CRTx® Mkt Val For 03/2023



Sub Index % of CRTx® Mkt Val For 03/2023

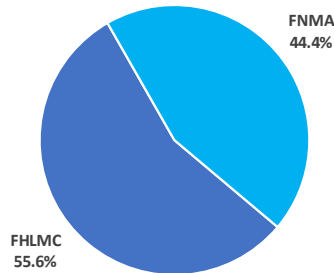


CRTx® AGG

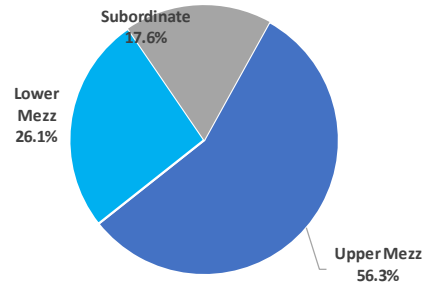
MONTH END CLOSINGS			BEGINNING MONTH BASKET						
Calculation Month	INDEX VALUE	Month to Date Total Return	# of Constituents	Beg Month UPB	Beg Month Total \$ Market Value	W Avg Adj Beg Month Security Mkt Value	WTD Avg Current Coupon	WTD Avg Cpn Margin	
Apr-2020	123.83	8.97%	234	52,342,281,038	40,769,683,770	77.89	4.45	351	
May-2020	132.53	7.03%	229	50,951,320,646	42,820,320,693	84.04	4.03	355	
Jun-2020	144.50	9.04%	218	48,983,309,963	43,695,592,838	89.21	3.77	360	
Jul-2020	143.94	-0.39%	214	46,718,914,995	45,227,362,482	96.81	3.83	365	
Aug-2020	146.37	1.69%	217	46,681,772,649	44,843,108,762	96.06	3.87	370	
Sep-2020	147.99	1.11%	217	46,076,349,850	44,862,684,449	97.37	3.92	374	
Oct-2020	148.99	0.68%	220	45,735,370,315	44,865,412,741	98.10	3.90	375	
Nov-2020	151.26	1.52%	224	46,269,817,211	45,566,172,083	98.48	3.93	378	
Dec-2020	154.14	1.91%	228	46,924,624,650	46,772,793,230	99.68	3.93	378	
Jan-2021	155.99	1.20%	230	47,148,362,895	47,722,154,982	101.22	3.92	377	
Feb-2021	156.91	0.59%	232	47,277,423,099	48,281,726,799	102.12	3.90	377	
Mar-2021	156.58	-0.21%	235	47,729,907,668	48,857,887,219	102.36	3.87	376	
Apr-2021	158.53	1.25%	236	47,872,554,649	48,747,702,476	101.83	3.87	378	
May-2021	159.34	0.51%	238	47,615,037,767	48,936,401,435	102.78	3.89	380	
Jun-2021	160.42	0.68%	235	46,556,670,751	47,976,744,707	103.05	3.90	382	
Jul-2021	160.88	0.29%	239	46,213,562,998	47,807,083,563	103.45	3.91	383	
Aug-2021	161.28	0.25%	242	46,542,264,071	48,139,580,923	103.43	3.91	383	
Sep-2021	162.16	0.55%	240	45,645,024,894	47,210,049,253	103.43	3.93	385	
Oct-2021	162.45	0.18%	243	44,395,832,151	46,008,939,674	103.63	3.93	385	
Nov-2021	162.69	0.15%	250	46,136,808,535	47,705,750,833	103.40	3.92	384	
Dec-2021	163.17	0.30%	253	44,428,702,439	45,850,865,730	103.20	3.97	389	
Jan-2022	163.27	0.06%	264	46,303,372,955	47,721,518,712	103.06	3.92	383	
Feb-2022	161.64	-1.00%	272	48,187,246,457	49,476,212,584	102.68	3.86	378	
Mar-2022	159.97	-1.04%	280	48,758,202,585	49,320,610,808	101.15	3.93	380	
Apr-2022	160.67	0.44%	285	50,947,780,611	50,882,869,681	99.87	4.14	386	
May-2022	159.01	-1.03%	291	53,065,956,573	53,054,131,960	99.98	4.34	386	
Jun-2022	157.45	-0.98%	297	54,707,014,476	53,912,547,204	98.55	4.66	388	
Jul-2022	157.87	0.27%	305	54,305,816,176	52,723,290,518	97.09	5.21	399	
Aug-2022	162.94	3.21%	311	52,868,638,801	51,179,435,509	96.81	5.87	406	
Sep-2022	161.27	-1.03%	316	52,267,272,868	51,923,167,525	99.34	6.34	407	
Oct-2022	159.63	-1.01%	325	54,074,843,112	52,881,044,458	97.79	6.64	407	
Nov-2022	160.61	0.61%	325	53,282,606,013	51,262,793,323	96.21	7.30	410	
Dec-2022	163.97	2.09%	323	52,834,998,700	50,794,605,389	96.14	7.80	410	
Jan-2023	167.96	2.43%	322	50,991,575,501	49,607,620,170	97.29	8.22	414	
Feb-2023	170.53	1.53%	324	51,422,346,150	50,913,054,870	99.01	8.51	414	
Mar-2023			327	50,866,586,034	50,673,509,110	99.62	8.64	412	

CRTx® RNI™ Index Basket History: Select Metrics As of 02/28/2023 Rebalancing

Sponsor % of CRTx® RNI™ Mkt Val For 03/2023



Sub Index % of CRTx® RNI™ Mkt Val For 03/2023



CRTx® RNI™ AGG

MONTH END CLOSINGS			BEGINNING MONTH BASKET						
Calculation Month	INDEX VALUE	Month to Date Total Return	# of Constituents	Beg Month UPB	Beg Month Total \$ Market Value	W Avg Adj Beg Month Security Mkt Value	WTD Avg Current Coupon	WTD Avg Cpn Margin	
Apr-2020	120.70	-2.45%	55	12,793,770,386	9,865,262,294	77.11	3.43	249	
May-2020	134.53	11.46%	51	11,841,276,956	8,721,408,098	73.65	3.01	252	
Jun-2020	151.62	12.71%	46	10,917,819,539	8,842,509,887	80.99	2.69	253	
Jul-2020	153.41	1.17%	45	10,409,152,540	9,432,905,082	90.62	2.78	259	
Aug-2020	154.49	0.71%	46	10,724,189,826	9,890,825,093	92.23	2.99	282	
Sep-2020	157.58	2.00%	47	10,980,427,286	10,237,992,004	93.24	3.19	301	
Oct-2020	158.61	0.66%	48	11,105,630,257	10,559,393,889	95.08	3.25	310	
Nov-2020	161.83	2.03%	47	10,696,965,880	10,283,123,737	96.13	3.47	333	
Dec-2020	166.71	3.02%	46	10,736,337,604	10,542,306,038	98.19	3.53	339	
Jan-2021	168.67	1.18%	50	11,324,184,451	11,415,597,441	100.81	3.50	337	
Feb-2021	169.49	0.48%	47	10,504,416,039	10,712,665,142	101.98	3.61	350	
Mar-2021	167.93	-0.92%	39	9,048,558,462	9,296,466,342	102.74	3.84	377	
Apr-2021	170.69	1.64%	38	8,978,749,172	9,107,517,591	101.43	3.81	376	
May-2021	172.19	0.88%	41	9,588,703,205	9,840,125,130	102.62	3.79	375	
Jun-2021	174.63	1.42%	40	9,373,273,707	9,681,506,748	103.29	3.81	378	
Jul-2021	175.45	0.47%	44	9,738,420,034	10,156,250,987	104.29	3.78	374	
Aug-2021	175.78	0.19%	42	9,659,687,165	10,041,577,171	103.95	3.55	349	
Sep-2021	177.19	0.80%	39	8,836,801,107	9,156,649,664	103.62	3.40	335	
Oct-2021	177.37	0.10%	39	9,275,157,362	9,611,457,885	103.63	3.25	320	
Nov-2021	177.29	-0.05%	44	11,029,258,671	11,264,989,273	102.14	3.12	307	
Dec-2021	178.13	0.47%	44	11,364,521,191	11,523,394,460	101.40	3.14	309	
Jan-2022	176.91	-0.69%	52	13,499,939,498	13,679,507,404	101.33	3.06	301	
Feb-2022	173.35	-2.01%	57	15,396,876,140	15,433,974,963	100.24	3.01	296	
Mar-2022	170.35	-1.73%	62	17,234,456,472	16,913,526,465	98.14	3.12	307	
Apr-2022	170.82	0.28%	67	19,128,995,434	18,549,644,816	96.97	3.38	329	
May-2022	168.30	-1.48%	72	21,068,208,560	20,517,088,834	97.38	3.64	336	
Jun-2022	165.20	-1.84%	80	23,394,497,238	22,433,577,349	95.89	4.00	343	
Jul-2022	165.70	0.30%	85	24,884,587,943	23,480,348,016	94.36	4.49	358	
Aug-2022	171.79	3.68%	89	25,180,986,750	23,907,838,996	94.94	5.17	365	
Sep-2022	168.34	-2.01%	95	26,170,925,042	25,675,201,828	98.11	5.82	365	
Oct-2022	166.79	-0.92%	100	27,235,965,638	26,187,236,662	96.15	6.00	372	
Nov-2022	168.61	1.09%	92	24,523,836,681	23,324,904,484	95.11	6.75	376	
Dec-2022	172.51	2.32%	88	23,106,299,521	22,134,708,648	95.80	7.30	378	
Jan-2023	176.88	2.53%	76	20,380,723,155	20,010,012,306	98.18	7.84	392	
Feb-2023	178.39	0.85%	70	18,368,982,917	18,505,981,530	100.75	8.37	406	
Mar-2023			65	16,106,692,919	16,354,719,935	101.54	8.62	413	

Latest Deal Performance Metrics: February 2023 Monthly Statements - CAS *(continued)*

CRTx® AGG Index Constituent Performance Data (Feb-2023 Monthly Statements)																						
Deal	Loss	Pool	Form	Structure (paid-off)	Early Redemption Option (Yrs)	Maturity (Yrs)	Rem. Early Redemp. Option (Yrs)	Rem. Maturity (Yrs)	Delinquency Pipeline								CPR		Net Credit Event Test			
									30d	60d	90d	120d	150d	180d+	Total DQ%	MoM % Chg	1mth	Pass	Min CE Test	Net Loss Test	DQ Test	
CAS 2022-R08	ACT	LLTV	REMIC	1M1-1M2-1B1	5.0	20.0	4.4	19.4	0.63	0.11	0.07	0.04	0.05	0.04	0.95	7%	3%	NA	YES	NA	YES	
CAS 2022-R09	ACT	HLTV	REMIC	2M1-2M2-2B1	5.0	20.0	4.6	19.6	0.62	0.18	0.10	0.07	0.04	-	1.00	13%	2%	NA	YES	NA	YES	
CAS 2023-R01	ACT	LLTV	REMIC	1M1-1M2-1B1	4.9	20.0	4.8	19.8	0.52	0.07	-	-	-	-	0.59	50%	3%	0%	YES	NA	YES	
CAS 2023-R02	ACT	LLTV	REMIC	1M1-1M2-1B1-1B2	5.0	20.0	4.9	19.9	0.43	0.00	-	-	-	-	0.43		3%	0%	YES	NA	YES	

Latest Deal Performance Metrics: February 2023 Monthly Statements – STACR (continued)

CRTx® AGG Index Constituent Performance Data (Feb-2023 Monthly Statements)																										
Deal	Loss	Pool	Form	Structure (paid-off)	Early Redemption Option (Yrs)	Maturity (Yrs)	Rem. Early Redemp. Option (Yrs)	Rem. Maturity (Yrs)	Delinquency Pipeline								CPR	Net Credit Event Test	Min CE Test	Cum Net Loss Test	DQ Test					
									30d	60d	90d	120d	150d	180d+	Total DQ%	MoM % Chg						1mth	Pass	Pass	Pass	Pass
STACR 2021-HQA1	ACT	HLTV	REMIC	M1-M2-B1-B2		12.5		10.5	0.50	0.14	0.07	0.07	0.04	0.22	1.04	-10%	3%	NA	YES	YES	YES					
STACR 2021-HQA2	ACT	HLTV	REMIC	M1-M2-B1-B2		12.5		10.8	0.50	0.13	0.06	0.09	0.18	0.96	-7%	3%	NA	YES	YES	YES						
STACR 2021-HQA3	ACT	HLTV	REMIC	M1-M2-B1-B2	5.0	20.0	3.6	18.6	0.44	0.12	0.08	0.11	0.21	0.96	-7%	3%	NA	YES	YES	YES						
STACR 2021-HQA4	ACT	HLTV	REMIC	M1-M2-B1-B2	5.0	20.1	3.8	18.8	0.52	0.13	0.07	0.12	0.21	1.05	-3%	2%	NA	YES	YES	YES						
STACR 2022-DNA1	ACT	LLTV	REMIC	M1A-M1B-M2-B1-B2	5.0	20.0	3.9	18.9	0.51	0.12	0.06	0.09	0.17	0.95	-6%	2%	NA	YES	YES	YES						
STACR 2022-DNA2	ACT	LLTV	REMIC	M1A-M1B-M2-B1-B2	5.0	20.1	4.0	19.0	0.55	0.13	0.10	0.10	0.16	1.04	-6%	3%	NA	YES	YES	YES						
STACR 2022-DNA3	ACT	LLTV	REMIC	M1A-M1B-M2-B1-B2	5.0	20.0	4.2	19.2	0.62	0.14	0.08	0.13	0.14	1.11	-2%	2%	NA	YES	YES	YES						
STACR 2022-DNA4	ACT	LLTV	REMIC	M1A-M1B-M2-B1-B2	5.0	20.0	4.2	19.3	0.64	0.16	0.07	0.11	0.11	1.09	-6%	3%	NA	YES	YES	YES						
STACR 2022-DNA5	ACT	LLTV	REMIC	M1A-M1B-M2-B1-B2	5.0	20.0	4.3	19.3	0.67	0.12	0.08	0.14	0.10	1.11	7%	3%	NA	YES	YES	YES						
STACR 2022-DNA6	ACT	LLTV	REMIC	M1A-M1B-M2	5.0	20.0	4.6	19.6	0.47	0.13	0.09	0.11	0.02	0.82	-7%	2%	NA	YES	YES	YES						
STACR 2022-DNA7	ACT	LLTV	REMIC	M1A-M1B-M2	5.0	20.0	4.6	19.6	0.60	0.13	0.09	0.10	-	0.92	-1%	3%	NA	YES	YES	YES						
STACR 2022-HQA1	ACT	HLTV	REMIC	M1A-M1B-M2-B1-B2	5.0	20.0	4.1	19.1	0.62	0.19	0.11	0.15	0.19	1.26	3%	2%	NA	YES	YES	YES						
STACR 2022-HQA2	ACT	HLTV	REMIC	M1A-M1B-M2	5.0	20.0	4.4	19.4	0.51	0.22	0.11	0.16	0.12	1.12	2%	2%	NA	YES	YES	YES						
STACR 2022-HQA3	ACT	HLTV	REMIC	M1A-M1B-M2	5.0	20.0	4.5	19.5	0.54	0.15	0.09	0.16	0.04	0.98	5%	2%	NA	YES	YES	YES						

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Mark Fontanilla

Mark Fontanilla & Co., LLC

255 W MLK Blvd

Suite 2402

Charlotte, NC 28202

C: (201) 213-7168

O: (704) 405-0575

mark@markfontanilla.com

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