

# CRT Payment Deferral & Modification Impact

Data as of Dec 2023 Reporting Period

Investors are directed to Disclaimer section at the end of the presentation

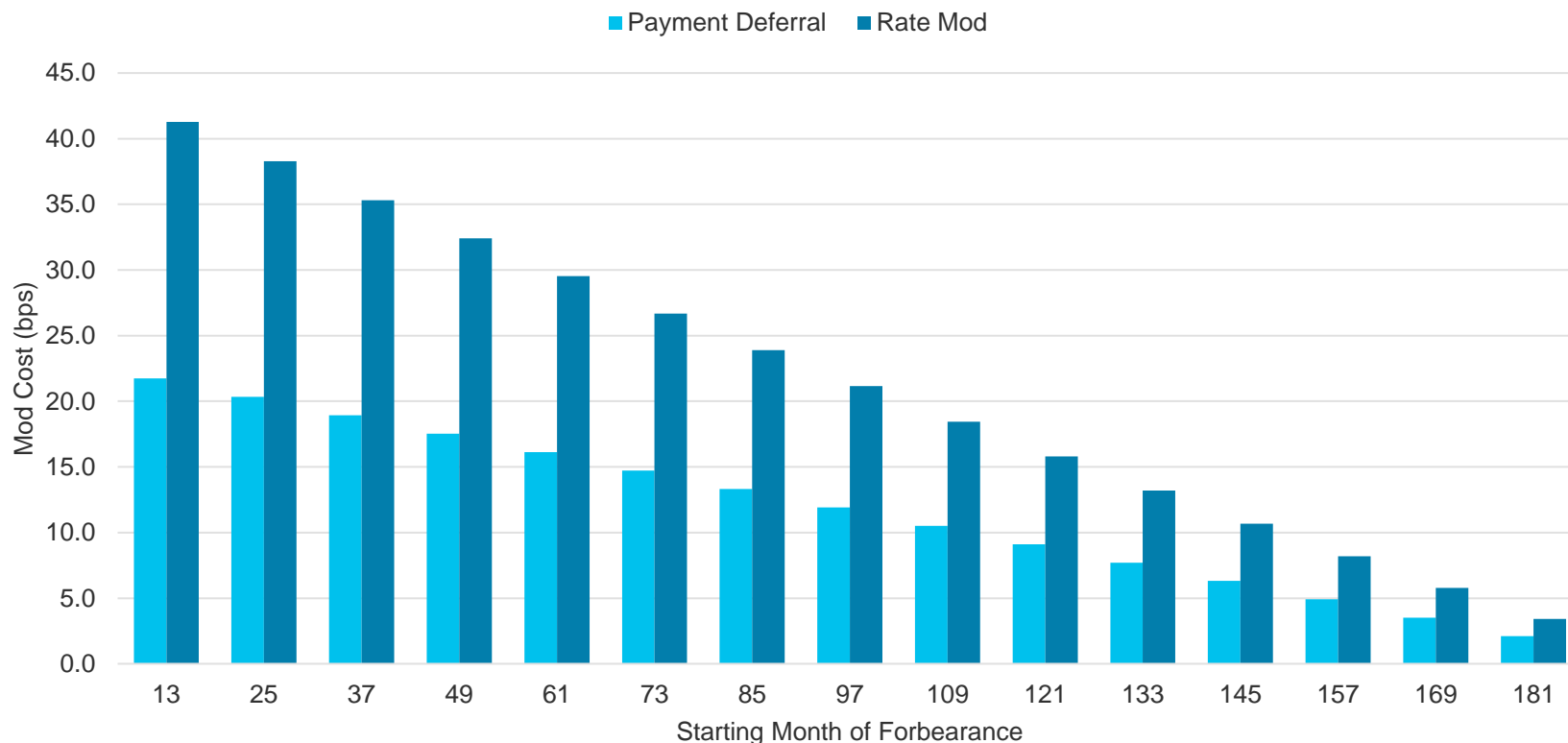


**Credit Risk  
Transfer**

# Potential Payment Deferral and Modification Impact



Illustrative Lifetime Mod Cost for Payment Deferrals and Modifications



## Assumptions:

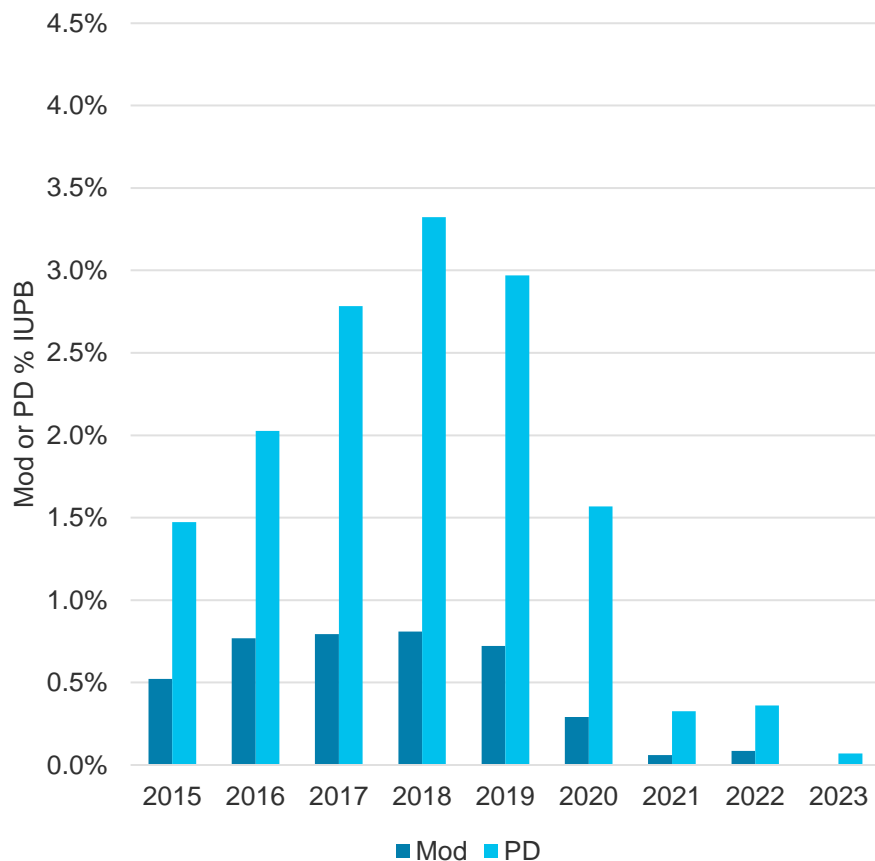
- 3% of the reference pool (by issuance UPB) goes into forbearance for 12 months and subsequently receives Payment Deferral or a rate-only Modification. The entire pool has a starting note rate of 6% and consists entirely of fixed 30-year loans.
- Rate modifications decrease the original note rate by 1% point and do not consider any forbore principal amounts or term extensions.
- 10% constant CPR on non-modified/PD loans. The reference pool remains outstanding until the 10% clean-up call.
- Losses shown are lifetime projected undiscounted losses from the Interest Shortfall resulting from non-interest-bearing deferred amounts as a result of Payment Deferral or a rate reduction as a result of modification.

# Mod/PD Percentage of Issuance UPB as of Dec 2023

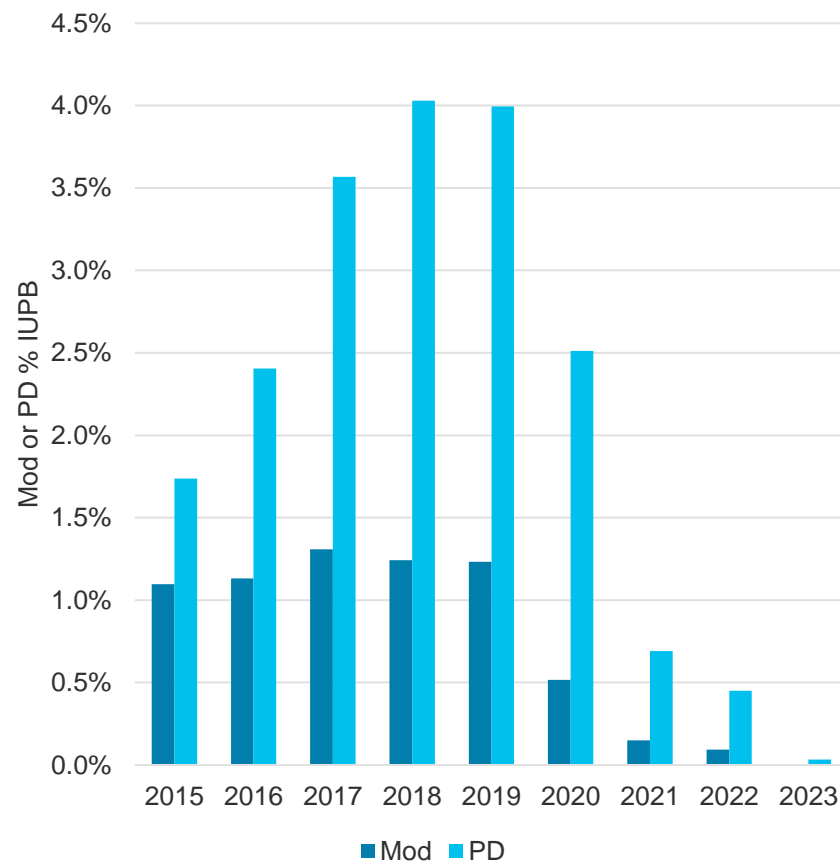


Cumulative modifications on the reference pool have remained below 1.5% on an issuance UPB basis. Payment Deferral volume has been higher, around 4% of the pools.

## Low LTV Reference Pools



## High LTV Reference Pools



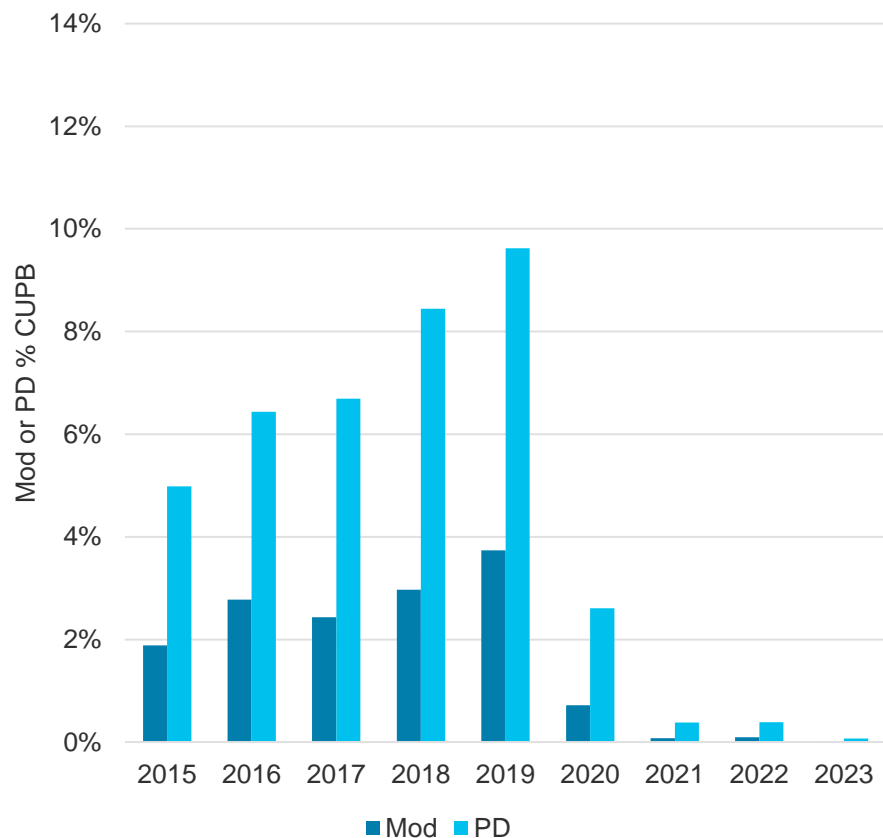
Includes DNA, HQA, SPL, SPH and non-15-year SP deals

# Mod/PD Percentage of Current UPB as of Dec 2023

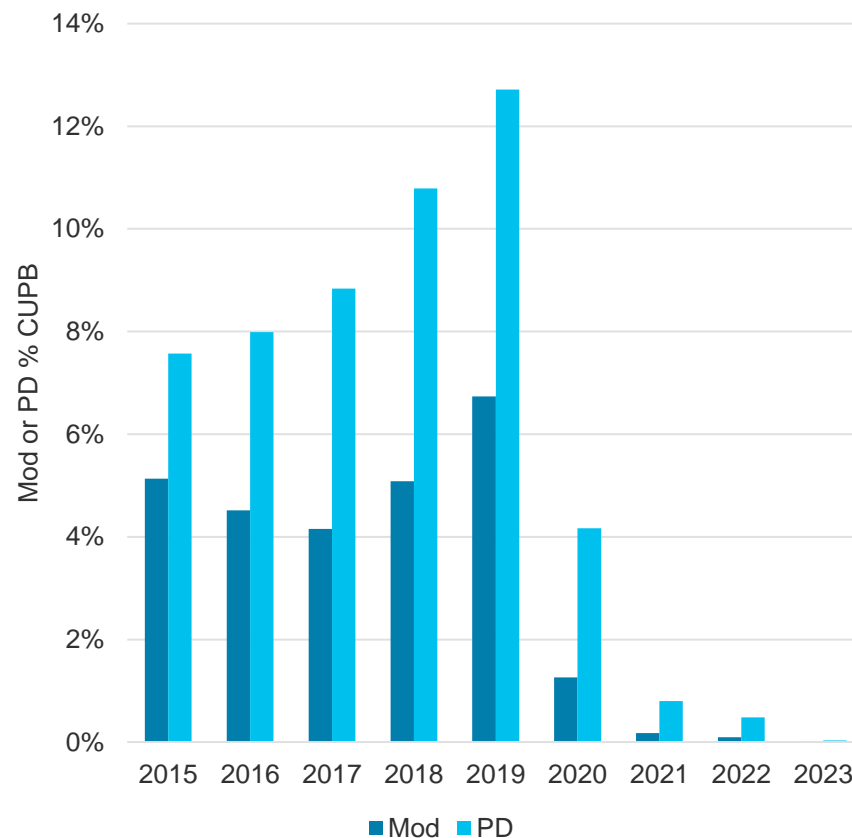


On a current UPB basis, modification and Payment Deferral volumes represent larger portions of the pools. Loans originated closest to the beginning of COVID were most impacted. One factor in this is the high prepayment rate for 2019 loans as a result of higher GWACs.

## Low LTV Reference Pools



## High LTV Reference Pools



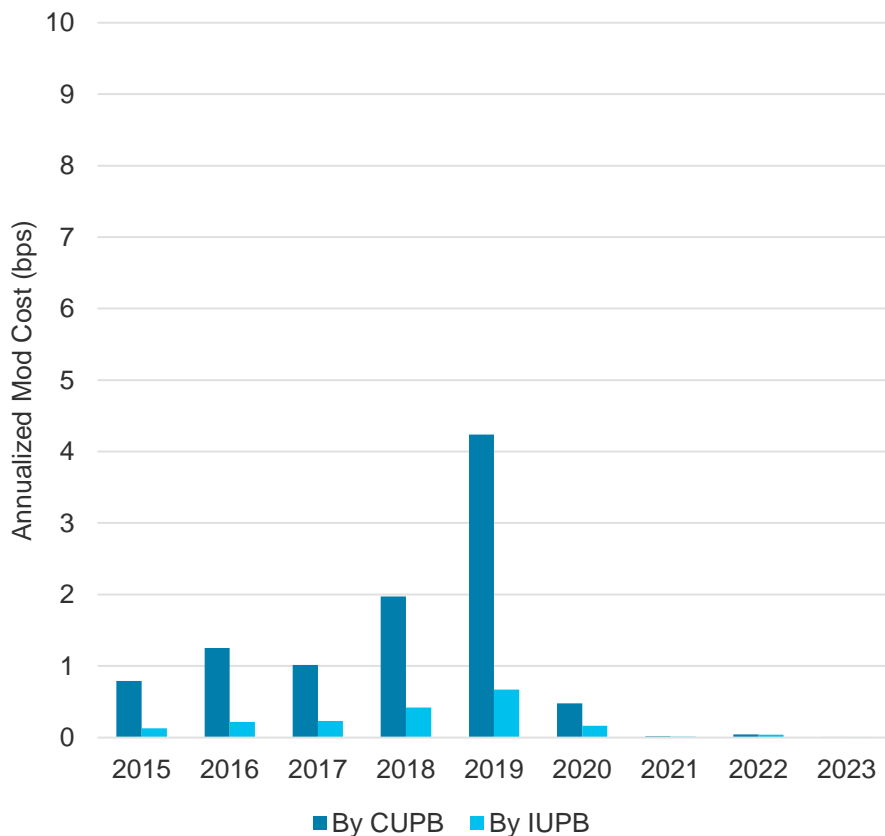
Includes DNA, HQA, SPL, SPH and non-15-year SP deals

# Annualized Modification Cost as of Dec 2023 reporting period

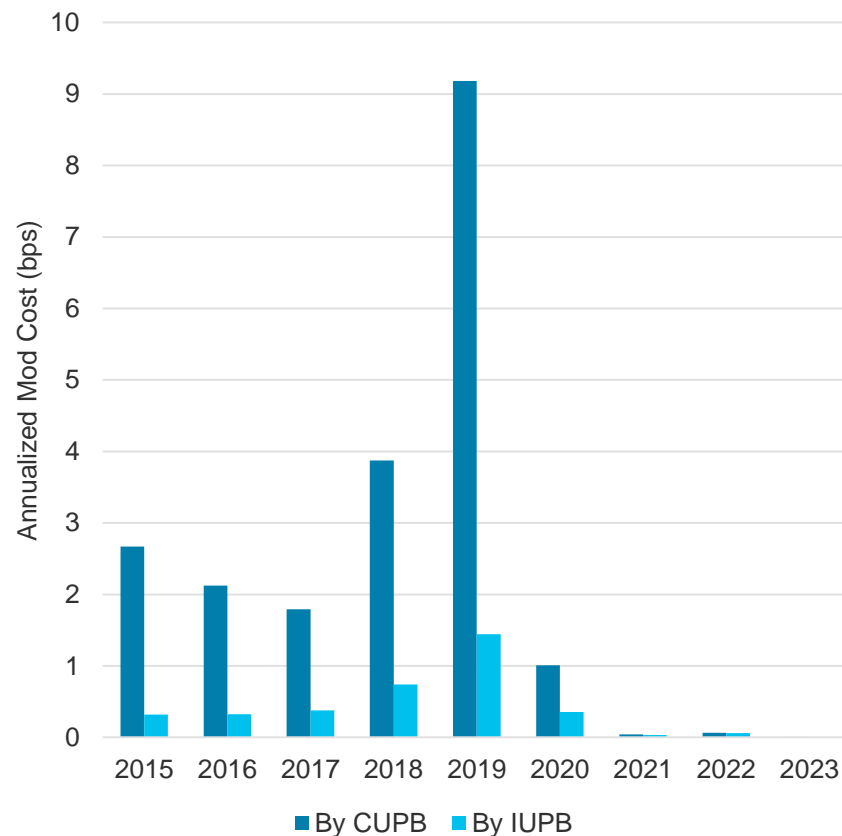


At a reference pool level, annualized mod costs are slightly more than 9 basis points based on current UPB but remain below 2 basis points on an issuance UPB basis. Most mod losses are being absorbed by hypothetical interest today (see slide 6).

## Low LTV Reference Pools



## High LTV Reference Pools



Includes DNA, HQA, SPL, SPH and non-15-year SP deals

# Modification Cost Breakdown in the Dec 2023 reporting period



For deals with a hypothetical coupon on the first loss tranche, no principal write-downs have yet occurred from modification costs.

Deal Category	Total Mod Cost (\$M)	Mod Cost Applied to First Loss Tranche Interest* (\$M)	Mod Cost Applied to First Loss Tranche Principal (\$M)	Available First Loss Tranche Interest* (\$M)	Available First Loss Tranche Principal (\$M)	Available First Loss Tranche Interest* (%)	Available First Loss Tranche Principal (%)
2015 DNA	0.11	0.11	-	11.96	1,061.39	99.1%	100.0%
2015 HQA	0.10	0.10	-	4.28	361.08	97.8%	100.0%
2016 DNA	0.21	0.21	-	14.26	1,152.86	98.5%	100.0%
2016 HQA	0.18	0.18	-	8.31	653.96	97.9%	100.0%
2017 DNA	0.29	0.29	-	9.49	741.75	97.0%	100.0%
2017 HQA	0.26	0.26	-	5.66	408.78	95.6%	100.0%
2018 DNA	0.40	0.40	-	5.43	440.02	93.2%	100.0%
2018 HQA	0.47	0.47	-	2.98	231.68	86.4%	100.0%
2019 DNA	0.51	0.51	-	1.63	86.12	76.1%	100.0%
2019 HQA	0.88	0.88	-	0.87	71.65	49.8%	100.0%
2020 DNA	0.34	0.34	-	9.88	436.82	96.7%	100.0%
2020 HQA	0.47	0.47	-	6.42	303.88	93.2%	100.0%
2021 DNA	0.00	0.00	-	8.36	573.83	99.9%	100.0%
2021 HQA	0.01	0.01	-	5.73	298.57	99.9%	100.0%
2021 DNA NHC**	0.04	-	0.04	-	390.84		100.0%
2021 HQA NHC**	0.03	-	0.03	-	171.92		100.0%
2022 DNA	0.07	-	0.07	-	613.01		100.0%
2022 HQA	0.04	-	0.04	-	200.13		100.0%
2023 DNA	0.00	-	0.00	-	81.94		100.0%
2023 HQA	0.00	-	0.00	-	132.28		100.0%

\*Interest includes total interest from issued and retained first loss tranches, including hypothetical interest.

\*\*NHC stands for "No Hypothetical Coupon". Starting with 2021-HQA3, the B3H tranche has no hypothetical coupon and payment deferrals contribute to modification cost.

# Cum Loss Summary as of Dec 2023 reporting period



Total Ref Pool Loss reflects the total of credit event and modification loss. Total Structure Loss reflects the total loss that has resulted in a principal write-down.

Deal Category	Cum Credit Event Loss (bps)	Cum Mod/PD Cost (bps)	Total Ref Pool Loss (bps)	Total Structure Loss (bps)
2015 DNA	1.78	0.27	2.05	1.78
2015 HQA	1.02	1.26	2.29	1.02
2016 DNA	1.60	0.43	2.03	1.60
2016 HQA	0.83	0.92	1.75	0.83
2017 DNA	0.82	0.42	1.24	0.82
2017 HQA	0.69	0.97	1.66	0.69
2018 DNA	0.88	0.76	1.64	0.88
2018 HQA	0.66	1.81	2.47	0.66
2019 DNA	0.55	1.22	1.77	0.55
2019 HQA	0.22	3.12	3.34	0.22
2020 DNA	0.10	0.29	0.40	0.10
2020 HQA	0.11	0.73	0.85	0.11
2021 DNA	0.02	0.01	0.02	0.02
2021 HQA	0.02	0.02	0.04	0.02
2021 DNA NHC*	0.01	0.02	0.03	0.03
2021 HQA NHC*	0.06	0.05	0.11	0.11
2022 DNA	0.04	0.02	0.06	0.06
2022 HQA	0.05	0.03	0.08	0.08
2023 DNA	0.00	0.00	0.00	0.00
2023 HQA	0.00	0.00	0.00	0.00

\*NHC stands for “No Hypothetical Coupon”. Starting with 2021-HQA3, the B3H tranche has no hypothetical coupon and payment deferrals contribute to modification cost. Includes only STACR DNA and HQA transactions. Denominator for all columns is total issuance UPB.



# Payment Deferral Example

Payment Deferral Example

STACR Disclosure									Amortization Schedule				
Loan ID	NoteRate	Payment Date	Beg Bal	Total UPB	IntBearing UPB	Deferred	Pmt Dfrr Flag	DQ Status	Am Period	Principal	Interest	Balance	Mod Loss
17DNA1013713	3.7500%	2/25/20	\$ 532,416	\$ 531,431	\$ 531,431	\$ -		0	44	\$ 985	\$ 1,664	\$ 531,431	\$ -
17DNA1013713	3.7500%	3/25/20	\$ 531,431	\$ 530,443	\$ 530,443	\$ -		0	45	\$ 988	\$ 1,661	\$ 530,443	\$ -
17DNA1013713	3.7500%	4/25/20	\$ 530,443	\$ 529,451	\$ 529,451	\$ -		0	46	\$ 991	\$ 1,658	\$ 529,451	\$ -
17DNA1013713	3.7500%	5/25/20	\$ 529,451	\$ 529,451	\$ 529,451	\$ -		1	47	\$ 994	\$ 1,655	\$ 528,457	\$ -
17DNA1013713	3.7500%	6/25/20	\$ 529,451	\$ 529,451	\$ 529,451	\$ -		2	48	\$ 998	\$ 1,651	\$ 527,459	\$ -
17DNA1013713	3.7500%	7/25/20	\$ 529,451	\$ 529,451	\$ 529,451	\$ -		3	49	\$ 1,001	\$ 1,648	\$ 526,459	\$ -
17DNA1013713	3.7500%	8/25/20	\$ 529,451	\$ 529,451	\$ 529,451	\$ -		4	50	\$ 1,004	\$ 1,645	\$ 525,455	\$ -
17DNA1013713	3.7500%	9/25/20	\$ 529,451	\$ 529,451	\$ 529,451	\$ -		5	51	\$ 1,007	\$ 1,642	\$ 524,448	\$ -
17DNA1013713	3.7500%	10/25/20	\$ 529,451	\$ 529,451	\$ 529,451	\$ -		6	52	\$ 1,010	\$ 1,639	\$ 523,438	\$ -
17DNA1013713	3.7500%	11/25/20	\$ 529,451	\$ 529,451	\$ 529,451	\$ -		7	53	\$ 1,013	\$ 1,636	\$ 522,424	\$ -
17DNA1013713	3.7500%	12/25/20	\$ 529,451	\$ 529,451	\$ 529,451	\$ -		8	54	\$ 1,016	\$ 1,633	\$ 521,408	\$ -
17DNA1013713	3.7500%	1/25/21	\$ 529,451	\$ 529,451	\$ 529,451	\$ -		9	55	\$ 1,020	\$ 1,629	\$ 520,388	\$ -
17DNA1013713	3.7500%	2/25/21	\$ 529,451	\$ 529,451	\$ 529,451	\$ -		10	56	\$ 1,023	\$ 1,626	\$ 519,366	\$ -
17DNA1013713	3.7500%	3/25/21	\$ 529,451	\$ 544,830	\$ 518,340	\$ 26,490	Y	0	57	\$ 1,026	\$ 1,623	\$ 518,340	\$ 75
17DNA1013713	3.7500%	4/25/21	\$ 544,830	\$ 543,801	\$ 517,310	\$ 26,490	P	0	58	\$ 1,029	\$ 1,620	\$ 517,310	\$ 75
17DNA1013713	3.7500%	5/25/21	\$ 543,801	\$ 542,768	\$ 516,278	\$ 26,490	P	0	59	\$ 1,032	\$ 1,617	\$ 516,278	\$ 75
17DNA1013713	3.7500%	6/25/21	\$ 542,768	\$ 541,733	\$ 515,242	\$ 26,490	P	0	60	\$ 1,036	\$ 1,613	\$ 515,242	\$ 75
17DNA1013713	3.7500%	7/25/21	\$ 541,733	\$ 540,694	\$ 514,203	\$ 26,490	p	0	61	\$ 1,039	\$ 1,610	\$ 514,203	\$ 75
17DNA1013713	3.7500%	8/25/21	\$ 540,694	\$ 539,652	\$ 513,161	\$ 26,490	P	0	62	\$ 1,042	\$ 1,607	\$ 513,161	\$ 75

Missed payments

Payment Deferral Complete  
(Back on original schedule)

Modification Loss	Loss (\$)	Loss (bps)
Monthly	\$ 75	1
Payoff 7 years after Pmt Dfrr	\$ 6,305	117
Payoff at 20 years	\$ 13,800	256

- **Modification Loss Amount** =  $\max[0, (\text{Modification Shortfall} - \text{Modification Excess})]$
- **Modification Shortfall** =  $\max[0, (1/12 * \text{Original Accrual Rate} * \text{Reference Obligation UPB}) - (1/12 * \text{Current Accrual Rate} * \text{Reference Obligation Interest-Bearing UPB})]$
- **Modification Excess** =  $\max[0, (1/12 * \text{Current Accrual Rate} * \text{Reference Obligation Interest-Bearing UPB}) - (1/12 * \text{Original Accrual Rate} * \text{Reference Obligation UPB})]$





# Historical Modification Rate Reduction and Average Forbearance Duration

Historical Interest Rate Reduction for  
Rate Mods in CRT Transactions

Series Year	Original Mortgage Rate	Post Mod Rate	Rate Reduction
2013	4.1	3.5	0.6
2014	3.9	3.1	0.9
2015	4.5	3.2	1.2
2016	4.3	3.2	1.1
2017	4.3	3.1	1.2
2018	4.5	3.2	1.4
2019	4.7	3.1	1.6
2020	4.4	3.1	1.3
2021	3.6	3.1	0.5
2022	4.4	3.9	0.5

Average Forbearance Duration by FB  
Exit Year for loans in CRT Transactions

FB Exit Year	Weighted Average Months in FB
2020	2.6
2021	10.5
2022	13.2



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