Trend Review
February 6, 2023

Updated Net Capital Charge Tables for ACIS/CIRT Reinsurance Transactions

Update to semiannual ACIS/CIRT net capital charge tables

Freddie Mac and Fannie Mae (the government-sponsored enterprises, or GSEs) transfer mortgage risk to the reinsurance market through two credit risk transfer (CRT) programs: Agency Credit Insurance Structure (ACIS), sponsored by Freddie Mac, and Credit Insurance Risk Transfer (CIRT), sponsored by Fannie Mae. This report updates the tables of net capital charges associated with select transactions in these programs. AM Best publishes these tables semiannually, using the most current performance data available from the GSEs' websites.

The net capital charge of CRT transactions, which is included in $B5_m$ in Best's Capital Adequacy Ratio (BCAR), are based on unexpected losses and premiums associated with the transactions and are represented as a fraction of the original exposures. The procedures for the calculation for each transaction are based on AM Best's factor-based approach and are described in AM Best's *Evaluating Mortgage Insurance*.

Impact of COVID-19

A handful of transactions remain under trigger events due to failed delinquency tests despite the low level of the national delinquency rate, resulting in no principal being allocated to junior tranches. This will not affect AM Best's net capital charge calculation, as the calculation assumes stress scenarios with trigger events in place for each transaction. The ultimate effect of the pandemic on the ACIS/CIRT transactions should be minimal.

Net Capital Charges ($B5_m$) of a Representative Sample of CRT Transactions

AM Best has selected approximately half the 151 transactions effective through December 2022 to highlight some of the key components of the factor-based method used to calculate the net capital charges associated with individual layers of the CRT transactions. As of this writing, 26 CIRT transactions have been cancelled and 13 ACIS transactions have had call options exercised. Any cancelled transactions have been removed from the representative sample. **Exhibits 1 and 2** show the characteristics of each ACIS and CIRT transaction in the representative sample.

The representative sample was selected based on the following factors:

GSE Diversity: Freddie Mac, Fannie Mae
Mortgage Products: >20-year maturities; ≤20 maturities; FRM; ARM
Retention Level
Loan to Value Characteristics: Low (60-80 LTV), high (80-97 LTV), mix (60-97 LTV)
Origination Type: Front-end, back-end

Exhibits 3 and 4 show the calculations of the net capital charges for the representative sample of ACIS and CIRT transactions by layer, using performance data provided by the GSEs in December 2022. Below, we define the elements in the two exhibits, most of which are fully described in *Evaluating Mortgage Insurance*:

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Transaction: The name given to each transaction by Fannie Mae or Freddie Mac

Layer: The layer associated with each transaction (for CIRT, there is only one layer)

Credit Enhancement: The percentage of the original unpaid principal balance (UPB) at which point losses will attach to the specified layer

Initial Limit: The initial size of the layer as a percentage of the original UPB

Premium Rate: The rate applied to the remaining limit (for ACIS) or the remaining UPB (for CIRT) paid to the reinsurer

Total Realized Loss: The cumulative losses from transaction inception to the time of the analysis as a percentage of the original UPB (in bps). The total realized loss at the beginning of the transaction is zero; as the transaction ages, the total realized loss will grow.

Years Since Inception: The number of years between the effective date of the transaction and the reporting date for the data

Remaining UPB: The percentage of the original UPB remaining in the reference pool

Current Limit: The size of the layer (as a percentage of the original UPB) at the time of the current analysis

Seasoning Factor: The factor representing the change in aggregate risk of default as pools of mortgages age; based on years since inception

Ultimate Loss: The last element of the cumulative loss vector for each transaction (at the time of the evaluation) at the VaR 99.6 level

Gross Capital Charge (calculated as a percentage of the original exposure): The loss that accrues to the layer before considering premiums at the VaR 99.6 level

Premium Credit: (calculated as a percentage of the original exposure): The premium that accrues to the layer at the VaR 99.6 level

Net Capital Charge: The gross capital charge minus the premium credit (for each of the VaR levels); this is $B5_m$ in the net required capital (NRC) formula

Exhibit 1
Characteristics of Representative Sample of Freddie Mac Transactions

Transaction	Products	Retention (%)	LTV	Origination Type
ACIS 2013-1	>20-year FRM	0.30	Low	Back-end
ACIS 2014-1	>20-year FRM	0.30	Low	Back-end
ACIS 2014-2	>20-year FRM	0.30	Low	Back-end
ACIS 2015-1	>20-year FRM	0.60	High	Back-end
ACIS 2015-2	>20-year FRM	0.40	Low	Back-end
ACIS 2015-8	>20-year FRM	0.00	Low	Back-end
ACIS 2015-9	>20-year FRM	0.00	High	Back-end
ACIS 2016-4	>20-year FRM	0.00	Low	Back-end
ACIS 2016-5	>20-year FRM	0.00	High	Back-end
ACIS 2016-8	>20-year FRM	0.00	Low	Back-end
ACIS 2016-9	>20-year FRM	0.00	High	Back-end
ACIS 2017-1	>20-year FRM	0.50	Low	Back-end
ACIS 2017-2	>20-year FRM	0.50	High	Back-end
ACIS 2018-DNA1	>20-year FRM	0.50	Low	Back-end
ACIS 2018-HQA1	>20-year FRM	0.50	High	Back-end
ACIS 2018-HQA2	>20-year FRM	0.10	High	Back-end
ACIS 2018-DNA3	>20-year FRM	0.10	Low	Back-end
ACIS 2019-DNA1	>20-year FRM	0.10	Low	Back-end
ACIS 2019-HQA1	>20-year FRM	0.10	High	Back-end
ACIS 2019-DNA2	>20-year FRM	0.10	Low	Back-end
ACIS 2019-DNA3	>20-year FRM	0.10	Low	Back-end
ACIS 2019-HQA3	>20-year FRM	0.10	High	Back-end
ACIS 2019-HQA4	>20-year FRM	0.10	High	Back-end
ACIS 2020-DNA1	>20-year FRM	0.10	Low	Back-end
ACIS 2020-HQA1	>20-year FRM	0.10	High	Back-end
ACIS 2020-DNA3	>20-year FRM	0.25	Low	Back-end
ACIS 2020-DNA4	>20-year FRM	0.25	Low	Back-end
ACIS 2020-HQA4	>20-year FRM	0.25	High	Back-end
ACIS 2021-DNA1	>20-year FRM	0.25	Low	Back-end
ACIS 2021-HQA1	>20-year FRM	0.25	High	Back-end
ACIS 2021-HQA2	>20-year FRM	0.25	High	Back-end
ACIS 2021-SAP8	>20-year FRM	0.25	Low	Back-end
ACIS 2022-SPL1	>20-year FRM	0.25	Low	Back-end
ACIS 2022-SPH1	>20-year FRM	0.25	High	Back-end
ACIS 2022-SPL2	>20-year FRM	0.25	Low	Back-end
ACIS 2022-SPL3*	>20-year FRM	0.25	Low	Back-end
ACIS 2022-SPH2*	>20-year FRM	0.25	High	Back-end
ACIS 2022-SPL5*	>20-year FRM	0.25	Low	Back-end

* Indicates a new transaction added to this report.
Source: Freddie Mac

Aggregation of Net Capital Charges at the Transaction Level

For ACIS transactions, the net capital charge associated with each risk layer depends on its position in the transaction's risk tower. According to the transaction structure, the rate at which

the limits of the top layers of ACIS transactions shrink is relatively high, given that scheduled amortization and prepayments in the loan portfolio are allocated sequentially from the top to the bottom layers to reduce those limits. In a number of cases, the net capital charges for specific layers of ACIS transactions are less than zero because (1) losses do not penetrate those layers (based on AM Best's Value-at-Risk analysis) or (2) those layers may have been very small to begin with and may have been paid down completely (according to our assumptions on the amortization of the underlying loans) before the losses could pierce such layers.[1]

Once the net capital charges for each layer are calculated, they are aggregated at the transaction level (floored at 5.00% of current exposures) and ultimately at the portfolio level for each reinsurer, before they are captured in the BCAR. **Exhibit 5** shows how the net capital charges in a hypothetical transaction are aggregated from the layer level to the transaction level while incorporating the net capital charge floor of 5.00% of total current exposures. (The exhibit shows the exposure information and net capital charges for layers M1, M2, M3, and B of the hypothetical transaction.)

Exhibit 2
Characteristics of Representative Sample of Fannie Mae Transactions

Transaction	Products	Retention (%)	LTV	Origination Type
CIRT 2014-1	>20-year FRM	0.50	Mix	Back-end
CIRT 2018-1	>20-year FRM	0.50	Low	Back-end
CIRT 2018-2	>20-year FRM	0.50	High	Back-end
CIRT 2018-3	>20-year FRM	0.50	High	Back-end
CIRT 2018-4	>20-year FRM	0.60	Low	Back-end
CIRT 2018-5	>20-year FRM	0.60	Low	Back-end
CIRT 2018-6	>20-year FRM	0.60	High	Back-end
CIRT 2018-7	>20-year FRM	0.60	High	Back-end
CIRT 2018 FE-1	>20-year FRM	0.50	Low	Front-end
CIRT 2018 FE-2	>20-year FRM	0.50	High	Front-end
CIRT 2019-1	>20-year FRM	0.60	Low	Back-end
CIRT 2019-2	>20-year FRM	0.60	High	Back-end
CIRT 2019-3	≤20-year FRM	0.40	Low	Back-end
CIRT 2019 FE-1	>20-year FRM	0.50	Low	Front-end
CIRT 2019 FE-2	>20-year FRM	0.50	High	Front-end
CIRT 2020-1	>20-year FRM	0.35	Low	Back-end
CIRT 2020 FE-1	>20-year FRM	0.35	Low	Front-end
CIRT 2021-1	>20-year FRM	0.60	High	Back-end
CIRT 2021-2	>20-year FRM	0.65	High	Back-end
CIRT 2022-1	>20-year FRM	0.25	Low	Back-end
CIRT 2022-2*	>20-year FRM	0.25	High	Back-end
CIRT 2022-3	>20-year FRM	0.65	High	Back-end
CIRT 2022-4*	>20-year FRM	0.45	Low	Back-end
CIRT 2022-5*	>20-year FRM	0.65	High	Back-end
CIRT 2022-6	>20-year FRM	0.55	Low	Back-end
CIRT 2022-7*	>20-year FRM	0.55	Low	Back-end
CIRT 2022-8*	>20-year FRM	0.65	High	Back-end
CIRT 2022-9*	>20-year FRM	0.55	Low	Back-end
CIRT 2022-10*	>20-year FRM	0.75	High	Back-end

* Indicates a new transaction added to this report.
Source: Fannie Mae

The last row in **Exhibit 5** consolidates the layer-by-layer exposures and the net capital charges. In this example, the exposure associated with the M2 layer is relatively large. Thus, the transaction-level net capital charge (before applying the 5.00% floor) is approximately $1.75 million, or 2.79% of the current exposure (2.79% = $1.75 million/$62.83 million). When the 5.00% floor is applied, the resulting net capital charge is $3.14 million ($3.14 million = 5.00% * $62.83 million). Although the transaction as a whole benefits from the negative net capital charge contributed by the M2 layer, the aggregate net capital charge is still floored by 5.00% of the prevailing exposure at the time of the analysis.

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[1] Net capital charges in CIRT transactions may be less than zero, for similar reasons.

Exhibit 3
Net Capital Charges (B5$_m$) for Representative Sample of ACIS Transactions
(%)

A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**			
Transaction	Layer	Credit Enhance-ment	Initial Limit	Pre-mium Rate	Total Real-ized Loss (bps)	Years Since Incep-tion	Remain-ing UPB	Current Limit	Season-ing Factor	Ultimate Loss (99.6%)	Gross Capital Charge (99.6%)	Pre-mium Credit (99.6%)	Net Capital Charge (95%)	Net Capital Charge (99%)	Net Capital Charge (99.5%)	Net Capital Charge (99.6%)
ACIS 2013-1	M1	1.65	1.35	2.35	15.51	8.9	17	0.00	63	0.33	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2013-1	M2	0.30	1.35	5.35	15.51	8.9	17	0.39	63	0.33	2.29	4.15	-4.20	-4.21	-2.35	-1.85
ACIS 2014-1	M1	1.95	1.05	1.36	22.31	8.5	22	0.00	66	0.47	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2014-1	M2	0.30	1.65	4.12	22.31	8.5	22	0.58	66	0.47	9.56	3.86	-3.15	2.70	5.10	5.70
ACIS 2014-2	M1	3.50	1.00	0.75	23.83	8.3	21	0.00	68	0.50	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2014-2	M2	2.00	1.50	1.35	23.83	8.3	21	0.00	68	0.50	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2014-2	M3	0.30	1.70	2.61	23.83	8.3	21	0.98	68	0.50	11.12	4.41	-2.44	3.63	6.10	6.71
ACIS 2015-1	M1	4.10	2.00	1.25	6.39	7.8	18	0.00	72	0.40	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2015-1	M2	2.25	1.85	2.25	6.39	7.8	18	0.00	72	0.40	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2015-1	M3	0.60	1.65	4.00	6.39	7.8	18	0.64	72	0.40	0.00	5.43	-5.39	-5.41	-5.42	-5.43
ACIS 2015-2	M1	3.60	1.00	1.25	9.04	7.8	11	0.00	72	0.29	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2015-2	M2	2.40	1.20	2.25	9.04	7.8	11	0.00	72	0.29	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2015-2	M3	0.40	2.00	4.00	9.04	7.8	11	0.27	72	0.29	0.00	1.85	-1.84	-1.85	-1.85	-1.85
ACIS 2015-8	M1	4.85	1.00	1.10	1.61	6.9	16	0.00	79	0.35	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2015-8	M2	2.65	2.20	2.50	1.61	6.9	16	0.00	79	0.35	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2015-8	M3	1.00	1.65	4.00	1.61	6.9	16	0.64	79	0.35	0.00	5.92	-5.88	-5.91	-5.92	-5.92
ACIS 2015-8	B	0.00	1.00	8.35	1.61	6.9	16	0.98	79	0.35	30.88	30.87	-22.76	-7.58	-1.51	0.01
ACIS 2015-9	M1	5.40	1.00	1.10	0.64	6.8	14	0.00	79	0.36	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2015-9	M2	2.95	2.45	2.50	0.64	6.8	14	0.00	79	0.36	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2015-9	M3	1.00	1.95	4.50	0.64	6.8	14	0.67	79	0.36	0.00	6.09	-6.04	-6.07	-6.09	-6.09
ACIS 2015-9	B	0.00	1.00	8.95	0.64	6.8	14	0.99	79	0.36	32.82	33.43	-25.22	-8.81	-2.25	-0.60
ACIS 2016-4	M1	4.15	0.85	1.20	1.27	6.3	19	0.00	83	0.45	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2016-4	M2	3.25	0.90	2.30	1.27	6.3	19	0.00	83	0.45	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2016-4	M3	1.00	2.25	4.00	1.27	6.3	19	0.82	83	0.45	0.00	6.24	-6.18	-6.22	-6.23	-6.24
ACIS 2016-4	B	0.00	1.00	8.95	1.27	6.3	19	0.99	83	0.45	40.21	33.77	-24.30	-3.80	4.40	6.45
ACIS 2016-5	M1	4.50	1.00	1.10	0.56	6.3	16	0.00	84	0.45	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2016-5	M2	3.00	1.50	2.30	0.56	6.3	16	0.00	84	0.45	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2016-5	M3	1.00	2.00	4.50	0.56	6.3	16	0.84	84	0.45	0.00	8.16	-8.08	-8.13	-8.16	-8.16
ACIS 2016-5	B	0.00	1.00	9.50	0.56	6.3	16	0.99	84	0.45	40.51	36.28	-27.20	-6.25	2.13	4.23
ACIS 2016-8	M1	4.00	1.00	0.90	1.13	6.0	20	0.00	86	0.53	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2016-8	M2	3.00	1.00	1.85	1.13	6.0	20	0.00	86	0.53	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2016-8	M3	1.00	2.00	3.75	1.13	6.0	20	1.04	86	0.53	0.00	8.93	-8.85	-8.91	-8.93	-8.93
ACIS 2016-8	B	0.00	1.00	8.75	1.13	6.0	20	0.99	86	0.53	47.01	32.73	-21.87	2.23	11.88	14.29
ACIS 2016-9	M1	4.28	1.23	0.90	0.80	6.0	18	0.00	86	0.56	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2016-9	M2	3.05	1.23	2.00	0.80	6.0	18	0.00	86	0.56	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2016-9	M3	1.00	2.05	4.05	0.80	6.0	18	1.21	86	0.56	0.00	11.15	-11.06	-11.12	-11.14	-11.15
ACIS 2016-9	B	0.00	1.00	9.15	0.80	6.0	18	0.99	86	0.56	49.77	33.90	-22.89	2.95	13.29	15.87
ACIS 2017-1	M1	2.55	1.20	1.20	0.57	5.7	23	0.00	89	0.61	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2017-1	M2	1.00	1.55	3.25	0.57	5.7	23	0.89	89	0.61	0.00	8.90	-8.78	-8.86	-8.89	-8.90
ACIS 2017-1	B1	0.50	0.50	5.25	0.57	5.7	23	0.50	89	0.61	17.32	28.49	-29.37	-29.37	-15.52	-11.17
ACIS 2017-2	M1	3.25	1.00	1.20	0.74	5.6	21	0.00	89	0.69	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2017-2	M2	1.00	2.25	3.50	0.74	5.6	21	1.23	89	0.69	0.00	9.36	-9.25	-9.32	-9.35	-9.36
ACIS 2017-2	B1	0.50	0.50	5.00	0.74	5.6	21	0.50	89	0.69	31.12	26.08	-28.13	-19.37	-0.01	5.04
ACIS 2018-DNA1	M1	3.10	0.90	0.85	0.59	4.7	21	0.00	97	0.71	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2018-DNA1	M2	1.00	2.10	2.70	0.59	4.7	21	1.13	97	0.71	0.00	9.24	-9.24	-9.24	-9.24	-9.24
ACIS 2018-DNA1	B1	0.50	0.50	4.50	0.59	4.7	21	0.50	97	0.71	33.08	26.09	-28.54	-17.94	1.86	6.99
ACIS 2018-HQA1	M1	3.20	0.80	0.85	0.68	4.6	19	0.00	98	0.76	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2018-HQA1	M2	1.00	2.20	2.90	0.68	4.6	19	1.45	98	0.76	0.00	10.72	-10.59	-10.68	-10.71	-10.72
ACIS 2018-HQA1	B1	0.50	0.50	4.75	0.68	4.6	19	0.50	98	0.76	42.46	26.84	-30.68	-12.16	9.92	15.62

Exhibit 3 (Cont'd.)
Net Capital Charges (B5$_m$) for Representative Sample of ACIS Transactions
(%)

A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**			
Transaction	Layer	Credit Enhance-ment	Initial Limit	Pre-mium Rate	Total Real-ized Loss (bps)	Years Since Incep-tion	Remain-ing UPB	Current Limit	Season-ing Factor	Ultimate Loss (99.6%)	Gross Capital Charge (99.6%)	Pre-mium Credit (99.6%)	Net Capital Charge (95%)	Net Capital Charge (99%)	Net Capital Charge (99.5%)	Net Capital Charge (99.6%)
ACIS 2018-HQA2	M1	3.00	1.00	1.05	0.37	4.0	23	0.00	102	0.98	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2018-HQA2	M2	1.15	1.85	2.90	0.37	4.0	23	1.60	102	0.98	0.00	17.31	-17.31	-17.31	-17.31	-17.31
ACIS 2018-HQA2	B1	0.65	0.50	4.85	0.37	4.0	23	0.50	102	0.98	52.66	28.26	-33.39	-11.32	17.06	24.40
ACIS 2018-HQA2	B2	0.10	0.55	13.00	0.37	4.0	23	0.55	102	0.98	91.50	28.11	-22.43	52.90	61.64	63.40
ACIS 2018-DNA3	M1	3.00	1.00	1.05	0.54	4.1	25	0.00	101	0.90	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2018-DNA3	M2	1.10	1.90	2.70	0.54	4.1	25	1.41	101	0.90	0.00	13.62	-13.62	-13.62	-13.62	-13.62
ACIS 2018-DNA3	B1	0.60	0.50	4.50	0.54	4.1	25	0.50	101	0.90	48.34	26.37	-30.68	-10.57	15.30	21.97
ACIS 2018-DNA3	B2	0.10	0.50	9.90	0.54	4.1	25	0.50	101	0.90	91.52	21.37	-6.75	61.49	68.68	70.15
ACIS 2019-DNA1	M1	3.00	1.25	1.05	0.54	3.7	19	0.00	104	0.73	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2019-DNA1	M2	1.10	1.90	2.60	0.54	3.7	19	1.16	104	0.73	0.00	11.26	-11.26	-11.26	-11.26	-11.26
ACIS 2019-DNA1	B1	0.60	0.50	4.55	0.54	3.7	19	0.50	104	0.73	19.97	31.04	-32.21	-32.21	-15.96	-11.07
ACIS 2019-DNA1	B2	0.10	0.50	10.70	0.54	3.7	19	0.50	104	0.73	88.77	30.58	-30.94	43.21	56.06	58.20
ACIS 2019-HQA1	M1	3.60	0.90	1.05	0.37	3.6	17	0.00	104	0.78	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2019-HQA1	M2	1.50	2.10	2.50	0.37	3.6	17	1.30	104	0.78	0.00	11.00	-11.00	-11.00	-11.00	-11.00
ACIS 2019-HQA1	B1	0.60	0.90	4.50	0.37	3.6	17	0.90	104	0.78	14.99	31.01	-32.09	-30.33	-19.07	-16.03
ACIS 2019-HQA1	B2	0.10	0.50	13.00	0.37	3.6	17	0.50	104	0.78	89.35	35.23	-40.79	40.41	52.03	54.12
ACIS 2019-DNA2	M1	3.50	0.75	0.95	0.25	3.6	16	0.00	105	0.66	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2019-DNA2	M2	1.10	2.40	2.45	0.25	3.6	16	0.93	105	0.66	0.00	6.84	-6.84	-6.84	-6.84	-6.84
ACIS 2019-DNA2	B1	0.60	0.50	4.50	0.25	3.6	16	0.50	105	0.66	8.68	32.04	-32.34	-32.34	-27.43	-23.36
ACIS 2019-DNA2	B2	0.10	0.50	10.75	0.25	3.6	16	0.50	105	0.66	87.01	35.55	-40.06	26.91	48.91	51.46
ACIS 2019-DNA3	M1	3.25	1.00	0.90	0.29	3.2	17	0.00	106	0.68	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2019-DNA3	M2	1.10	2.15	2.20	0.29	3.2	17	0.85	106	0.68	0.00	6.44	-6.44	-6.44	-6.44	-6.44
ACIS 2019-DNA3	B1	0.60	0.50	4.00	0.29	3.2	17	0.50	106	0.68	12.10	29.21	-29.68	-29.68	-21.38	-17.11
ACIS 2019-DNA3	B2	0.10	0.50	10.50	0.29	3.2	17	0.50	106	0.68	87.03	34.67	-38.51	30.70	49.90	52.37
ACIS 2019-HQA3	M1	3.50	1.00	0.95	0.03	3.1	18	0.00	107	0.84	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2019-HQA3	M2	1.50	2.00	2.20	0.03	3.1	18	1.30	107	0.84	0.00	10.80	-10.80	-10.80	-10.80	-10.80
ACIS 2019-HQA3	B1	0.60	0.90	4.00	0.03	3.1	18	0.90	107	0.84	20.76	28.51	-30.17	-23.78	-11.07	-7.75
ACIS 2019-HQA3	B2	0.10	0.50	12.25	0.03	3.1	18	0.50	107	0.84	89.48	32.81	-34.69	44.34	54.63	56.67
ACIS 2019-HQA4	M1	3.25	1.25	0.95	-0.03	2.9	18	0.00	108	0.88	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2019-HQA4	M2	1.15	2.10	2.20	-0.03	2.9	18	0.07	108	0.88	0.00	0.57	-0.57	-0.57	-0.57	-0.57
ACIS 2019-HQA4	B1	0.60	0.55	4.10	-0.03	2.9	18	0.55	108	0.88	38.73	27.92	-31.36	-16.99	5.12	10.81
ACIS 2019-HQA4	B2	0.10	0.50	12.00	-0.03	2.9	18	0.50	108	0.88	89.69	31.48	-30.86	46.60	56.17	58.21
ACIS 2020-DNA1	M1	2.75	1.00	0.95	0.05	2.7	21	0.00	108	0.85	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2020-DNA1	M2	1.10	1.65	1.95	0.05	2.7	21	0.31	108	0.85	0.00	2.85	-2.85	-2.85	-2.85	-2.85
ACIS 2020-DNA1	B1	0.60	0.50	3.55	0.05	2.7	21	0.50	108	0.85	37.23	24.82	-27.63	-16.09	6.47	12.42
ACIS 2020-DNA1	B2	0.10	0.50	10.50	0.05	2.7	21	0.50	108	0.85	88.88	29.73	-26.33	48.39	57.41	59.14
ACIS 2020-HQA1	M1	3.00	1.25	0.95	0.17	2.7	21	0.00	108	0.99	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2020-HQA1	M2	1.10	1.90	1.95	0.17	2.7	21	0.31	108	0.99	0.00	2.48	-2.48	-2.48	-2.48	-2.48
ACIS 2020-HQA1	B1	0.60	0.50	3.80	0.17	2.7	21	0.50	108	0.99	61.24	23.40	-29.63	1.86	30.46	37.84
ACIS 2020-HQA1	B2	0.10	0.50	11.75	0.17	2.7	21	0.50	108	0.99	90.55	28.26	-18.14	52.82	60.76	62.29
ACIS 2020-DNA3	M1	3.00	1.00	1.50	0.02	2.3	34	0.00	109	1.22	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2020-DNA3	M2	1.75	1.25	2.90	0.02	2.3	34	0.00	109	1.22	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2020-DNA3	B1	0.75	1.00	6.50	0.02	2.3	34	0.80	109	1.22	35.50	35.79	-41.91	-23.57	-5.12	-0.29
ACIS 2020-DNA3	B2	0.25	0.50	11.00	0.02	2.3	34	0.50	109	1.22	88.22	32.99	-39.48	43.98	53.43	55.23
ACIS 2020-DNA4	M1	3.00	1.00	1.45	0.05	2.1	37	0.00	109	1.34	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2020-DNA4	M2	1.75	1.25	2.90	0.05	2.1	37	0.00	109	1.34	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2020-DNA4	B1	0.75	1.00	6.70	0.05	2.1	37	0.97	109	1.34	44.97	44.48	-53.35	-26.15	-4.99	0.49
ACIS 2020-DNA4	B2	0.25	0.50	12.00	0.05	2.1	37	0.50	109	1.34	88.86	34.02	-35.60	44.19	53.17	54.84
ACIS 2020-HQA4	M1	3.00	1.00	1.40	0.05	2.0	41	0.00	109	1.81	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2020-HQA4	M2	1.75	1.25	3.00	0.05	2.0	41	0.01	109	1.81	0.56	0.19	-0.20	-0.20	-0.20	0.37

Exhibit 3 (Cont'd.)
Net Capital Charges (B5$_m$) for Representative Sample of ACIS Transactions
(%)

		Credit Enhance-ment	Initial Limit	Pre-mium Rate	Total Real-ized Loss (bps)	Years Since Incep-tion	Remain-ing UPB	Current Limit	Season-ing Factor	Ultimate Loss (99.6%)	Gross Capital Charge (99.6%)	Pre-mium Credit (99.6%)	Net Capital Charge (95%)	Net Capital Charge (99%)	Net Capital Charge (99.5%)	Net Capital Charge (99.6%)
A	B	C	D	E	F	G	H	I	J	K	L	M			N	
Transaction	Layer															
ACIS 2020-HQA4	B1	0.75	1.00	6.50	0.05	2.0	41	1.00	109	1.81	79.39	34.14	-53.58	11.36	41.91	45.25
ACIS 2020-HQA4	B2	0.25	0.50	12.00	0.05	2.0	41	0.50	109	1.81	91.22	26.80	12.11	57.36	63.19	64.43
ACIS 2021-DNA1	M1	2.00	0.50	1.25	0.00	1.7	67	0.00	108	2.07	0.00	0.00	0.00	0.00	0.00	0.00
ACIS 2021-DNA1	M2	1.25	0.75	1.75	0.00	1.7	67	0.63	108	2.07	63.99	8.67	-12.36	27.86	54.09	55.32
ACIS 2021-DNA1	B1	0.75	0.50	4.00	0.00	1.7	67	0.50	108	2.07	84.90	15.39	-22.84	62.39	68.37	69.51
ACIS 2021-DNA1	B2	0.25	0.50	9.00	0.00	1.7	67	0.50	108	2.07	91.29	19.95	38.07	66.28	70.33	71.34
ACIS 2021-HQA1	M1	2.50	0.75	1.20	0.01	1.6	72	0.04	108	3.04	4.18	0.44	-0.57	-0.57	3.59	3.75
ACIS 2021-HQA1	M2	1.25	1.25	2.00	0.01	1.6	72	1.25	108	3.04	80.88	9.74	-17.03	59.96	70.00	71.15
ACIS 2021-HQA1	B1	0.75	0.50	4.65	0.01	1.6	72	0.50	108	3.04	88.80	13.26	39.11	70.47	74.94	75.54
ACIS 2021-HQA1	B2	0.25	0.50	8.90	0.01	1.6	72	0.50	108	3.04	92.96	15.93	56.04	74.34	76.49	77.03
ACIS 2021-HQA2	M1	2.00	0.50	1.00	0.00	1.3	83	0.21	107	3.48	32.10	2.57	-3.69	25.92	28.74	29.52
ACIS 2021-HQA2	M2	1.50	0.75	1.55	0.00	1.3	83	0.75	107	3.48	82.21	7.03	-5.58	69.56	74.38	75.18
ACIS 2021-HQA2	B1	0.75	0.50	3.25	0.00	1.3	83	0.50	107	3.48	88.82	9.25	57.53	76.00	79.07	79.58
ACIS 2021-HQA2	B2	0.25	0.50	7.50	0.00	1.3	83	0.50	107	3.48	92.63	14.06	62.33	76.36	78.12	78.56
ACIS 2021-SAP8	M	1.25	1.75	1.50	0.00	1.0	89	1.63	108	1.20	0.00	7.52	-7.52	-7.52	-7.52	-7.52
ACIS 2021-SAP8	B1	0.75	0.50	3.25	0.00	1.0	89	0.50	108	1.20	74.87	14.37	-17.46	17.97	51.74	60.50
ACIS 2021-SAP8	B2	0.25	0.50	8.25	0.00	1.0	89	0.50	108	1.20	89.15	22.78	-0.78	61.91	65.91	66.37
ACIS 2022-SPL1	M1	2.85	1.65	0.95	0.00	0.7	93	1.58	104	3.25	16.26	8.10	-8.29	-8.29	2.67	8.16
ACIS 2022-SPL1	M2	1.35	1.50	1.55	0.00	0.7	93	1.50	104	3.25	77.29	8.97	-14.14	50.29	67.11	68.33
ACIS 2022-SPL1	B1	0.75	0.60	3.25	0.00	0.7	93	0.60	104	3.25	85.89	11.68	43.39	70.76	73.75	74.21
ACIS 2022-SPL1	B2	0.25	0.50	8.25	0.00	0.7	93	0.50	104	3.25	90.54	19.87	51.76	66.65	69.80	70.66
ACIS 2022-SPH1	M1	3.00	1.50	0.90	0.00	0.7	95	1.50	104	4.02	47.54	7.31	-8.21	1.36	32.14	40.23
ACIS 2022-SPH1	M2	1.40	1.60	1.60	0.00	0.7	95	1.60	104	4.02	80.03	8.14	-5.65	66.35	71.12	71.89
ACIS 2022-SPH1	B1	0.75	0.65	3.35	0.00	0.7	95	0.65	104	4.02	87.61	10.57	56.65	73.45	76.18	77.05
ACIS 2022-SPH1	B2	0.25	0.50	7.80	0.00	0.7	95	0.50	104	4.02	91.51	16.84	59.62	71.54	74.35	74.67
ACIS 2022-SPL2	M1	2.85	1.65	0.95	0.00	0.7	93	1.58	104	3.24	16.03	8.09	-8.27	-8.27	2.45	7.94
ACIS 2022-SPL2	M2	1.35	1.50	1.55	0.00	0.7	93	1.50	104	3.24	77.26	8.98	-14.14	50.04	67.06	68.27
ACIS 2022-SPL2	B1	0.75	0.60	3.25	0.00	0.7	93	0.60	104	3.24	85.88	11.69	43.06	70.72	73.73	74.19
ACIS 2022-SPL2	B2	0.25	0.50	8.25	0.00	0.7	93	0.50	104	3.24	90.52	19.90	51.72	66.63	69.77	70.63
ACIS 2022-SPL3*	M1	3.30	2.20	1.10	0.00	0.5	96	2.20	103	3.42	3.56	10.18	-10.21	-10.21	-10.21	-6.62
ACIS 2022-SPL3*	M2	1.55	1.75	2.25	0.00	0.5	96	1.75	103	3.42	74.53	14.60	-20.88	31.41	57.86	59.93
ACIS 2022-SPL3*	B1	0.85	0.70	4.00	0.00	0.5	96	0.70	103	3.42	84.72	15.57	21.68	64.22	68.17	69.15
ACIS 2022-SPL3*	B2	0.25	0.60	8.50	0.00	0.5	96	0.60	103	3.42	89.27	23.21	46.53	63.81	65.61	66.06
ACIS 2022-SPH2*	M1	3.15	2.10	1.60	0.00	0.3	97	2.01	102	3.97	26.52	13.64	-14.40	-13.63	7.29	12.89
ACIS 2022-SPH2*	M2	1.55	1.60	2.50	0.00	0.3	97	1.60	102	3.97	77.60	14.27	-21.95	55.96	62.16	63.33
ACIS 2022-SPH2*	B1	0.85	0.70	4.90	0.00	0.3	97	0.70	102	3.97	85.24	18.42	38.42	62.17	66.33	66.82
ACIS 2022-SPH2*	B2	0.25	0.60	9.00	0.00	0.3	97	0.60	102	3.97	89.33	24.44	47.38	62.51	64.41	64.89
ACIS 2022-SPL5*	M1	3.30	1.70	1.80	0.00	0.2	97	1.62	101	3.44	5.38	16.16	-16.21	-16.21	-16.04	-10.78
ACIS 2022-SPL5*	M2	1.55	1.75	3.25	0.00	0.2	97	1.75	101	3.44	73.95	21.58	-30.67	23.40	50.61	52.37
ACIS 2022-SPL5*	B1	0.85	0.70	5.00	0.00	0.2	97	0.70	101	3.44	83.70	20.76	13.40	58.04	61.94	62.95
ACIS 2022-SPL5*	B2	0.25	0.60	9.75	0.00	0.2	97	0.60	101	3.44	88.64	28.20	38.84	56.74	60.04	60.44

Notes: In transactions ACIS 2013-1 through ACIS 2015-8, the total realized loss is based on a severity formula. In transactions ACIS 2018-HQA2 through ACIS 2022-SPL5, new rules for allocating principal payments were put into place, causing the limits of all layers to remain unchanged in AM Best stress scenarios.
* Indicates a new transaction added to this report.
Sources: Information and figures in columns A through E are from Freddie Mac; AM Best data and research

Exhibit 4
Net Capital Charges (B5$_m$) for Representative Sample of for CIRT Transactions
(%)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N			
	Transaction	Layer	Credit Enhance-ment	Initial Limit	Pre-mium Rate	Total Real-ized Loss (bps)	Years Since Incep-tion	Remain-ing UPB	Current Limit	Season-ing Factor	Ultimate Loss (99.6%)	Gross Capital Charge (99.6%)	Pre-mium Credit (99.6%)	Net Capital Charge (95%)	Net Capital Charge (99%)	Net Capital Charge (99.5%)	Net Capital Charge (99.6%)
	CIRT 2014-1	Tranche	0.50	3.00	0.14	2.18	8.0	11	0.66	70	0.23	0.00	0.98	-0.98	-0.98	-0.98	-0.98
	CIRT 2018-1	Tranche	0.50	2.75	0.11	0.40	4.7	22	0.79	97	0.74	7.05	3.53	-3.53	-0.88	2.63	3.52
	CIRT 2018-2	Tranche	0.50	3.00	0.13	0.57	4.5	20	1.11	98	0.81	8.52	3.63	-3.63	0.39	3.97	4.89
	CIRT 2018-3	Tranche	0.50	3.00	0.13	0.25	4.5	20	1.24	98	0.80	8.25	3.68	-3.68	0.11	3.67	4.57
	CIRT 2018-4	Tranche	0.60	3.00	0.13	0.32	4.4	24	1.11	99	0.85	6.56	4.40	-4.40	-2.40	1.23	2.16
	CIRT 2018-5	Tranche	0.60	3.00	0.13	0.30	4.4	24	1.22	99	0.84	6.47	4.39	-4.39	-2.45	1.16	2.09
	CIRT 2018-6	Tranche	0.60	3.00	0.14	0.65	4.2	22	1.58	100	0.97	9.94	4.53	-4.53	0.10	4.33	5.41
	CIRT 2018-7	Tranche	0.60	3.00	0.14	0.71	4.2	22	0.94	100	0.94	9.01	4.44	-4.44	-0.51	3.55	4.57
	CIRT 2018 FE-1	Tranche	0.50	3.25	0.16	0.37	4.6	16	1.16	97	0.62	2.99	3.30	-3.30	-3.30	-0.92	-0.30
	CIRT 2018 FE-2	Tranche	0.50	3.25	0.17	0.52	4.6	17	1.69	97	0.75	6.28	3.69	-3.69	-1.20	1.82	2.59
	CIRT 2019-1	Tranche	0.60	3.25	0.15	0.09	3.7	17	1.00	104	0.69	2.14	3.45	-3.45	-3.45	-1.97	-1.31
	CIRT 2019-2	Tranche	0.60	3.25	0.15	0.20	3.7	18	1.52	104	0.83	5.62	3.80	-3.80	-2.23	0.99	1.82
	CIRT 2019-3	Tranche	0.40	3.25	0.17	0.13	3.2	18	1.12	107	0.85	10.74	5.34	-5.34	1.15	4.54	5.39
	CIRT 2019 FE-1	Tranche	0.50	3.25	0.16	0.04	3.5	31	1.00	105	1.07	14.11	7.07	-7.07	1.53	5.93	7.03
	CIRT 2019 FE-2	Tranche	0.50	3.25	0.17	0.00	3.5	35	1.59	105	1.55	26.75	8.73	-5.98	9.87	16.38	18.01
	CIRT 2020-1	Tranche	0.35	3.00	0.14	0.06	2.8	28	0.99	108	1.13	20.77	7.48	-5.06	7.02	12.03	13.28
	CIRT 2020 FE-1	Tranche	0.35	3.15	0.14	0.03	2.7	51	1.60	108	1.89	39.51	14.48	-4.69	15.04	23.03	25.03
	CIRT 2021-1	Tranche	0.60	3.15	0.08	0.00	1.1	89	3.15	106	4.30	80.85	14.00	12.07	55.61	65.48	66.85
	CIRT 2021-2	Tranche	0.65	3.85	0.08	0.00	1.0	91	3.85	106	4.39	75.85	12.68	8.72	44.93	59.52	63.16
	CIRT 2022-1	Tranche	0.25	2.95	0.06	0.00	0.8	92	2.95	104	3.06	74.73	11.73	13.54	46.50	59.69	63.00
	CIRT 2022-2*	Tranche	0.25	3.35	0.07	0.00	0.7	93	3.35	104	3.28	70.67	13.91	10.29	41.26	53.66	56.76
	CIRT 2022-3	Tranche	0.65	3.85	0.09	0.00	0.7	95	3.85	104	4.69	78.12	16.01	7.60	45.88	61.23	62.11
	CIRT 2022-4*	Tranche	0.45	3.65	0.08	0.00	0.6	94	3.65	103	3.58	66.35	14.00	6.03	36.85	49.25	52.35
	CIRT 2022-5*	Tranche	0.65	3.50	0.11	0.00	0.5	97	3.50	103	4.75	79.18	20.41	5.49	47.84	57.65	58.77
	CIRT 2022-6	Tranche	0.55	3.75	0.09	0.00	0.5	96	3.75	102	3.67	63.46	16.60	1.22	31.58	43.79	46.86
	CIRT 2022-7*	Tranche	0.55	3.35	0.09	0.00	0.4	97	3.35	102	3.61	69.54	17.87	1.51	34.90	48.32	51.67
	CIRT 2022-8*	Tranche	0.65	2.75	0.09	0.00	0.4	97	2.75	102	4.74	81.16	19.38	10.98	56.14	61.22	61.78
	CIRT 2022-9*	Tranche	0.55	3.35	0.09	0.00	0.2	98	3.35	101	3.66	70.24	19.55	0.14	33.78	47.31	50.69
	CIRT 2022-10*	Tranche	0.75	2.75	0.09	0.00	0.1	99	2.75	101	4.77	79.81	20.31	6.57	52.67	57.70	59.50

* Indicates a new transaction added to this report.
Sources: Information and figures in columns A through E are from Fannie Mae; AM Best data and research

Exhibit 5
Layer-by-Layer & Consolidated Results for a Hypothetical Transaction

A	B	C	D	E = B * D	F = 5.00% * C[1]	G = max(E, F)[1]
Layer	Original Exposure	Current Exposure	Net Capital Charge (%)	Net Capital Charge ($) Before Application of Floor	Floor for Transaction Net Capital Charge ($)	Transaction Net Capital Charge ($) After Application of Floor
M1	3,000,000	0	0.00	0		
M2	150,000,000	47,856,450	-3.14	-4,708,960		
M3	10,000,000	10,000,000	23.80	2,380,040		
B	5,000,000	4,977,883	81.67	4,083,387		
Total	168,000,000	62,834,333		1,754,466	3,141,717	3,141,717[2]

[1] Applicable to last row only.

[2] The net capital charge is typically expressed as a percentage of the original exposure, so the net capital charge for this transaction is 1.87% (1.87% = $3.14m / $168.00mm).
Source: AM Best data and research

Disclaimer

At its sole discretion, AM Best may discontinue the publication of the net capital charges ($B5_m$), change the frequency of the publication, or change the transaction selection criteria associated with the net capital charges. Publication will also depend on the timely availability of the ACIS/CIRT data from the GSEs.

The net capital charges in this report are meant to approximate the net capital charges used in the determination of net required capital in the BCAR. Readers may not be able to precisely replicate the net capital charges in this report because of assumptions related to seasoning, evaluation cut-off dates, transaction effective dates, and interpolation methodology. In addition, the GSEs may revise or update data associated with the ACIS/CIRT transactions after AM Best has downloaded such data for the current net capital charge calculations. Changes by the GSEs, as well as any changes or corrections AM Best makes to the net capital charge calculations, will be reflected in subsequent AM Best reports.

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