

RMBS Research

Fourth-Quarter 2018 RMBS Quarterly – Non-QM RMBS Continue to Perform Well as Issuance Grows

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Morningstar Perspective

The credit performance of residential mortgage-backed securities backed by non-qualified, or non-QM, mortgage loans¹ remained strong in the last quarter of 2018, as the credit-enhancement levels for all rated bonds climbed because of steady voluntary prepayments, relatively low serious delinquency rates, and no realized losses.

Non-QM RMBS issuance continues to grow at a steady rate with the collateral quality of new issue deals and the structure of the transactions generally in line with those of the previously issued securitizations.

As noted in our RMBS outlook for 2019, Morningstar Credit Ratings, LLC expects the growth in non-QM RMBS issuance to continue in 2019 with the credit quality of the collateral weakening somewhat but remaining overall consistent with the prior year². Also, we expect the non-QM RMBS transaction structures to continue to evolve as the issuers explore ways to optimize funding costs and maximize proceeds from securitization.

¹ A nonqualified mortgage loan is a loan that does not have the characteristics of qualified mortgage loan. The ability-to-repay rules issued by the Consumer Financial Protection Bureau established the categorization of QMs, which must meet certain criteria, including underwriting standards established in Appendix Q of the Truth in Lending Act. See [CFPB mortgage rules](#).

² See [Morningstar RMBS Outlook for 2019: Solid Post-2010 RMBS Performance and Modest Issuance Growth Will Continue In 2019](#) for details.

New Issue Highlights: Issuance, Collateral Quality, and Deal Structure Remained Steady in Fourth-Quarter 2018

The amount of Morningstar-rated new issuance of non-QM RMBS remained steady in fourth-quarter 2018. We rated three new transactions that quarter, which brought the total number of non-QM RMBS deals we rated in 2018, to 16. The new issuance credit quality and the structure of the transactions generally remained in line with those of the previously issued non-QM RMBS.

The credit quality of the collateral backing the Deeptown Residential Mortgage Trust 2018-4 deal (DRMT 2018-4), which closed in November 2018, is about the same as that of the previously issued Deeptown Residential Mortgage Trust 2018-3 deal (DRMT 2018-3), as evidenced by the weighted average current loan-to-value ratio, or LTV, the FICO score, and the share of fully documented loans, as Table 1 below shows. Also, the credit quality of the DRMT 2018-4 deal is generally similar to that of the Deeptown Residential Mortgage Trust 2018-2 deal (DRMT 2018-2), though with a somewhat higher weighted average FICO score of 694, compared with a FICO score of 679 for DRMT 2018-2. Similarly, apart from a slight increase in the weighted average FICO score and a decline in the average loan size, the collateral attributes of Verus Securitization Trust 2018-3 (Verus 2018-3) are generally in line with those of the Verus Securitization Trust 2018-2 deal (Verus 2018-2), as Table 1 shows.

Table 1: Select Loan and Transaction Characteristics of Morningstar Rated Non-QM RMBS

Issuer	Issuance Date	Issuance (\$)	Loan Size (\$)	WAC (%) *	OLTV (%) *	Current LTV (%) *	Adj-Rate Mortgage (%) *	FICO*	Full Doc (%)	IO (%)*	Investor (%)	Senior CE Loss (%)**	AAA Loss (%)***	B (%) Loss
Transactions Issued in Fourth-Quarter 2018														
Deephaven Residential Mortgage Trust 2018-4	11/27/2018	362,131,000	436,752	6.8	72.9	72.6	64.2	694	68.8	14.8	22.0	37.9	28.6	3.0
Ellington Financial Mortgage Trust 2018-1	11/13/2018	223,333,000	455,917	6.3	69.0	68.5	72.4	704	80.6	4.2	19.5	30.2	24.2	2.0
Verus Securitization Trust 2018-3	10/19/2018	430,385,000	546,746	6.6	69.3	69.1	75.6	696	83.7	23.2	16.5	35.5	28.9	2.2
Deephaven Residential Mortgage Trust 2018-3	9/27/2018	317,452,000	435,372	6.9	72.9	72.6	74.7	693	74.8	11.9	15.7	37.0	34.1	3.4
Verus Securitization Trust 2018-2	7/26/2018	489,565,021	573,933	6.5	69.1	68.8	77.1	690	84.5	22.7	16.8	33.4	28.2	2.4
COLT 2018-2 Mortgage Loan Trust	6/5/2018	358,655,000	451,777	6.5	79.0	N/A	60.3	701	99.7	0.7	3.6	31.3	33.1	3.3
Deephaven Residential Mortgage Trust 2018-2	5/31/2018	292,034,000	382,045	6.8	71.8	71.5	80.1	679	70.6	7.8	18.9	37.1	34.6	3.4
SGRMT 2018-1	4/27/2018	129,688,000	551,687	6.6	71.9	71.6	65.1	701	87.0	3.2	8.4	45.3	27.5	2.1
Deephaven Residential Mortgage Trust 2018-1	1/31/2018	305,427,000	408,755	6.7	73.4	73.1	85.1	689	76.6	9.6	16.6	35.9	27.2	3.2
Verus Securitization Trust 2018-1	1/25/2018	242,521,000	443,842	6.7	70.0	68.8	69.9	698	84.0	13.5	20.7	37.7	22.4	2.3
Verus Securitization Trust 2017-SG1	11/16/2017	247,511,000	460,144	6.8	71.4	70.5	73.5	693	86.4	9.4	15.0	36.0	23.7	2.4
Ellington Financial Mortgage Trust 2017-1	11/15/2017	138,550,000	448,360	6.6	65.5	64.7	96.6	697	92.1	0.6	19.4	31.4	18.8	1.8
Deephaven Residential Mortgage Trust 2017-3	11/7/2017	305,016,000	389,712	6.9	74.9	74.6	82.4	687	81.2	4.4	10.4	38.8	27.8	3.3
Verus Securitization Trust 2017-2	7/28/2017	236,056,000	407,090	7.0	68.5	68.0	77.4	701	89.9	14.5	27.0	36.2	23.2	2.7
COLT 2017-1 Mortgage Loan Trust	5/3/2017	377,480,000	472,827	6.3	76.1	75.6	74.1	708	77.5	2.8	3.3	34.1	22.6	2.4
Verus Securitization Trust 2017-1	2/22/2017	137,403,000	501,789	6.7	69.9	69.2	91.8	700	90.8	5.8	6.1	39.8	19.6	2.0

* Weighted average by loan balance

** Credit enhancement to the most senior tranche

*** Highest AAA scenario loss projected across high-, mid- and low- interest rates scenarios

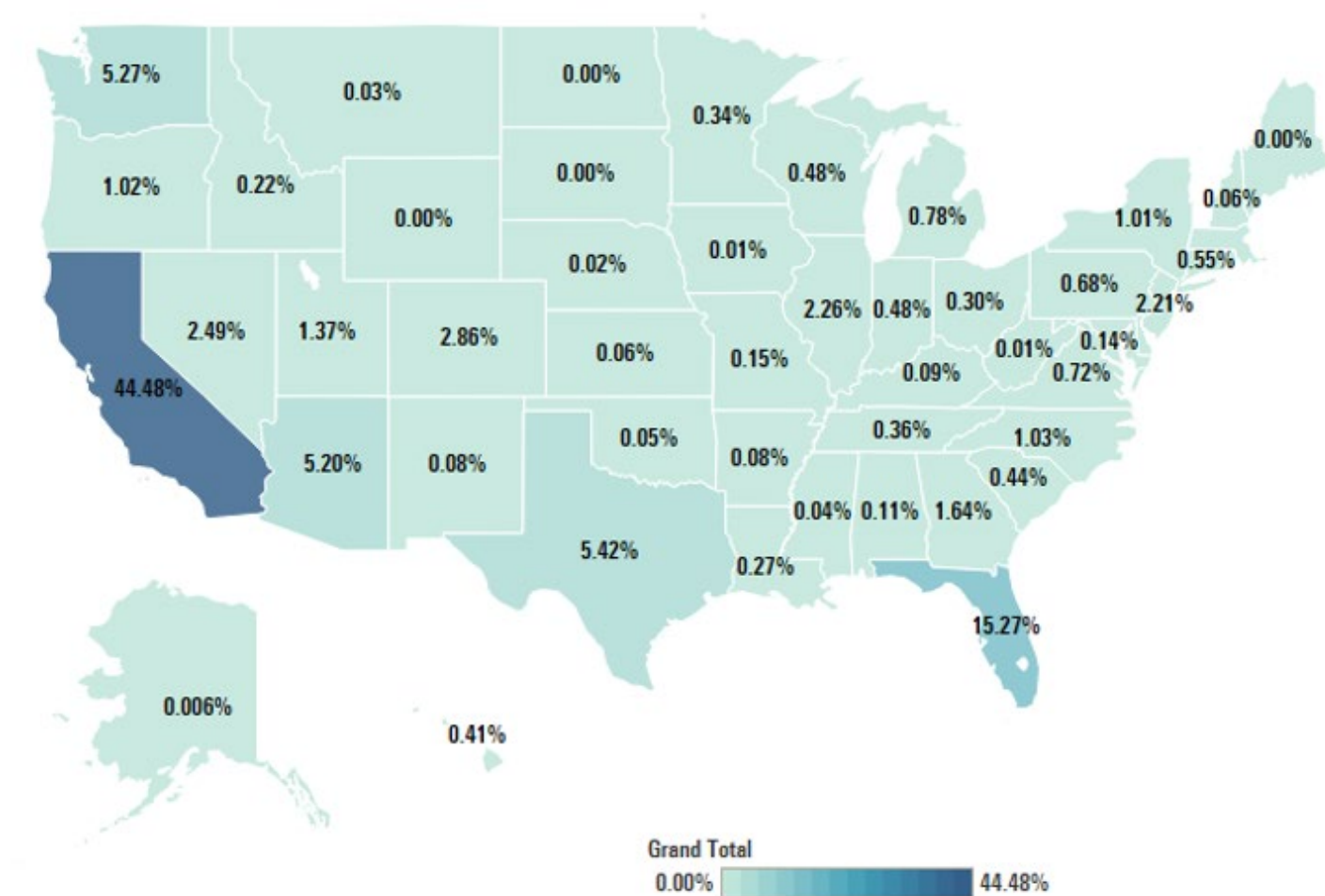
Source: Morningstar Credit Ratings, LLC

Another deal that closed in fourth-quarter 2018 was Ellington Financial Mortgage Trust 2018-1 (EFMT 2018-1), the second non-QM securitization in this shelf following the Ellington Financial Mortgage Trust 2017-1 (EFMT 2017-1) deal issued almost a year ago in November 2017. The new deal had a slightly weaker but generally similar credit quality as its predecessor, with a higher current LTV and a lower share of fully documented loans, both generally weaker collateral attributes, which were somewhat offset by the higher weighted average FICO score and larger average loan size.

Notably, the structure of the transactions remained generally similar across various non-QM RMBS issuers. In these deals, the principal is usually distributed sequentially first to senior and then to subordinated bonds. The principal is typically paid pro rata among senior, or Class A, notes with a sequential trigger, which determines if such distributions should be made sequentially to various Class A notes based on severe delinquency rates or realized losses. The transactions also generally benefit from the excess interest, which could be used to cover losses.

The geographical dispersion of the properties backing loans in DRMT 2018-4, EFMT 2018-1, and Verus 2018-3 was about the same as in other non-QM RMBS deals, with most properties in California and Florida as Map 1 shows. Although, New York was the third state with most properties backing loans in Verus 2018-3.

Map 1: Most Properties Backing Loans in Non-QM RMBS are in California, Florida, Washington, and Texas.



Note: The map shows the percentage of properties backing loans in select rated non-QM RMBS in each state. The list of transactions for which the data is shown in the chart includes all rated non-QM RMBS except Verus 2018-1, Verus 2018-2, and SGRMT 2018-1, deals for which we do not have loan-level data.

Sources: Morningstar Credit Ratings, LLC, CoreLogic, and 1010data.

Performance Highlights: Credit Performance Remains Strong

The credit performance of non-QM RMBS we rate remained strong and continued to improve in fourth-quarter 2018 as the credit-enhancement levels increased steadily because of the steady voluntary prepayments, nonexistent losses, and excess interest.

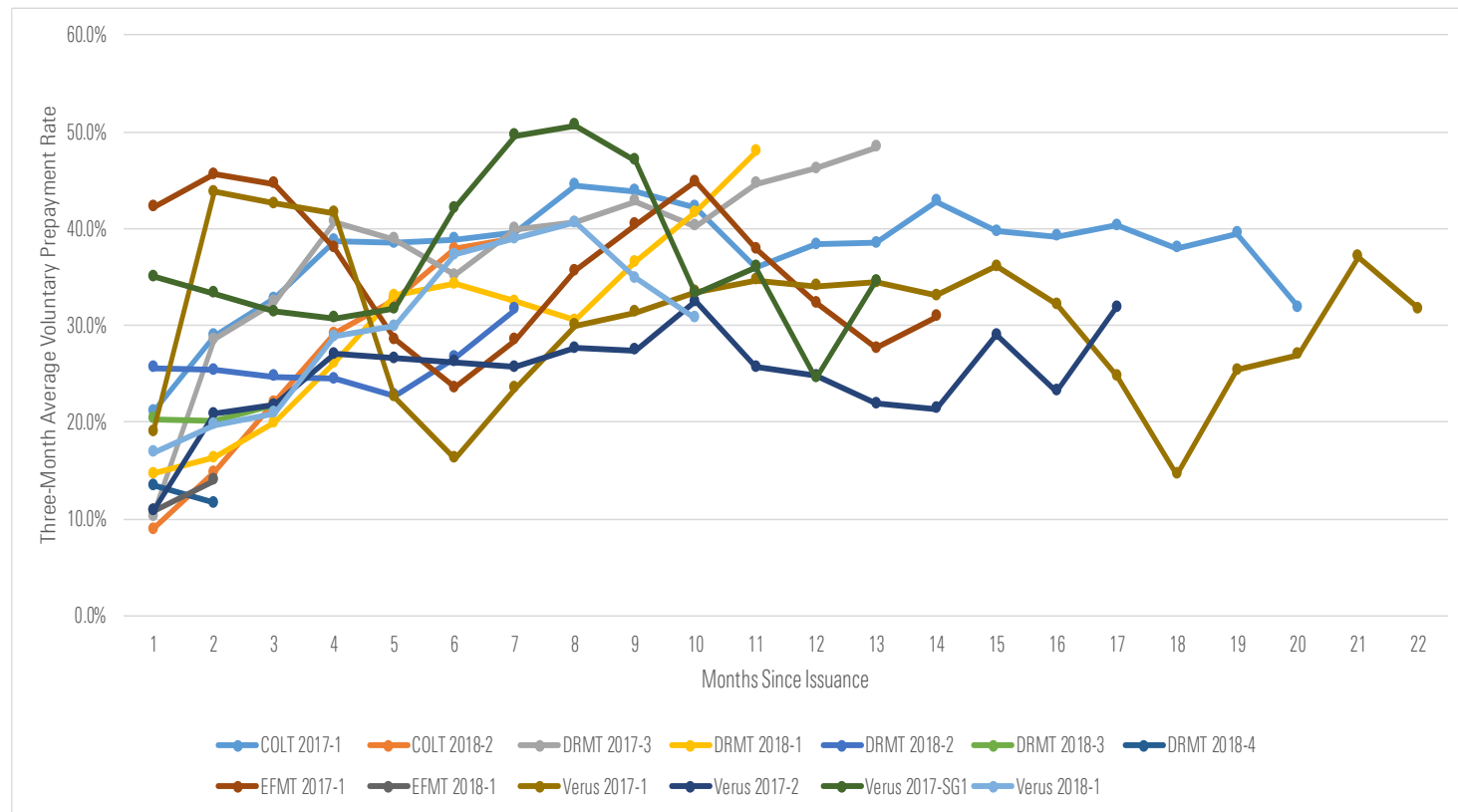
Voluntary Prepayment Rates Remain Unscathed by Rising Mortgage Rates

Despite rising mortgage rates, a trend we observed in 2018, which typically causes the prepayment rates to decline, the voluntary prepayment rates for most non-QM deals remained elevated well above a 20% conditional prepayment rate, or CPR, as Chart 1 shows.

The prepayments will likely continue at a healthy pace because the mortgage rates on the loans backing non-QM RMBS are higher than the rates on conventional loans to high credit quality, or prime, borrowers. Table 1 above shows that mortgage rates in non-QM RMBS are on average above 6%, or more than 1.5% higher than the rate on conventional loans to prime borrowers in 2018, as evidenced by Freddie Mac's 30-year fixed primary mortgage market survey rate, which averaged about 4.54%³ in 2018. The non-QM borrowers might improve their credit over time if they remain current on their mortgage loans and on other lines of credit, thus becoming eligible to refinance their loans into mortgages with a lower rate.

³See [Freddie Mac Primary Mortgage Market Survey Rate Archive](#) for details.

Chart 1: Voluntary Prepayments Rates Remain Elevated in Rated Non-QM Deals



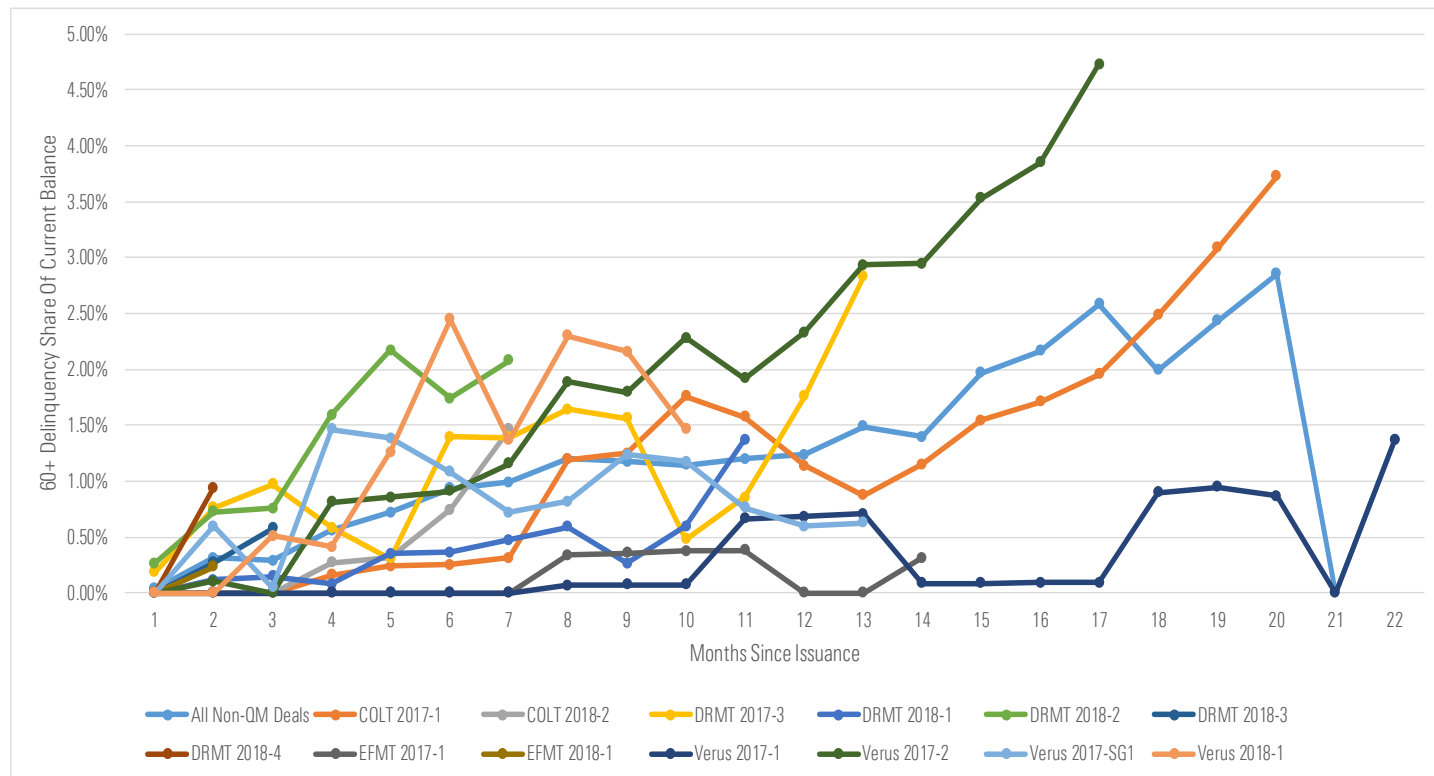
Note: The chart shows three-month average voluntary prepayment rates for select rated non-QM RMBS.

Sources: Morningstar Credit Ratings, LLC, CoreLogic, and 1010data.

Delinquencies Remain Low in Most Non-QM RMBS

The serious delinquency rates (60 or more days past due) remain generally low in most non-QM RMBS, as Chart 2 shows.

Chart 2: Serious Delinquency Rates Are Still Low in Many Rated Non-QM Deals

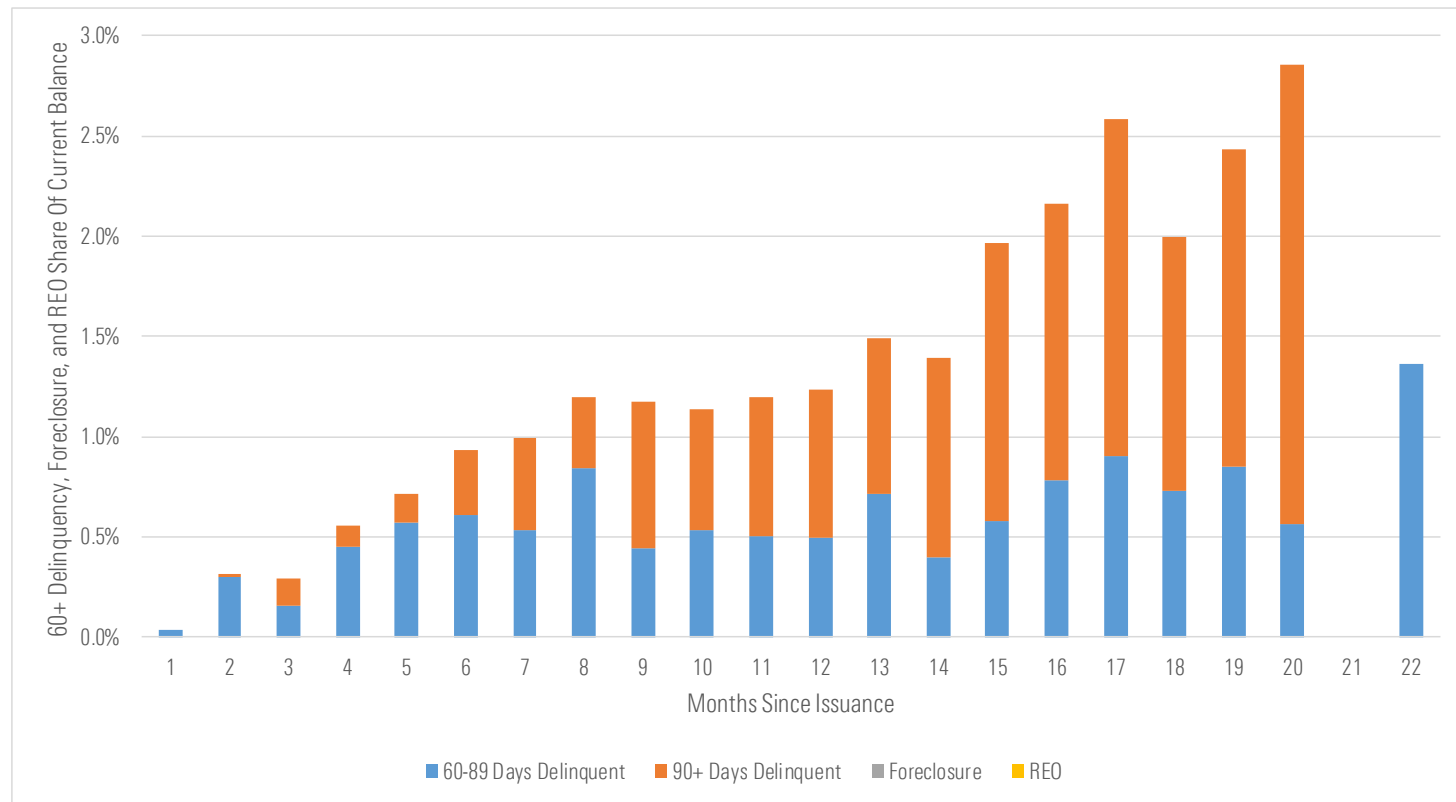


Note: The chart shows the share of the unpaid balance of the 60 or more days delinquent loans, including those in foreclosure and real estate owned, as a percentage of the current outstanding loan balance.

Sources: Morningstar Credit Ratings, LLC, CoreLogic, and 1010data.

Although two deals, Verus 2017-2 and COLT 2017-1, show a recent increase in the share of seriously delinquent loans, the overall percentage of the seriously delinquent loans in all non-QM deals remains on average below 1.5%, as Chart 3 shows. Also, servicers have not moved most of the seriously delinquent loans to the foreclosure or real estate owned, or REO, liquidation process, as Chart 3 shows, which might suggest that the currently delinquent borrowers might be able to become current again or work out another solution with a servicer to lower or avoid the potential losses to the deal.

Chart 3: Seriously Delinquent Loans Have Not Moved to Foreclosure and REO Yet

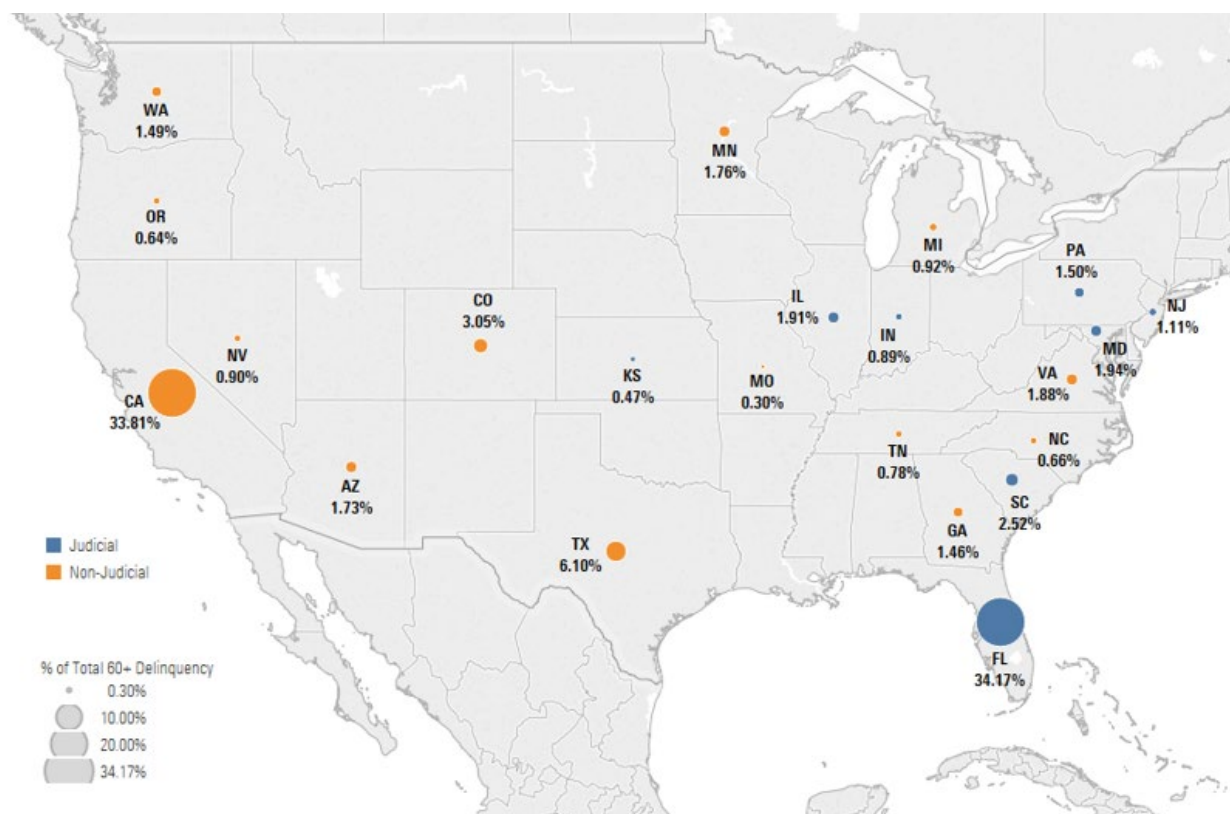


Note: The chart shows the average monthly share of the unpaid balance of the 60 or more days delinquent loans, including those in foreclosure and REO, as a percentage of the current outstanding loan balance of the select rated non-QM RMBS weighted by the deal balance. The data for 21 and 22 months since issuance only includes Verus 2017-1.

Sources: Morningstar Credit Ratings, LLC, CoreLogic, and 1010data.

Properties backing most of the seriously delinquent loans reside in California, Florida, and Texas, as Map 2 shows.

Map 2: Most Properties Backing Seriously Delinquent Loans Are in California, Florida, Texas, and South Carolina



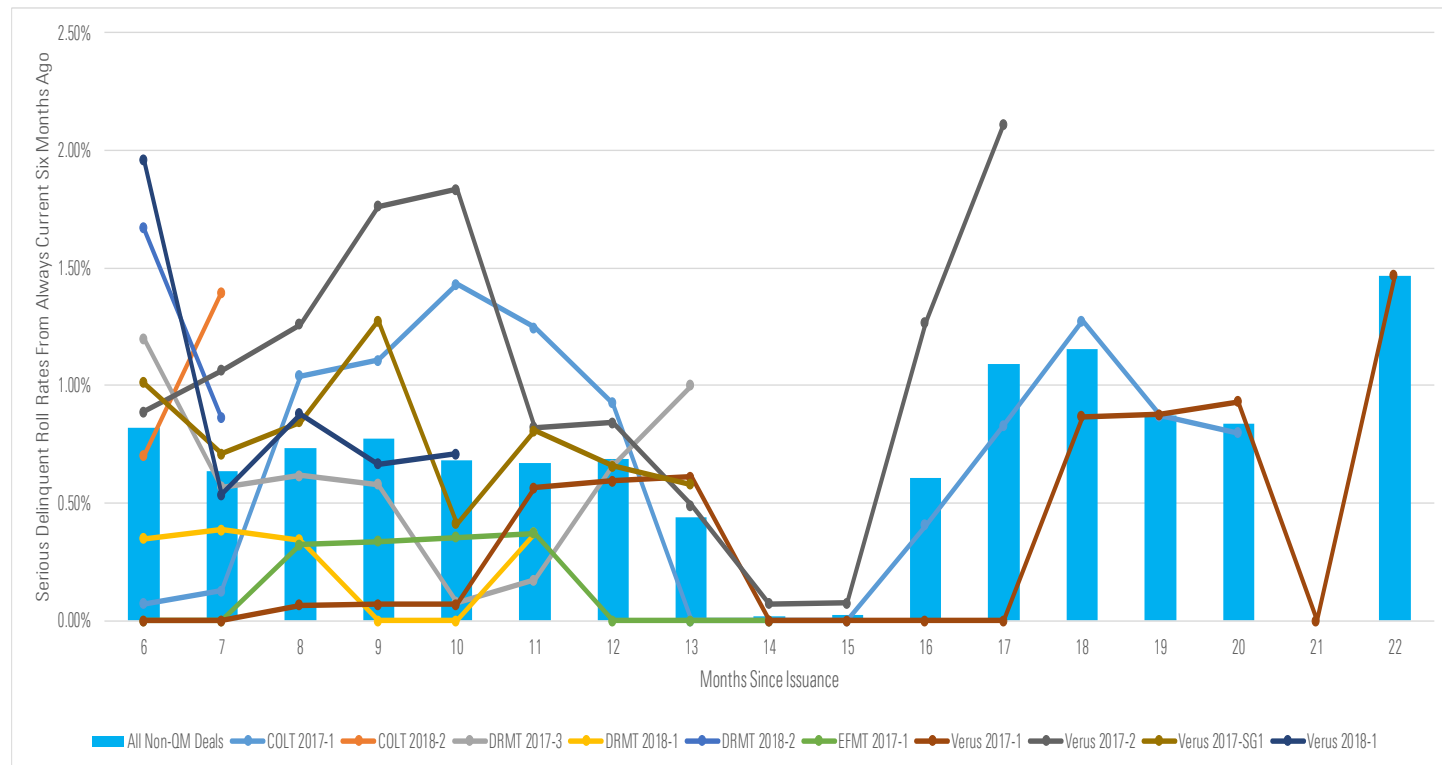
Note: The map shows the percentage of properties backing loans that are 60 or more days delinquent in select rated non-QM RMBS in each state. The list of transactions for which the data is shown in the chart includes all rated non-QM RMBS except Verus 2018-1, Verus 2018-2, and SGRMT 2018-1, deals for which we do not have loan-level data.

Sources: Morningstar Credit Ratings, LLC, CoreLogic, and 1010data.

Near Term Delinquency Rates Will Likely Remain Low in Most Transactions

If the economic growth does not taper off, the delinquency rates will likely remain low in most non-QM RMBS in the near term because the rates at which borrowers who always stayed current on their mortgage payments become seriously delinquent, or “roll into serious delinquency,” are low in most transactions, as Chart 4 shows. The lower roll rate into serious delinquency suggests there will be a lower share of severely delinquent loans in the near term.

Chart 4: Delinquency Roll Rates Remain Low in Rated Non-QM Deals



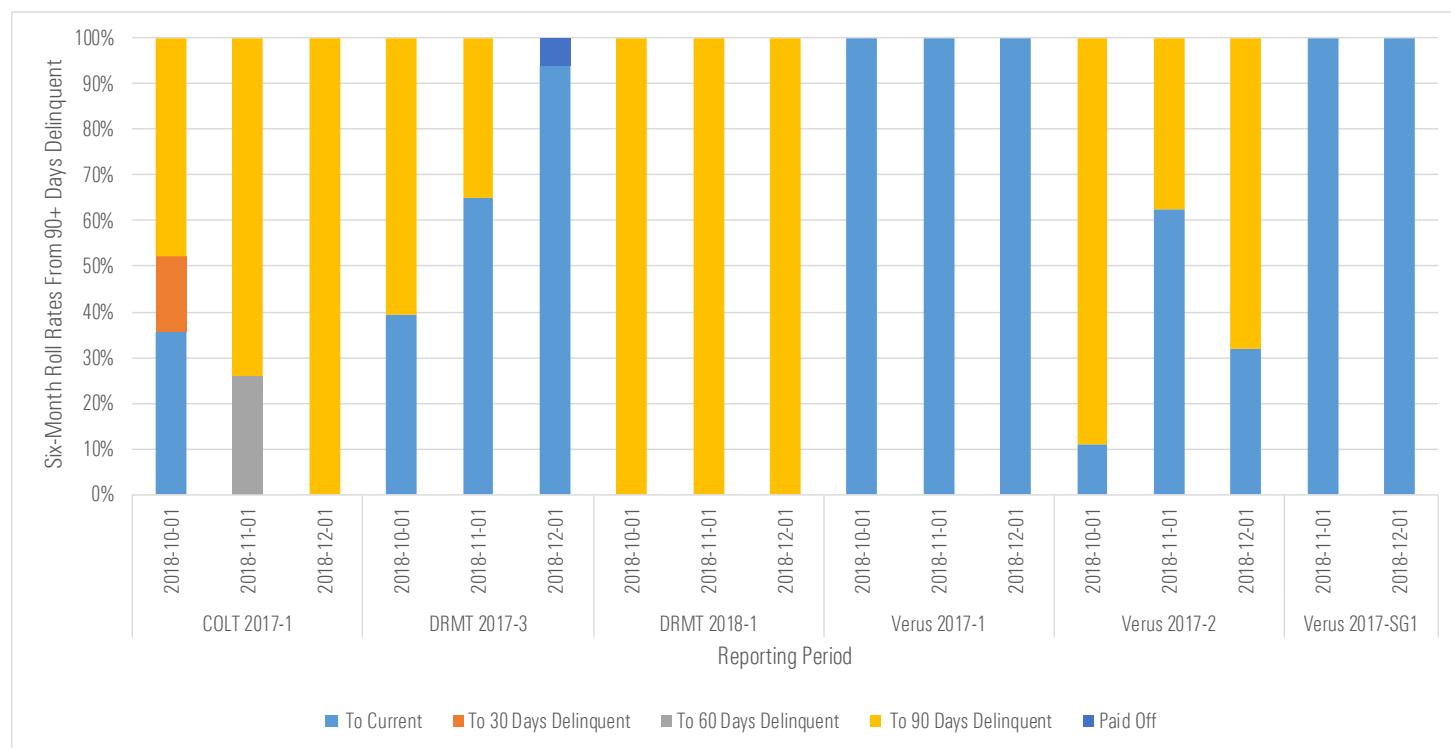
Note: The chart shows the rates at which always current borrowers (those who always stayed current on their mortgage payments) become 60 or more days delinquent. For every reporting period, we calculate the rate as the share of the unpaid loan balance of the always current borrowers six months ago, which are 60 or more days delinquent now.

Also note: the data for periods 21 and 22 is provided by one transaction Verus 2017-1.

Sources: Morningstar Credit Ratings, LLC, CoreLogic, and 1010data.

Moreover, of the few borrowers who became seriously delinquent in non-QM RMBS, some reported having become current again, as Chart 5 shows. That said, the actual delinquency cure rates varied by the deal in fourth-quarter 2018. As shown in Chart 5, all of the previously seriously delinquent borrowers in DRMT 2017-3 and Verus 2017-SG1 have either paid off the loans or became current again by December, while the larger share of the borrowers in COLT 2017-1, DRMT 2018-1, and Verus 2017-2 remained seriously delinquent.

Chart 5: The Serious Delinquency Cure Rates Vary by Deal, Show Some Borrowers Becoming Current



Note: The chart shows serious delinquency resolution rates for select rated non-QM RMBS for the last reported quarter. For each reporting period within the previous quarter, the resolution rate is calculated as the percentage of loan balance of the borrowers who were 90 or more days delinquent six months ago, which became current, paid off, 30- or 60-days delinquent, or remained 90 or more days delinquent.

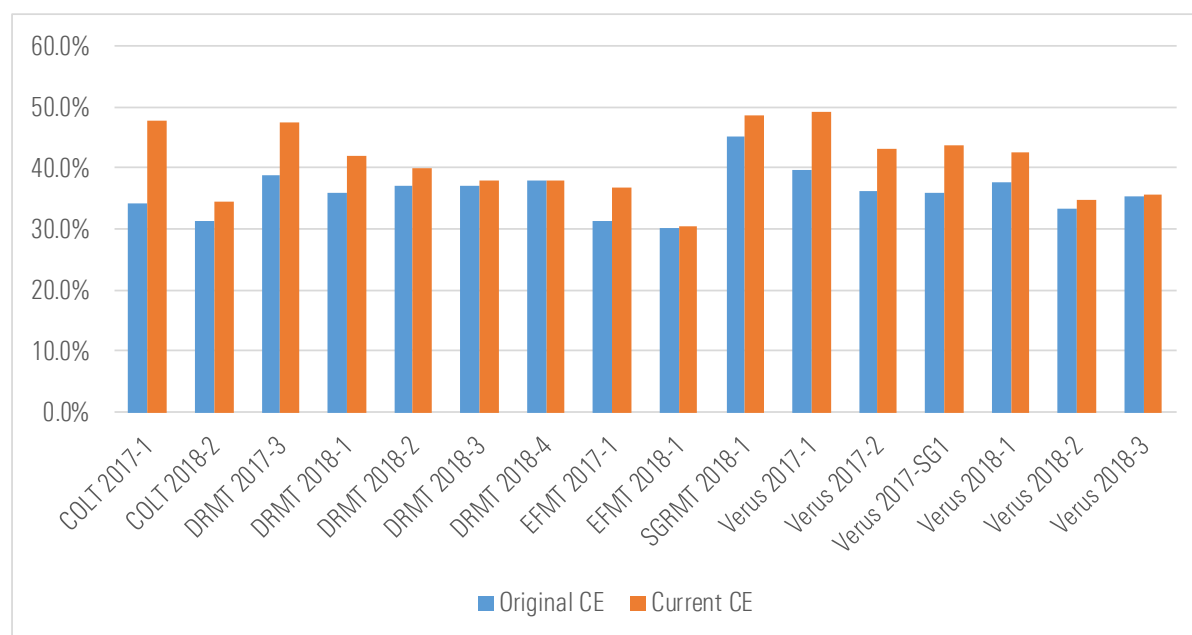
Sources: Morningstar Credit Ratings, LLC, CoreLogic, and 1010data.

Steady Growth in Credit Enhancement Continues to Bolster Credit Performance

In fourth-quarter 2018, credit enhancement to the rated bonds, the share of the loan balance available to cushion bonds against the future collateral losses, continued to grow, which is a credit positive for the deals. The credit enhancement, or CE, growth in the fourth quarter is a part of a broader trend we observed in the non-QM sector, as Chart 6 shows. The credit enhancement for senior bonds increased from origination in all non-QM RMBS we rate.

Fast prepayments and no bond losses helped boost the growth in credit enhancement. The steady voluntary prepayments helped pay down senior bonds, making the remaining subordinated bonds the larger share of a deal's balance available to cushion against future potential losses. Also, there were no liquidations of properties backing seriously delinquent loans in non-QM RMBS and, consequently, no collateral and no bond losses. If there were such losses on the loans stemming from liquidations of the underlying properties, the excess interest in the deals would have also been available to cushion the bondholders against the losses.

Chart 6: Credit Enhancement for Senior Bonds Continues to Grow in Rated Non-QM Deals



Note: The chart shows credit enhancement to the most-senior tranche as a percentage of unpaid loan balance at origination and as of Dec. 25, 2018.

Sources: Morningstar Credit Ratings, LLC and IntexCalc.

The growth in credit enhancement helped offset the recent uptick in serious delinquency rates in two non-QM deals. For example, Verus 2017-2's Class A-1, rated AAA, had about 43.0% of credit enhancement⁴ as of Dec. 25, 2018 (up from 36.2% at origination) and Class B-3, rated BBB-, had about 4.0% (up from 2.1% at origination), and the deal had about 3.4% of annualized excess interest³ versus approximately 4.7% of 60-plus day delinquencies as of Dec. 25. Also, COLT 2017-1's Class A-1, rated AAA, had about 48.0% as of Dec. 25 (up from 34.1% at origination) and Class B-1, rated BBB+, had about 22.8% as of Dec. 25 (up from about 6.3% at origination), and the deal had about 2.3% of annualized excess interest versus approximately 3.6% of 60-plus day delinquencies as of Dec. 25.

³ Excess interest is calculated as the annualized monthly excess cash flow as a percentage of the actual ending collateral balance. Credit enhancement is calculated as a percentage of the actual ending collateral balance. Source: December 2018 remittance reports for Verus 2017-2 and COLT 2017-1.

Appendix 1

Select Loan-Level Performance Characteristics of Rated Non-QM Deals

		COLT 2017-1	COLT 2018-2	DRMT 2017-3	DRMT 2018-1	DRMT 2018-2	DRMT 2018-3	DRMT 2018-4	EFMT 2017-1	EFMT 2018-1	Verus 2017-1	Verus 2017-2	Verus 2017-SG1	Verus 2018-1
Current	Current Loan Count	383	732	475	528	643	712	835	200	499	141	354	363	405
	Original UPB (\$)	181,424,333	320,711,915	170,540,804	211,837,831	244,877,571	307,255,908	365,104,057	87,776,161	227,757,900	75,936,867	151,940,477	155,658,644	180,540,117
	Current UPB (\$)	171,038,689	317,191,128	166,545,703	207,508,186	241,535,488	304,874,531	363,095,469	84,361,292	226,052,015	71,118,148	148,332,970	151,885,447	176,741,028
	Average Loan size (\$)*	446,576	433,321	350,623	393,008	375,638	428,195	434,845	421,806	453,010	504,384	419,020	418,417	436,398
	% Original Balance	44.6	79.6	57.2	68.4	81.3	93.7	97.1	61.3	97.3	51.5	62.5	61.1	72.3
	Months Since Issuance	20	7	13	11	7	3	2	14	2	22	17	13	10
	WA FICO	709	703	672	673	651	679	676	685	697	695	674	670	699
	WA DTI (%)	39.3	41.6	31.4	31.8	31.2	34.8	31.6	37.5	35.6	35.0	26.9	32.3	30.9
	WAC (%)	6.2	6.5	6.8	6.7	6.8	6.8	6.8	6.6	6.3	6.7	6.9	6.8	6.6
	WA LTV (%)	75.2	79.1	73.9	72.9	71.6	72.9	72.9	64.3	68.9	68.2	67.2	70.2	69.5
	WA MORN LTV (%)	64.8	77.8	67.2	67.7	68.7	72.3	77.4	56.5	72.2	57.2	60.0	64.1	63.7
Prepaid	Current Loan Count	457	145	286	221	127	34	16	114	10	147	228	184	141
	Original UPB (\$)	218,586,215	77,702,032	122,690,573	95,100,503	51,178,904	19,044,710	7,621,248	55,037,242	5,709,280	70,652,018	83,687,769	98,258,900	66,554,558
	Current UPB (\$)	209,061,400	76,018,769	120,816,462	94,260,816	50,343,030	18,983,082	7,521,935	53,621,165	5,679,128	69,114,644	81,153,313	96,545,727	64,738,183
	Average Loan size (\$)*	457,465	524,267	422,435	426,520	396,402	558,326	470,121	470,361	567,913	470,168	355,936	524,705	459,136
	% Original Balance	53.7	19.3	41.2	30.7	17.0	5.8	2.0	38.5	2.4	47.9	34.4	38.5	26.6
	WA FICO	708	714	690	687	687	695	706	691	689	716	681	696	707
	WA DTI (%)	39.9	42.7	36.1	34.8	33.2	31.6	32.2	37.7	37.5	35.6	29.6	35.3	30.9
	WAC (%)	6.5	6.6	6.9	6.9	6.9	7.1	6.6	6.7	7.0	6.7	7.2	6.8	7.0
	WA LTV (%)	77.3	78.2	75.9	74.5	72.4	73.1	69.5	67.2	70.6	71.9	70.3	73.4	70.6
	WA MORN LTV (%)	71.2	76.5	70.4	70.1	69.4	72.3	76.0	61.1	76.8	65.0	64.1	68.6	64.5
Defaulted**	Current Loan Count	13	12	11	5	14	3	6	1	1	1	10	3	9
	Original UPB (\$)	6,704,521	4,707,805	4,893,863	2,907,430	5,155,911	1,776,750	3,435,500	266,232	534,000	999,000	7,417,838	969,500	2,641,150
	Current UPB (\$)	6,610,008	4,690,924	4,834,353	2,883,453	5,121,943	1,769,811	3,433,827	262,918	528,818	980,896	7,358,158	954,036	2,626,653
	Average Loan size (\$)*	508,462	390,910	439,487	576,691	365,853	589,937	572,305	262,918	528,818	980,896	735,816	318,012	291,850
	% Original Balance	1.6	1.2	1.6	0.9	1.7	0.5	0.9	0.2	0.2	0.7	3.1	0.4	1.1
	WA FICO	688	646	636	306	530	655	634	659	680	762	684	688	639
	WA DTI (%)	41.0	43.8	40.1	40.5	31.6	43.2	30.9	14.9	47.0	26.6	35.6	34.8	38.9
	WAC (%)	6.8	7.5	7.1	7.6	7.4	7.1	6.7	8.9	6.4	7.6	7.4	6.5	7.6
	WA LTV (%)	86.3	82.9	75.2	73.1	77.1	69.7	73.1	80.0	75.0	74.8	74.0	61.2	75.3
	WA MORN LTV (%)	75.3	82.1	69.7	70.5	73.1	69.5	75.8	72.8	82.0	68.8	67.6	55.1	71.0
Liquidated	Current Loan Count	-	-	-	-	-	-	-	-	-	-	-	-	-
	Original UPB (\$)	-	-	-	-	-	-	-	-	-	-	-	-	-
	Current UPB (\$)	-	-	-	-	-	-	-	-	-	-	-	-	-
	Average Loan size (\$)*	-	-	-	-	-	-	-	-	-	-	-	-	-
	% Original Balance	-	-	-	-	-	-	-	-	-	-	-	-	-
	Cum Loss	-	-	-	-	-	-	-	-	-	-	-	-	-
	WA FICO	-	-	-	-	-	-	-	-	-	-	-	-	-
	WA DTI (%)	-	-	-	-	-	-	-	-	-	-	-	-	-
	WAC (%)	-	-	-	-	-	-	-	-	-	-	-	-	-
	WA LTV (%)	-	-	-	-	-	-	-	-	-	-	-	-	-
	WA MORN LTV (%)	-	-	-	-	-	-	-	-	-	-	-	-	-

* Average loan size is based on balance of loans as of reporting period in which prepayment occurred

** 60 or more days delinquent loans including loans in foreclosure and REO

Appendix II

Geographical Concentration of Properties Backing Rated Non-QM Deals

	COLT 2017-1	COLT 2018-2	DRMT 2017-3	DRMT 2018-1	DRMT 2018-2	DRMT 2018-3	DRMT 2018-4	EFMT 2017-1	EFMT 2018-1	Verus 2017-1	Verus 2017-2	Verus 2017-SG1
Alaska	0.00%	0.06%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Alabama	0.18%	0.30%	0.06%	0.13%	0.09%	0.25%	0.00%	0.00%	0.00%	0.00%	0.16%	0.03%
Arkansas	0.02%	0.14%	0.08%	0.00%	0.00%	0.09%	0.36%	0.00%	0.10%	0.00%	0.00%	0.00%
Arizona	2.38%	4.79%	7.65%	9.88%	6.34%	9.60%	4.96%	3.75%	3.41%	0.49%	2.77%	4.67%
California	52.43%	31.51%	36.53%	39.53%	41.74%	40.67%	49.44%	61.99%	53.19%	57.40%	48.97%	56.67%
Colorado	2.06%	2.30%	2.53%	2.39%	2.93%	2.52%	2.79%	8.20%	6.61%	2.10%	2.55%	1.91%
Connecticut	0.16%	1.25%	0.36%	1.01%	0.14%	0.62%	0.18%	0.17%	0.27%	0.27%	0.32%	1.71%
District of Columbia	0.29%	0.42%	0.27%	0.00%	0.19%	0.00%	0.07%	0.00%	0.00%	0.00%	0.20%	0.00%
Delaware	0.23%	0.18%	0.30%	0.13%	0.06%	0.00%	0.00%	0.00%	0.13%	0.00%	0.08%	0.00%
Florida	11.25%	18.58%	20.90%	17.77%	21.39%	15.62%	15.29%	6.64%	13.82%	11.87%	16.31%	12.37%
Georgia	2.88%	1.67%	2.44%	2.64%	1.06%	1.43%	1.41%	0.00%	0.41%	2.94%	1.22%	1.06%
Hawaii	0.46%	1.36%	0.27%	0.19%	0.26%	0.27%	1.00%	0.00%	0.00%	0.00%	0.12%	0.00%
Iowa	0.07%	0.00%	0.00%	0.00%	0.00%	0.02%	0.03%	0.00%	0.00%	0.00%	0.00%	0.00%
Idaho	0.00%	0.21%	0.00%	0.56%	0.29%	0.27%	0.20%	0.00%	0.29%	0.00%	0.49%	0.39%
Illinois	1.01%	2.17%	4.58%	4.06%	2.51%	3.52%	1.75%	0.00%	0.13%	3.40%	2.27%	1.74%
Indiana	1.12%	0.69%	0.34%	0.49%	0.93%	0.50%	0.39%	0.00%	0.00%	0.30%	0.00%	0.29%
Kansas	0.02%	0.34%	0.15%	0.00%	0.04%	0.00%	0.05%	0.00%	0.00%	0.00%	0.00%	0.00%
Kentucky	0.03%	0.07%	0.06%	0.00%	0.00%	0.64%	0.00%	0.00%	0.00%	0.16%	0.04%	0.08%
Louisiana	0.63%	0.23%	0.00%	0.00%	0.19%	0.31%	0.66%	0.00%	0.00%	0.00%	0.00%	0.82%
Massachusetts	0.00%	0.00%	0.58%	0.35%	0.18%	0.67%	0.93%	0.00%	0.00%	0.00%	0.17%	0.40%
Maryland	1.07%	1.57%	0.45%	1.31%	1.07%	1.76%	1.61%	0.00%	1.02%	0.05%	0.67%	1.20%
Michigan	0.61%	2.81%	0.52%	0.78%	0.46%	0.53%	0.64%	0.00%	0.00%	0.94%	1.06%	0.11%
Minnesota	0.36%	0.90%	0.45%	0.91%	0.25%	0.29%	0.28%	0.00%	0.00%	0.00%	0.00%	0.00%
Missouri	0.12%	0.35%	0.10%	0.00%	0.00%	0.21%	0.52%	0.00%	0.00%	0.00%	0.18%	0.00%
Mississippi	0.00%	0.17%	0.00%	0.00%	0.03%	0.11%	0.00%	0.00%	0.00%	0.00%	0.02%	0.05%
Montana	0.09%	0.00%	0.00%	0.13%	0.00%	0.00%	0.05%	0.00%	0.00%	0.00%	0.00%	0.00%
North Carolina	0.84%	1.53%	1.91%	0.94%	1.27%	1.50%	1.47%	0.00%	0.00%	0.20%	1.05%	0.42%
North Dakota	0.00%	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Nebraska	0.00%	0.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
New Hampshire	0.00%	0.00%	0.00%	0.00%	0.18%	0.27%	0.06%	0.00%	0.00%	0.00%	0.15%	0.00%
New Jersey	3.48%	4.25%	2.21%	1.95%	2.66%	2.35%	1.38%	0.00%	0.18%	3.40%	2.33%	0.94%
New Mexico	0.08%	0.09%	0.10%	0.10%	0.15%	0.05%	0.17%	0.00%	0.00%	0.00%	0.00%	0.10%
Nevada	3.16%	4.75%	2.31%	2.38%	2.81%	2.18%	2.20%	1.05%	1.83%	2.75%	1.64%	1.71%
New York	0.00%	0.00%	0.00%	0.00%	0.00%	0.36%	0.39%	0.00%	0.00%	3.62%	7.43%	3.83%
Ohio	0.43%	0.31%	0.90%	0.26%	0.34%	0.30%	0.31%	0.00%	0.00%	0.07%	0.07%	0.29%
Oklahoma	0.00%	0.07%	0.10%	0.06%	0.22%	0.00%	0.08%	0.00%	0.00%	0.00%	0.04%	0.00%
Oregon	1.17%	2.06%	0.76%	0.64%	0.88%	0.58%	0.31%	1.83%	2.10%	0.31%	0.80%	1.22%
Pennsylvania	0.46%	0.70%	1.56%	0.90%	0.50%	1.51%	0.48%	0.00%	0.00%	0.36%	0.77%	0.58%
Rhode Island	0.00%	0.06%	0.00%	0.00%	0.00%	0.13%	0.00%	0.00%	0.00%	0.00%	0.08%	0.11%
South Carolina	0.25%	0.56%	0.95%	0.81%	0.64%	0.77%	0.48%	0.00%	0.00%	0.29%	0.10%	0.04%
Tennessee	0.47%	0.51%	0.22%	0.26%	0.33%	0.84%	0.29%	0.00%	0.00%	0.15%	0.99%	0.00%
Texas	3.33%	4.87%	5.00%	3.72%	5.79%	4.51%	5.15%	13.66%	12.57%	6.19%	4.19%	5.09%
Utah	1.64%	1.18%	2.36%	2.65%	1.72%	2.03%	1.24%	0.78%	0.84%	0.00%	0.06%	0.80%
Virginia	0.17%	1.29%	0.59%	0.65%	1.01%	0.87%	0.63%	0.00%	1.21%	0.00%	1.60%	0.41%
Washington	6.98%	5.32%	1.57%	2.22%	0.92%	1.31%	2.50%	1.93%	1.90%	2.48%	0.95%	0.94%
Wisconsin	0.05%	0.20%	0.83%	0.17%	0.42%	0.54%	0.24%	0.00%	0.00%	0.24%	0.09%	0.00%
West Virginia	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.08%	0.00%

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