



RMBS Research

Second-Quarter 2019 RMBS Quarterly – Lower Credit Quality Drives Few Delinquencies in Non-QM RMBS

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Morningstar Perspective

During the second quarter of 2019, the credit performance of residential mortgage-backed securities Morningstar Credit Ratings, LLC rates backed by nonqualified mortgage loans¹, or non-QM RMBS, remained solid. The credit-enhancement levels for all rated bonds continued to climb because of high voluntary prepayments and no realized losses. That said, the share of seriously delinquent loans (60 or more days past due) rose as the collateral pools shrunk because of paydowns and a few borrowers that were previously current on mortgage payments became delinquent. We found that seriously delinquent loans are generally of a lower credit quality than the remaining loans and the prepaid loans (see Page 17). In the second half of the year, we expect the share of delinquent loans to rise somewhat as the servicers work to resolve existing delinquencies and the pools continue to pay down quickly, though remain generally low relative to the credit support available to the rated bonds.

Non-QM RMBS issuance also increased in the second quarter, as two first-time issuers launched transactions and four repeat issuers tapped the market with new deals. The latest deals' collateral quality and structures were generally in line with those of the previously issued securitizations, though the variety of loans backing the new deals broadened to include loans with weaker income

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](#).

documentation requirements, such as Community Development Financial Institution, or CDFI, loans. As noted in our RMBS outlook for 2019, we expect non-QM RMBS issuance to continue to increase in 2019, with the credit quality of the collateral weakening somewhat but remaining overall consistent with the prior year². Also, if the interest rates decline the issuers might have more incentives to collapse the existing transactions and use the collateral to issue new bonds at a lower rate.

New Issue Highlights: Issuance Continues to Grow, New Issuers Tap the Market and Include New Loans

The amount of Morningstar-rated new issuance of non-QM RMBS rose again in second-quarter 2019. We rated six new transactions in the quarter, which brought the total number of non-QM RMBS deals we rated through the end of June 2019 to 29. One rated deal, COLT 2017-1, was called in May 2019 as the depositor exercised an optional redemption option. The option allowed the depositor to purchase all of the outstanding transaction certificates on any date on or after the earlier of the two-year anniversary of the deal's closing date or the date on which the pool factor dropped to 20%. The depositor chose the former.

The credit quality and structure of the four new transactions Residential Mortgage Loan Trust 2019-2, Ellington Financial Mortgage Trust 2019-1, Verus Securitization Trust 2019-2, and Deephaven Residential Mortgage Trust 2019-2 – all issued by repeat issuers – generally remained in line with those of the previously issued non-QM RMBS securitizations, as Table 1 shows.

The credit quality of the collateral backing Gold Creek Asset Trust 2019-NQM1 (GCAT 2019-NQM1), a first-time securitization of non-QM loans aggregated by Blue River Mortgage TRS, which is the residential mortgage aggregator platform of Angelo Gordon, that closed in June 2019, is generally stronger than that of other Morningstar-rated deals. GCAT 2019-NQM1 was the first rated deal to include CDFI loans originated by Quontic Bank, which contributed about 46.7% of the deal's balance. CDFI programs are designed to serve low- or moderate-income consumers and are exempt from ATR Rules. As such, income documentation standards for CDFI loans are typically weaker than typical non-QM mortgage programs. In GCAT 2019-NQM1, the weaker income documentation requirement was mitigated by the CDFI loans' high weighted average FICO score³ of 732, which is above the deal's weighted average FICO score of 714, and by CDFI loans' lower current LTV of about 61.9%, which is below the deal's weighted average current LTV of 65.2%. In addition, the risk retention requirement for this transaction was reduced. In a typical non-QM RMBS transaction, the sponsor or a majority-owned affiliate of the sponsor is required to retain a residual interest of at least 5% of the certificates to satisfy credit risk-retention rules. However, the risk retention requirement for GCAT 2019-NQM1 was reduced to

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

³ Includes Morningstar adjustments. See the related pre-sale report for details.

2.66% because CDFI loans are considered as “community-focused residential mortgages” and the percentage of required credit risk retention is permitted to be reduced by the ratio of the unpaid principal balance of the CDFI loans.

The credit quality of the collateral backing Spruce Hill Mortgage Loan Trust 2019-SH1 (SHMLT 2019-SH1), a first-time securitization of non-QM loans originated by Carrington Mortgage Service LLC, is generally weaker than other Morningstar-rated non-QM RMBS, as evidenced by the deal’s weighted average FICO score⁴ of 655, which is below that of most other deals, and the deal’s weighted average current LTV of 72.5%, which is above the LTV of most deals issued in the second quarter, as Table 1 shows.

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

Issuer	Issuance Date	Issuance (\$ MM)	Loan Size (\$)	WAC (%)*	OLTV (%)*	Current LTV (%)*	ARMs (%)*	FICO*	DTI*	IO (%)*	Investor (%)*	Senior CE (%)	AAA Loss (%)**	B Loss (%)
Transactions issued in Q2 2019														
Residential Mortgage Loan Trust 2019-2	6/27/2019	292,193,000	436,763	6.8	68.3	68.0	67.6	684	38.4	14.1	29.7	35.2	29.1	2.9
Ellington Financial Mortgage Trust 2019-1	6/21/2019	219,539,000	456,566	6.2	67.7	67.0	63.3	697	37.5	15.9	23.7	30.2	27.9	2.9
Gold Creek Asset Trust 2019-NQM1	6/7/2019	386,748,000	448,672	6.1	66.1	65.2	70.0	714	37.7	4.5	20.3	29.5	21.0	1.6
Spruce Hill Mortgage Loan Trust 2019-SH1	5/23/2019	274,857,000	288,246	7.5	72.9	72.5	58.2	655	37.5	0.0	8.7	38.7	34.4	4.6
Verus Securitization Trust 2019-2	5/20/2019	596,725,000	505,992	6.7	70.1	69.7	63.5	693	36.1	18.2	18.4	31.9	27.9	2.6
Deephaven Residential Mortgage Trust 2019-2	4/24/2019	361,964,000	418,719	7.2	73.2	72.9	66.9	695	37.0	15.8	23.5	37.8	33.7	3.4
COLT 2019-2 Mortgage Loan Trust	3/29/2019	377,253,000	695,527	5.8	82.0	81.7	23.2	735	40.4	2.5	1.1	24.7	18.1	1.7
New Residential Mortgage Loan Trust 2019-NQM2	3/19/2019	300,167,000	517,471	6.2	73.6	73.4	51.6	729	34.4	13.8	25.0	30.1	23.5	3.2
Bunker Hill Loan Depository Trust 2019-1	3/19/2019	259,858,000	438,885	5.7	61.8	59.5	87.7	706	36.6	4.4	40.3	28.1	18.5	0.9
Verus Securitization Trust 2019-1	2/22/2019	645,657,000	522,907	6.5	69.7	69.3	63.9	696	36.2	22.1	13.9	31.2	24.1	2.3
Deephaven Residential Mortgage Trust 2019-1	2/19/2019	335,760,000	426,987	7.0	73.2	72.8	73.7	693	37.4	19.9	20.3	37.9	31.8	4.0
Residential Mortgage Loan Trust 2019-1	2/19/2019	221,773,000	395,662	7.1	68.2	68.5	78.6	693	38.0	12.7	32.0	37.5	28.2	2.5
COLT 2019-1 Mortgage Loan Trust	2/4/2019	349,138,000	559,260	6.3	82.0	81.9	27.7	719	41.0	0.2	1.9	35.8	22.7	2.5
Deephaven Residential Mortgage Trust 2018-4	11/27/2018	362,131,000	436,752	6.8	72.9	72.6	64.2	694	37.9	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	36.7	4.2	19.5	30.2	24.2	2.0
Verus Securitization Trust 2018-3	11/8/2018	430,385,000	546,746	6.6	69.3	69.1	75.6	696	38.0	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	38.6	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	37.6	22.7	16.8	33.4	28.2	2.4
COLT 2018-2	6/5/2018	358,655,000	451,777	6.5	79.0	N/A	60.3	701	41.9	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	37.0	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	35.0	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	36.8	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	38.4	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	37.5	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	39.0	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	35.3	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	37.7	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	41.8	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	35.2	5.8	6.1	39.8	19.6	2.0

* Weighted average by loan balance; FICO score includes Morningstar adjustments

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

Source: Morningstar Credit Ratings, LLC

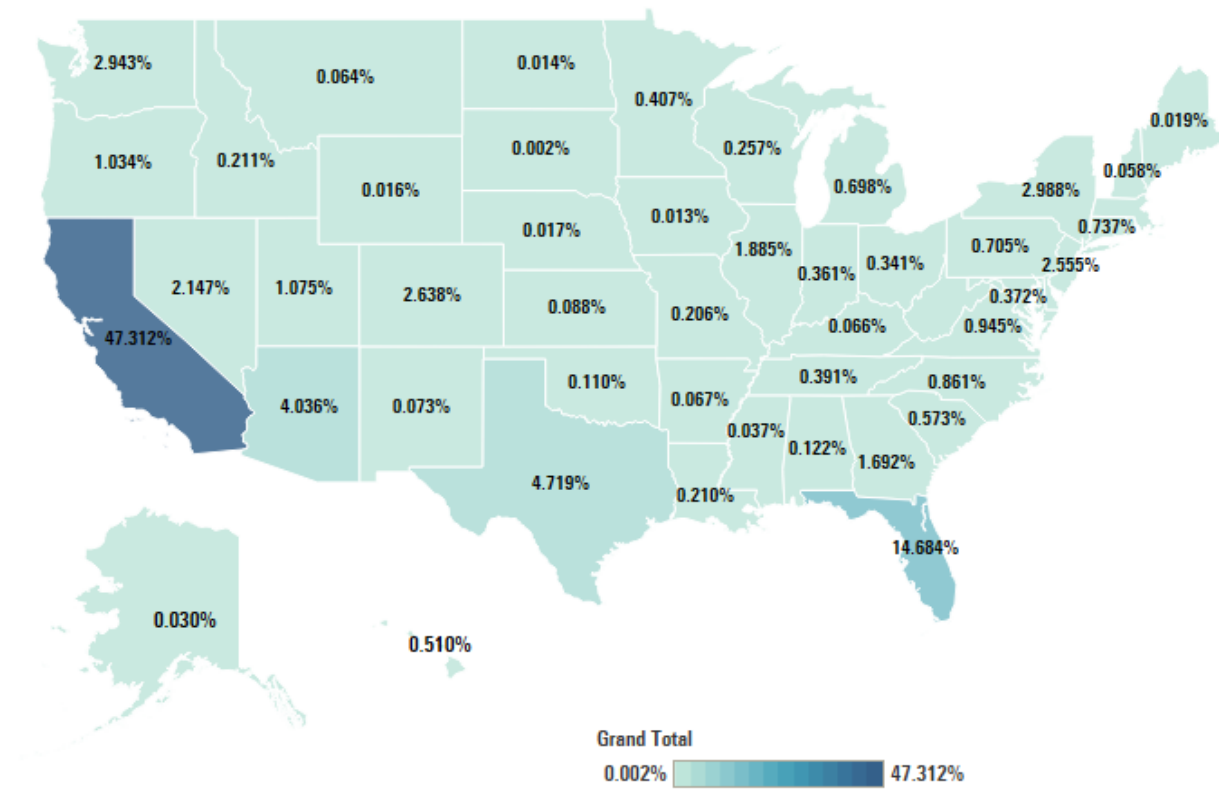
⁴ Includes Morningstar adjustments. See the related pre-sale report for details.

The structure of the transactions across various non-QM RMBS issuers remained similar to the deals we rated in first-quarter 2019. 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 cover losses. That said, we note that credit support available to the rated certificates is dependent on the availability of the excess cash flow to cover the losses. If the excess cash flow is lower than projected, for example, because of high prepayments or a decline in interest rates on the mortgage loans without a corresponding decline in bond coupon rates, the credit support from the excess cash flow would also decline. As such, we continue to observe the degree to which the credit support to the rated bonds in non-QM RMBS depends on the availability of excess interest at issuance and during our surveillance process.

Property-Level Highlights: Over Two-Thirds of the Properties Backing Non-QM RMBS Are in Four States

The geographical dispersion of the properties backing loans in non-QM RMBS we rate has not changed materially since the prior quarter, with most properties in California, Florida, Texas, and Arizona, as Map 1 shows. Of note, California's share has declined slightly since first-quarter 2019 to 47.31% from 48.43%, indicating that the collateral backing non-QM RMBS has become slightly more geographically diverse.

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



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 certain deals for which we do not have loan-level performance data. Please see Appendix I for details.

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

Performance Highlights: Credit Performance Remains Solid Despite Delinquencies Uptick in Some Transactions

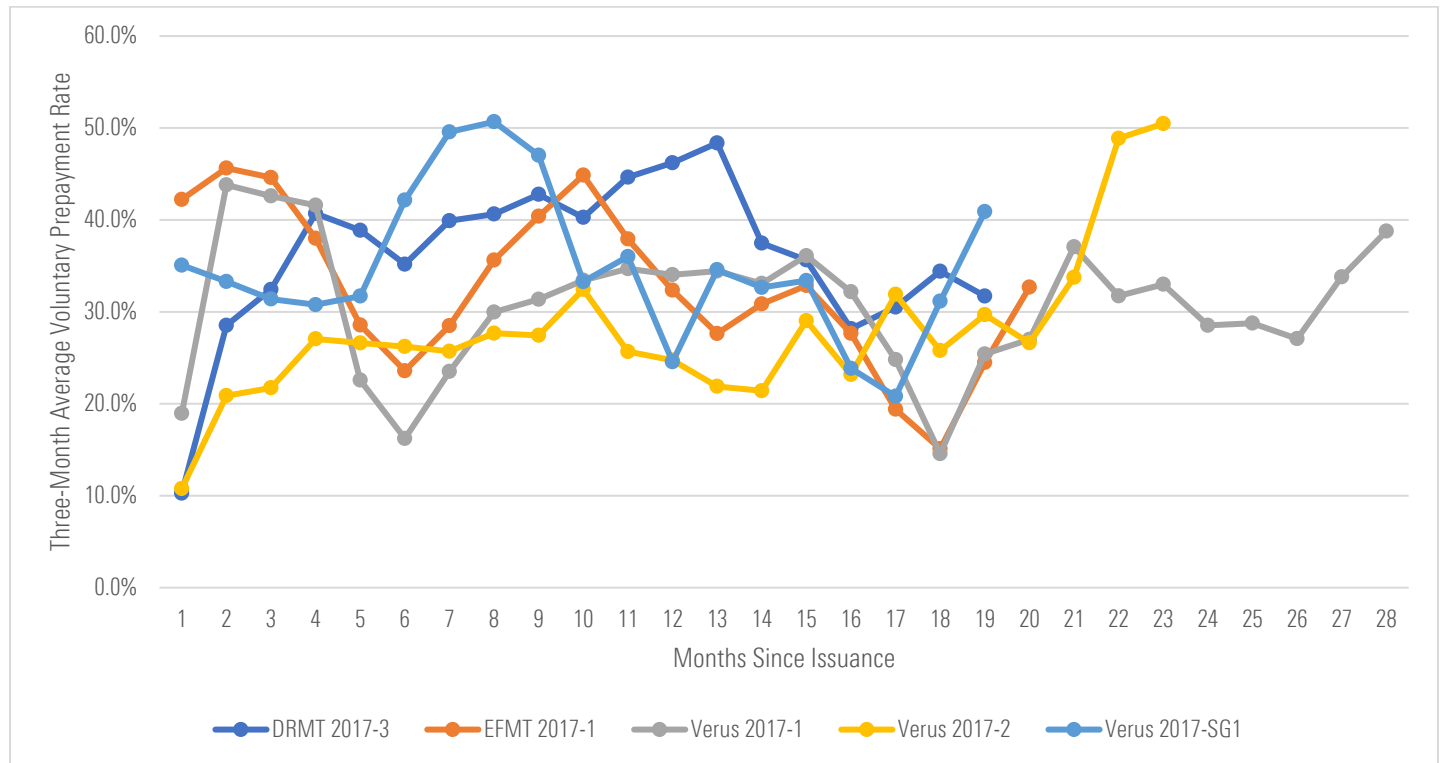
The credit performance of non-QM RMBS we rate remained solid in second-quarter 2019 as the credit-enhancement levels continued to edge up amid elevated voluntary prepayments, nonexistent losses, and available excess interest, factors which together helped to offset an uptick in the share of seriously delinquent loans we observed in five transactions issued in 2017-2018.

Voluntary Prepayment Rates Remain High in Most Rated non-QM RMBS

The voluntary prepayment rates for most non-QM deals remained high, hovering above a 30% conditional prepayment rate, or CPR, in most seasoned deals (those issued in 2017) as Chart 1a shows. We expect the prepayments to likely continue at a steady pace in the seasoned deals and in the recently issued transactions as the eligible borrowers and those borrowers who become eligible to refinance into the lower mortgage rates continue to take advantage of refinance opportunities. The non-QM borrowers will likely

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. Also, borrowers with good credit who choose to provide limited documentation might avail themselves opportunities of refinancing into conventional loans if they choose to fully document their income.

Chart 1a: Voluntary Prepayment Rates Stayed High in Rated Seasoned Non-QM Deals



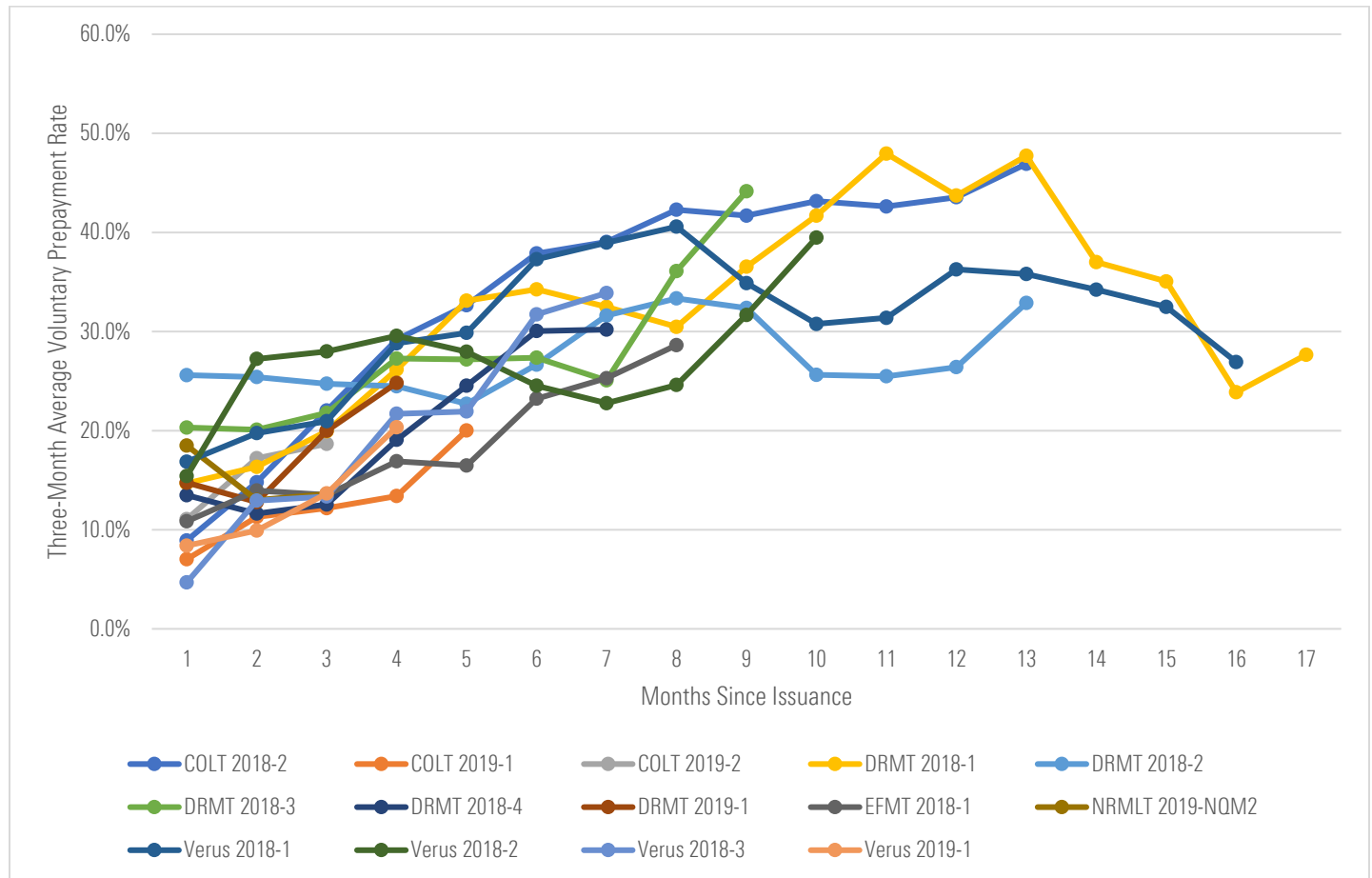
Note: The chart shows three-month average voluntary prepayment rates for select rated non-QM RMBS. The average three-month rate is calculated as an annualized three-month voluntary prepayment rate. The list of transactions for which the data is shown in the chart includes all rated non-QM RMBS except certain deals for which we do not have loan-level performance data. Please see Appendix I for details.

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

Similarly, the voluntary prepayments in transactions issued in 2018-2019 remained elevated for most deals, as Chart 1b shows, though the prepaays were off the prior highs for Deephaven 2018-1 and Verus 2018-1 transactions. The prepayments in recently issued transactions also continued to track higher from the start nearing a 20% CPR, as Chart 1b shows. The mortgage rates on the loans backing non-QM RMBS issued in second-quarter 2019 remained well above the rates on conventional loans to high credit quality, or prime, borrowers. Table 1 above shows that the mortgage rate in non-QM RMBS issued last quarter was on average

6.75%, or about 2.75% higher than the rate on conventional loans to prime borrowers in second-quarter 2019, as evidenced by Freddie Mac’s 30-year fixed primary mortgage market survey rate, which averaged about 4.00%⁵ in second-quarter 2019.

Chart 1b: Voluntary Prepayments Rates Remain Elevated in Most Recent Non-QM RMBS



Note: The chart shows three-month average voluntary prepayment rates for select rated non-QM RMBS. The average three-month rate is calculated as an annualized three-month voluntary prepayment rate. The list of transactions for which the data is shown in the chart includes all rated non-QM RMBS except certain deals for which we do not have loan-level performance data. Please see Appendix I for details.

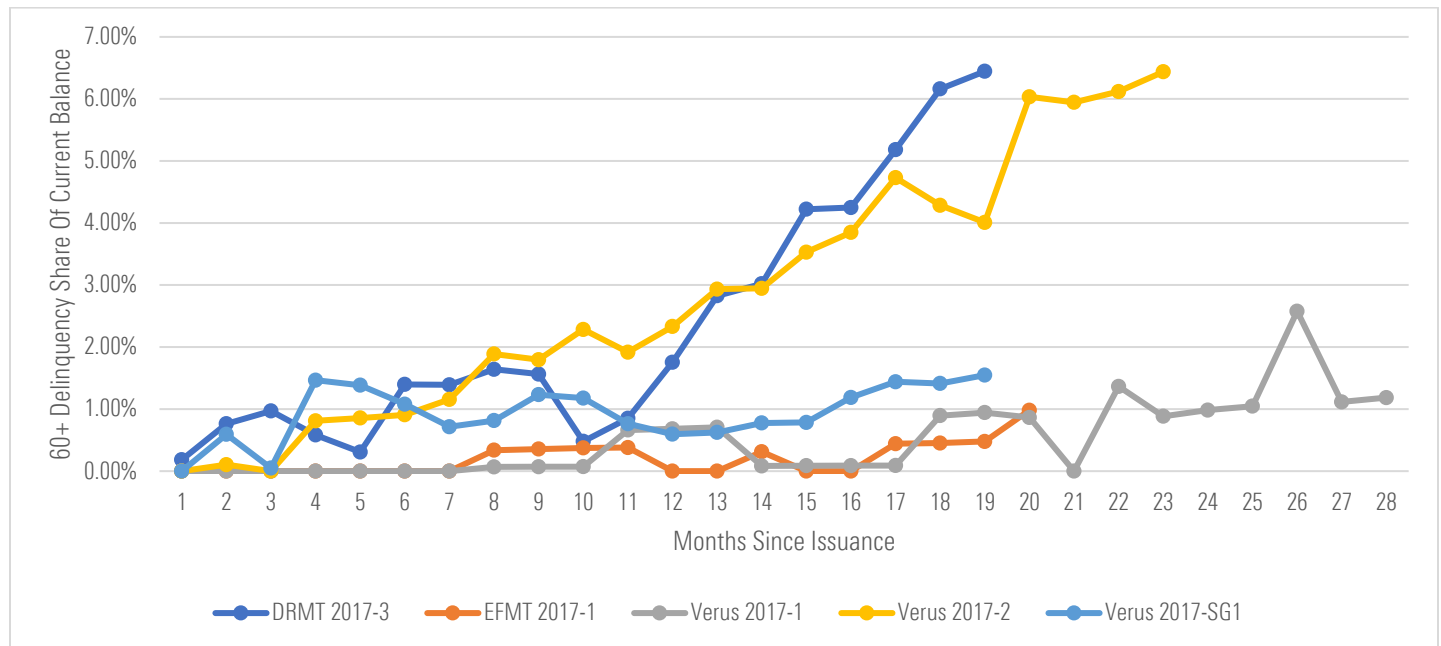
Sources: Morningstar Credit Ratings, LLC, CoreLogic, and 1010data.

⁵See [Freddie Mac Primary Mortgage Market Survey Archive](#) for details.

Delinquencies Remain Low in Most Non-QM RMBS, Ticked Up in a Few Deals

The serious delinquency rates (60 or more days past due) remain generally low in most seasoned non-QM RMBS, remaining under 2.00% of the collateral balance, as Chart 2a shows. That said, the share of seriously delinquent loans ticked up in Deephaven 2017-3 and Verus 2017-2, edging above 6.00%. The actual number of seriously delinquent loans in these two deals remained unchanged from May to June 2019 at 17 in DRMT 2017-3 and increased by one to 12 loans in Verus 2017-2. At the same time, the pool factor, or the ratio of the current loan balance to the original loan balance, for both deals declined to about 45.9% and 50.2%, respectively. As such, the rising share may be partially explained by falling overall pool balances, which makes the portion of seriously delinquent loans look larger relative to the gradually reducing overall size of the pool, if the number and the balance of the seriously delinquent loans remained unchanged. Overall, even though the share of delinquencies increased in these two deals, the overall share of the seriously delinquent loans in seasoned non-QM RMBS deals remains on average about 3.32% and about 0.74% excluding the two deals above.

Chart 2a: Serious Delinquency Rates Ticked Up in Two Seasoned Deals but Remain Low in Most Seasoned Non-QM RMBS

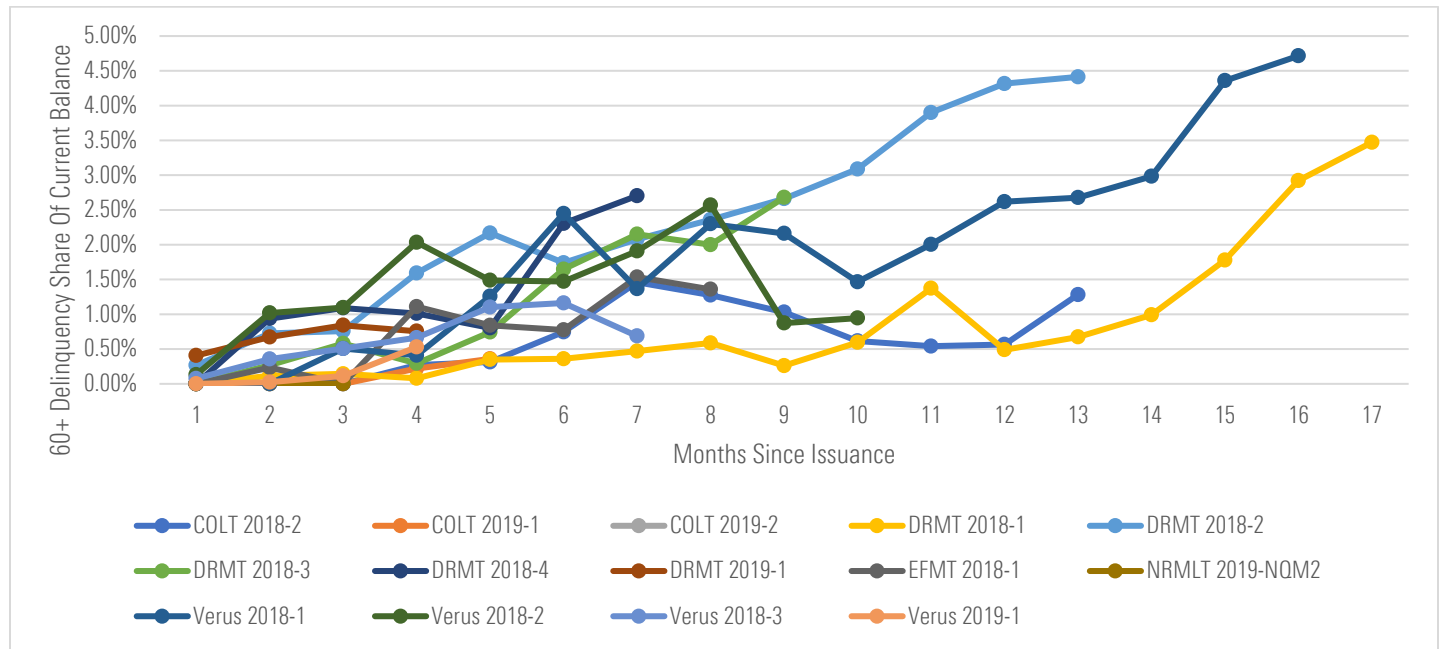


Note: The chart shows the share of the unpaid balance of the 60 or more days delinquent loans, including those in foreclosure and real estate owned, as a percentage of the current outstanding loan balance. The list of transactions for which the data is shown in the chart includes all rated non-QM RMBS except certain deals for which we do not have loan-level performance data. Please see Appendix I for details.

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

Similarly, the overall share of the seriously delinquent loans in recently issued deals remained low at under 2.00% for most deals, as Chart 2b shows. Even though three deals, Verus 2018-1, DRMT 2018-1, and DRMT 2018-2, show some increase in the share of seriously delinquent loans, the overall percentage of the seriously delinquent loans in recent non-QM deals remains on average about 1.71% and about 0.81% excluding the three deals above.

Chart 2b: Serious Delinquency Rates Edged Up in Three 2018 Deals But Remain Low in Most Recently Rated Deals



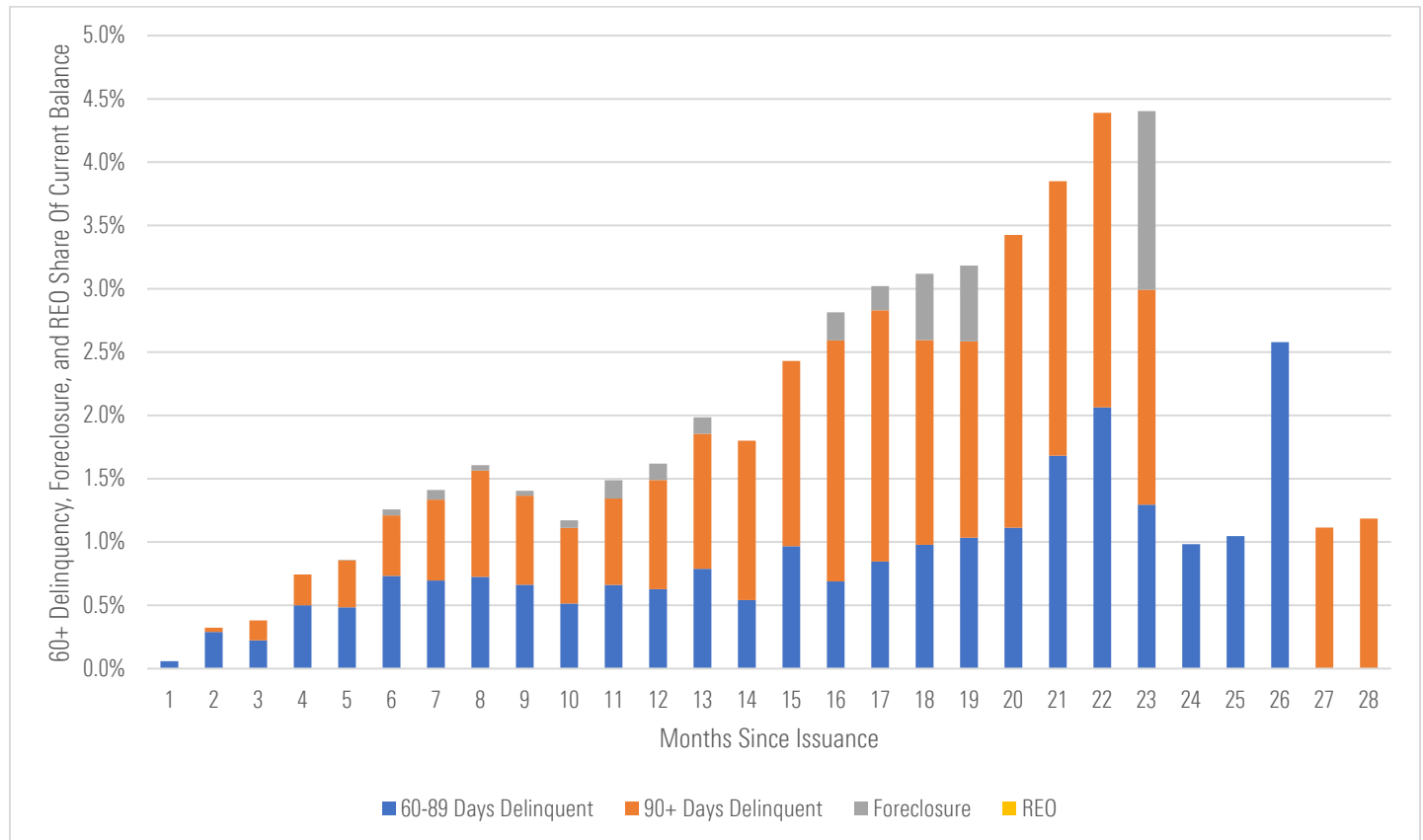
Note: The chart shows the share of the unpaid balance of the 60 or more days delinquent loans, including those in foreclosure and real estate owned, as a percentage of the current outstanding loan balance. The list of transactions for which the data is shown in the chart includes all rated non-QM RMBS except certain deals for which we do not have loan-level performance data. Please see Appendix I for details.

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

In second-quarter 2019, servicers started to move some seriously delinquent loans to foreclosure, as Chart 3 shows, though no loans moved to real estate owned, or REO, liquidation process. As of June 25, 2019, reporting period, 12 transactions reported a total of 29 loans in foreclosure. Three deals reported the most loans in foreclosure: (1) Verus 2018-1 reported six loans, or 1.43% by balance, (2) DRMT 2017-3 reported- five mortgages, or about 2.19% by balance, and (3) Verus 2017-2 reported four mortgages, or 2.21% by balance. The other nine transactions reported one or two loans in foreclosure except for DRMT 2018-2, which reported three loans.

That said, the number of loans in foreclosure and their share by balance is still low, as Chart 3 shows. Absence of many loans in foreclosure might suggest that the delinquent borrowers will be able to become current again or work out another solution with a servicer to lower or avoid the potential losses to the deal. The borrowers also might file for bankruptcy in which case the mortgage payments could be reduced as a result of a court ruling.

Chart 3: Small Share of Seriously Delinquent Loans Are in Foreclosure

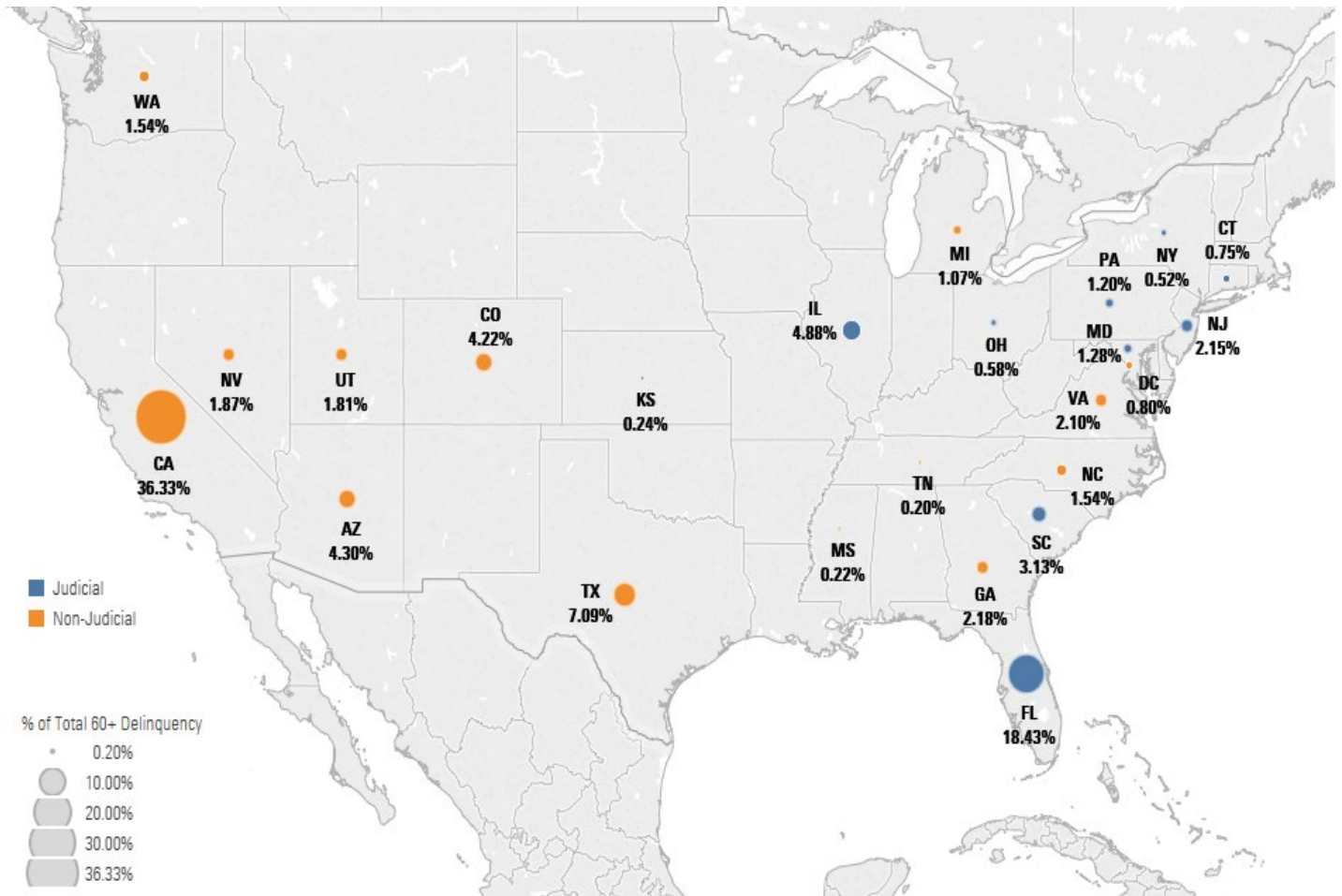


Note: The chart shows the average monthly share of the unpaid balance of the 60 or more days delinquent loans, including those in foreclosure and REO, as a percentage of the current outstanding loan balance of the select rated non-QM RMBS weighted by the deal balance. The data for 27 and 28 months since issuance only includes Verus 2017-1. The list of transactions for which the data is shown in the chart includes all rated non-QM RMBS except certain deals for which we do not have loan-level performance data. Please see Appendix I for details.

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

Properties backing most of the seriously delinquent loans are in California, Florida, Texas, Illinois, Arizona, and Colorado, as Map 2 shows.

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



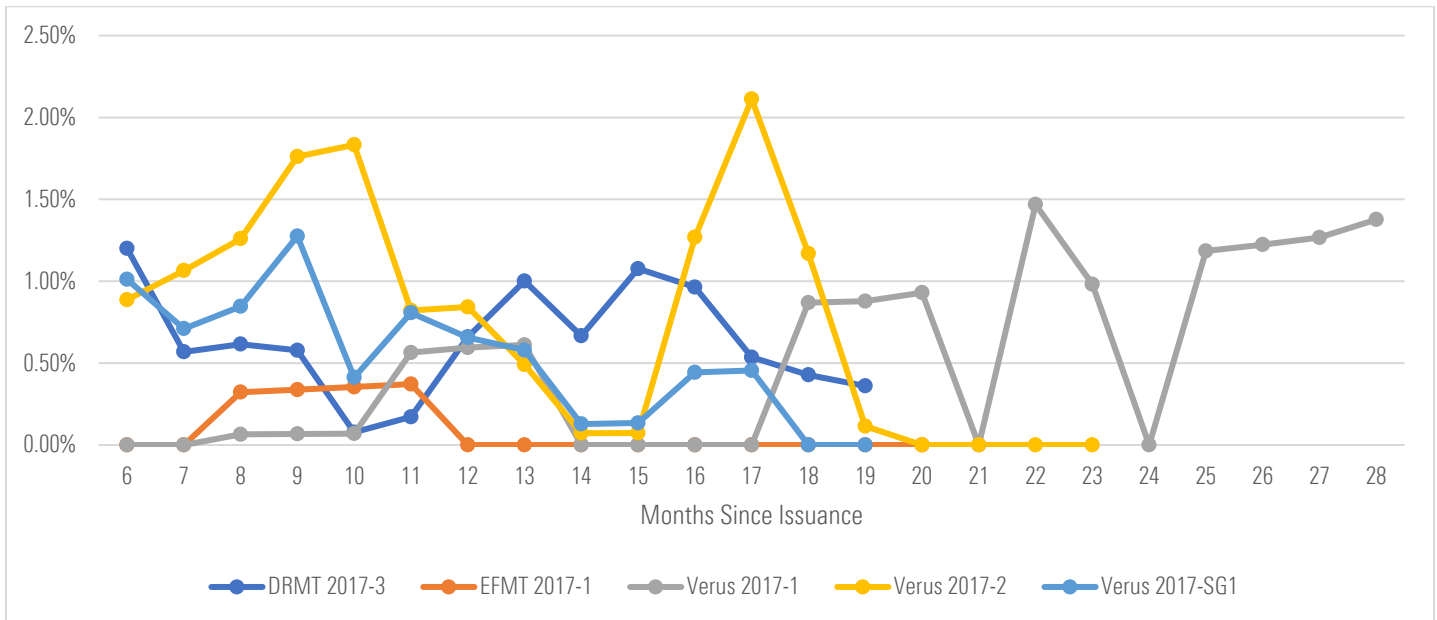
Note: The map shows the percentage of properties backing loans that are 60 or more days delinquent in select rated non-QM RMBS in each state. The list of transactions for which the data is shown in the chart includes all rated non-QM RMBS except certain deals for which we do not have loan-level performance data. Please see Appendix I for details.

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

Near Term Serious Delinquency Rates Will Likely Remain Low in Most Transactions, Might Edge Up in a Few Seasoned Deals

If economic growth does not dwindle, the serious 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,” remained low in second-quarter 2019 in most seasoned and in the recently issued deals, as Charts 4a and 4b show.

Chart 4a: Serious Delinquency Roll Rates Edge Up for One Seasoned Deal, but Remain Low for Most

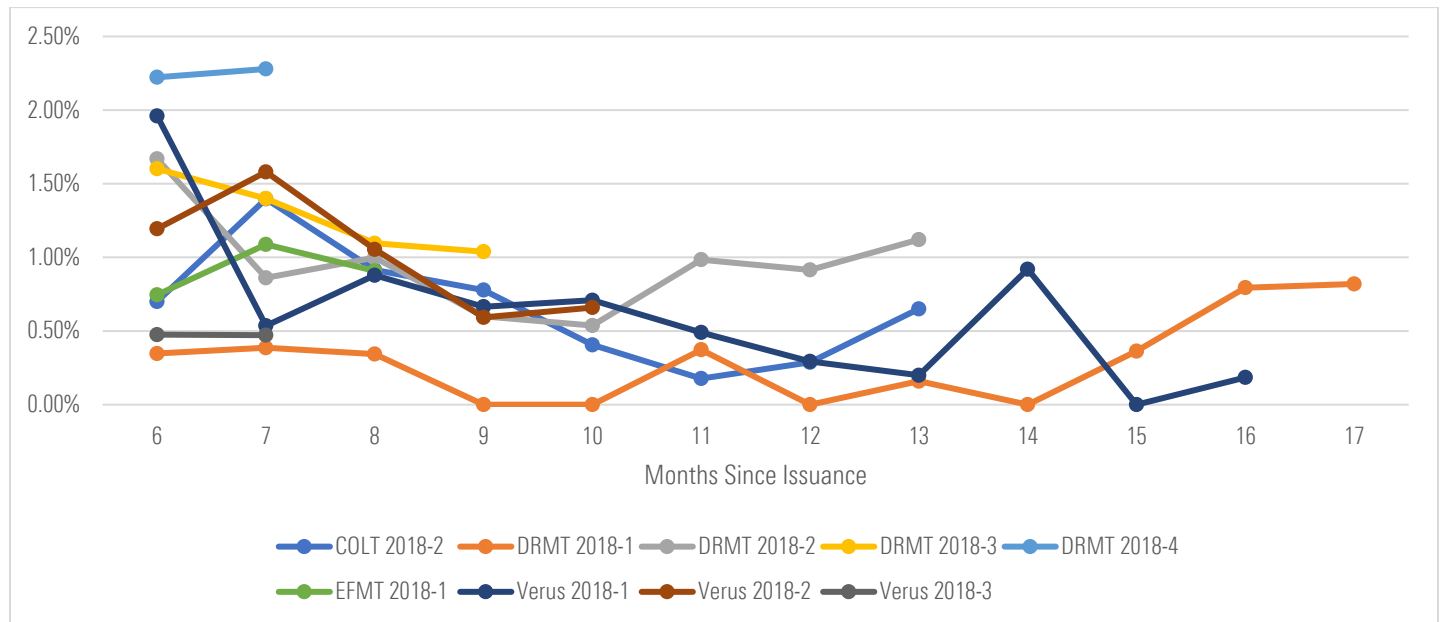


Note: The chart shows the rates at which always current borrowers (those who always stayed current on their mortgage payments) become 60 or more days delinquent. For every reporting period, we calculate the rate as the share of the unpaid loan balance of the always current borrowers six months ago, which are 60 or more days delinquent now. Also note: the data for months 27 and 28 is provided by one transaction, Verus 2017-1. The list of transactions for which the data is shown in the chart includes all rated non-QM RMBS except certain deals for which we do not have loan-level performance data. Please see Appendix I for details.

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

The lower roll rate into serious delinquency indicates the share of seriously delinquent loans will likely remain low in the near term. That said, the roll rates for Verus 2017-1, DRMT 2018-2, and DRMT 2018-4 hint that the share of seriously delinquent loans might increase somewhat if the borrowers do not catch up on their payments or do not work out a payment plan with the servicers. It is important to note, however, that the serious delinquency roll rates are volatile because any transition into delinquency might cause the rates to soar for a short period owing to a generally low number of seriously delinquent loans.

Chart 4b: Serious Delinquency Roll Rates Remain Low in Most Recently Issued Non-QM Deals



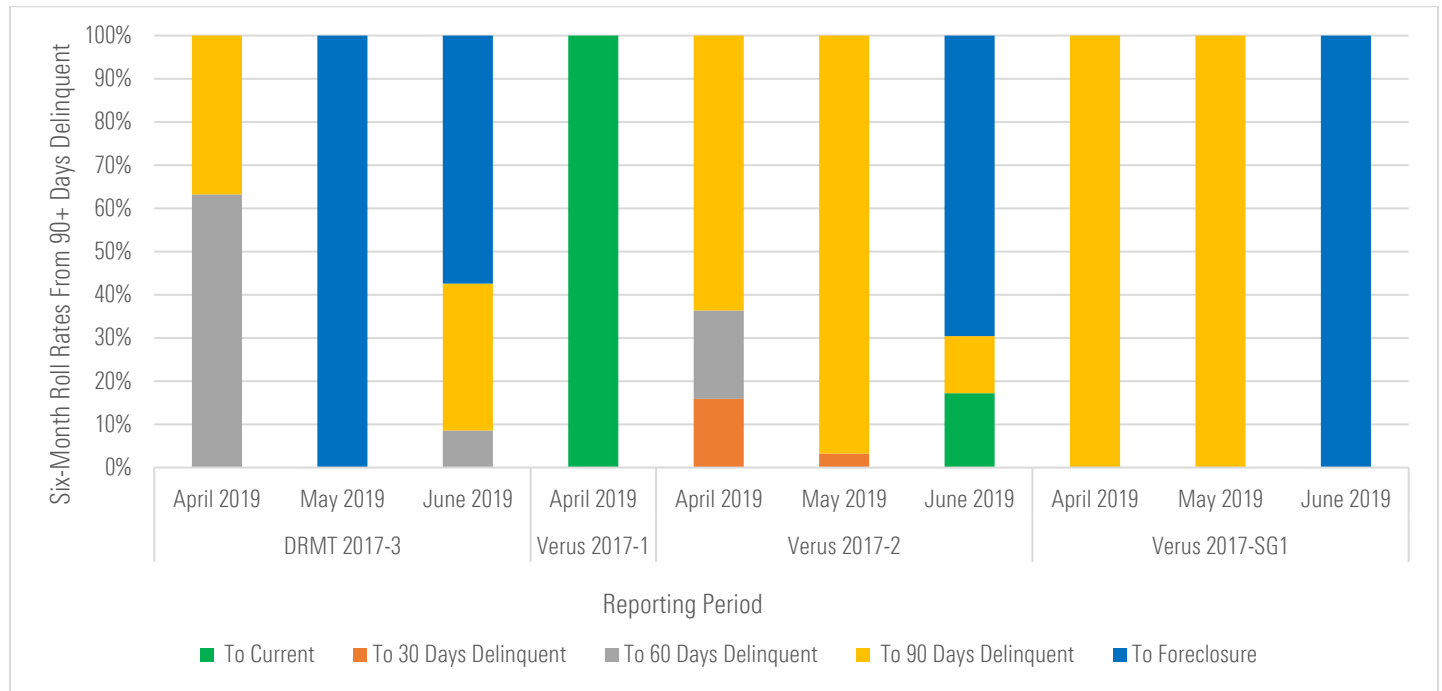
Note: The chart shows the rates at which always current borrowers (those who always stayed current on their mortgage payments) become 60 or more days delinquent. For every reporting period, we calculate the rate as the share of the unpaid loan balance of the always current borrowers six months ago, which are 60 or more days delinquent now. The list of transactions for which the data is shown in the chart includes all rated non-QM RMBS except certain deals for which we do not have loan-level performance data. Please see Appendix I for details.

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

Of the few borrowers who became 90 or more days delinquent in non-QM RMBS, some reported having become current again while others moved to the later stage of delinquency or to foreclosure, as Charts 5a and 5b show. That said, the actual delinquency cure rates varied by the deal in second-quarter 2019.

Amongst more seasoned deals, most of the borrowers in Verus 2017-SG1, DRMT 2017-3, and Verus 2017-2 became more severely delinquent or entered the foreclosure process by June, while the seriously delinquent borrowers in Verus 2017-1 became current again, as Chart 5a shows.

Chart 5a: The 90+ Delinquency Resolution Rates Vary by Deal Amongst Seasoned Non-QM RMBS, Show Most Borrowers Becoming More Delinquent or Entering Foreclosure

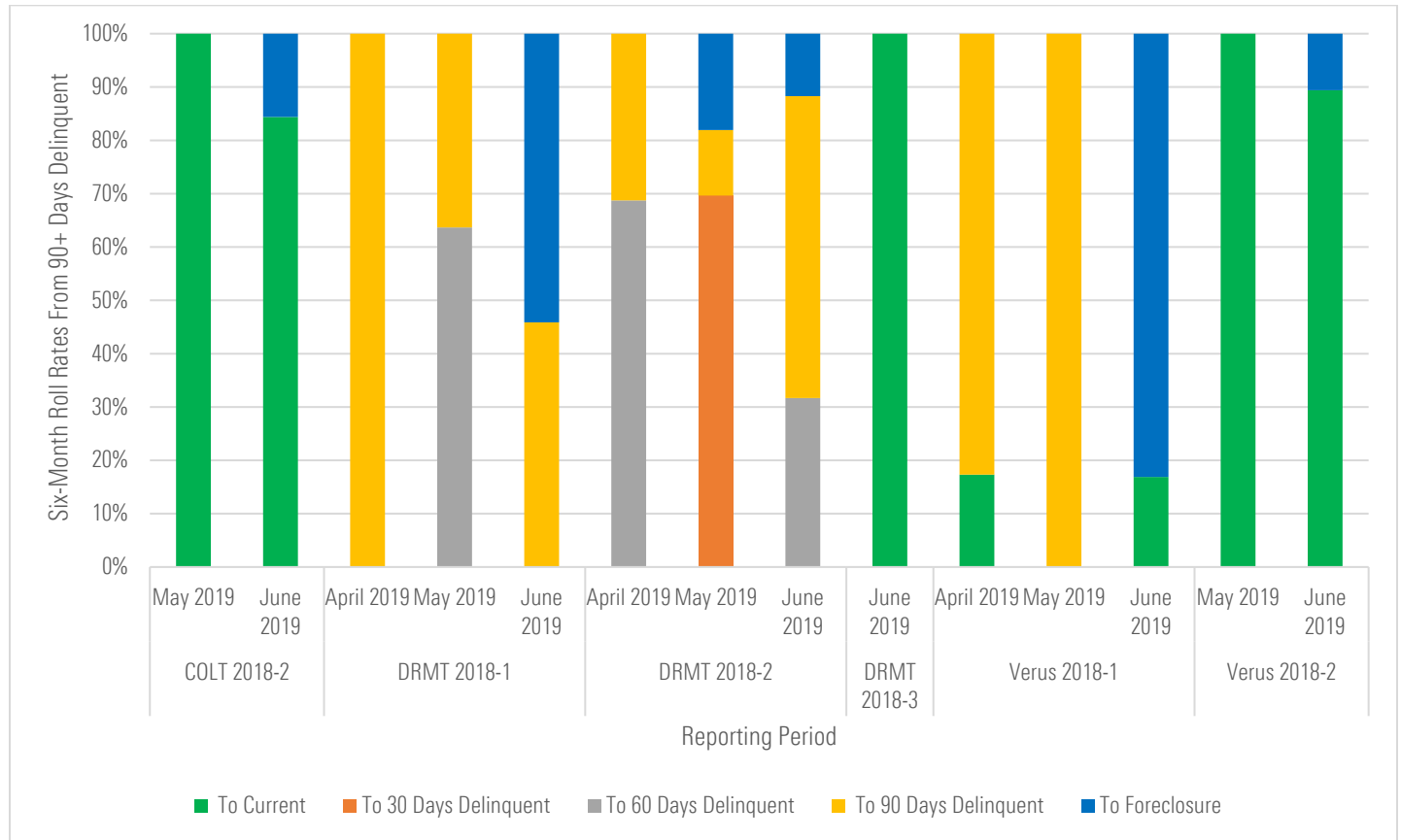


Note: The chart shows serious delinquency resolution rates for select rated non-QM RMBS for the last reported quarter. For each reporting period within the previous quarter, the resolution rate is calculated as the percentage of loan balance of the borrowers who were 90 or more days delinquent six months ago, who became current, paid off, were 30- or 60-day delinquent, or remained 90 or more days delinquent. The list of transactions for which the data is shown in the chart includes all rated non-QM RMBS except certain deals for which we do not have loan-level performance data. Please see Appendix I for details.

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

Amongst recently issued deals, the second-quarter 2019 loan transition rates indicate that all or most previously seriously delinquent borrowers cured their delinquency and became current again by June in DRMT 2018-3, COLT 2018-2, and Verus 2018-2, though the larger share became more severely delinquent or entered the foreclosure process in DRMT 2018-1, DRMT 2018-2, and Verus 2018-1, as Chart 5b shows.

Chart 5: The 90+ Delinquency Cure Rates Vary by Deal Amongst Recent Deals, 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, who became current, paid off, were 30- or 60-day delinquent, or remained 90 or more days delinquent. The list of transactions for which the data is shown in the chart includes all rated non-QM RMBS except certain deals for which we do not have loan-level performance data. Please see Appendix I for details.

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

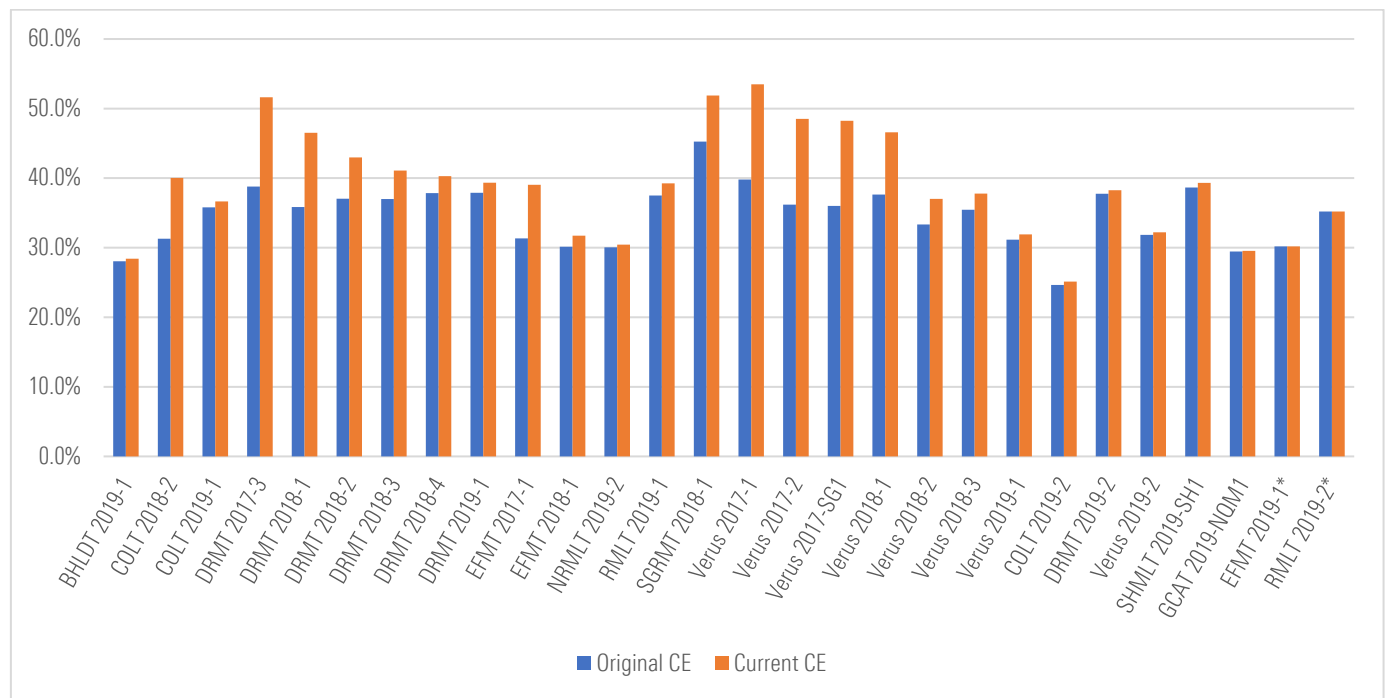
Barring an unexpected economic downturn, in the second half of the year, we expect the share of delinquent loans to rise somewhat as the servicers work to resolve the existing delinquencies, which will likely take some time, while the pools continue to pay down quickly making the outstanding balance of the delinquent loans a larger share of the remaining pool. That said, the delinquency rates and the percentage of the delinquent loans will likely remain generally low relative to the credit support available to the rated bonds.

Steady Growth in Credit Enhancement Continues to Support Solid Credit Performance

In second-quarter 2019, credit enhancement to the rated bonds, the share of the loan balance available to cushion bonds against the future collateral losses, continued to grow steadily, which is a credit positive for the deals. The credit enhancement growth in the second quarter is a part of a broader general trend we observed in non-QM RMBS in the first quarter and in 2018. The credit enhancement for senior bonds increased from origination in all non-QM RMBS we rate, as Chart 6 shows.

Elevated voluntary prepayments helped boost the growth in credit enhancement because they 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, even though some seriously delinquent loans entered foreclosure, no properties backing these loans have been liquidated yet and no collateral or bond losses incurred in non-QM RMBS, which, in turn, helped to bolster the credit-enhancement growth. Notably, if such losses on the loans stemming from liquidations of the underlying properties were to occur, 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 RMBS



*As of the issuance date, since first payment date is July 25, 2019.

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

Sources: Morningstar Credit Ratings, LLC and IntexCalc.

As in the prior quarter, the growth in credit enhancement helped offset the recent uptick in serious delinquency rates in a few non-QM deals, which shows rising share of seriously delinquent loans.

For example, Verus 2017-2's Class A-1, rated AAA, had about 48.51% of credit enhancement⁶ as of June 25 (up from 36.20% at origination) and Class B-3, rated BBB-, had about 5.08% (up from 2.55% at origination), and the deal had about 3.34% of annualized excess interest⁷ versus approximately 6.41% of 60-plus day delinquencies as of June 25. DRMT 2017-3's Class A-1, rated AAA, had about 51.63% of credit enhancement as of June 25 (up from 38.8% at origination) and Class M-1, rated AA-, had about 19.72% of credit enhancement as of June 25 (up from about 9.05% at origination) versus approximately 6.43% of 60-plus day delinquencies as of June 25. Verus 2018-1's Class A-1, rated AAA, had about 46.59% of credit enhancement as of June 25 (up from 37.65% at origination) and Class B-3, rated BB+, had about 4.41% of credit enhancement (up from 2.60% at origination), and the deal had about 2.75% of annualized excess cash interest versus approximately 4.70% of 60-plus day delinquencies as of June 25.

Similarly, DRMT 2018-1's Class A-1, rated AAA, had about 46.52% of credit enhancement as of June 25 (up from 35.85% at origination) and Class M-1, rated AA-, had about 18.94% of credit enhancement (up from 10.55% at origination) versus approximately 3.47% of 60-plus day delinquencies as of June 25. Finally, DRMT 2018-2's Class A-1, rated AAA, had about 42.97% of credit enhancement as of June 25, (up from 37.05% at origination) and Class M-1, rated A+, had about 15.98% of credit enhancement (up from 10.95% at origination) versus approximately 4.40% of 60-plus day delinquencies as of June 25.

Loan-Level Performance Highlights: Credit Quality of Defaulted Loans Is Notably Weaker Than Remaining and Prepaid Loans

As a few more loans became seriously delinquent during second-quarter 2019, we found that the credit quality of the defaulted loans is generally notably weaker than that of the remaining loans, or current loans, and of the prepaid loans, as Table 2 shows. Borrowers with weaker credit attributes appear to default earlier than those with stronger credit attributes. Earlier, we found that the credit quality of prepaid loans is about the same as that of current loans. If those trends continue, the credit quality of outstanding non-QM RMBS will likely remain stable and might even strengthen somewhat, as the weakest borrowers default and the better mortgagees remain in pool or prepay, and those who prepay are not materially better as than the remaining ones.

⁶ Source: Morningstar Credit Ratings, LLC and IntexCalc.

⁷ Excess interest is calculated as the annualized monthly excess cash flow as a percentage of the actual ending collateral balance. Source: Remittance reports and IntexCalc.

The top two sections of Table 2 show select credit attributes of the prepaid loans and loans that remain current in the non-QM RMBS we rate. The third section of the table shows the attributes of loans that became 60 or more days delinquent, or defaulted loans. Although the exact characteristics vary by the deal, on average, the defaulted loans had a notably weaker credit characteristics than the current loans, as evidenced by the lower average⁸ FICO score of 634 relative to the 701 of the remaining current loans and 702 of prepaid loans, a higher interest rate of 7.34% versus 6.58% of current and 6.74% of prepaid loans, and higher DTI of 38.6% versus 37.6% of the remaining loans and 37.8% of the prepaid loans. The defaulted borrowers appear to have about the same amount of home equity as the current remaining and prepaid borrowers as their average current LTV is about 72.2% or about the same as 72.1% current LTV of the remaining current loans and 73.6% of the prepaid loans. The overall results show that that the defaulted loans were consistently of a notably weaker credit quality than the remaining loans and the prepaid loans across the non-QM RMBS deals we rate.

Table 2: Select Loan-Level Performance Characteristics of Rated Non-QM Deals

	COLT 2018-2	COLT 2019-2	COLT 2019-1	DRMT 2019-1	DRMT 2017-3	DRMT 2018-1	DRMT 2018-2	DRMT 2018-3	DRMT 2018-4	EFMT 2017-1	EFMT 2018-1	NRMLT 2019-							
												NOM2	Verus 2017-1	Verus 2017-2	Verus 2017-SG1	Verus 2018-1	Verus 2018-2	Verus 2018-3	Verus 2019-1
Current																			
Current Loan Count	566	571	625	738	389	430	530	572	732	170	433	574	119	279	301	341	640	674	1190
Original UPB (\$)	241,569,914	397,655,007	349,347,422	316,736,765	137,956,238	171,051,646	201,301,687	242,379,353	314,447,350	75,246,289	198,615,728	295,833,459	61,903,997	117,006,386	127,187,322	145,950,554	361,955,504	367,032,054	623,342,478
Current UPB (\$)	235,063,411	394,310,352	346,813,352	312,838,459	131,825,317	165,849,654	196,432,461	237,651,370	309,694,701	70,880,758	194,942,264	294,308,824	57,211,647	113,388,829	122,963,061	140,126,098	355,805,815	363,110,707	616,787,398
Average Loan Size (\$)*	415,306	690,561	554,901	424,036	338,883	385,697	370,627	415,474	423,067	416,946	450,213	512,733	480,770	406,412	408,515	410,927	555,947	538,740	518,309
% Original Balance	59.9	94.8	92.3	91.4	46.3	55.2	66.8	73.9	83.6	52.6	84.9	96.5	41.9	48.1	49.9	58.4	74.9	84.2	93.3
Months Since Issuance	13	3	5	4	19	17	13	9	7	20	8	3	28	23	19	16	10	7	4
WA FICO	701	735	720	695	695	691	680	693	696	701	707	722	696	705	691	702	692	698	696
WA DTI (%)	41.0	40.4	41.0	37.5	33.8	36.2	36.8	39.0	37.9	38.9	37.1	35.3	34.4	37.6	37.5	38.4	37.3	37.8	36.2
WAC (%)	6.5	5.8	6.3	7.0	6.9	6.7	6.8	6.8	6.6	6.6	6.3	6.2	6.7	6.9	6.8	6.6	6.4	6.6	6.5
WA LTV (%)	79.0	82.2	82.0	73.4	75.0	72.2	71.5	72.7	73.1	65.0	68.7	73.6	67.7	66.5	70.1	69.2	69.0	69.1	69.7
WA MORN LTV (%)	73.9	80.8	80.1	71.3	67.1	65.9	66.0	69.7	70.8	56.0	65.7	238.5	55.9	59.0	63.1	62.3	65.5	67.0	68.3
Prepaid																			
Current Loan Count	316	29	49	66	366	311	233	165	111	142	73	17	169	301	242	198	191	117	75
Original UPB (\$)	158,475,238	21,596,470	27,979,978	27,686,941	150,939,979	132,745,188	90,741,239	79,111,099	53,063,095	67,118,396	32,681,012	10,800,295	84,979,888	118,140,703	125,733,772	96,790,171	117,941,655	66,289,453	41,147,358
Current UPB (\$)	155,560,521	20,675,534	27,086,792	27,466,931	147,588,942	130,324,527	88,345,180	78,435,704	52,263,966	65,120,270	32,238,454	10,760,320	82,167,357	114,514,122	123,079,560	94,487,256	116,515,356	65,705,909	40,643,371
Average Loan Size (\$)*	492,280	712,949	552,792	416,166	403,276	419,050	379,164	475,368	470,847	458,593	441,623	632,960	486,197	380,446	508,593	477,208	610,028	561,589	541,912
% Original Balance	39.3	5.2	7.4	8.0	50.6	42.8	30.1	24.1	14.1	46.9	14.0	3.5	57.6	48.6	49.3	38.8	24.4	15.2	6.2
WA FICO	704	745	730	686	689	690	688	696	695	692	700	732	703	701	697	701	691	691	708
WA DTI (%)	43.1	41.8	41.8	35.2	37.1	37.7	37.8	37.4	39.2	39.4	35.0	28.6	35.7	38.2	37.4	38.5	38.6	39.3	36.7
WAC (%)	6.6	5.7	6.5	6.9	6.9	6.8	6.9	7.0	6.9	6.7	6.7	6.2	6.8	7.3	6.8	6.9	6.7	6.9	6.8
WA LTV (%)	79.1	80.5	82.8	72.4	75.6	74.9	72.8	74.5	72.9	66.3	70.7	75.7	71.8	70.3	72.9	71.4	70.0	71.3	71.7
WA MORN LTV (%)	76.5	78.3	80.0	71.7	69.7	70.1	68.8	72.4	71.8	60.2	68.5	197.8	64.7	64.1	67.5	65.9	67.2	69.4	70.3
Defaulted**																			
Current Loan Count	7	-	2	5	17	13	21	12	14	3	4	-	1	12	7	16	9	10	5
Original UPB (\$)	3,076,600	-	1,252,400	2,393,474	9,229,023	6,048,930	9,169,480	6,586,916	8,650,360	714,950	2,704,440	-	704,000	7,898,995	1,965,950	6,995,100	3,419,600	2,528,790	3,291,193
Current UPB (\$)	3,052,140	-	1,248,234	2,386,682	9,080,867	5,965,687	9,068,786	6,542,646	8,604,095	702,468	2,685,874	-	685,926	7,800,696	1,933,109	6,933,242	3,392,940	2,514,437	3,278,156
Average Loan Size (\$)*	436,020	-	624,117	477,336	534,169	458,899	431,847	545,221	614,578	234,156	671,468	-	685,926	650,058	276,158	433,328	376,993	251,444	655,631
% Original Balance	0.8	-	0.3	0.7	3.1	2.0	3.0	2.0	2.3	0.5	1.2	-	0.5	3.2	0.8	2.8	0.7	0.6	0.5
WA FICO	655	-	682	602	613	619	599	667	667	669	591	-	645	651	671	634	607	540	668
WA DTI (%)	46.8	-	41.0	40.0	33.7	35.6	37.5	40.8	32.5	47.1	26.3	-	49.4	33.5	42.5	41.0	36.6	29.3	42.7
WAC (%)	7.2	-	7.4	7.7	7.1	7.2	7.2	7.1	7.3	7.2	7.1	-	7.9	7.8	7.3	7.5	7.6	7.8	6.4
WA LTV (%)	80.8	-	88.2	71.5	71.7	74.9	71.9	69.8	71.9	61.2	71.6	-	80.0	72.1	67.2	71.4	65.6	70.0	67.1
WA MORN LTV (%)	78.3	-	85.9	69.6	66.6	70.6	66.7	66.8	68.4	52.0	67.9	-	68.8	65.9	61.1	65.6	63.2	67.6	67.2
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

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

⁸ Excluding zero values.



Appendix 1

The list of transactions for which the loan-level performance data is not available from CoreLogic and 1010data as of the report publication date includes:

1. SGRMT 2018-1
2. RMLT 2019-1
3. BHLT 2019-1
4. DEEPHAVEN 2019-2
5. VERUS 2019-2
6. SHMLT 2019-SH1
7. GCAT 2019-NQM1
8. EFMT 2019-1
9. RMLT 2019-2

Appendix II

Geographical Concentration of Properties Backing Rated Non-QM RMBS

	COLT 2018-2	COLT 2019-1	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	Verus 2018-2	Verus 2018-3	COLT 2019-2	Verus 2019-1	DRMT 2019-1	NRMLT 2019- NOM2
Alaska	0.06%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.28%	0.00%	0.00%	0.00%
Alabama	0.30%	0.07%	0.06%	0.13%	0.09%	0.25%	0.00%	0.00%	0.00%	0.00%	0.00%	0.16%	0.03%	0.00%	0.17%	0.02%	0.03%	0.11%	0.26%
Arkansas	0.14%	0.23%	0.08%	0.00%	0.00%	0.09%	0.36%	0.00%	0.10%	0.00%	0.00%	0.00%	0.00%	0.08%	0.00%	0.00%	0.00%	0.08%	0.00%
Arizona	4.79%	2.77%	7.65%	9.88%	6.34%	9.60%	4.96%	3.75%	3.41%	0.49%	2.77%	4.67%	1.74%	2.00%	0.89%	2.76%	3.26%	4.09%	1.47%
California	31.51%	37.73%	36.53%	39.53%	41.74%	40.67%	49.41%	61.99%	53.19%	57.40%	48.97%	56.67%	53.11%	57.91%	65.32%	32.52%	56.04%	46.65%	26.25%
Colorado	2.30%	4.15%	2.53%	2.39%	2.93%	2.52%	2.79%	8.20%	6.61%	2.10%	2.55%	1.91%	1.76%	1.03%	0.85%	2.83%	2.18%	3.78%	2.44%
Connecticut	1.25%	0.81%	0.36%	1.01%	0.14%	0.62%	0.18%	0.17%	0.27%	0.27%	0.32%	1.71%	0.57%	1.10%	0.94%	0.53%	1.00%	0.85%	1.92%
District of Colu	0.42%	0.61%	0.27%	0.00%	0.19%	0.00%	0.07%	0.00%	0.00%	0.00%	0.20%	0.00%	0.08%	0.91%	1.99%	0.24%	0.37%	1.01%	0.11%
Delaware	0.18%	0.03%	0.30%	0.13%	0.06%	0.00%	0.00%	0.00%	0.13%	0.00%	0.08%	0.00%	0.05%	0.00%	0.00%	0.08%	0.00%	0.00%	0.46%
Florida	18.58%	10.35%	20.90%	17.77%	21.39%	15.62%	15.28%	6.64%	13.82%	11.87%	16.31%	12.37%	15.49%	15.83%	10.77%	13.68%	15.25%	13.75%	8.41%
Georgia	1.67%	2.59%	2.44%	2.64%	1.06%	1.43%	1.41%	0.00%	0.41%	2.94%	1.22%	1.06%	0.82%	1.71%	1.59%	1.87%	1.34%	3.02%	2.46%
Hawaii	1.36%	1.80%	0.27%	0.19%	0.26%	0.27%	1.00%	0.00%	0.00%	0.00%	0.12%	0.00%	0.13%	1.03%	0.25%	0.70%	0.34%	0.36%	0.00%
Iowa	0.00%	0.08%	0.00%	0.00%	0.00%	0.02%	0.03%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.00%	0.05%	0.00%	0.00%	0.00%
Idaho	0.21%	0.37%	0.00%	0.56%	0.29%	0.27%	0.20%	0.00%	0.29%	0.00%	0.49%	0.39%	0.20%	0.11%	0.11%	0.28%	0.14%	0.12%	0.00%
Illinois	2.17%	2.34%	4.58%	4.06%	2.51%	3.52%	1.75%	0.00%	0.13%	3.40%	2.27%	1.74%	1.19%	0.74%	1.56%	1.14%	1.11%	1.87%	1.87%
Indiana	0.69%	0.96%	0.34%	0.49%	0.93%	0.50%	0.39%	0.00%	0.00%	0.30%	0.00%	0.29%	0.13%	0.06%	0.08%	0.45%	0.20%	0.65%	0.45%
Kansas	0.34%	0.03%	0.15%	0.00%	0.04%	0.00%	0.05%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.14%	0.00%	0.40%	0.15%	0.00%	0.00%
Kentucky	0.07%	0.00%	0.06%	0.00%	0.00%	0.64%	0.00%	0.00%	0.00%	0.16%	0.04%	0.08%	0.00%	0.10%	0.03%	0.00%	0.13%	0.00%	0.00%
Louisiana	0.23%	0.23%	0.00%	0.00%	0.19%	0.31%	0.66%	0.00%	0.00%	0.00%	0.00%	0.82%	0.15%	0.33%	0.05%	0.22%	0.23%	0.21%	0.00%
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%	0.42%	0.24%	1.08%	0.00%	0.41%	0.84%	1.50%
Maryland	1.57%	1.72%	0.45%	1.31%	1.07%	1.76%	1.61%	0.00%	1.02%	0.67%	1.20%	0.84%	0.99%	0.57%	1.54%	1.17%	0.22%	3.96%	0.00%
Maine	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.06%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.06%	0.00%	0.00%	0.04%	0.20%
Michigan	2.81%	1.39%	0.52%	0.78%	0.46%	0.53%	0.64%	0.00%	0.00%	0.94%	1.06%	0.11%	0.17%	0.31%	0.39%	1.26%	0.19%	0.97%	0.51%
Minnesota	0.90%	0.46%	0.50%	0.91%	0.25%	0.29%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.36%	0.22%	0.05%	1.28%	0.35%	0.78%	1.29%
Missouri	0.35%	0.32%	0.10%	0.00%	0.00%	0.21%	0.52%	0.00%	0.00%	0.00%	0.18%	0.00%	0.00%	0.02%	0.09%	0.62%	0.13%	0.19%	0.65%
Mississippi	0.17%	0.04%	0.00%	0.00%	0.03%	0.11%	0.00%	0.00%	0.00%	0.00%	0.02%	0.05%	0.00%	0.00%	0.11%	0.00%	0.00%	0.11%	0.00%
Montana	0.00%	0.23%	0.00%	0.13%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.22%	0.00%	0.37%	0.00%	0.00%	0.00%
North Carolina	1.53%	1.28%	1.91%	0.94%	1.27%	1.50%	1.47%	0.00%	0.00%	0.20%	1.05%	0.42%	0.69%	0.77%	0.48%	0.63%	0.16%	0.92%	3.02%
North Dakota	0.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.18%	0.00%	0.00%	0.00%
Nebraska	0.14%	0.12%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
New Hampshire	0.00%	0.09%	0.00%	0.00%	0.18%	0.27%	0.06%	0.00%	0.00%	0.00%	0.15%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%	0.28%	0.03%
New Jersey	4.25%	4.23%	2.21%	1.95%	2.66%	2.35%	1.38%	0.00%	0.18%	3.40%	2.33%	0.94%	3.95%	1.93%	1.70%	4.05%	2.13%	2.02%	7.73%
New Mexico	0.09%	0.19%	0.10%	0.10%	0.15%	0.05%	0.17%	0.00%	0.00%	0.00%	0.00%	0.10%	0.17%	0.02%	0.05%	0.00%	0.00%	0.19%	0.00%
Nevada	4.75%	2.65%	2.31%	2.38%	2.81%	2.18%	2.20%	1.05%	1.83%	2.75%	1.64%	1.71%	2.75%	1.11%	1.69%	2.25%	1.33%	3.37%	0.24%
New York	0.00%	1.20%	0.00%	0.00%	0.00%	0.36%	0.39%	0.00%	0.00%	3.62%	7.43%	3.83%	6.00%	5.17%	4.09%	0.41%	3.58%	0.19%	14.71%
Ohio	0.31%	0.67%	0.90%	0.26%	0.34%	0.30%	0.31%	0.00%	0.00%	0.07%	0.07%	0.29%	0.24%	0.28%	0.09%	0.29%	0.26%	0.07%	3.21%
Oklahoma	0.07%	0.19%	0.10%	0.06%	0.22%	0.00%	0.08%	0.00%	0.00%	0.00%	0.04%	0.00%	0.00%	0.00%	0.25%	0.72%	0.05%	0.00%	0.00%
Oregon	2.06%	1.20%	0.76%	0.64%	0.88%	0.58%	0.31%	1.83%	2.10%	0.31%	0.80%	1.22%	0.73%	0.92%	0.26%	2.12%	1.04%	0.53%	1.05%
Pennsylvania	0.70%	0.73%	1.56%	0.90%	0.50%	1.51%	0.48%	0.00%	0.00%	0.36%	0.77%	0.58%	0.12%	0.44%	0.31%	0.43%	0.45%	1.08%	4.25%
Rhode Island	0.06%	0.00%	0.00%	0.00%	0.00%	0.13%	0.00%	0.00%	0.00%	0.00%	0.08%	0.11%	0.00%	0.00%	0.00%	0.00%	0.17%	0.13%	0.39%
South Carolina	0.56%	1.03%	0.95%	0.81%	0.64%	0.77%	0.48%	0.00%	0.00%	0.29%	0.10%	0.04%	1.14%	0.08%	0.36%	0.58%	0.54%	0.49%	1.45%
South Dakota	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.03%	0.00%	0.00%	0.00%	0.00%	0.00%
Tennessee	0.51%	1.09%	0.22%	0.26%	0.33%	0.84%	0.29%	0.00%	0.00%	0.15%	0.99%	0.00%	0.21%	0.43%	0.19%	0.00%	0.34%	0.61%	0.91%
Texas	4.87%	3.95%	5.00%	3.72%	5.79%	4.51%	5.15%	13.66%	12.57%	6.19%	4.19%	5.09%	4.41%	1.81%	3.03%	3.90%	4.01%	5.60%	4.71%
Utah	1.18%	1.92%	2.36%	2.65%	1.72%	2.03%	1.24%	0.00%	0.78%	0.84%	0.00%	0.06%	0.80%	0.03%	0.00%	1.87%	0.29%	1.69%	0.60%
Virginia	1.29%	1.59%	0.59%	0.65%	1.01%	0.87%	0.63%	0.00%	1.21%	0.00%	1.60%	0.41%	1.39%	0.17%	0.76%	2.67%	0.47%	1.14%	1.64%
Washington	5.32%	7.79%	1.57%	2.22%	0.92%	1.31%	2.50%	1.93%	1.90%	2.48%	0.95%	0.94%	0.84%	1.42%	1.52%	14.42%	1.08%	2.19%	0.58%
Wisconsin	0.20%	0.57%	0.83%	0.17%	0.42%	0.54%	0.24%	0.00%	0.00%	0.24%	0.09%	0.00%	0.18%	0.05%	0.21%	0.56%	0.20%	0.14%	0.00%
West Virginia	0.00%	0.08%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.08%	0.00%	0.00%	0.00%	0.00%	0.00%	0.06%	0.00%	0.00%
Wyoming	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.21%	0.00%	0.00%	0.00%	0.00%	0.00%

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