

Market Snapshot





Contents

Macro-Economic Indicators

Rate History

Prepayment Speed Trends

Delinquency Trends

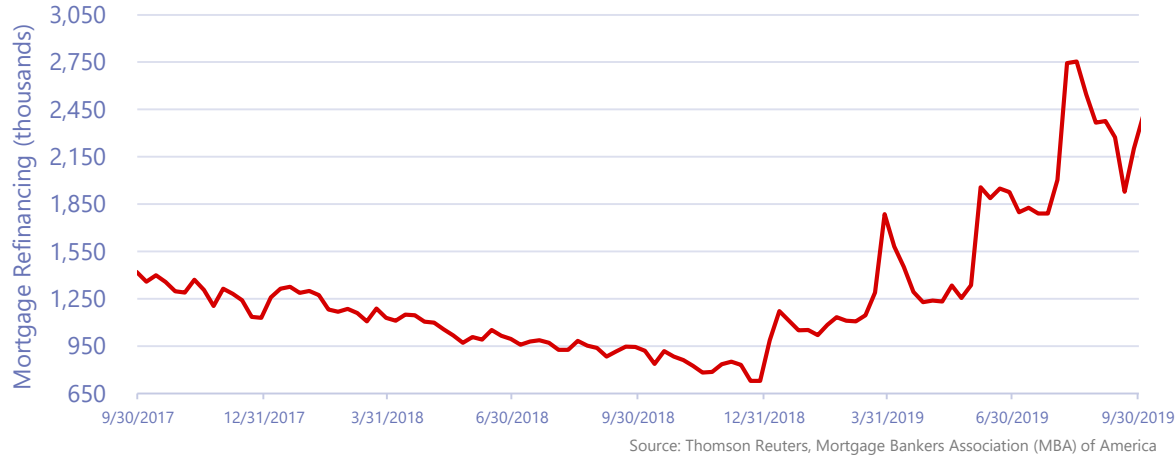
Macro- Economic Indicators

Summary

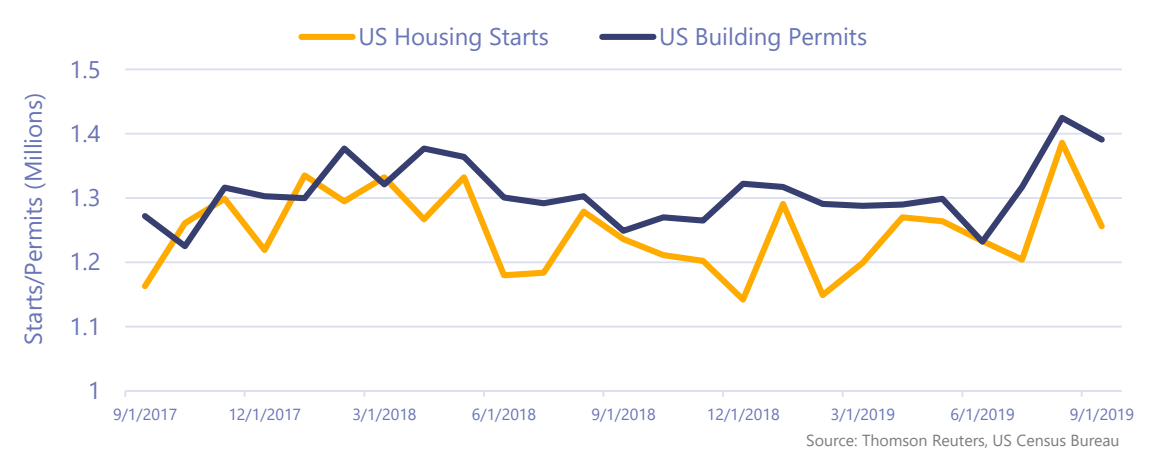
- Consumer confidence dipped in September, falling 6.8% to a reading of 125.1 (vs. 134.2 in August). This was the largest drop the index has seen in 9 months, and the largest miss relative to consensus expectations (of 133.5) since 2010.
- The national unemployment rate fell 0.2% to a new 50-year low of 3.5% for September. There were 136,000 jobs added for the month of September, below consensus estimates of 145,000.
- The MBA Mortgage Refinance Application Index once again reflected the volatile par rate environment, fluctuating between weekly readings of 2,378 and 1,928, finishing the month off down 7.4% at 2,203.

Macro-Economic Indicators

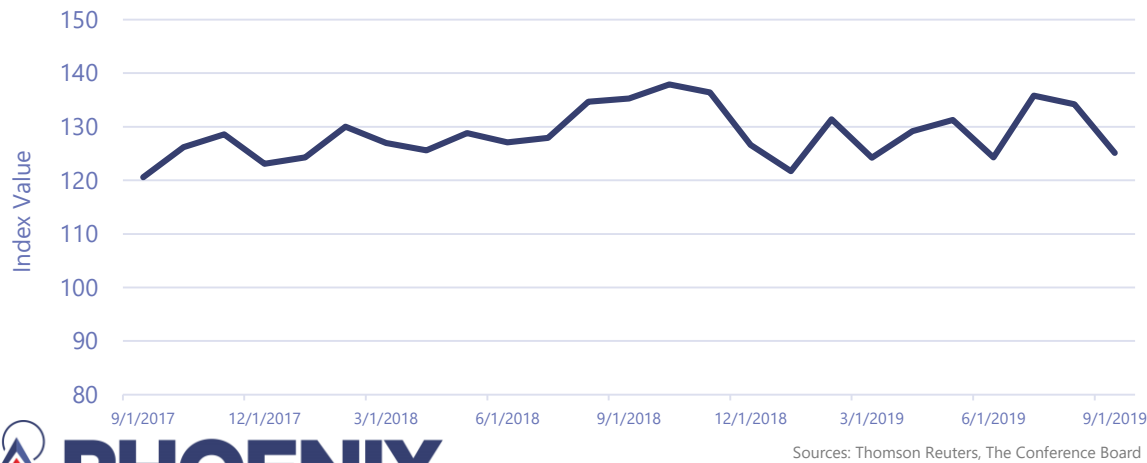
MBA Mortgage Refinance Application Index



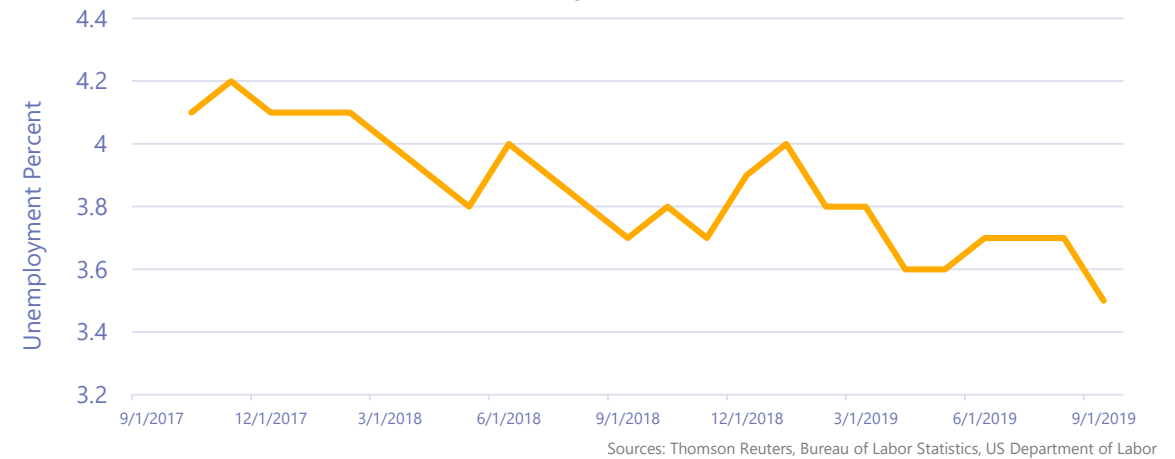
US Housing Starts/US Building Permits



US Consumer Confidence



Unemployment Rate



Rate History

Summary

- Mortgage rates rallied throughout September, peaking mid-month and then retracting the second-half as the Fannie 30yr current coupon (USFN30CC) increased over 21bps and the 15yr up 14bps. GNMA rates followed a similar trend increasing nearly 12bps.
- Swaption volatility was down as the third quarter came to a close.
- The yield curve started to steepen around the 2 year mark compared to August month-end.
- SWAP rates increased, recouping some of the heavy losses experienced over the prior month with the 2yr up 19bps sitting at 1.61% and the 10yr increasing 22bps to 1.54%.

Rate History (cont.)

Primary Rates as of 09/30/2019

Rate	9/30/2019	8/30/2019	6/28/2019	9/28/2018
CONV30	3.861	3.749	4.057	4.873
CONV15	3.425	3.382	3.606	4.102
GOV30	3.615	3.549	3.716	4.691
ARM 5/1	3.500	3.625	3.750	4.125

Secondary Rates as of 09/30/2019

Rate	9/30/2019	8/30/2019	6/28/2019	9/28/2018
FNMA 30	2.611	2.399	2.757	3.823
FNMA 15	2.225	2.082	2.306	3.102
GNMA II 30	2.315	2.199	2.416	3.641
GNMA II 15	2.225	2.082	2.306	3.109
ARM 5/1	4.000	3.890	3.850	4.420

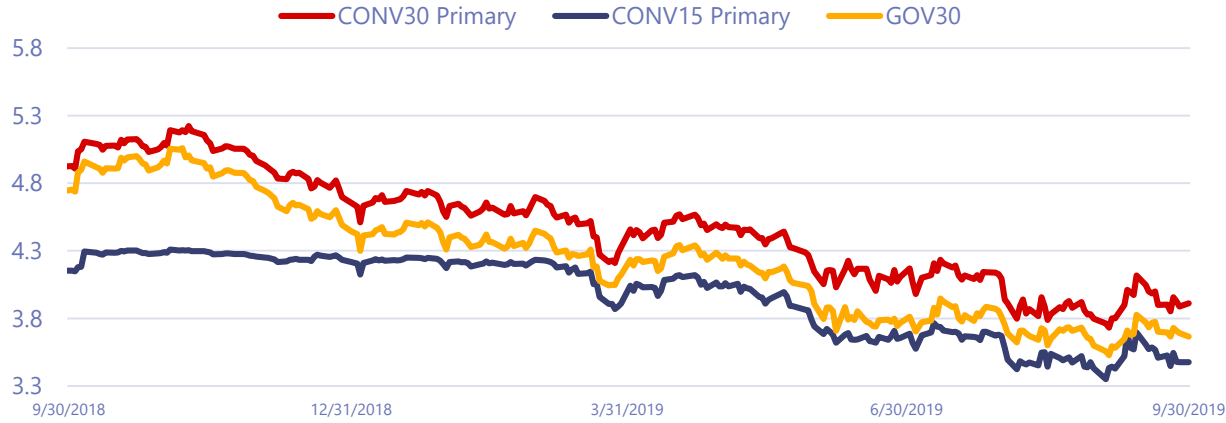
Earnings Rates as of 09/30/2019

Rate	9/30/2019	8/30/2019	6/28/2019	9/28/2018
3 MO ED	2.089	2.124	2.344	2.440
6 MO ED	2.022	2.032	2.190	2.594
12 MO ED	1.763	1.821	2.019	2.762
2 YR SWAP	1.610	1.492	1.782	2.965
3 YR SWAP	1.530	1.375	1.722	3.025
5 YR SWAP	1.481	1.298	1.742	3.045
10 YR SWAP	1.542	1.361	1.940	3.094
15 YR SWAP	1.623	1.446	2.085	3.133
20 YR SWAP	1.671	1.499	2.154	3.138
30 YR SWAP	1.691	1.523	2.189	3.110

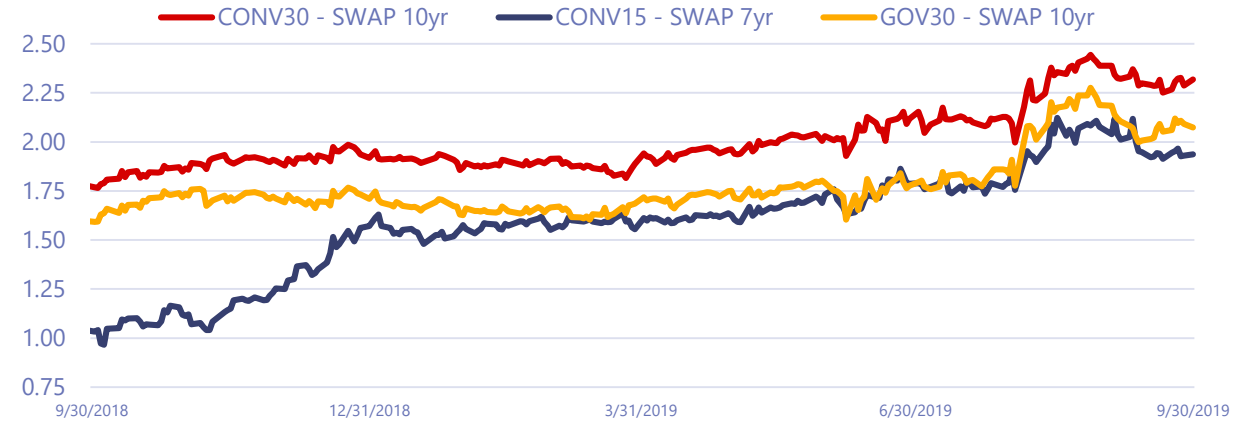
Source: Thomson Reuters and PHOENIX

Rate History

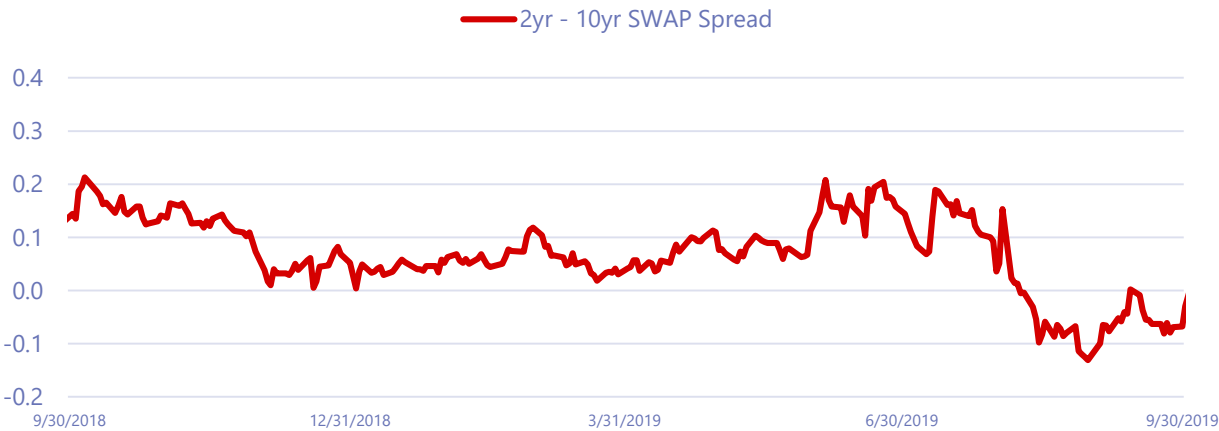
Mortgage Par Rates (%)



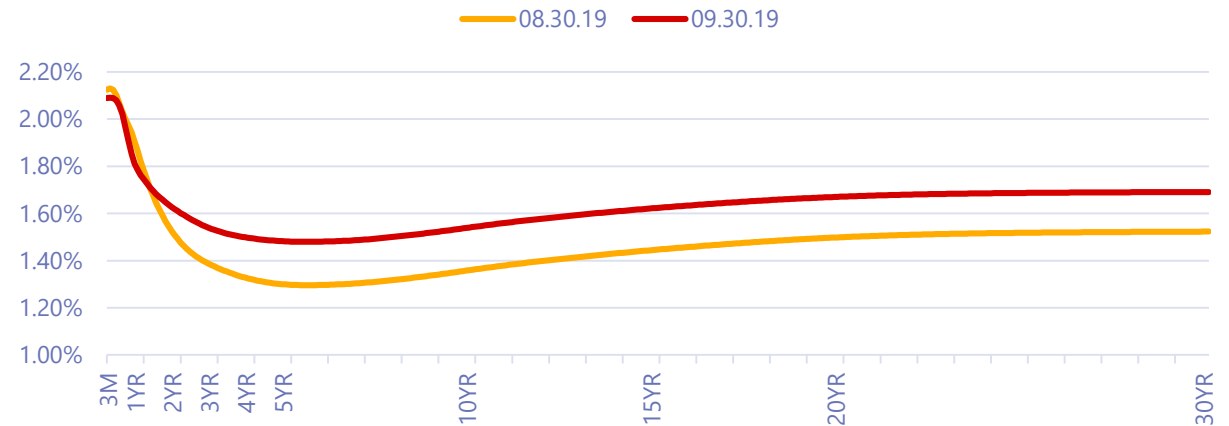
Mortgage Par Spread over SWAP Rates (%)



2yr and 10yr SWAP Spread



Yield Curve Comparison



Prepayment Speed Trends

Summary

- Par rates continued to be relatively flat over the month of September—total CPRs are up marginally by 4.13%.
- Conventional 30-year product saw the largest monthly increase of 9.37%, while conventional 15-year, FHA, and VA product all saw decreases in prepayment speeds over the month.
- Conventional 30-year, FHA, and VA product prepayment speeds have increased by at least 75% year-over-year, driven primarily by the decrease in conventional and government 30-year par rates by ~100bps from September 2018.

CPR Summary

SUMMARY TABLES - September 2019

Loan Characteristics						Prepayments	
Investor	Avg Orig Bal	WAC	WAvg Orig FICO	WAvg Orig LTV	WAvg Age	CPR	1mo CPR Change%
CONV Fixed 30	\$216,608	4.37	748	77	55	17.69%	9.37%
CONV Fixed 15	\$171,978	3.64	755	66	56	12.74%	-5.41%
GNMA Fixed 30	\$187,047	4.14	694	94	49	18.98%	-1.90%
GNMA Fixed 15	\$141,832	3.66	711	83	58	13.27%	-9.57%

Vintage	Avg Orig Bal	WAC	WAvg Orig FICO	WAvg Orig LTV	WAvg Age	CPR	1mo CPR Change%
2005	\$138,864	5.35	693	77	144	10.90%	-5.53%
2006	\$145,757	5.39	685	78	128	10.01%	-6.39%
2007	\$155,458	5.27	681	80	116	9.57%	-11.08%
2008	\$150,164	5.27	685	81	114	10.76%	-3.72%
2009	\$166,307	4.91	726	79	115	13.98%	-3.13%
2010	\$174,217	4.65	737	79	105	14.30%	-3.24%
2011	\$173,247	4.41	742	77	95	13.69%	-3.85%
2012	\$201,446	3.77	748	80	84	11.97%	-6.74%
2013	\$191,151	3.81	742	80	73	12.44%	-4.67%
2014	\$183,262	4.25	732	81	59	16.31%	-0.27%
2015	\$211,363	3.95	734	80	48	16.17%	1.31%
2016	\$231,216	3.70	735	79	36	15.16%	1.19%
2017	\$228,129	4.12	730	82	25	20.33%	12.13%
2018	\$229,012	4.71	729	82	14	37.63%	10.56%

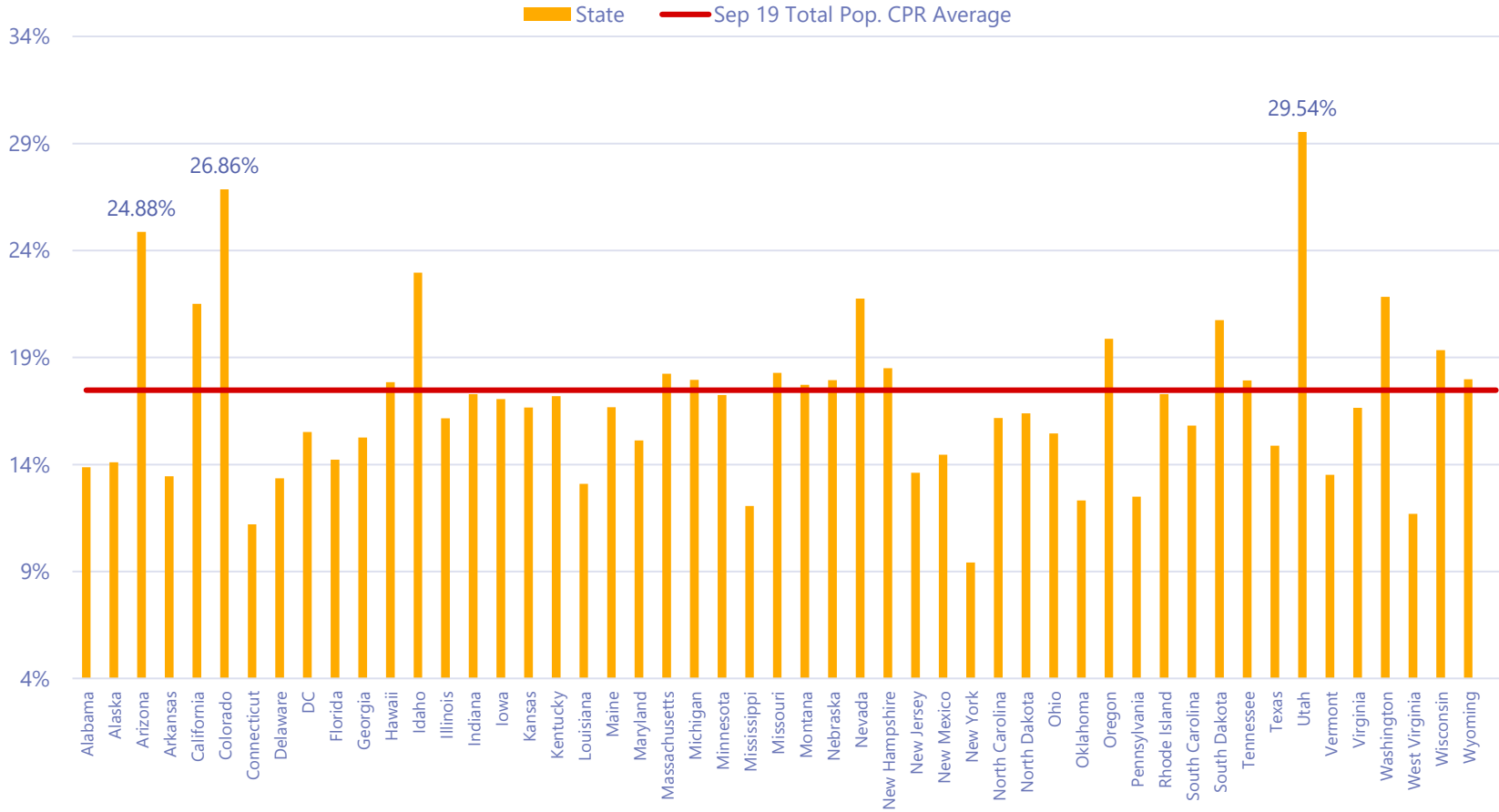
Tranche	Avg Orig Bal	WAC	WAvg Orig FICO	WAvg Orig LTV	WAvg Age	CPR	1mo CPR Change%
0.0000 - 4.4999	\$216,937	3.83	740	80	48	14.79%	1.80%
4.5000 - 4.9999	\$196,874	4.68	726	82	45	24.09%	11.11%
5.0000 - 5.4999	\$172,707	5.16	709	83	60	24.66%	4.03%
5.5000 - 5.9999	\$145,958	5.66	698	81	93	19.33%	-1.40%
6.0000 - 6.4999	\$122,025	6.16	694	78	141	13.37%	-5.06%
6.5000 - 6.9999	\$106,328	6.66	686	79	159	11.14%	-8.79%
7.0000 - 7.4999	\$87,323	7.14	674	81	180	10.10%	-10.62%
7.5000 - 7.9999	\$77,975	7.63	659	82	197	9.11%	-16.31%
8.0000 - 8.4999	\$70,998	8.14	647	82	217	8.82%	-13.48%
8.5000 or more	\$64,618	8.89	637	82	223	9.06%	-27.18%

GSE and GNMA fixed rate product only

Source: Black Knight McDash

Prepayment Speed Trends

Average CPR by State - September 2019



Analysis

- Utah continued its fast prepayment performance and led the country at 29.54% CPR, while New York prepaid the slowest at 9.42% CPR over the month of September.
- Western states (UT, CO, NM, AZ, WY) continue to lead the country in prepayment speeds, while Northeastern states (PA, NY, NJ) continue to bring up the rear.
- Utah saw the largest month-over-month increase at 11.18%, while South Carolina saw the largest month-over-month decrease at 6.41%.

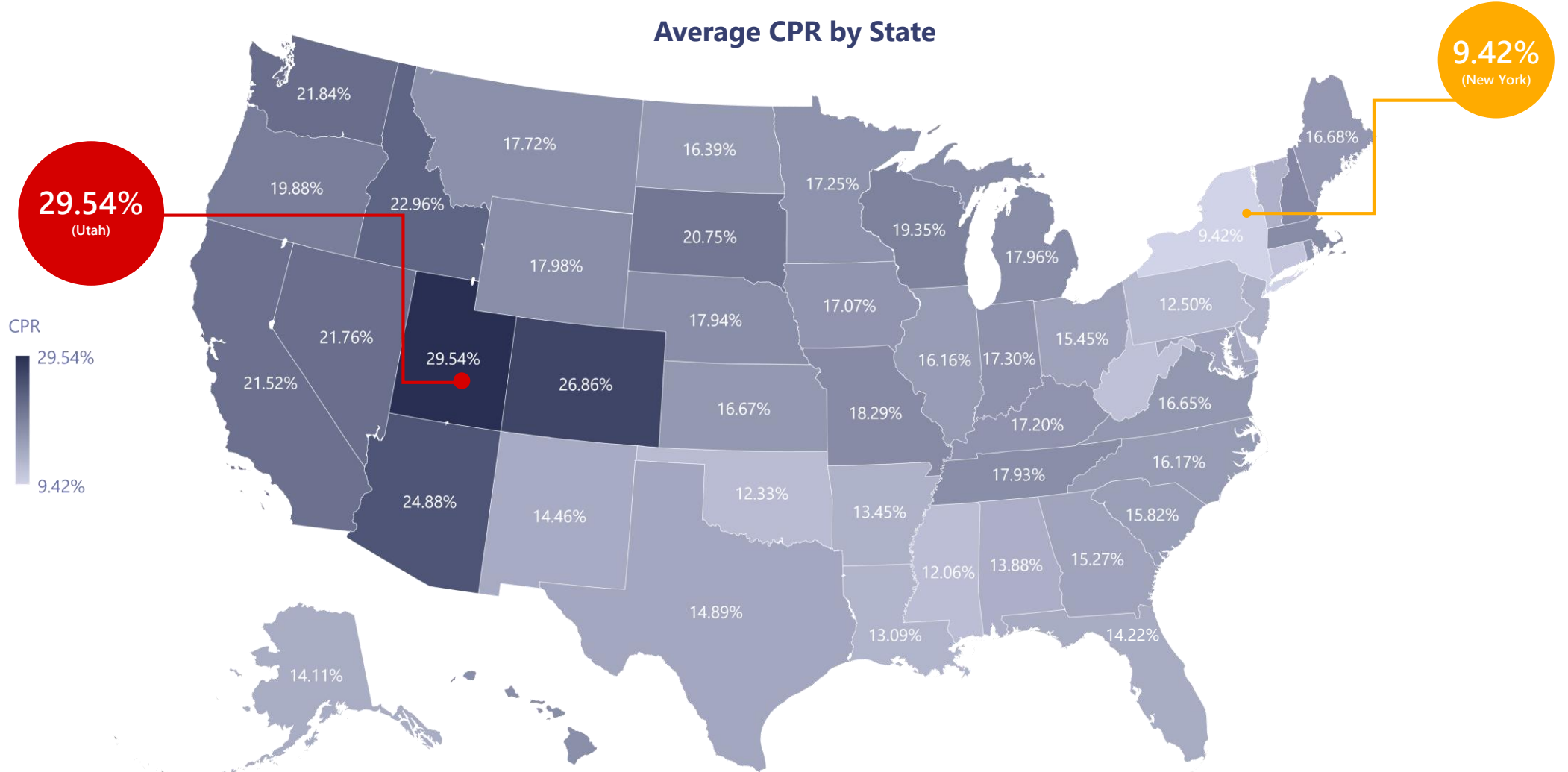
Source: Black Knight McDash

GSE and GNMA fixed rate product only



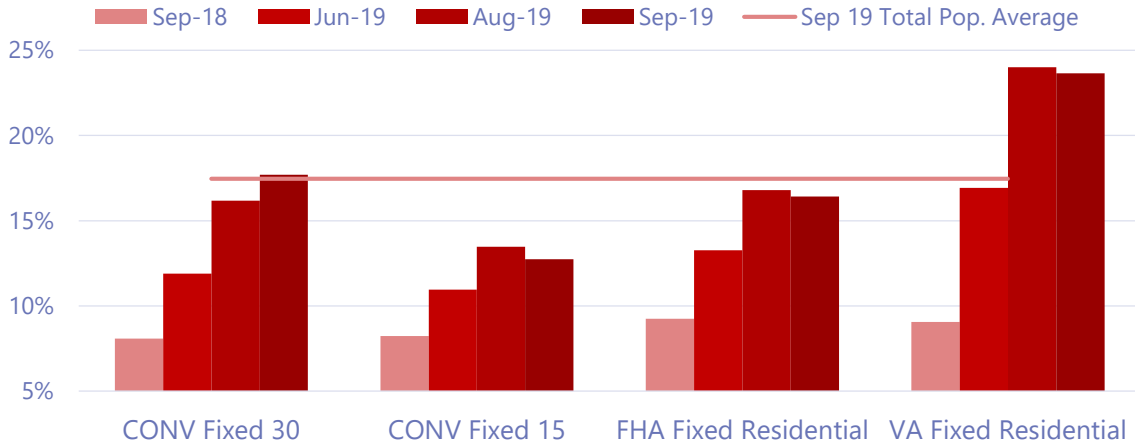
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Prepayment Speed Trends (cont.)

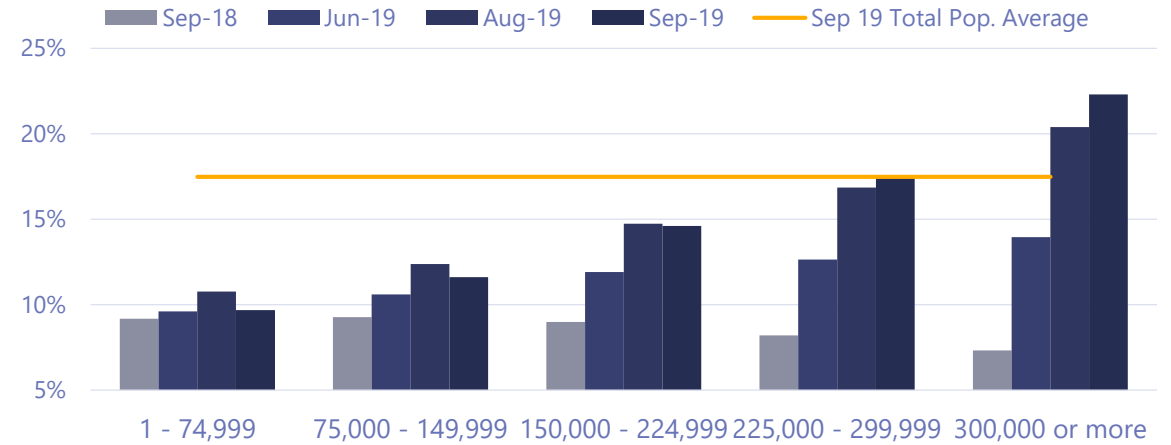


Prepayment Speed Trends (cont.)

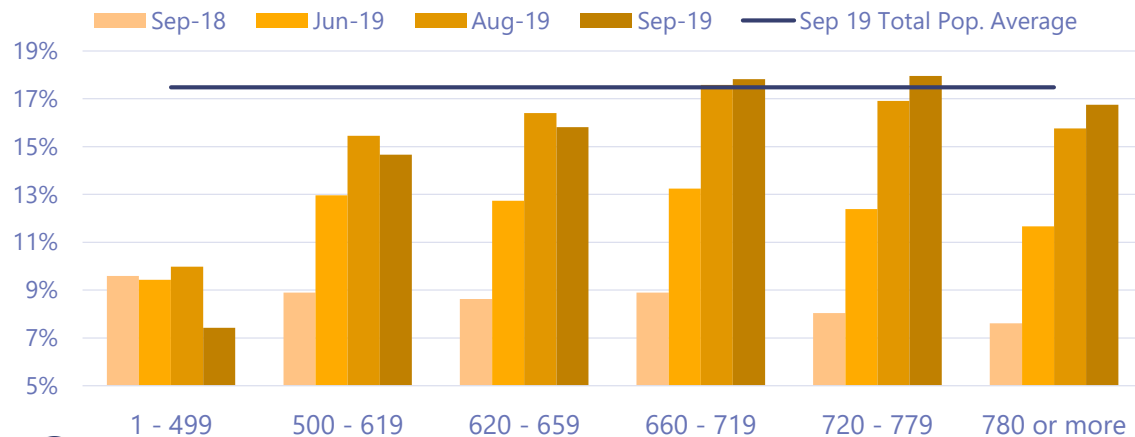
CPR by Fixed-Rate Product - September 2019



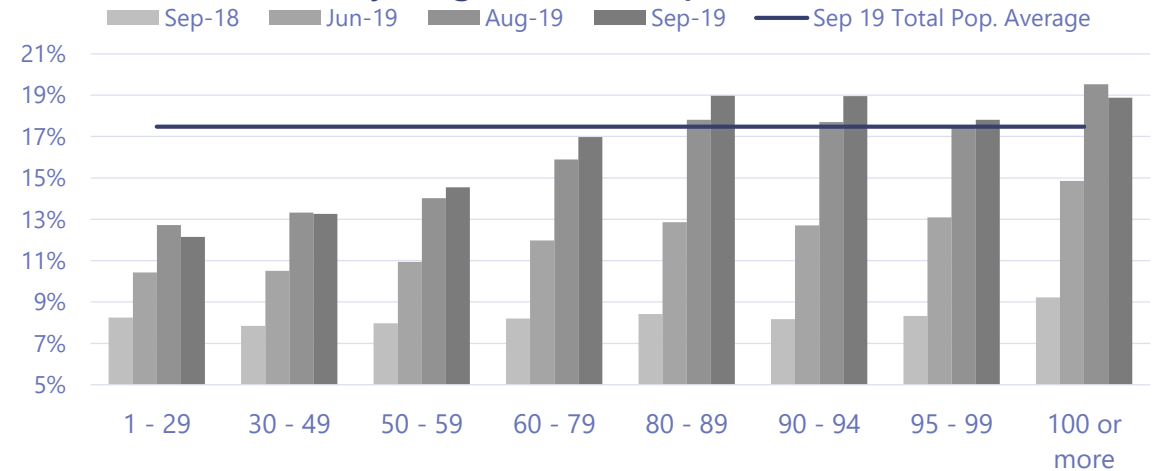
CPR by Original Loan Balance - September 2019



CPR by Original FICO - September 2019



CPR by Original LTV - September 2019



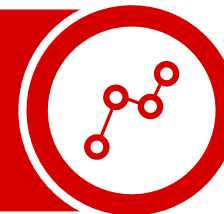
Delinquency Trends

Summary

- The national delinquency and foreclosure rate increased by 3.55% this month.
- Conventional 30-year delinquency and foreclosure rates increased slightly, rising 8bp over the month. FHA delinquency and foreclosure rates increased 28bp.
- Although the national average delinquency & foreclosure rate increased slightly over the month, delinquency and foreclosure rates are down around 25bp over the year.

Total delinquencies up

3.55%



Delinquency Summary

SUMMARY TABLES - September 2019

Loan Characteristics

Investor	Avg Orig Bal	WAC	WAvg Orig FICO	WAvg Orig LTV	WAvg Age
CONV Fixed 30	\$216,608	4.37	748	77	55
CONV Fixed 15	\$171,978	3.64	755	66	56
GNMA Fixed 30	\$187,047	4.14	694	94	49
GNMA Fixed 15	\$141,832	3.66	711	83	58

Delinquencies

30d DQ	60d DQ	+90d DQ	Total FC	Total DQ & FC	1mo DQ & FC Change%
1.26%	0.33%	0.43%	0.26%	2.29%	3.39%
0.52%	0.09%	0.09%	0.04%	0.74%	7.36%
3.99%	1.11%	0.86%	0.46%	6.43%	4.40%
1.37%	0.30%	0.21%	0.11%	1.99%	5.86%

Vintage	Avg Orig Bal	WAC	WAvg Orig FICO	WAvg Orig LTV	WAvg Age	30d DQ	60d DQ	+90d DQ	Total FC	Total DQ & FC	1mo DQ & FC Change%
2005	\$138,864	5.35	693	77	144	5.63%	1.83%	2.11%	1.64%	11.21%	0.85%
2006	\$145,757	5.39	685	78	128	6.75%	2.35%	2.97%	2.45%	14.51%	-0.11%
2007	\$155,458	5.27	681	80	116	7.24%	2.55%	3.33%	2.71%	15.83%	0.64%
2008	\$150,164	5.27	685	81	114	6.84%	2.20%	2.19%	1.89%	13.12%	1.81%
2009	\$166,307	4.91	726	79	115	3.28%	0.92%	0.75%	0.48%	5.43%	2.88%
2010	\$174,217	4.65	737	79	105	2.28%	0.61%	0.48%	0.27%	3.63%	2.60%
2011	\$173,247	4.41	742	77	95	1.85%	0.49%	0.40%	0.20%	2.94%	2.83%
2012	\$201,446	3.77	748	80	84	1.18%	0.29%	0.25%	0.12%	1.84%	4.67%
2013	\$191,151	3.81	742	80	73	1.43%	0.35%	0.33%	0.16%	2.27%	3.42%
2014	\$183,262	4.25	732	81	59	2.09%	0.57%	0.55%	0.27%	3.48%	3.14%
2015	\$211,363	3.95	734	80	48	1.85%	0.50%	0.50%	0.24%	3.10%	3.96%
2016	\$231,216	3.70	735	79	36	1.67%	0.44%	0.46%	0.23%	2.80%	4.56%
2017	\$228,129	4.12	730	82	25	1.92%	0.50%	0.51%	0.23%	3.17%	6.91%
2018	\$229,012	4.71	729	82	14	1.92%	0.50%	0.43%	0.16%	3.01%	13.53%

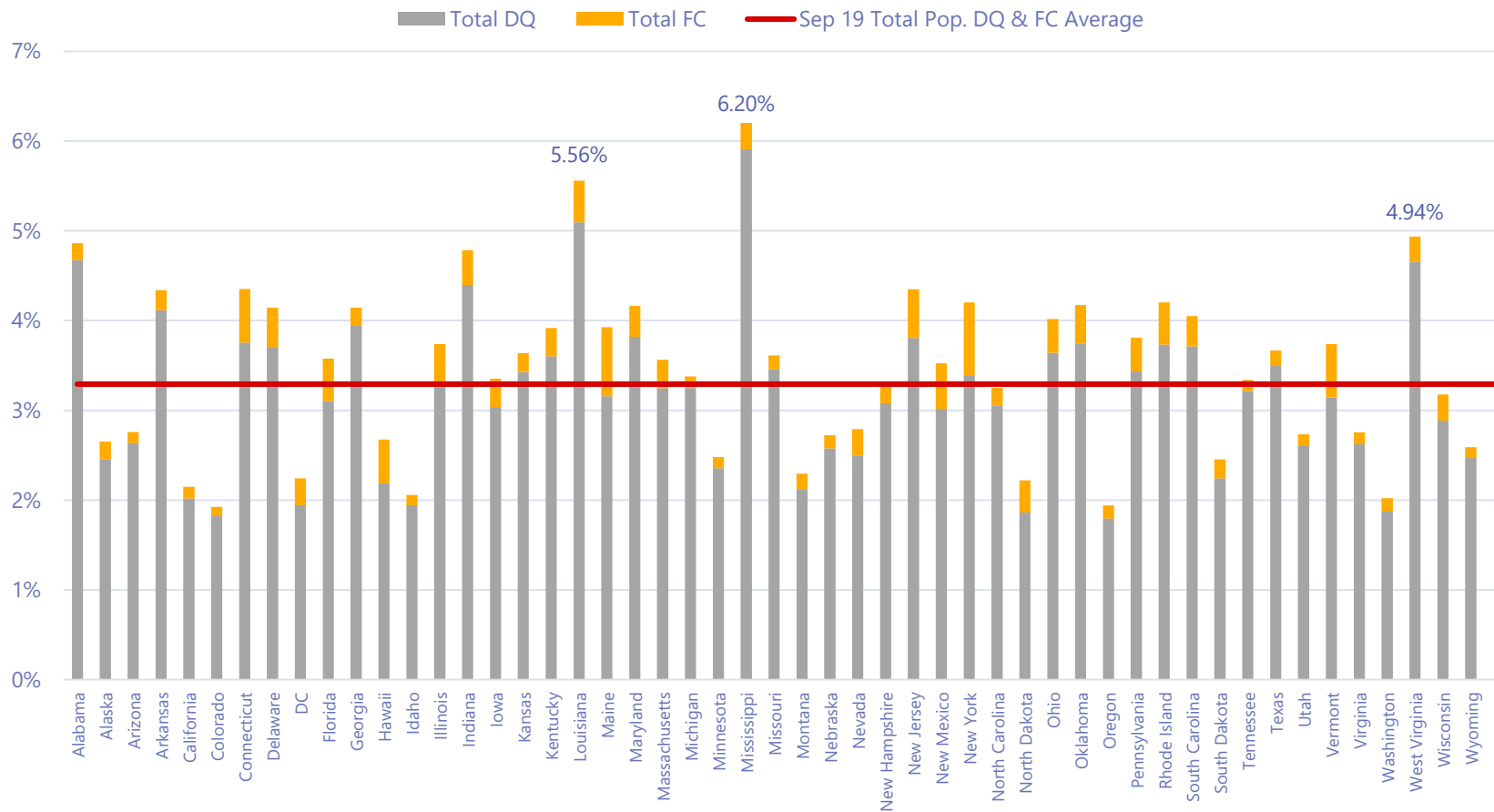
Tranche	Avg Orig Bal	WAC	WAvg Orig FICO	WAvg Orig LTV	WAvg Age	30d DQ	60d DQ	+90d DQ	Total FC	Total DQ & FC	1mo DQ & FC Change%
0.0000 - 4.4999	\$216,937	3.83	740	80	48	1.55%	0.42%	0.42%	0.24%	2.63%	2.66%
4.5000 - 4.9999	\$196,874	4.68	726	82	45	2.22%	0.59%	0.56%	0.26%	3.63%	6.36%
5.0000 - 5.4999	\$172,707	5.16	709	83	60	3.19%	0.87%	0.78%	0.36%	5.19%	6.66%
5.5000 - 5.9999	\$145,958	5.66	698	81	93	3.85%	1.06%	0.94%	0.54%	6.39%	4.39%
6.0000 - 6.4999	\$122,025	6.16	694	78	141	4.62%	1.33%	1.25%	1.08%	8.28%	2.11%
6.5000 - 6.9999	\$106,328	6.66	686	79	159	5.41%	1.50%	1.53%	1.59%	10.03%	2.33%
7.0000 - 7.4999	\$87,323	7.14	674	81	180	6.02%	1.77%	1.85%	2.10%	11.73%	1.11%
7.5000 - 7.9999	\$77,975	7.63	659	82	197	6.29%	1.86%	2.24%	2.35%	12.74%	1.74%
8.0000 - 8.4999	\$70,998	8.14	647	82	217	6.83%	2.12%	2.44%	2.48%	13.87%	2.38%
8.5000 or more	\$64,618	8.89	637	82	223	7.18%	2.37%	2.70%	3.03%	15.27%	2.69%

GSE and GNMA fixed rate product only

Source: Black Knight McDash

Delinquency Trends

Average Delinquency and Foreclosure by State - September 2019



Analysis

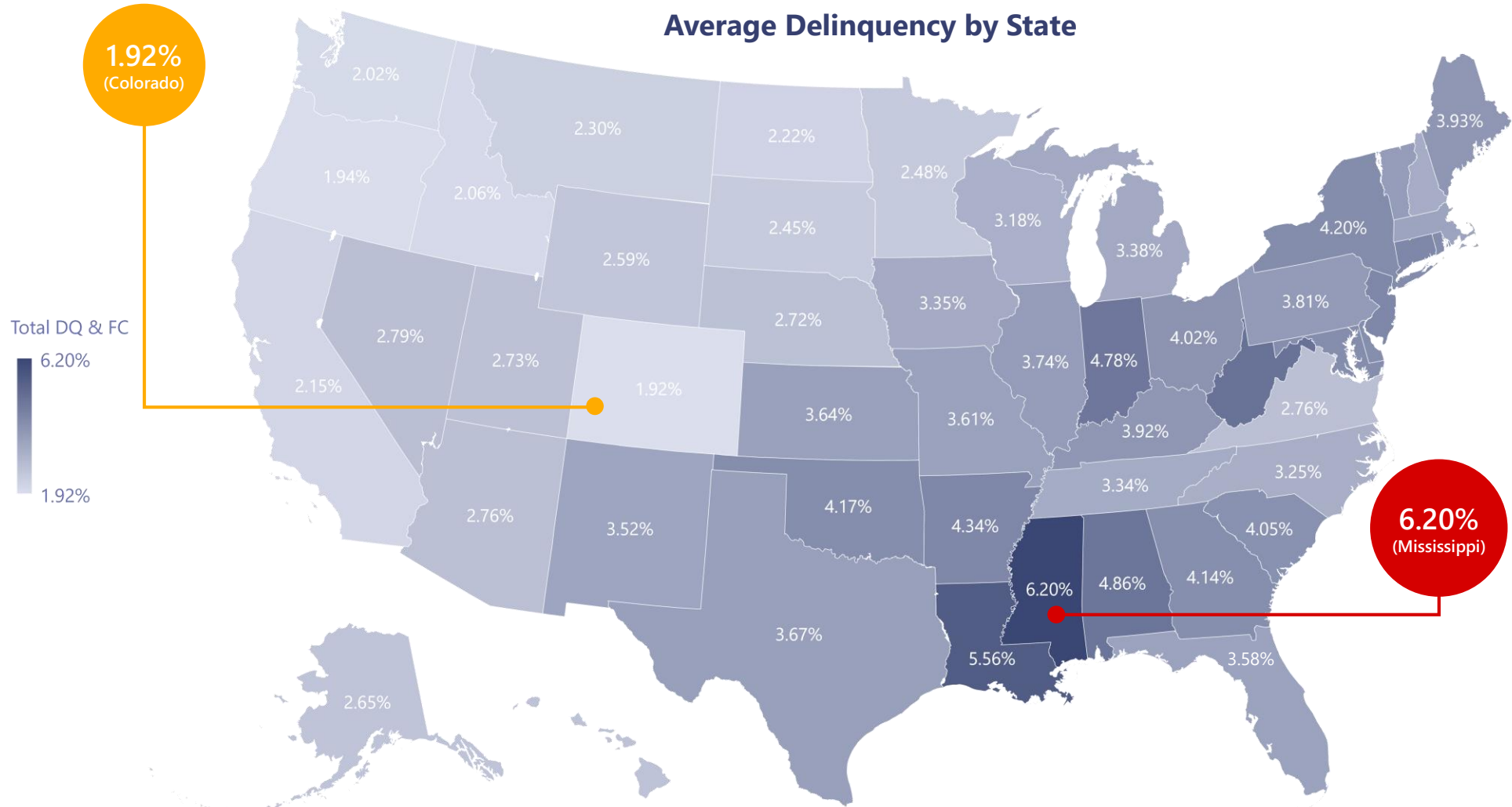
- Colorado is the best-performing state, with delinquency and foreclosure rates at 1.92%, a 3bp increase over last month.
- The Pacific region (CA, OR, WA, HI, and AK) has the lowest overall delinquency and foreclosure rates (2.32%), representing a small increase over last month.
- The East-South-Central region (KY, TN, MS, AL) recorded the highest regional level at 4.54%, which is an increase since last month.

GSE and GNMA fixed rate product only

Source: Black Knight McDash

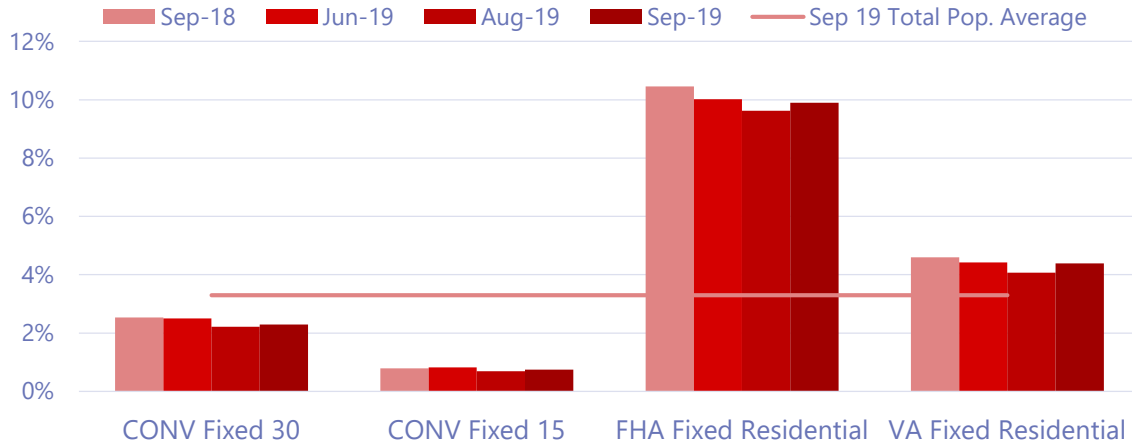


Delinquency Trends (cont.)

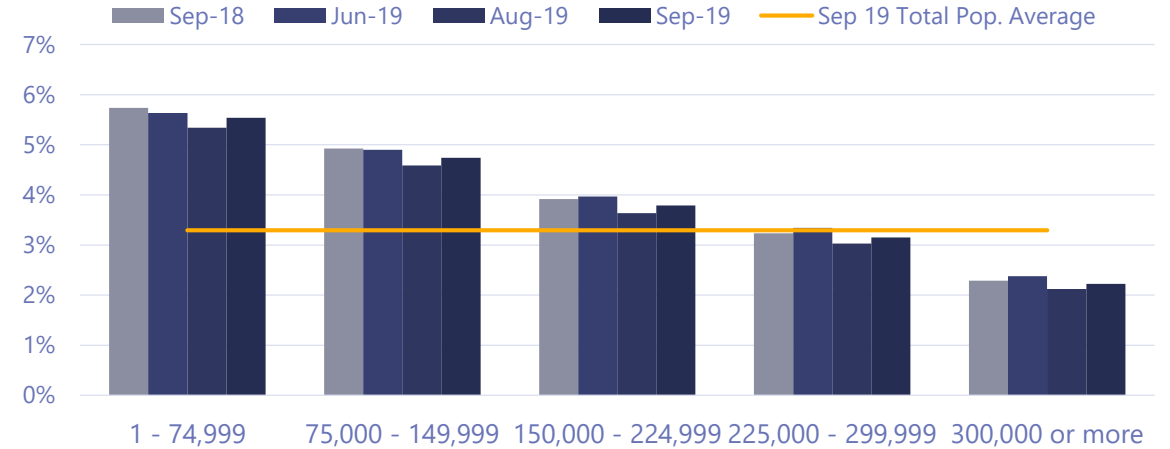


Delinquency Trends (cont.)

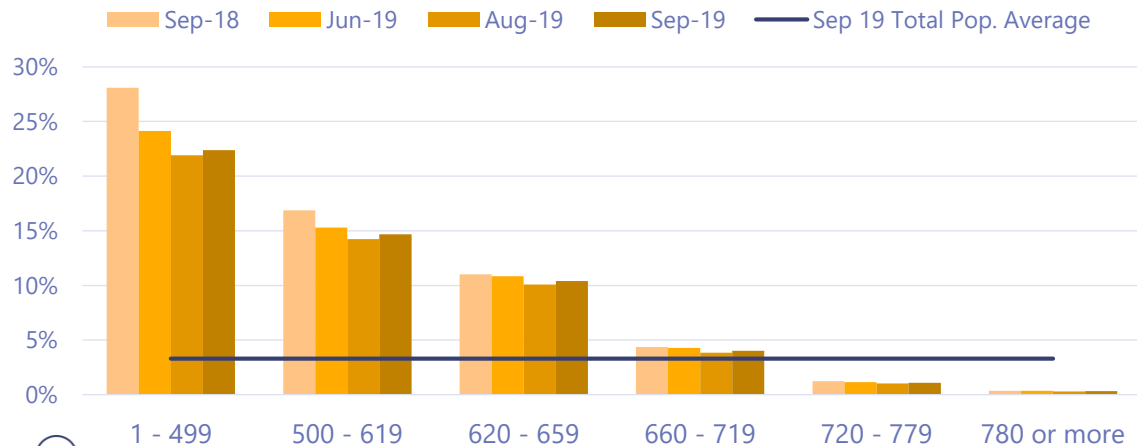
Delinquency and Foreclosure by Fixed-Rate Product - September 2019



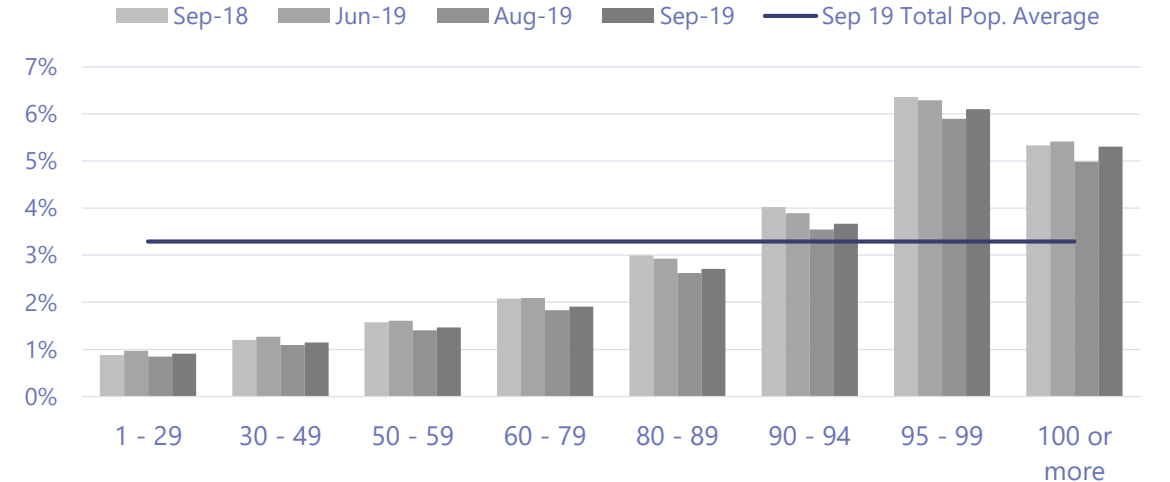
Delinquency and Foreclosure by Original Loan Balance - September 2019



Delinquency and Foreclosure by Original FICO - September 2019



Delinquency and Foreclosure by Original LTV - September 2019



Tables

State Summary

Prepayment and Delinquency

SUMMARY TABLES - September 2019

Loan Characteristics						Prepayments			Delinquencies						
State	WAvg Orig Bal	WAC	WAvg Orig FICO	WAvg Orig LTV	WAvg Age	CPR	1mo CPR Change%	CPR Factor	30d DQ	60d DQ	+90d DQ	Total FC	Total DQ & FC	1mo DQ & FC Change%	DQ Factor
National	\$199,323	4.21	733	81	53	17.47%	4.13%	100.00%	1.96%	0.53%	0.52%	0.29%	3.29%	3.55%	100.00%
Alabama	\$153,242	4.26	724	86	57	13.88%	-2.69%	79.44%	2.95%	0.81%	0.91%	0.19%	4.86%	4.22%	147.63%
Alaska	\$247,938	4.00	731	86	56	14.11%	-3.86%	80.75%	1.66%	0.42%	0.38%	0.20%	2.65%	7.85%	80.53%
Arizona	\$185,957	4.30	730	84	46	24.88%	7.70%	142.39%	1.79%	0.46%	0.39%	0.12%	2.76%	6.90%	83.81%
Arkansas	\$138,480	4.19	727	85	56	13.45%	-1.55%	77.01%	2.63%	0.71%	0.77%	0.22%	4.34%	5.34%	131.80%
California	\$285,397	4.14	742	73	50	21.52%	7.25%	123.15%	1.38%	0.33%	0.31%	0.13%	2.15%	5.19%	65.25%
Colorado	\$238,430	4.13	740	78	44	26.86%	8.47%	153.75%	1.23%	0.30%	0.28%	0.10%	1.92%	5.31%	58.41%
Connecticut	\$214,096	4.22	734	80	62	11.21%	-2.40%	64.14%	2.37%	0.71%	0.67%	0.60%	4.35%	1.68%	132.17%
Delaware	\$201,543	4.24	731	83	57	13.35%	7.91%	76.44%	2.36%	0.69%	0.66%	0.44%	4.15%	3.39%	125.91%
DC	\$321,540	4.13	750	73	53	15.52%	8.96%	88.82%	1.23%	0.32%	0.40%	0.30%	2.24%	2.28%	68.17%
Florida	\$180,590	4.34	726	84	49	14.22%	-1.22%	81.40%	2.00%	0.56%	0.54%	0.47%	3.58%	4.13%	108.66%
Georgia	\$172,320	4.25	725	85	54	15.27%	-1.01%	87.37%	2.55%	0.70%	0.70%	0.19%	4.14%	5.82%	125.88%
Hawaii	\$355,693	4.10	745	77	55	17.85%	1.66%	102.19%	1.41%	0.37%	0.41%	0.49%	2.67%	4.13%	81.23%
Idaho	\$179,764	4.22	738	81	48	22.96%	1.49%	131.42%	1.38%	0.31%	0.26%	0.11%	2.06%	3.99%	62.48%
Illinois	\$180,818	4.21	732	83	56	16.16%	5.08%	92.50%	2.04%	0.61%	0.60%	0.49%	3.74%	2.83%	113.58%
Indiana	\$132,871	4.33	718	86	55	17.30%	3.35%	98.99%	2.87%	0.81%	0.72%	0.39%	4.78%	2.35%	145.26%
Iowa	\$143,961	4.09	728	83	53	17.07%	-0.28%	97.68%	2.00%	0.56%	0.48%	0.32%	3.35%	2.88%	101.85%
Kansas	\$147,305	4.19	729	85	54	16.67%	-4.18%	95.42%	2.27%	0.59%	0.57%	0.21%	3.64%	4.90%	110.51%
Kentucky	\$145,702	4.22	726	84	53	17.20%	11.02%	98.44%	2.36%	0.64%	0.60%	0.32%	3.92%	4.04%	118.96%
Louisiana	\$164,854	4.28	719	84	55	13.09%	3.44%	74.94%	3.24%	0.96%	0.90%	0.46%	5.56%	6.27%	168.83%
Maine	\$178,889	4.22	731	82	54	16.68%	6.82%	95.47%	2.08%	0.54%	0.54%	0.77%	3.93%	1.87%	119.29%
Maryland	\$245,416	4.14	729	83	55	15.13%	6.77%	86.58%	2.41%	0.69%	0.72%	0.34%	4.16%	3.20%	126.49%
Massachusetts	\$257,365	4.11	738	76	53	18.24%	5.55%	104.42%	2.12%	0.55%	0.58%	0.32%	3.56%	1.25%	108.26%
Michigan	\$143,249	4.28	731	84	57	17.96%	8.89%	102.82%	2.17%	0.59%	0.49%	0.13%	3.38%	3.40%	102.61%
Minnesota	\$189,403	4.13	742	83	53	17.25%	5.46%	98.75%	1.60%	0.39%	0.36%	0.12%	2.48%	3.85%	75.33%
Mississippi	\$146,364	4.28	715	86	55	12.06%	-4.47%	69.03%	3.73%	1.07%	1.12%	0.29%	6.20%	6.42%	188.37%
Missouri	\$146,982	4.21	731	84	53	18.29%	6.55%	104.68%	2.28%	0.59%	0.58%	0.16%	3.61%	4.97%	109.69%
Montana	\$189,249	4.11	711	79	50	17.72%	10.27%	101.45%	1.43%	0.36%	0.33%	0.18%	2.30%	0.53%	69.71%
Nebraska	\$148,052	4.06	739	84	50	17.94%	5.14%	102.68%	1.69%	0.44%	0.45%	0.15%	2.72%	3.07%	82.72%
Nevada	\$202,767	4.36	726	85	44	21.76%	1.16%	124.56%	1.58%	0.43%	0.48%	0.30%	2.79%	4.53%	84.78%
New Hampshire	\$205,973	4.18	734	82	55	18.51%	3.46%	105.94%	2.09%	0.49%	0.50%	0.21%	3.29%	4.51%	99.88%
New Jersey	\$240,550	4.20	735	79	58	13.61%	1.66%	77.91%	2.30%	0.68%	0.83%	0.54%	4.35%	2.04%	132.11%
New Mexico	\$163,952	4.33	710	83	62	14.46%	2.11%	82.78%	2.11%	0.51%	0.40%	0.51%	3.52%	3.47%	107.02%
New York	\$234,265	4.30	737	75	63	9.42%	-3.00%	53.91%	2.17%	0.59%	0.63%	0.81%	4.20%	2.09%	127.61%
North Carolina	\$173,536	4.21	733	83	52	16.17%	1.74%	92.56%	1.98%	0.54%	0.54%	0.20%	3.25%	4.87%	98.82%
North Dakota	\$182,736	3.97	740	82	48	16.39%	-3.07%	93.80%	1.16%	0.29%	0.41%	0.36%	2.22%	-5.85%	67.44%
Ohio	\$136,475	4.30	724	86	57	15.45%	4.76%	88.43%	2.36%	0.65%	0.63%	0.38%	4.02%	2.63%	122.02%
Oklahoma	\$143,318	4.30	723	86	56	12.33%	0.39%	70.55%	2.46%	0.67%	0.62%	0.43%	4.17%	2.61%	126.79%
Oregon	\$217,302	4.23	744	79	49	19.88%	2.52%	113.78%	1.20%	0.30%	0.30%	0.15%	1.94%	5.83%	58.96%
Pennsylvania	\$169,285	4.21	734	82	58	12.50%	1.84%	71.56%	2.22%	0.63%	0.58%	0.38%	3.81%	2.72%	115.77%
Rhode Island	\$204,098	4.22	732	82	55	17.28%	10.10%	98.93%	2.37%	0.65%	0.71%	0.47%	4.20%	1.89%	127.70%
South Carolina	\$168,563	4.26	727	84	51	15.82%	-6.41%	90.54%	2.45%	0.66%	0.61%	0.34%	4.05%	6.19%	123.00%
South Dakota	\$165,659	3.99	743	83	48	20.75%	0.97%	118.76%	1.52%	0.35%	0.37%	0.21%	2.45%	6.14%	74.51%
Tennessee	\$167,795	4.20	729	84	49	17.93%	3.59%	102.64%	2.07%	0.58%	0.56%	0.12%	3.34%	5.10%	101.46%
Texas	\$177,208	4.28	725	83	49	14.89%	-0.64%	85.21%	2.33%	0.65%	0.52%	0.17%	3.67%	5.10%	111.39%
Utah	\$222,105	4.19	735	83	42	29.54%	11.18%	169.09%	1.69%	0.46%	0.46%	0.13%	2.73%	6.80%	82.96%
Vermont	\$179,895	4.23	739	79	61	13.52%	7.02%	77.38%	2.08%	0.55%	0.52%	0.59%	3.74%	-0.16%	113.61%
Virginia	\$240,173	4.09	736	83	52	16.65%	4.32%	95.31%	1.71%	0.47%	0.45%	0.13%	2.76%	6.37%	83.69%
Washington	\$240,984	4.20	738	80	48	21.84%	4.12%	125.02%	1.25%	0.29%	0.33%	0.15%	2.02%	-1.61%	61.39%
West Virginia	\$144,604	4.30	718	86	58	11.70%	-6.31%	66.99%	3.20%	0.80%	0.65%	0.28%	4.94%	2.39%	149.94%
Wisconsin	\$161,139	4.18	727	83	55	19.35%	7.93%	110.77%	1.90%	0.51%	0.48%	0.29%	3.18%	2.82%	96.48%
Wyoming	\$196,106	4.09	733	83	50	17.98%	-1.51%	102.91%	1.66%	0.41%	0.40%	0.12%	2.59%	1.57%	78.65%

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