

Market Snapshot





Contents

Macro-Economic Indicators

Rate History

Prepayment Speed Trends

Delinquency Trends

Macro- Economic Indicators

Summary

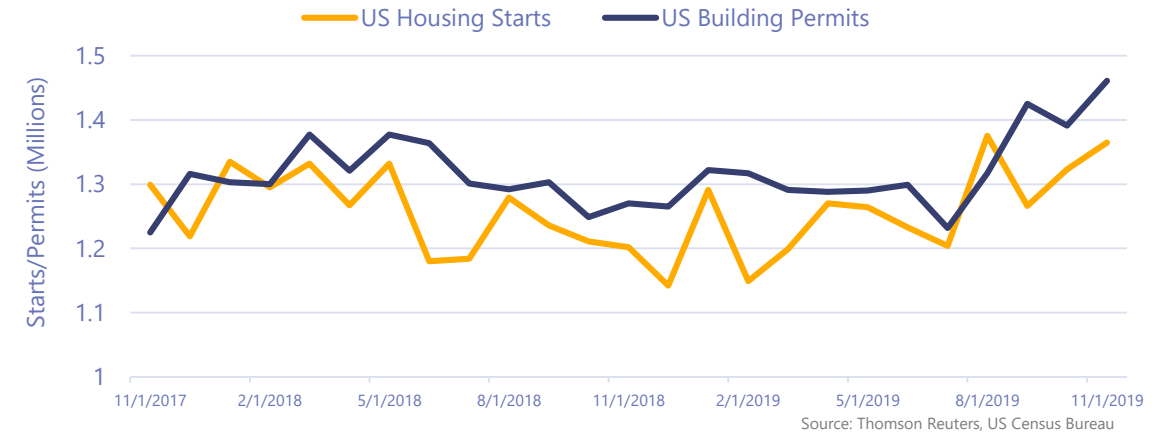
- The US unemployment rate fell back to a reading of 3.50% for November. This matches the lowest domestic unemployment level seen in the last 50 years.
- The single-family residential housing market continued to power forward with housing starts coming in at 1,365,000, up 13.56% year-over-year. There were 1,482,000 new building permits issued in November, up 11.10% from November 2018, which was the most in a single month in 12 and a half years.
- The MBA Mortgage Refinance Application Index once again fluctuated between weekly readings, with highs and lows of 2,375 and 1,926, respectively. The index finished November down 6.79% from the final reading in October.

Macro-Economic Indicators

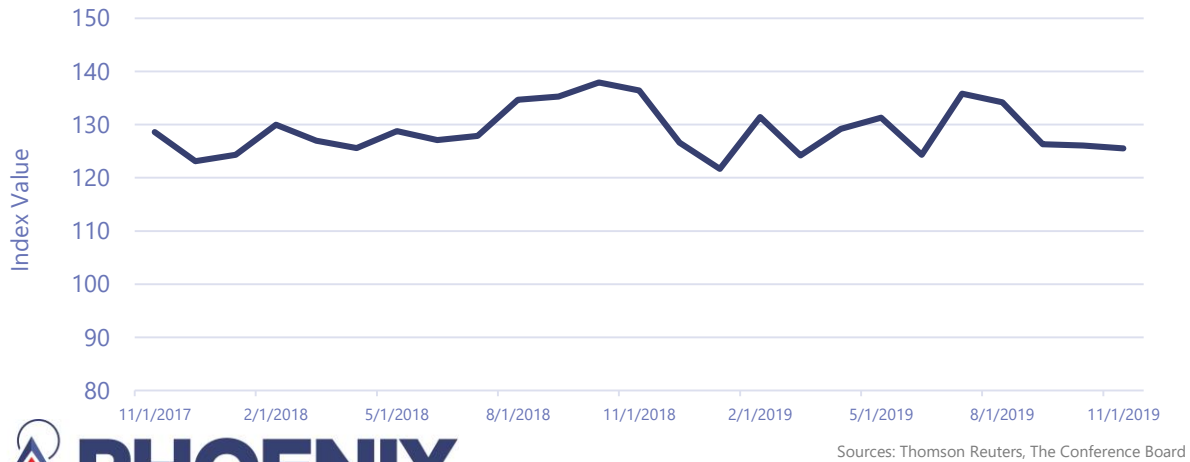
MBA Mortgage Refinance Application Index



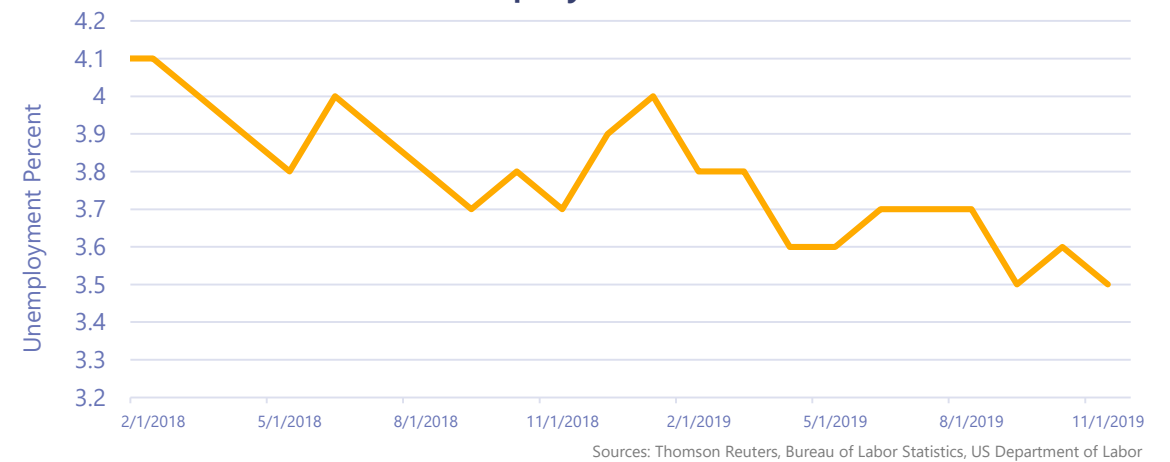
US Housing Starts/US Building Permits



US Consumer Confidence



Unemployment Rate



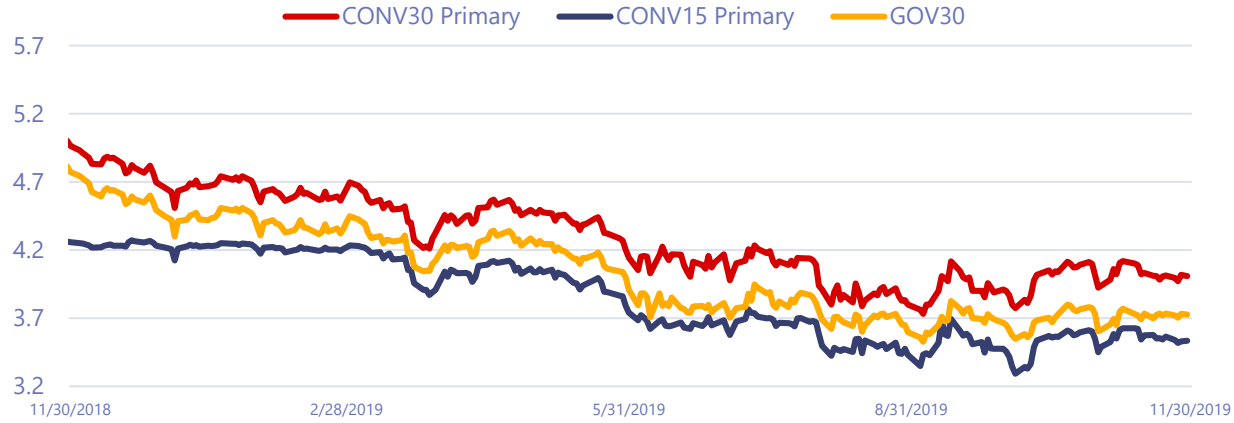
Rate History

Summary

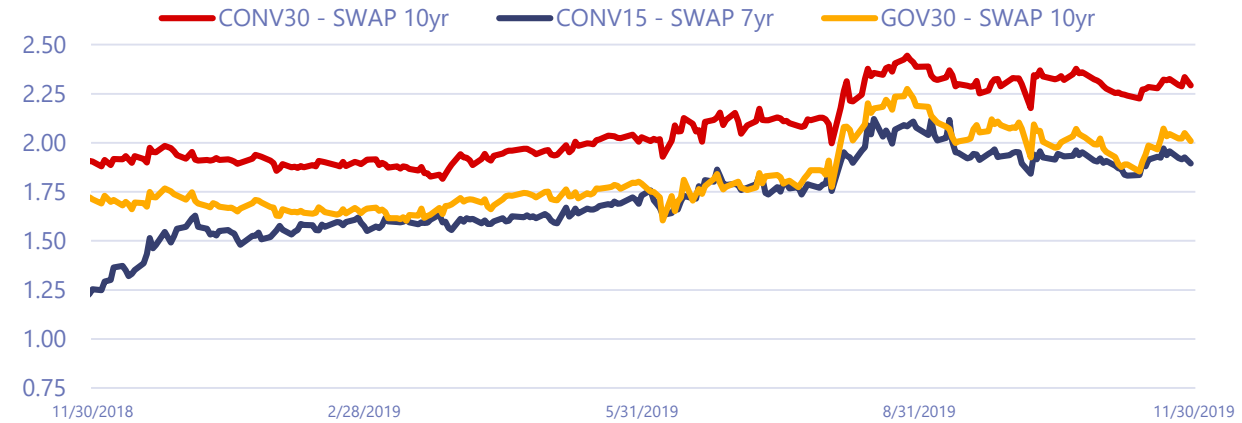
- Mortgage rates held to a fairly tight range for the month of November and ended the month up slightly. Conventional 30-year fixed product increased 8.60 bps, and the 15-year product was up nearly the same at 8.40 bps. GNMA rates increased by 12 bps month over month.
- Volatilities were down compared to October, and the yield curve continued to steepen as we head into the holiday season at the end of the year.

Rate History

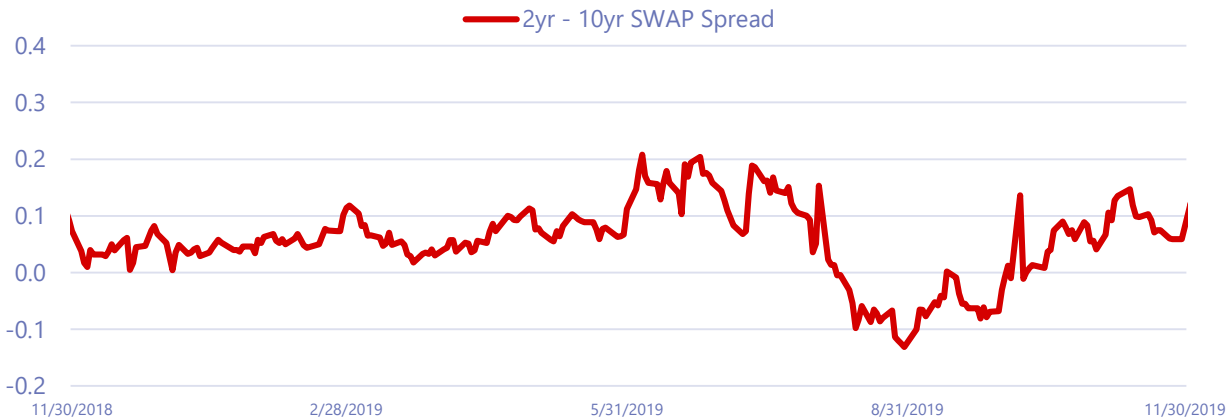
Mortgage Par Rates (%)



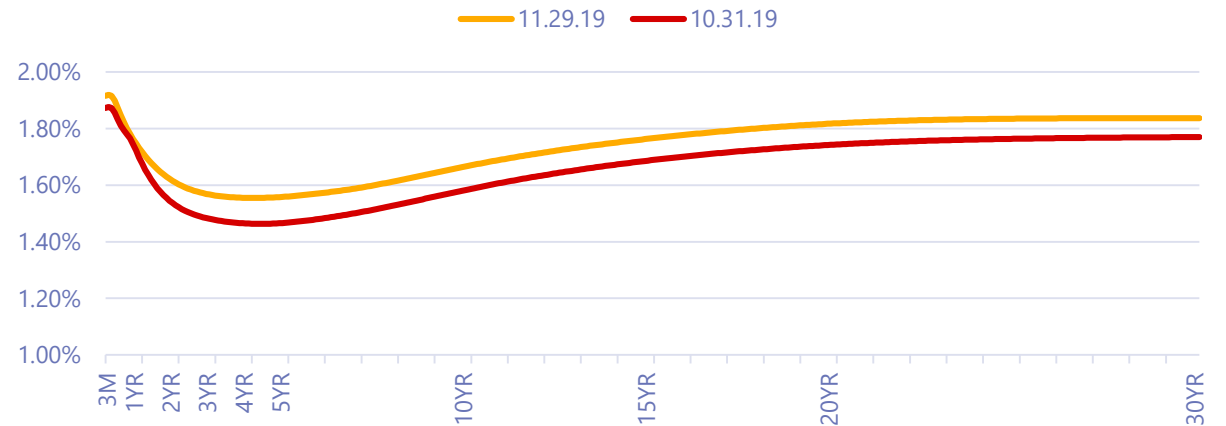
Mortgage Par Spread over SWAP Rates (%)



2yr and 10yr SWAP Spread



Yield Curve Comparison



Rate History (cont.)

Primary Rates as of 11/29/2019

Rate	11/29/2019	10/31/2019	8/30/2019	11/29/2018
CONV30	3.960	3.874	3.749	4.952
CONV15	3.484	3.400	3.382	4.213
GOV30	3.676	3.556	3.549	4.765
ARM 5/1	3.500	3.500	3.625	4.250

Secondary Rates as of 11/29/2019

Rate	11/29/2019	10/31/2019	8/30/2019	11/29/2018
FNMA 30	2.710	2.624	2.399	3.902
FNMA 15	2.284	2.200	2.082	3.113
GNMA II 30	2.376	2.256	2.199	3.765
GNMA II 15	2.284	2.238	2.082	3.432
ARM 5/1	4.000	3.850	3.890	4.190

Earnings Rates as of 11/29/2019

Rate	11/29/2019	10/31/2019	8/30/2019	11/30/2018
3 MO ED	1.915	1.872	2.124	2.758
6 MO ED	1.847	1.810	2.032	2.827
12 MO ED	1.731	1.698	1.821	2.903
2 YR SWAP	1.609	1.529	1.492	2.938
3 YR SWAP	1.565	1.479	1.375	2.940
5 YR SWAP	1.559	1.467	1.298	2.934
10 YR SWAP	1.668	1.585	1.361	3.011
15 YR SWAP	1.765	1.688	1.446	3.088
20 YR SWAP	1.818	1.743	1.499	3.114
30 YR SWAP	1.837	1.770	1.523	3.107

Source: Thomson Reuters and PHOENIX

Prepayment Speed Trends

Summary

- Over the month of November, the recent trend of rising CPRs came to a halt with total CPR decreasing 14.42% month-over-month.
- All products saw a decrease in prepayment speeds month-over-month, with conventional 30-year product experiencing the largest monthly decrease of 18.69%.
- Although total CPRs experienced a decrease over November 2019, all products' prepayment speeds are still at least 50% above their levels compared to November 2018. Over the year, the conventional 30-year par rate has dropped ~99 bps and the government 30-year par rate has dropped ~109 bps.

CPR Summary

SUMMARY TABLES - November 2019

Loan Characteristics						Prepayments	
Investor	Avg Orig Bal	WAC	WAvg Orig FICO	WAvg Orig LTV	WAvg Age	CPR	1mo CPR Change%
CONV Fixed 30	\$219,152	4.34	749	77	54	16.27%	-18.69%
CONV Fixed 15	\$173,562	3.63	756	66	56	12.51%	-11.68%
GNMA Fixed 30	\$188,405	4.12	694	94	52	18.19%	-6.30%
GNMA Fixed 15	\$142,380	3.65	711	83	60	14.15%	-6.74%

Vintage	Avg Orig Bal	WAC	WAvg Orig FICO	WAvg Orig LTV	WAvg Age	CPR	1mo CPR Change%
2005	\$137,687	5.37	693	77	147	10.93%	-11.06%
2006	\$143,913	5.42	685	78	132	10.15%	-9.76%
2007	\$153,351	5.30	681	80	120	9.85%	-9.10%
2008	\$149,197	5.29	685	82	116	11.23%	-6.54%
2009	\$165,961	4.91	726	79	117	14.18%	-12.49%
2010	\$173,874	4.65	737	79	108	14.59%	-11.76%
2011	\$172,988	4.41	742	77	97	14.03%	-12.52%
2012	\$201,360	3.77	749	80	87	11.84%	-13.43%
2013	\$191,028	3.80	742	79	77	12.27%	-10.74%
2014	\$182,782	4.25	733	81	62	16.36%	-12.23%
2015	\$211,628	3.95	735	80	52	15.58%	-13.08%
2016	\$232,073	3.70	736	79	39	14.19%	-12.42%
2017	\$227,319	4.12	732	81	28	19.05%	-14.12%
2018	\$225,916	4.71	730	82	17	31.42%	-17.35%

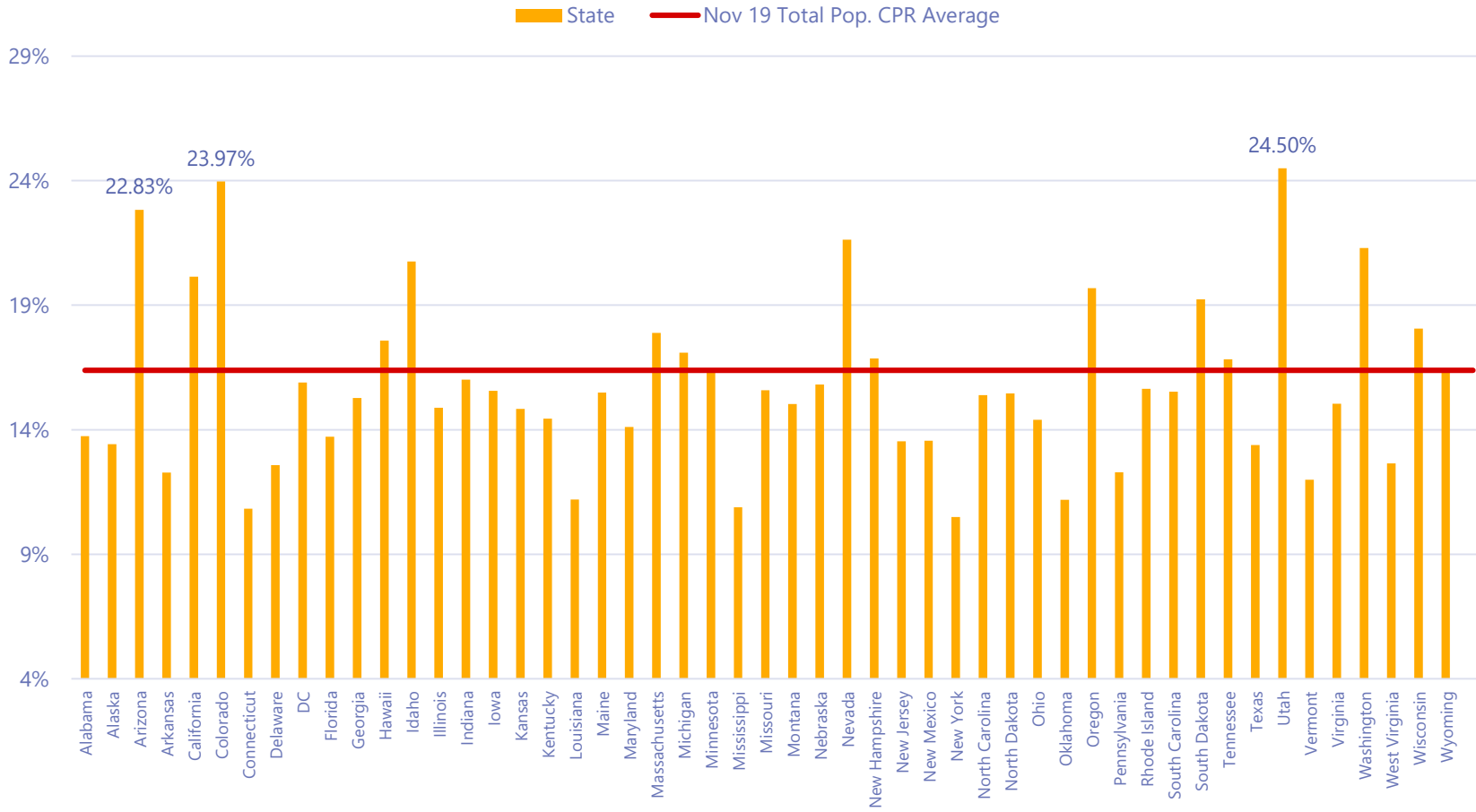
Tranche	Avg Orig Bal	WAC	WAvg Orig FICO	WAvg Orig LTV	WAvg Age	CPR	1mo CPR Change%
0.0000 - 4.4999	\$219,601	3.82	741	80	50	13.95%	-14.05%
4.5000 - 4.9999	\$196,476	4.68	727	82	48	22.47%	-15.40%
5.0000 - 5.4999	\$171,954	5.16	709	83	64	23.24%	-12.27%
5.5000 - 5.9999	\$145,569	5.66	698	81	97	19.22%	-9.26%
6.0000 - 6.4999	\$121,448	6.16	694	78	142	13.60%	-9.49%
6.5000 - 6.9999	\$105,524	6.65	686	79	161	11.20%	-9.38%
7.0000 - 7.4999	\$86,790	7.14	675	81	183	10.17%	-11.05%
7.5000 - 7.9999	\$77,510	7.63	659	82	201	9.30%	-9.32%
8.0000 - 8.4999	\$70,776	8.14	648	82	220	9.03%	-6.98%
8.5000 or more	\$64,385	8.89	638	82	227	9.53%	-11.71%

GSE and GNMA fixed rate product only

Source: Black Knight McDash

Prepayment Speed Trends

Average CPR by State - November 2019



Analysis

- Utah continues to lead the country in prepayment speeds (24.50% CPR), while New York brings up the rear with the slowest prepayment speeds (10.49% CPR) over the month.
- Western states (UT, CO, NM, AZ, WY) continue to lead the country in prepayment speeds, while Southern states (TX, OK, AR, LA) experienced the slowest regional speeds.
- All states experienced a decrease in prepayment speeds over November, but Vermont saw the largest month-over-month decrease of 27.64%.

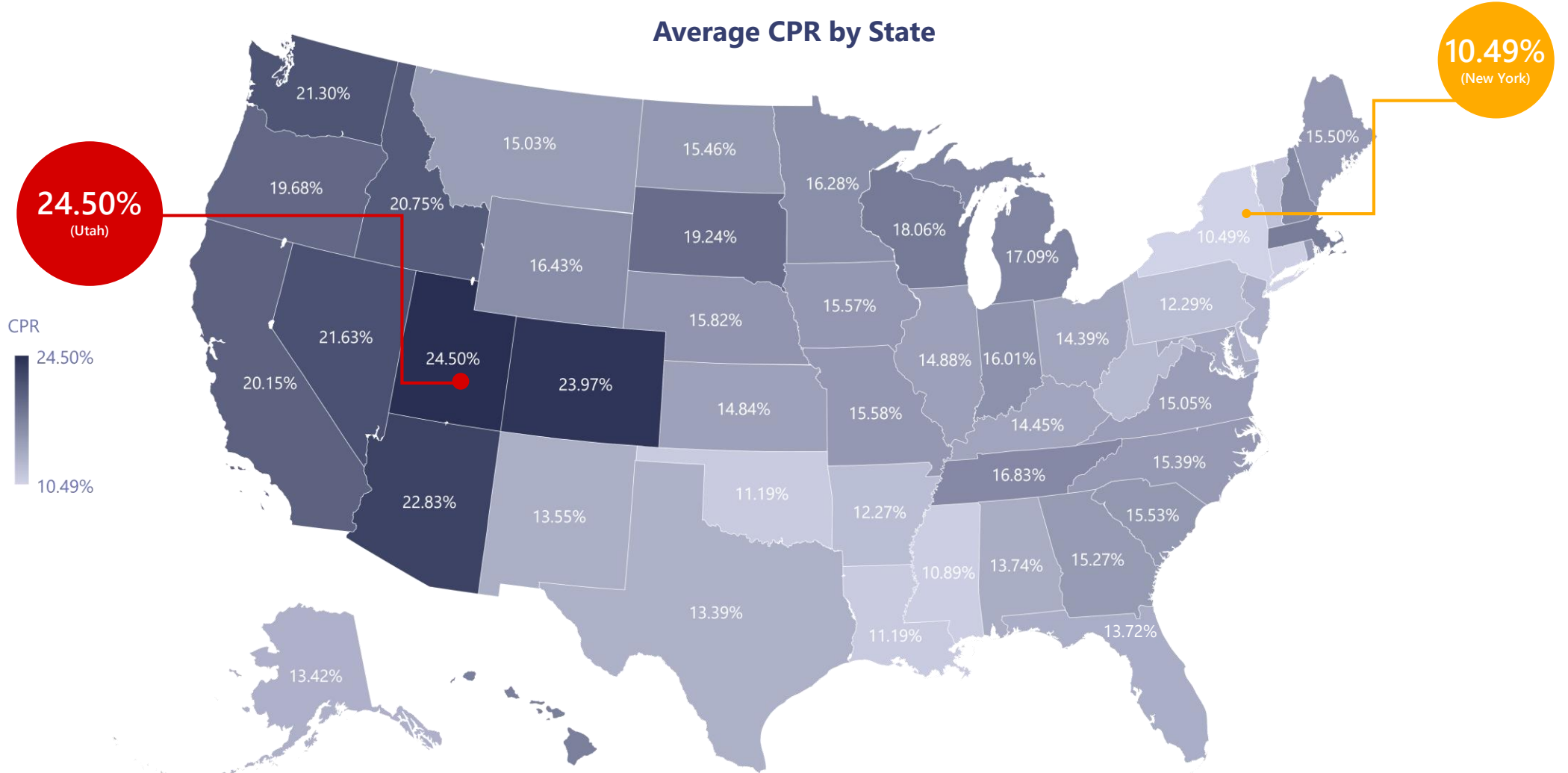
GSE and GNMA fixed rate product only



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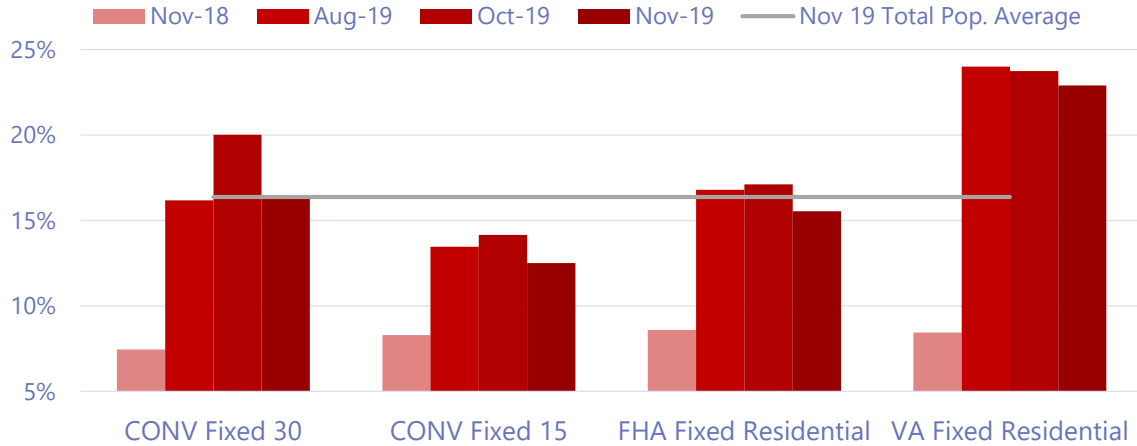
Source: Black Knight McDash

Prepayment Speed Trends (cont.)

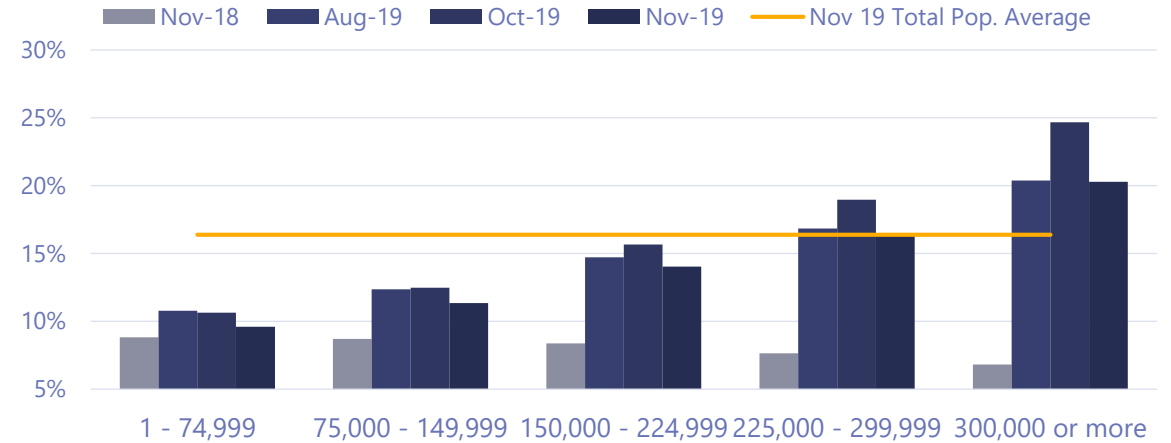


Prepayment Speed Trends (cont.)

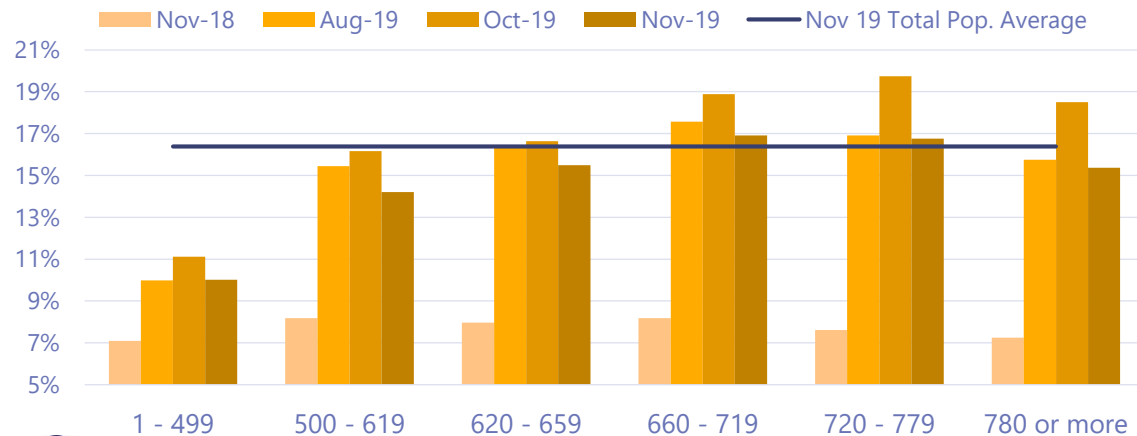
CPR by Fixed-Rate Product - November 2019



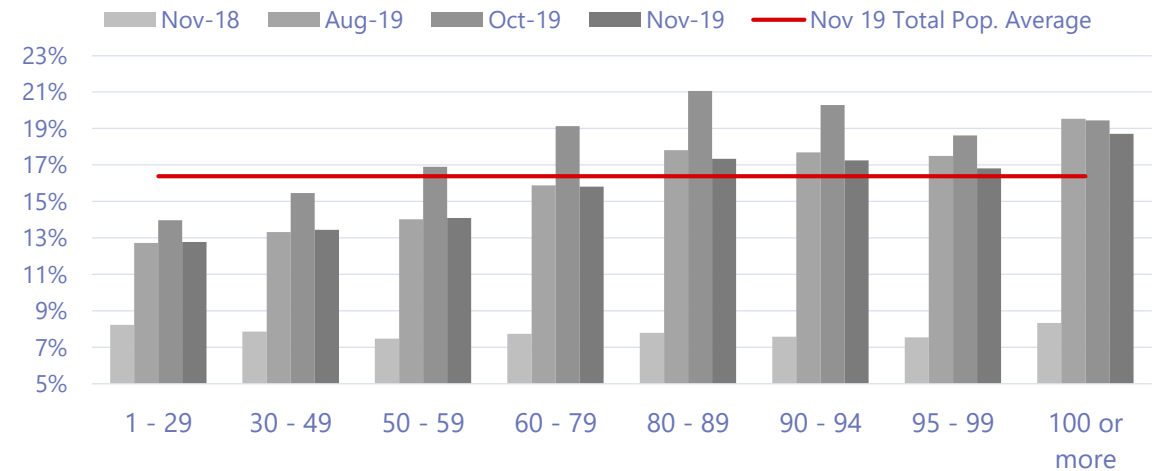
CPR by Original Loan Balance - November 2019



CPR by Original FICO - November 2019



CPR by Original LTV - November 2019



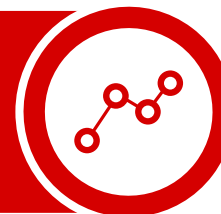
Delinquency Trends

Summary

- The national delinquency and foreclosure rate increased by 2.14% this month.
- Conventional 30-year loans' delinquency and foreclosure rates were unchanged over the month. while delinquency among VA loans decreased 1 bp.
- FHA delinquency and foreclosure rates increased by 44 bps, posting the highest delinquency and foreclosure rate of 2019.

Total delinquencies up

2.14%



Delinquency Summary

SUMMARY TABLES - November 2019

Loan Characteristics

Investor	Avg Orig Bal	WAC	WAvg Orig FICO	WAvg Orig LTV	WAvg Age
CONV Fixed 30	\$219,152	4.34	749	77	54
CONV Fixed 15	\$173,562	3.63	756	66	56
GNMA Fixed 30	\$188,405	4.12	694	94	52
GNMA Fixed 15	\$142,380	3.65	711	83	60

Delinquencies

30d DQ	60d DQ	+90d DQ	Total FC	Total DQ & FC	1mo DQ & FC Change%
1.22%	0.32%	0.41%	0.23%	2.18%	0.09%
0.53%	0.10%	0.10%	0.04%	0.76%	10.00%
4.07%	1.14%	0.88%	0.46%	6.55%	3.99%
1.43%	0.33%	0.21%	0.11%	2.07%	8.42%

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	\$137,687	5.37	693	77	147	5.63%	1.82%	2.02%	1.58%	11.05%	1.92%
2006	\$143,913	5.42	685	78	132	6.80%	2.34%	2.82%	2.31%	14.28%	0.44%
2007	\$153,351	5.30	681	80	120	7.12%	2.55%	3.20%	2.56%	15.43%	0.12%
2008	\$149,197	5.29	685	82	116	6.94%	2.21%	2.12%	1.77%	13.02%	2.67%
2009	\$165,961	4.91	726	79	117	3.48%	0.94%	0.75%	0.47%	5.64%	6.80%
2010	\$173,874	4.65	737	79	108	2.43%	0.62%	0.49%	0.28%	3.82%	7.74%
2011	\$172,988	4.41	742	77	97	1.99%	0.51%	0.40%	0.20%	3.10%	8.33%
2012	\$201,360	3.77	749	80	87	1.23%	0.29%	0.24%	0.12%	1.89%	6.26%
2013	\$191,028	3.80	742	79	77	1.46%	0.35%	0.33%	0.16%	2.31%	5.28%
2014	\$182,782	4.25	733	81	62	2.19%	0.60%	0.58%	0.27%	3.64%	6.13%
2015	\$211,628	3.95	735	80	52	1.90%	0.52%	0.53%	0.24%	3.18%	5.89%
2016	\$232,073	3.70	736	79	39	1.69%	0.45%	0.48%	0.23%	2.85%	4.06%
2017	\$227,319	4.12	732	81	28	1.92%	0.52%	0.54%	0.24%	3.22%	3.30%
2018	\$225,916	4.71	730	82	17	1.96%	0.55%	0.51%	0.20%	3.21%	5.98%

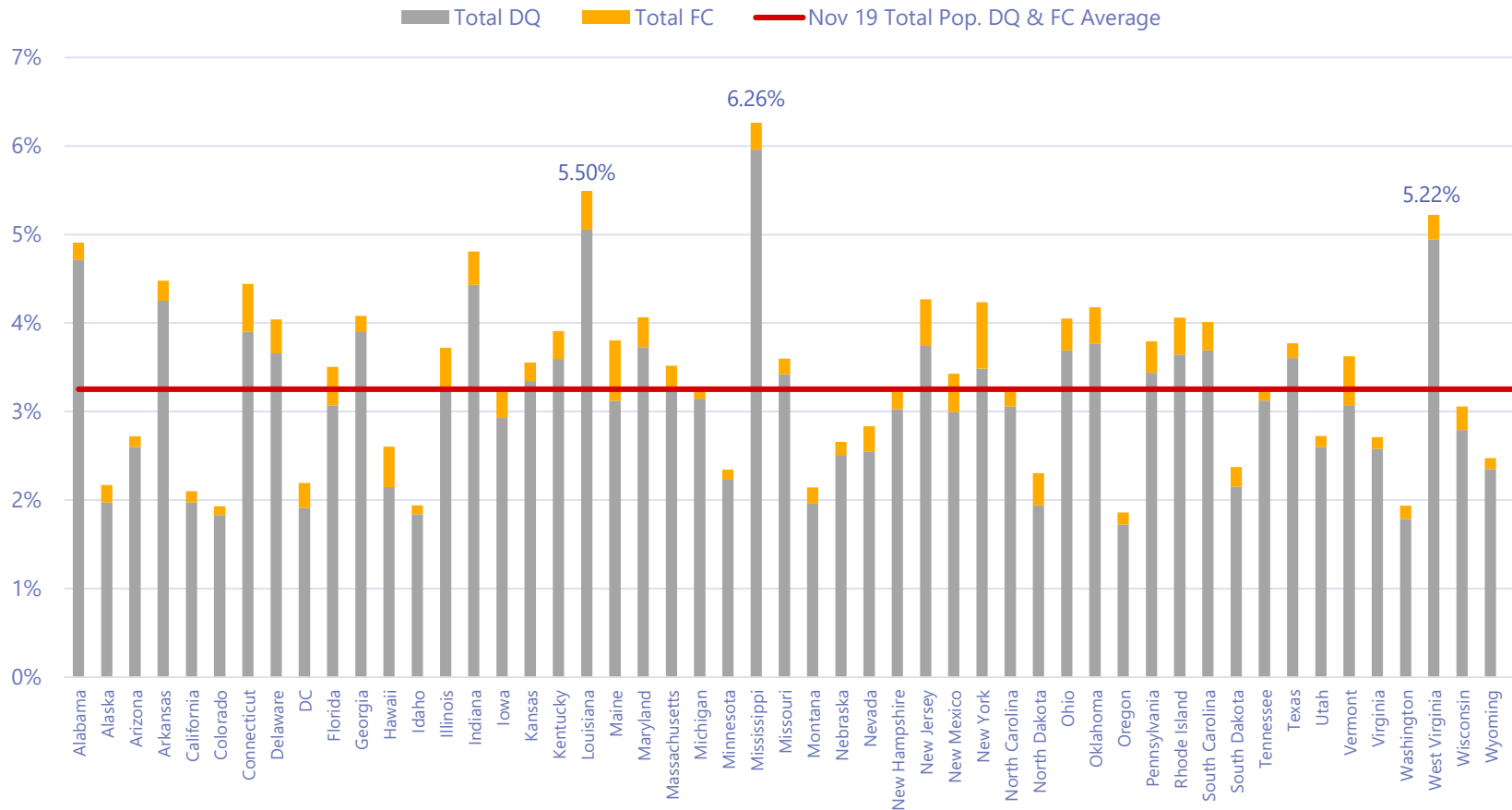
Tranche	Avg Orig Bal	WAC	WAvg Orig FICO	WAvg Orig LTV	WAvg Age	30d DQ	60d DQ	+90d DQ	Total FC	Total DQ & FC	1mo DQ & FC Change%
0.0000 - 4.4999	\$219,601	3.82	741	80	50	1.52%	0.40%	0.40%	0.22%	2.54%	0.99%
4.5000 - 4.9999	\$196,476	4.68	727	82	48	2.30%	0.63%	0.58%	0.27%	3.78%	5.38%
5.0000 - 5.4999	\$171,954	5.16	709	83	64	3.31%	0.94%	0.84%	0.39%	5.47%	6.05%
5.5000 - 5.9999	\$145,569	5.66	698	81	97	4.10%	1.11%	0.98%	0.56%	6.76%	6.56%
6.0000 - 6.4999	\$121,448	6.16	694	78	142	4.75%	1.34%	1.25%	1.03%	8.36%	4.30%
6.5000 - 6.9999	\$105,524	6.65	686	79	161	5.47%	1.52%	1.48%	1.48%	9.95%	3.13%
7.0000 - 7.4999	\$86,790	7.14	675	81	183	6.17%	1.74%	1.86%	1.93%	11.70%	2.33%
7.5000 - 7.9999	\$77,510	7.63	659	82	201	6.44%	1.85%	2.13%	2.15%	12.58%	0.88%
8.0000 - 8.4999	\$70,776	8.14	648	82	220	6.93%	2.18%	2.26%	2.27%	13.64%	1.24%
8.5000 or more	\$64,385	8.89	638	82	227	7.49%	2.25%	2.67%	2.75%	15.16%	2.04%

GSE and GNMA fixed rate product only

Source: Black Knight McDash

Delinquency Trends

Average Delinquency and Foreclosure by State - November 2019



Analysis

- Oregon is the best-performing state, with delinquency and foreclosure rates at 1.86%.
- With 6.26% delinquency and foreclosure rates, Mississippi is the nation's most-delinquent state.
- The Pacific region (CA, OR, WA, HI, and AK) has the lowest overall delinquency and foreclosure rates (2.18%).

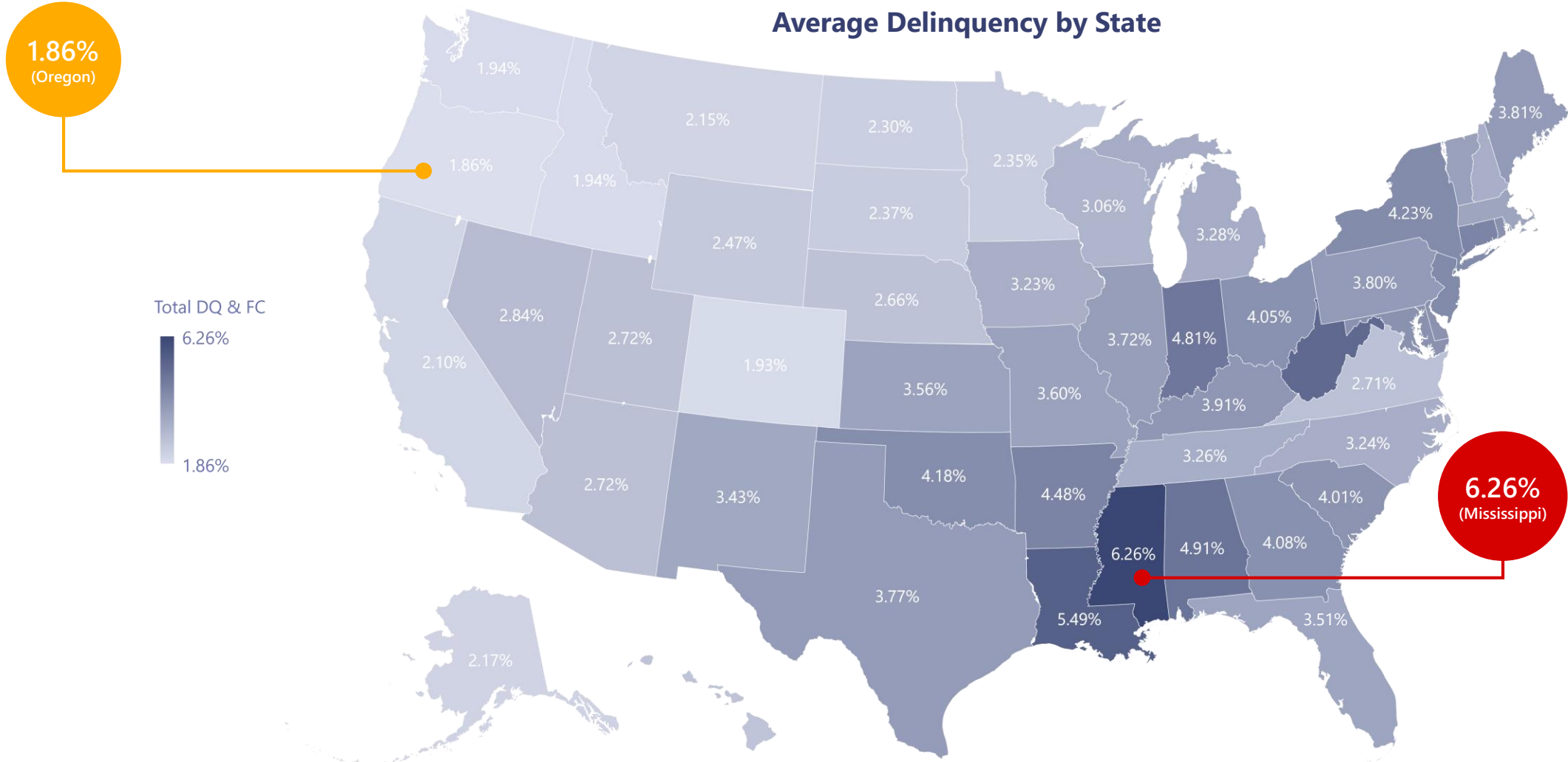
GSE and GNMA fixed rate product only

Source: Black Knight McDash



Delinquency Trends (cont.)

Average Delinquency by State



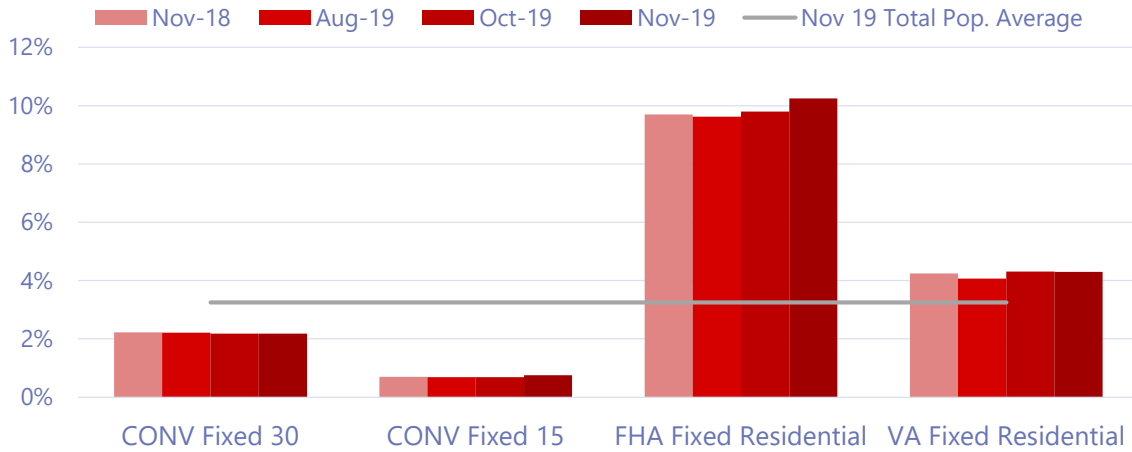
Total DQ & FC
 6.26%
 1.86%

GSE and GNMA fixed rate product only

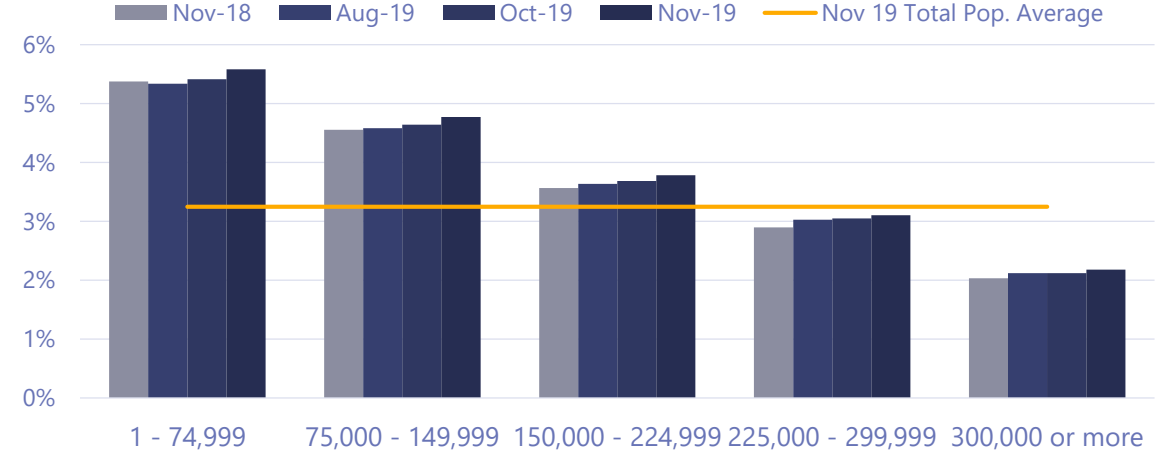
Source: Black Knight McDash

Delinquency Trends (cont.)

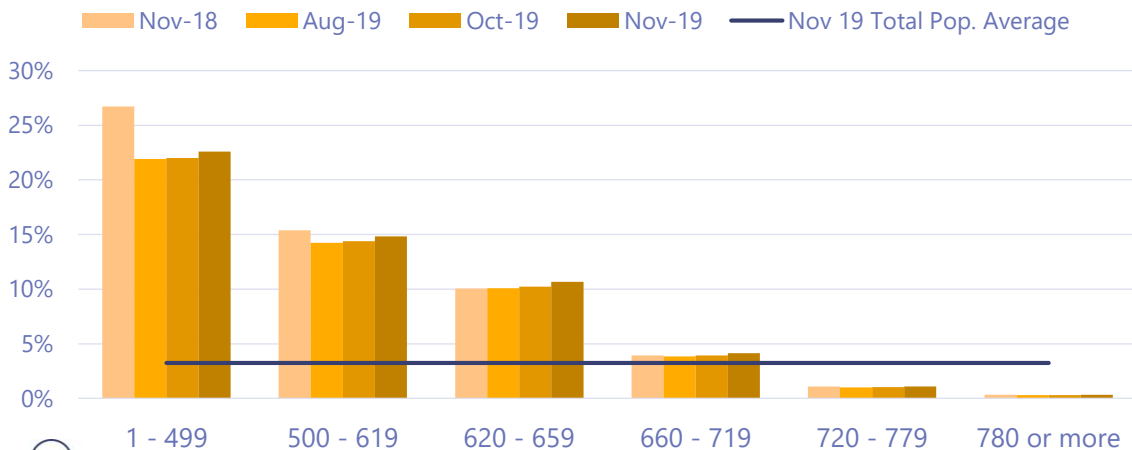
Delinquency and Foreclosure by Fixed-Rate Product - November 2019



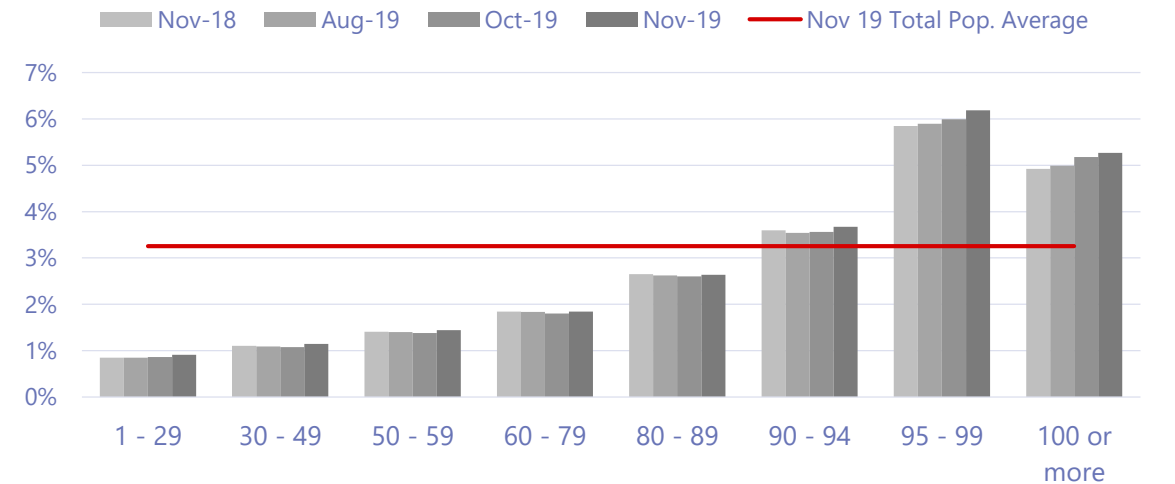
Delinquency and Foreclosure by Original Loan Balance - November 2019



Delinquency and Foreclosure by Original FICO - November 2019



Delinquency and Foreclosure by Original LTV - November 2019



Tables

State Summary

Prepayment and Delinquency

SUMMARY TABLES - November 2019

State	Loan Characteristics					Prepayments			Delinquencies						
	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	\$201,518	4.19	734	80	54	16.38%	-14.42%	100.00%	1.95%	0.52%	0.51%	0.27%	3.25%	2.14%	100.00%
Alabama	\$155,424	4.23	725	86	59	13.74%	-7.74%	83.89%	2.98%	0.83%	0.91%	0.20%	4.91%	2.76%	150.97%
Alaska	\$248,778	3.99	732	86	57	13.42%	-6.28%	81.91%	1.31%	0.37%	0.29%	0.20%	2.17%	9.32%	66.75%
Arizona	\$188,775	4.27	733	84	47	22.83%	-10.86%	139.38%	1.75%	0.46%	0.39%	0.12%	2.72%	0.18%	83.64%
Arkansas	\$139,572	4.17	727	85	60	12.27%	-13.63%	74.92%	2.77%	0.74%	0.74%	0.23%	4.48%	5.54%	137.71%
California	\$288,115	4.12	743	73	50	20.15%	-17.75%	122.98%	1.34%	0.33%	0.30%	0.13%	2.10%	2.89%	64.63%
Colorado	\$241,727	4.10	743	78	45	23.97%	-13.91%	146.29%	1.24%	0.30%	0.28%	0.10%	1.93%	4.33%	59.34%
Connecticut	\$215,074	4.20	734	80	63	10.82%	-17.20%	66.06%	2.55%	0.67%	0.68%	0.54%	4.44%	5.61%	136.60%
Delaware	\$203,008	4.22	732	82	59	12.58%	-17.39%	76.79%	2.33%	0.68%	0.66%	0.39%	4.04%	0.57%	124.36%
DC	\$324,541	4.11	750	73	54	15.89%	-11.96%	96.99%	1.23%	0.30%	0.38%	0.29%	2.19%	0.05%	67.49%
Florida	\$183,238	4.32	727	84	51	13.72%	-8.48%	83.73%	1.98%	0.55%	0.54%	0.44%	3.51%	1.18%	107.84%
Georgia	\$174,764	4.22	726	85	57	15.27%	-6.54%	93.23%	2.53%	0.70%	0.67%	0.19%	4.08%	1.42%	125.59%
Hawaii	\$359,850	4.07	746	76	56	17.58%	-18.66%	107.31%	1.36%	0.37%	0.43%	0.46%	2.60%	-1.44%	80.07%
Idaho	\$182,693	4.19	739	81	50	20.75%	-15.54%	126.67%	1.28%	0.30%	0.26%	0.10%	1.94%	-1.02%	59.67%
Illinois	\$181,270	4.19	734	83	57	14.88%	-18.87%	90.81%	2.06%	0.61%	0.60%	0.45%	3.72%	3.02%	114.46%
Indiana	\$134,611	4.30	719	86	56	16.01%	-9.55%	97.72%	2.90%	0.81%	0.72%	0.38%	4.81%	2.21%	147.89%
Iowa	\$146,035	4.06	738	83	55	15.57%	-19.29%	95.01%	1.93%	0.54%	0.46%	0.31%	3.23%	1.44%	99.42%
Kansas	\$149,451	4.16	731	85	56	14.84%	-14.25%	90.58%	2.22%	0.56%	0.56%	0.21%	3.56%	1.51%	109.35%
Kentucky	\$147,095	4.20	726	84	56	14.45%	-17.67%	88.20%	2.37%	0.64%	0.59%	0.31%	3.91%	2.71%	120.24%
Louisiana	\$166,583	4.25	720	84	57	11.19%	-19.47%	68.32%	3.20%	0.94%	0.92%	0.44%	5.49%	1.31%	168.90%
Maine	\$180,377	4.20	731	82	55	15.50%	-19.10%	94.59%	2.12%	0.48%	0.52%	0.68%	3.81%	2.62%	117.04%
Maryland	\$247,529	4.12	730	83	58	14.11%	-13.51%	86.10%	2.40%	0.66%	0.68%	0.34%	4.07%	0.92%	125.04%
Massachusetts	\$259,677	4.09	738	76	54	17.89%	-17.78%	109.17%	2.16%	0.53%	0.55%	0.28%	3.52%	4.64%	108.24%
Michigan	\$145,150	4.26	732	83	57	17.09%	-16.33%	104.33%	2.09%	0.57%	0.49%	0.13%	3.28%	0.61%	100.80%
Minnesota	\$192,149	4.11	744	83	54	16.28%	-16.03%	99.40%	1.51%	0.38%	0.34%	0.12%	2.35%	0.77%	72.13%
Mississippi	\$148,109	4.25	716	86	58	10.89%	-12.63%	66.48%	3.76%	1.07%	1.13%	0.31%	6.26%	2.35%	192.68%
Missouri	\$148,540	4.18	732	84	54	15.58%	-18.68%	95.10%	2.24%	0.62%	0.56%	0.18%	3.60%	1.87%	110.70%
Montana	\$191,093	4.10	744	79	53	15.03%	-21.02%	91.73%	1.29%	0.37%	0.30%	0.18%	2.15%	4.74%	65.98%
Nebraska	\$149,352	4.04	740	84	52	15.82%	-20.47%	96.53%	1.66%	0.42%	0.44%	0.15%	2.66%	0.72%	81.73%
Nevada	\$205,919	4.33	729	85	45	21.63%	-7.95%	132.02%	1.65%	0.41%	0.49%	0.28%	2.84%	4.27%	87.20%
New Hampshire	\$208,551	4.16	735	82	55	16.86%	-19.33%	102.90%	2.07%	0.47%	0.48%	0.19%	3.22%	4.17%	99.05%
New Jersey	\$242,299	4.19	735	79	60	13.53%	-11.85%	82.58%	2.32%	0.66%	0.76%	0.53%	4.27%	1.45%	131.28%
New Mexico	\$165,785	4.30	730	83	64	13.55%	-10.79%	82.73%	2.07%	0.54%	0.38%	0.43%	3.43%	0.82%	105.38%
New York	\$234,741	4.29	737	75	65	10.49%	-8.75%	64.02%	2.25%	0.60%	0.63%	0.75%	4.23%	5.04%	130.24%
North Carolina	\$175,540	4.18	733	83	55	15.39%	-13.04%	93.91%	2.00%	0.54%	0.52%	0.19%	3.24%	2.76%	99.75%
North Dakota	\$184,595	3.95	743	82	50	15.46%	-23.46%	94.35%	1.32%	0.29%	0.33%	0.36%	2.30%	1.50%	70.81%
Ohio	\$137,668	4.28	725	86	59	14.39%	-14.84%	87.86%	2.41%	0.65%	0.63%	0.36%	4.05%	2.66%	124.61%
Oklahoma	\$144,650	4.28	724	86	58	11.19%	-14.03%	68.28%	2.50%	0.68%	0.59%	0.41%	4.18%	2.03%	128.48%
Oregon	\$220,143	4.20	744	79	51	19.68%	-9.27%	120.13%	1.14%	0.30%	0.29%	0.14%	1.86%	1.09%	57.21%
Pennsylvania	\$170,713	4.19	734	82	61	12.29%	-15.57%	74.99%	2.25%	0.62%	0.57%	0.36%	3.80%	3.21%	116.76%
Rhode Island	\$205,537	4.20	733	82	57	15.64%	-18.64%	95.45%	2.34%	0.66%	0.64%	0.42%	4.06%	1.45%	124.98%
South Carolina	\$170,622	4.23	727	84	54	15.53%	-10.41%	94.78%	2.40%	0.66%	0.63%	0.32%	4.01%	2.90%	123.38%
South Dakota	\$167,730	3.97	744	83	50	19.24%	-11.93%	117.44%	1.42%	0.35%	0.38%	0.22%	2.37%	2.90%	73.02%
Tennessee	\$170,312	4.18	730	84	53	16.83%	-8.17%	102.72%	2.03%	0.55%	0.54%	0.13%	3.26%	0.84%	100.15%
Texas	\$179,617	4.26	725	83	51	13.39%	-12.60%	81.73%	2.39%	0.67%	0.54%	0.17%	3.77%	3.77%	115.96%
Utah	\$224,340	4.15	735	83	43	24.50%	-14.19%	149.57%	1.69%	0.46%	0.45%	0.13%	2.72%	2.87%	83.79%
Vermont	\$182,310	4.21	739	79	60	11.99%	-27.64%	73.20%	2.12%	0.48%	0.47%	0.56%	3.62%	-0.36%	111.44%
Virginia	\$242,347	4.07	737	82	55	15.05%	-14.63%	91.85%	1.69%	0.45%	0.44%	0.13%	2.71%	0.33%	83.33%
Washington	\$244,395	4.17	738	80	49	21.30%	-11.15%	130.01%	1.21%	0.27%	0.31%	0.15%	1.94%	-2.86%	59.61%
West Virginia	\$145,849	4.28	718	86	62	12.65%	-6.86%	77.18%	3.45%	0.84%	0.65%	0.28%	5.22%	7.82%	160.66%
Wisconsin	\$162,589	4.16	736	83	56	18.06%	-15.65%	110.25%	1.83%	0.50%	0.47%	0.27%	3.06%	0.69%	94.03%
Wyoming	\$197,473	4.08	734	83	52	16.43%	-12.85%	100.28%	1.62%	0.38%	0.35%	0.12%	2.47%	1.23%	76.10%

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