

*DECEMBER 2016 REPORT*



***MORTGAGEMONITOR***

# CONTENTS

- 1** | *DECEMBER FIRST LOOK RELEASE*
- 2** | *BLACK KNIGHT HPI & AFFORDABILITY UPDATE*
- 3** | *TAX SEASON IMPACT ON MORTGAGE PERFORMANCE*
- 4** | *2016 YEAR-IN-REVIEW: FORECLOSURE INVENTORY*
- 5** | *APPENDIX*
- 6** | *DISCLOSURES*



**DECEMBER 2016 OVERVIEW**

Each month, the Black Knight Mortgage Monitor looks at a variety of issues related to the mortgage and financial services industry.

This month, as always, we begin a look at some of the high-level mortgage performance statistics reported in the company's most recent First Look report, with an update on delinquency, foreclosure and prepayment trends. From there, we leverage data from data from the Black Knight [Home Price Index](#) along with Census Bureau income figures to look at the state of home price appreciation and its impact on affordability, particularly in light the current higher interest rate environment. We examine state level detail on the change in payment-to-income ratios required to purchase the median priced home as compared to pre-bubble norms, as well as the difference in monthly payments since interest rates spiked this fall.

Next, we examine Internal Revenue Service (IRS) tax filing statistics in conjunction with mortgage performance data to quantify potential impacts of the upcoming tax season on the mortgage market. We conduct an analysis of tax filing data along with mortgage cure volumes to get a sense of how tax refunds influence mortgage cures, and the more pronounced seasonal pattern seen in FHA/VA mortgage performance. Finally, we take a year-end look back at 2016 foreclosure activity along with a state-by-state breakdown of reductions seen in foreclosure inventory.

In producing the Mortgage Monitor, the Data & Analytics division of Black Knight Financial services aggregates, analyzes and reports upon the most recently available mortgage performance data from the company's [McDash loan-level database](#). For more information on McDash or Black Knight Data & Analytics in general, please call 844-474-2537 or email [AskBlackKnight@bkfs.com](mailto:AskBlackKnight@bkfs.com).



**DECEMBER FIRST LOOK FINDINGS**

Here we have an overview of findings from [Black Knight's 'First Look' at December mortgage performance data](#). This information has been compiled from Black Knight's [McDash](#) loan-level mortgage performance database. You may click on each chart to see its contents in high-resolution.

	Dec-16	Month-over-month change	Year-over-year change	12 Month Trend
<b>Total U.S. loan delinquency rate (loans 30 or more days past due, but not in foreclosure):</b>	4.42%	↓ -0.91%	↓ -7.49%	
<b>Total U.S. foreclosure pre-sale inventory rate:</b>	0.95%	↓ -3.29%	↓ -30.53%	
<b>Total U.S. foreclosure starts:</b>	59,700	↓ -1.16%	↓ -23.56%	
<b>Monthly Prepayment Rate (SMM):</b>	1.35%	↓ -5.50%	↑ 19.08%	
<b>Foreclosure Sales as % of 90+:</b>	1.78%	↓ -2.27%	↓ -5.20%	
<b>Number of properties that are 30 or more days past due, but not in foreclosure:</b>	2,248,000	↓ -15,000	↓ -160,000	
<b>Number of properties that are 90 or more days past due, but not in foreclosure:</b>	682,000	↑ 0	↓ -126,000	
<b>Number of properties in foreclosure pre-sale inventory:</b>	483,000	↓ -15,000	↓ -206,000	
<b>Number of properties that are 30 or more days past due or in foreclosure:</b>	2,731,000	↓ -30,000	↓ -366,000	

- » Delinquencies improved in December, in part due to an increase in cure activity; over 450,000 borrowers paid themselves current on their mortgages, a 17 percent monthly rise
- » The inventory of loans in foreclosure declined by more than 30 percent year-over-year, edging out 2013 for the highest rate of decline on record
- » Severely delinquent foreclosures – those that haven't made a payment in over 2 years – dropped by 38 percent from last year, while less delinquent foreclosure inventory dropped by 21 percent
- » December saw 59,700 foreclosure starts, a 24% decline from one year ago
- » Overall, the prepayment rate has fallen about 17 percent from where it peaked in August
- » There has been a 22 percent decline in prepayment activity for 720+ credit score borrowers but less than an 8 percent decline for borrowers with sub-680 credit scores
- » There has also been more of a decline in recent vintage prepayment activity; 2012 and later vintages dropped by 13-19 percent, while prior vintages saw declines in the 0-8 percent range

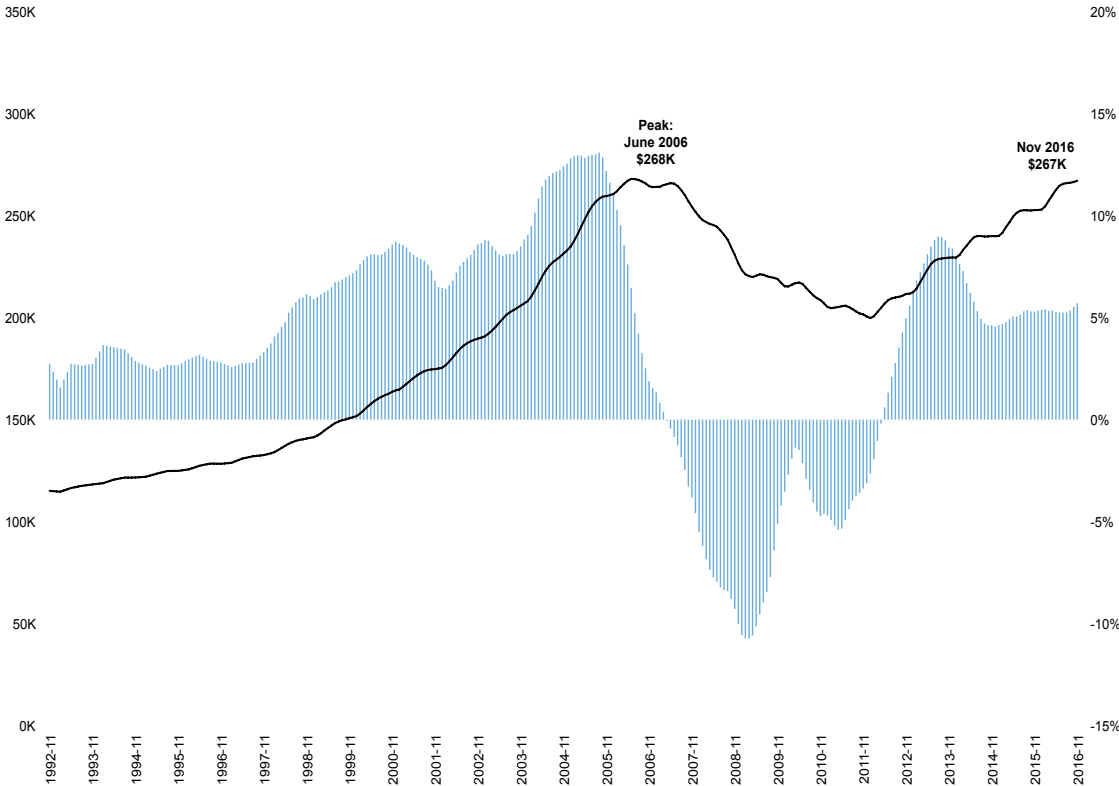


**BLACK KNIGHT HPI & AFFORDABILITY UPDATE**

Here, we leverage data from data from the Black Knight [Home Price Index](#) along with Census Bureau income figures to look at the state of home price appreciation and its impact on affordability, particularly in light the current higher interest rate environment. We examine state level detail on the change in payment-to-income ratios required to purchase the median priced home as compared to pre-bubble norms, as well as the difference in monthly payments since interest rates spiked this fall. You may click on each chart to see its contents in high-resolution.

**Black Knight Home Price Index**

■ Annual Home Price Appreciation (right axis) — Home Price Index (left axis)

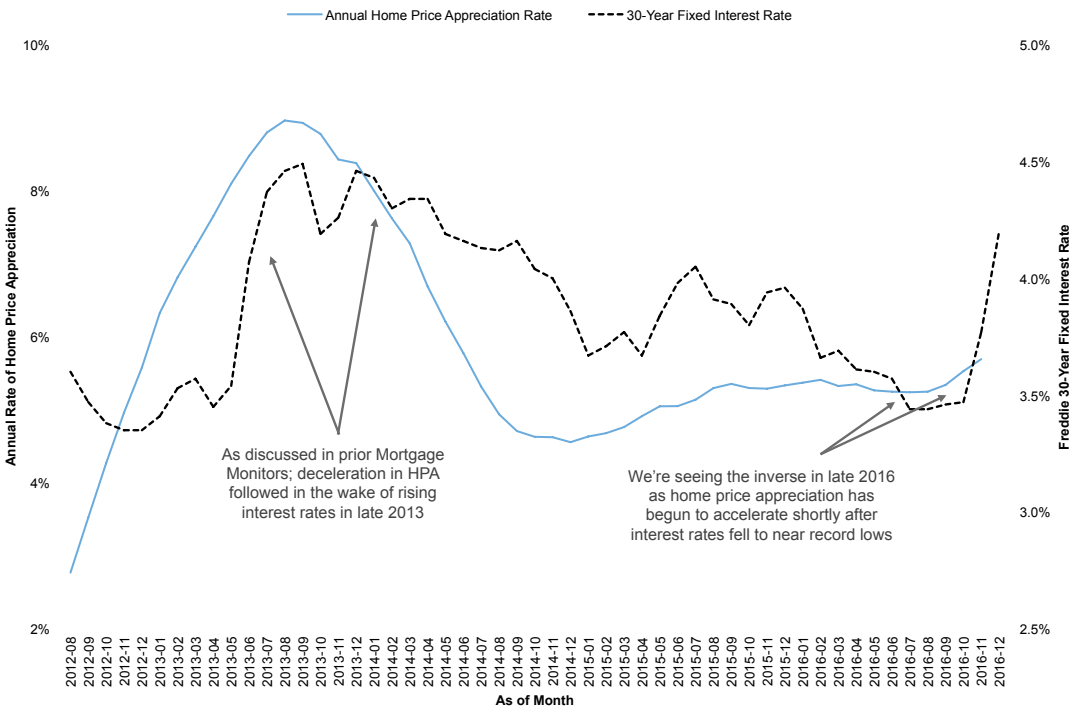


- » Home prices were up 5.7 percent year-over-year as of November 2016, marking 55 months of annual growth and the highest annual rate of appreciation since June of 2014
- » Home prices are now within 0.3 percent of their June 2006 peak; on average, roughly \$864 away from that peak value
- » Prices have risen on a monthly basis in every month of 2016; if that trend holds true in December, 2016 will join 2013 as the only two years since 2005 where home prices increased in each month throughout the year



**BLACK KNIGHT HPI & AFFORDABILITY UPDATE**

**Home Price Appreciation vs. 30-Year Fixed Interest Rate**

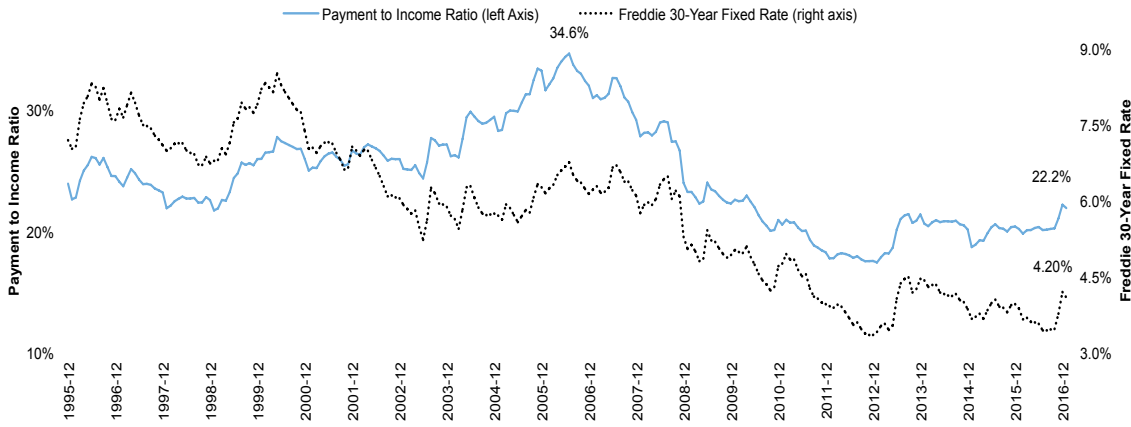


- » Heading into December home price appreciation was beginning to accelerate, likely in reaction to the declining rates seen in the second half of 2016 prior to November's rapid increase
- » This suggests borrowers were willing to pay more for the same home than they were prior to the rate decline; it's notable that, rather than absorbing the interest rate declines as savings, borrowers opted to use the increased buying power to bid up home prices
- » As discussed in prior Mortgage Monitors, marked deceleration in HPA was observed in the wake of the "taper tantrum" interest rate increases of late 2013; a similar reaction has yet to materialize today, although based on recent history, home price movement following changes in interest rates have been lagged by 2 to 3 months
- » In the [September 2016 Mortgage Monitor](#) we discussed decelerating HPA in the condominium market; while they still appreciate at a slower rate than single family residences, condo HPA has shifted into acceleration over the past four months

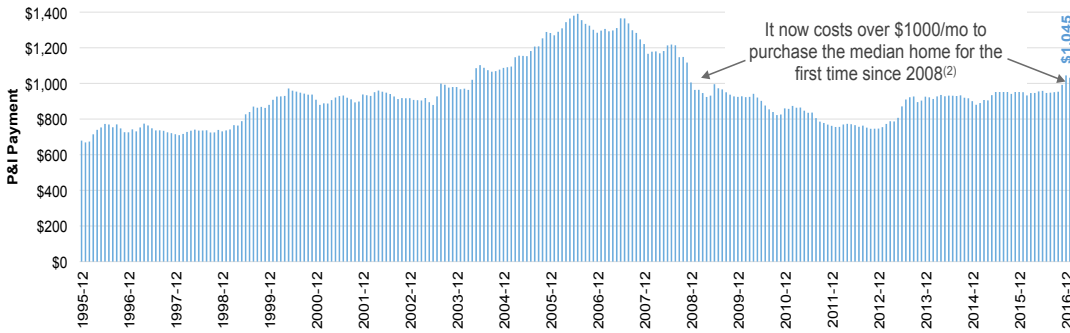


**BLACK KNIGHT HPI & AFFORDABILITY UPDATE**

**National Payment to Income Ratio**



**Monthly P&I Payment Needed to Purchase Median Home**



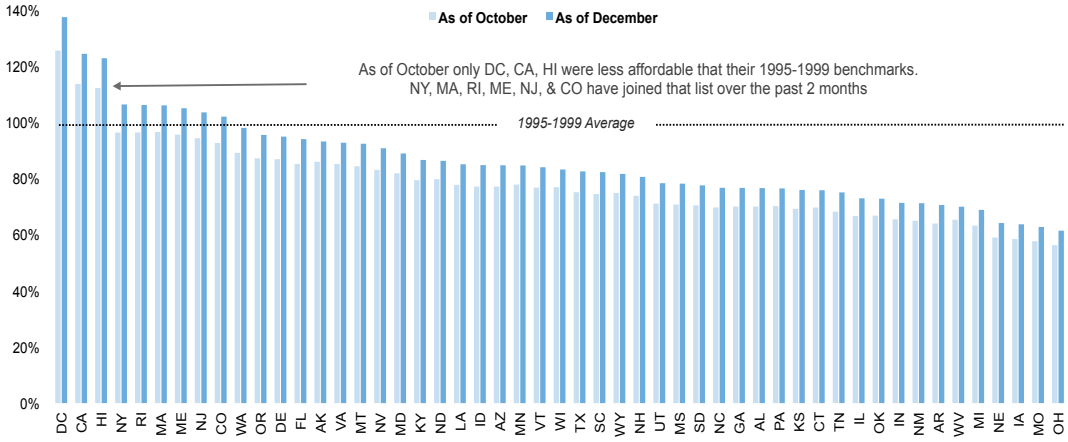
(1) The National Payment to Income Ratio is the % of the median household income needed to purchase the median home using an 80% LTV 30-year fixed rate mortgage at the FHLMC 30-year rate. (2) The Monthly P&I Payment using an 80% LTV 30-year fixed rate mortgage at the corresponding FHLMC 30-year fixed rate

- » With the recent rise in interest rates, housing is now the least affordable it's been since 2010
- » At the prevailing 30-year conforming mortgage rate (4.19 percent as of January 26th), it now requires 22.2 percent of the median income to make the monthly principal and interest (P&I) payment on the median priced home
- » Prior to this, the highest post-bubble ratio was 21.4 percent in 2013, before home prices began to decelerate and interest rates to pull back down
- » In total, there was a 10 percent increase in the monthly P&I payment required to purchase the median home in Q4 2016 alone
- » The monthly P&I payment on the median home (using a 30-year fixed loan with 20 percent down) was \$1,045 in December, the first time it had crossed the \$1000 barrier since 2008



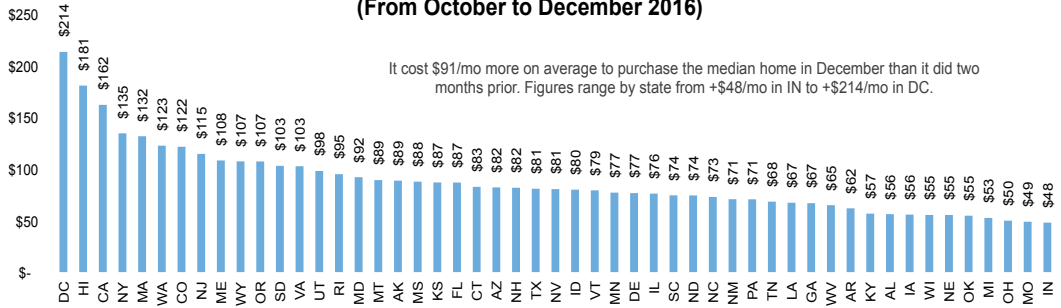
**BLACK KNIGHT HPI & AFFORDABILITY UPDATE**

**Payment to Income Ratio Benchmarked to 1995-1999**



As of October only DC, CA, HI were less affordable than their 1995-1999 benchmarks. NY, MA, RI, ME, NJ, & CO have joined that list over the past 2 months

**Increase in Monthly Payment Needed to Purchase Median Home (From October to December 2016)**



It cost \$91/mo more on average to purchase the median home in December than it did two months prior. Figures range by state from +\$48/mo in IN to +\$214/mo in DC.

\* Using an 80% LTV 30-year fixed rate mortgage

- » Nationally, the median priced home cost \$91 (+9 percent) more per month to buy in December than it would have in October, but that increase differed considerably depending upon geography
- » In Washington D.C., the increase was \$214/month (+8 percent), in Hawaii, \$181 (+9 percent), and in California, \$162 (+9 percent)
- » Although dollar amounts vary, each state in the U.S. saw an increase between 7 to 11 percent in the principal and interest payment needed to purchase the median home from October to December
- » While the national payment-to-income ratio is the highest it's been in six years, it is still below pre-bubble 'norms' - it is eight percent below what it was in the late 1990s and 16 percent below the early 2000s
- » The number of geographies where this is not the case continues to grow; when we last looked at the situation in October, three states were less affordable than long-term norms - today, there are nine

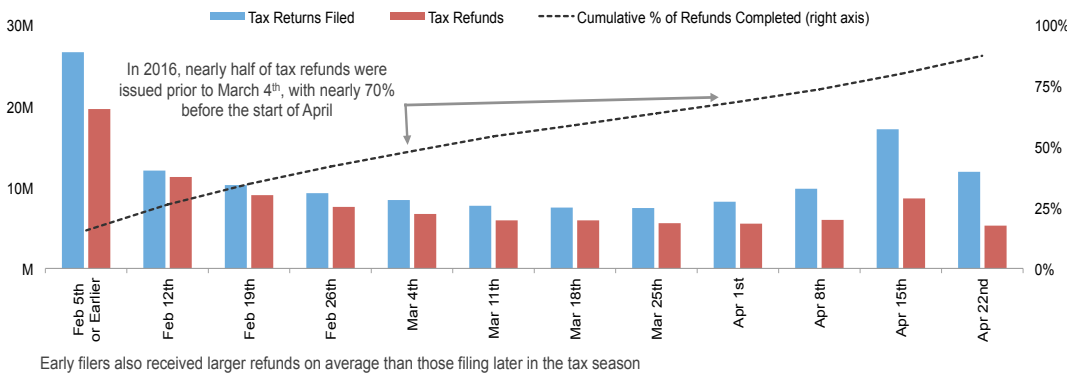




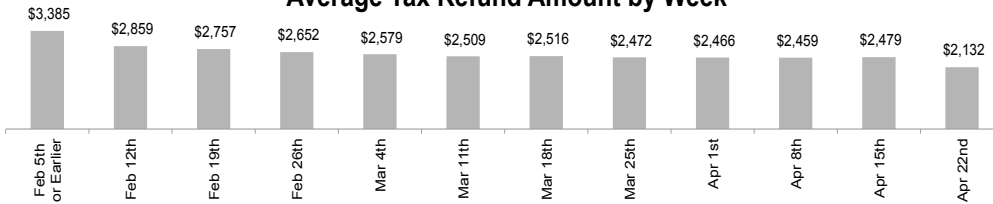
# TAX SEASON IMPACT ON MORTGAGE PERFORMANCE

Here we examine Internal Revenue Service (IRS) tax filing statistics in conjunction with mortgage performance data to quantify potential impacts of the upcoming tax season on the mortgage market. We conduct an analysis of tax filing data along with mortgage cure volumes to get a sense of how tax refunds influence mortgage cures, and the more pronounced seasonal pattern seen in FHA/VA mortgage performance. This information has been compiled from IRS statistics and Black Knight's [McDash](#) loan-level mortgage performance database. You may click on each chart to see its contents in high-resolution.

IRS Tax Filings and Refunds by Week (2016)



Average Tax Refund Amount by Week

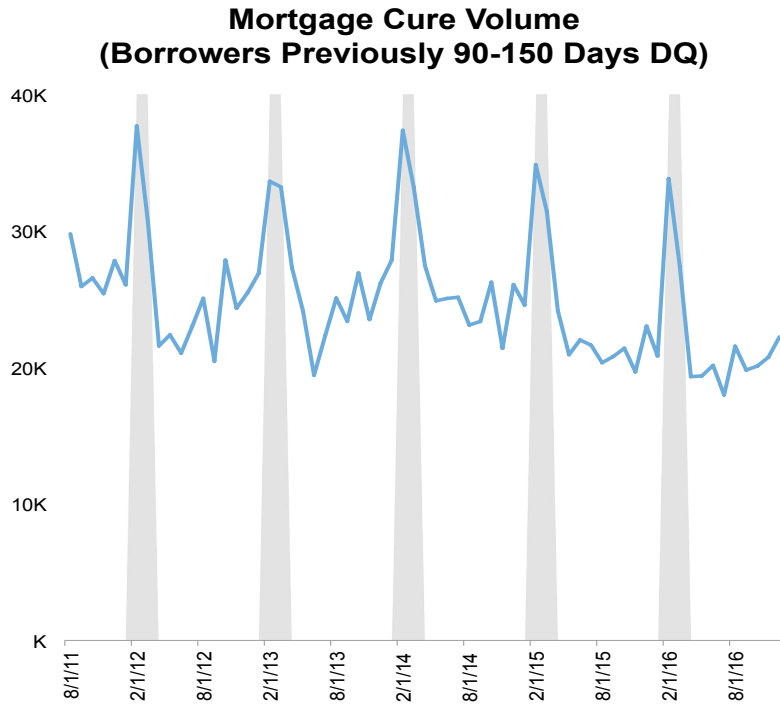


Source: IRS Filing Season Statistics; Average Tax Refund Amount by Week was derived using data reported by the IRS

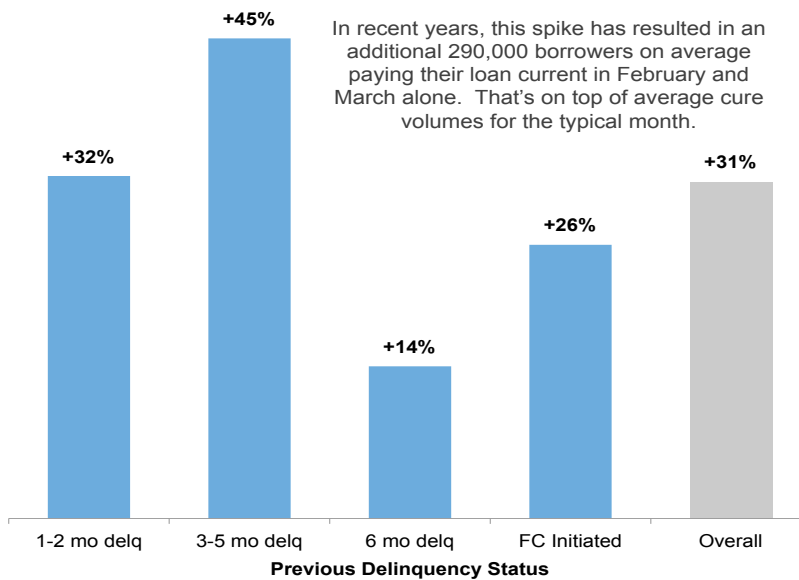
- » Contrary to colloquial perception, over 40 percent of Americans have filed their tax returns by the first weekend in March, with nearly one in five having done so within the first two weeks of tax season
- » Incentive undoubtedly plays a part, as Americans who file early are more likely to receive a refund than those filing later and also receive larger refunds on average
- » This is obviously not because filing early increases the chances of a refund, but rather that those who know they will receive a refund are more eager to complete their taxes, and vice versa
- » The average refund on or before February 5th was nearly \$3,400 – over 35% higher than those filing in early April, and nearly 60 percent higher than those filing the last week of the season



**TAX SEASON IMPACT ON MORTGAGE PERFORMANCE**



### Average Spike in Mortgage Cures (Feb & March vs. All Other Months)



\*February and March cure volumes compared to the average cure volume of the remaining 10 months in the same calendar year; Most recent 5 year average

- » Mortgage cures – a borrower paying their mortgage current from some stage of delinquency or foreclosure (Note: modifications are also counted as cures) – tend to correspondingly spike in February and March as well
- » This suggests that some portion of Americans are using their tax returns to make past due payments on their mortgage
- » The increase in cures is observed across the delinquency and foreclosure spectrum, but it is most pronounced in the early and moderate stages of delinquency
- » This makes sense, in that a tax refund may be sufficient to pay a few months of past due mortgage payments, but is likely not enough to bring a homeowner out of severe delinquency
- » If history holds, we can expect as many as 290,000 borrowers to pay their loan current in February and March, on top of normal cure volumes for a typical month
- » Over 85 percent of this activity (over 250,000 cures) would come from borrowers that are one to two months past due

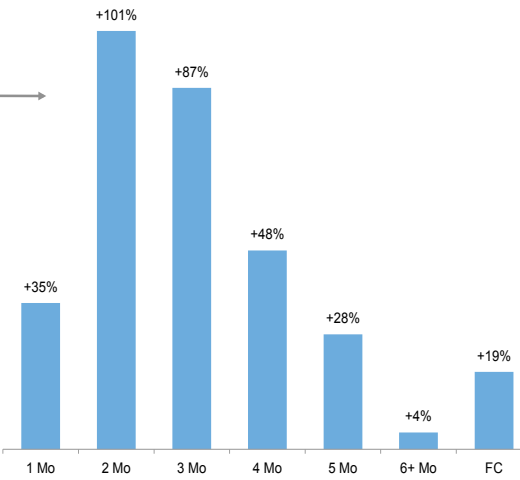


**TAX SEASON IMPACT ON MORTGAGE PERFORMANCE**

**Average Spike in Mortgage Cures (by Product/Investor)**



**FHA/VA Spike in Cures (Breakdown by Previous DQ Status)**



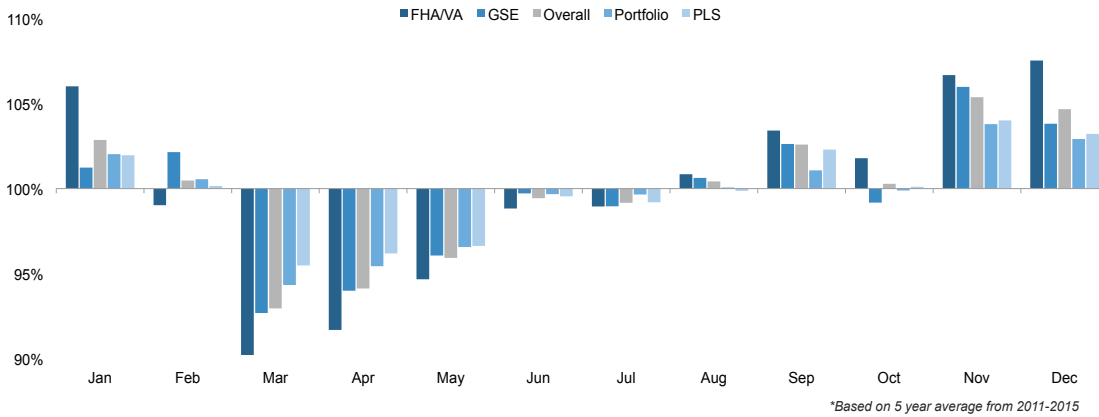
*\*February and March cure volumes by investor compared to the average cure volume of the remaining 10 months in the same calendar year; Most recent 5 year average*

- » FHA/VA borrowers see the most pronounced impact from the February/March cure spike
- » FHA/VA borrowers see loan cures increase by an average of 40 percent in February and March – as compared to just 26 percent for GSE loans
- » Such borrowers may be expected to have less cash reserves on hand (i.e., 3.5 percent down payment mortgages) and therefore be more dependent upon the infusion of funds during tax refund season to pay down late payments
- » The FHA/VA impact appears even more focused on early stage delinquencies than is true for other investor categories with cure rates roughly doubling for borrowers that are 60 and 90 days delinquent on their mortgages

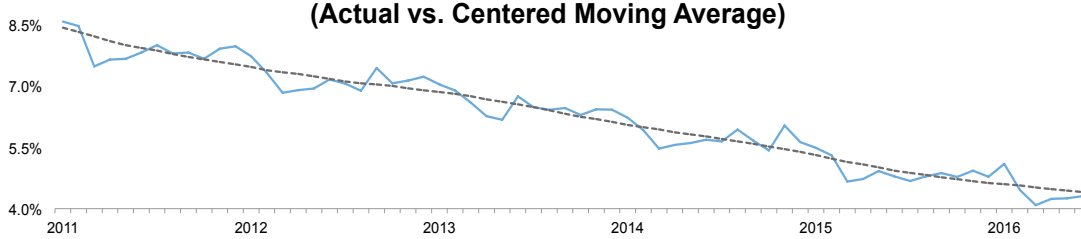


**TAX SEASON IMPACT ON MORTGAGE PERFORMANCE**

**Delinquency Rate - Seasonal Ratios By Month and Investor**



**Delinquency Rate (Actual vs. Centered Moving Average)**

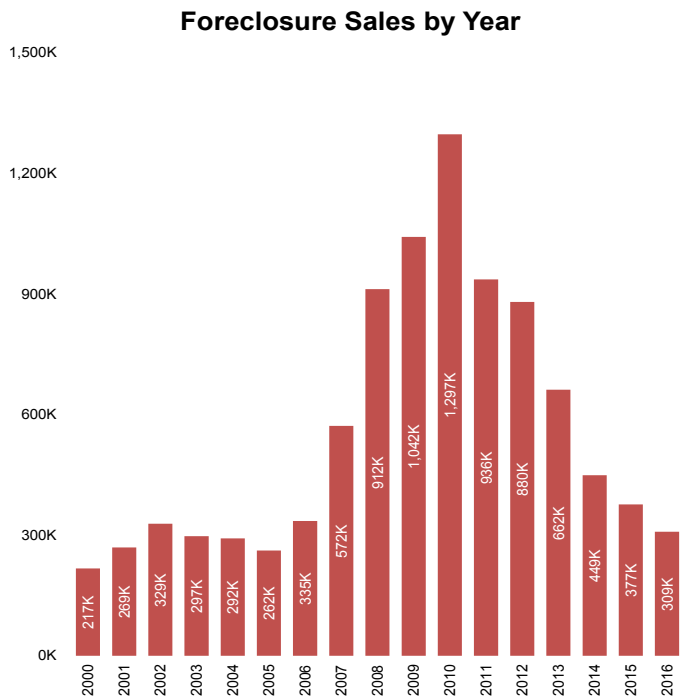
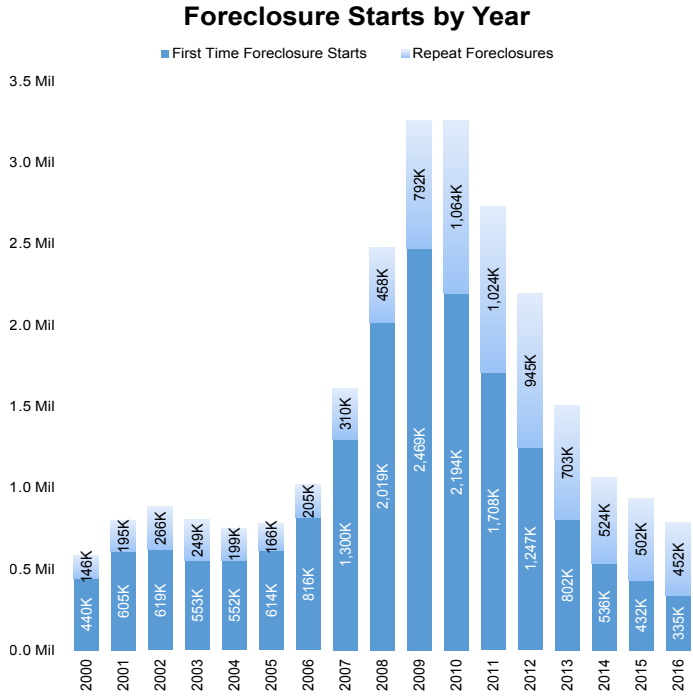


- » Seasonality in mortgage delinquencies is a well-established phenomenon, but FHA/VA loans see the most seasonal fluctuation in delinquency rates throughout the year
- » The top chart shows five-year average seasonal ratios (2011-2015) for each month broken out by investor, while the bottom depicts seasonal delinquency rate trends by comparing actual rates to the 12-month centered moving average
- » March is the seasonal low for mortgage delinquencies, and FHA/VA loans see the most seasonal improvement during that period; correspondingly, in the winter months FHA/VA loans see the most adverse seasonal impact on delinquency rates
- » The more pronounced seasonal impacts for FHA/VA loans are quite likely due to the borrower profile; benefitting more from sudden infusions of funds in the spring, and struggling more when money becomes tight late in the year



**2016 YEAR-IN-REVIEW:  
FORECLOSURE INVENTORY**

Here we take a look back at 2016 foreclosure activity along with a state-by-state breakdown of reductions seen in foreclosure inventory. This information has been compiled from Black Knight's [McDash](#) loan-level mortgage performance database. You may click on each chart to see its contents in high-resolution.

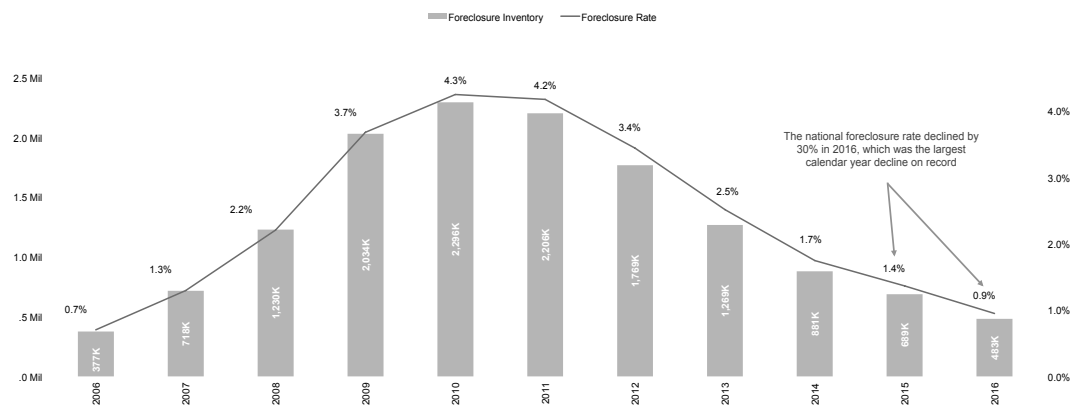


- » Nearly 790K mortgages were referred to foreclosure in 2016; 57 percent of these were repeats (mortgages that had been referred to foreclosure at least once previously)
- » 335K first time foreclosure starts is the lowest one-year total since before the turn of the century, and was actually 20 percent below what we saw in 2015
- » As of Q4 2016, over 13 million foreclosures had been initiated since 2007
- » There were 309K foreclosure sales in 2016, marking a 19 percent decline from 2015 and the lowest yearly total since 2005
- » This is still slightly elevated from historical perspective; 2000-2005 averaged ~275k foreclosure sales/year
- » Overall there have now been 7.4 million homes lost to foreclosure sale since 2007

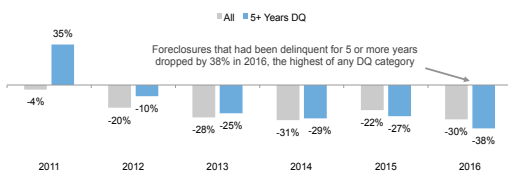


**2016 YEAR-IN-REVIEW:  
FORECLOSURE INVENTORY**

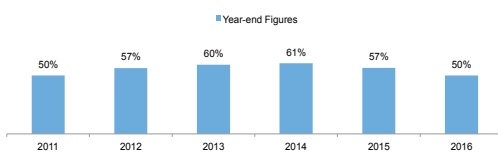
**Active Foreclosure Inventory (Year-End Figures)**



**Annual Decline in Foreclosure Inventory**



**Share of Active Foreclosures That are 5+ Years DQ**

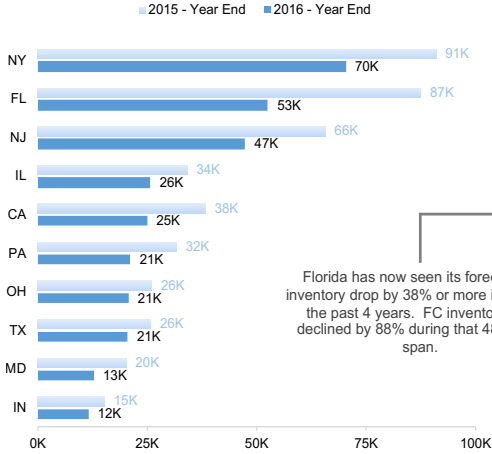


- » Foreclosure inventory has now dropped below 500k and the national foreclosure rate is now below one percent; both metrics are the lowest they've been since 2007
- » The 30 percent year-over-year decline in December 2016, was the largest calendar year decline in the foreclosure rate of any year on record
- » The highest rate of decline in 2016 (-38 percent YoY) came from foreclosures that had been delinquent for five years or more, by far the most annual improvement seen in that segment
- » 5+ year seasoned foreclosures now make up 50 percent of all active foreclosures, the smallest share since early 2012, having made up more than three out of every five as little as 24 months ago
- » All that said, national foreclosure inventory remains roughly 70 percent above "normal" market levels



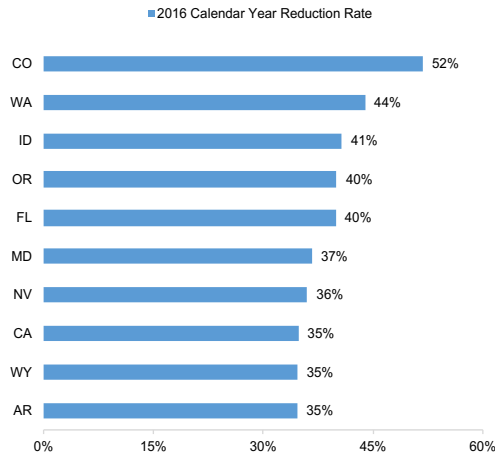
**2016 YEAR-IN-REVIEW:  
FORECLOSURE INVENTORY**

**Active Foreclosure Inventory (Top 10 States)**



Florida has now seen its foreclosure inventory drop by 38% or more in each of the past 4 years. FC inventory has declined by 88% during that 48 month span.

**2016 Inventory Reduction (Top 10 States)**



- » Florida's active foreclosure inventory fell by 40 percent in 2016, marking four consecutive years of 38 percent or larger declines (the only state even close to this level of sustained improvement)
- » New York, New Jersey and Illinois now contain 30 percent of the country's remaining active foreclosure inventory, up two percentage points from 2015
- » New York, New Jersey and Illinois all saw improvement at rates below the national average, at 23 percent, 28 percent and 25 percent, respectively
- » Colorado saw the highest rate of decline in 2016 (52 percent), and now has the lowest foreclosure rate of any state at just 0.22 percent
- » Washington, Oregon and Colorado all saw reductions in their foreclosure inventories of 40 percent or higher, no doubt aided by the fact that these states led the country in HPA last year as well

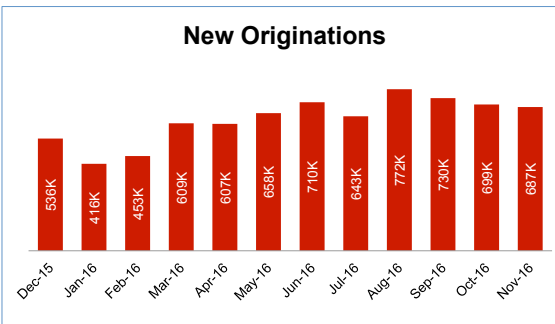
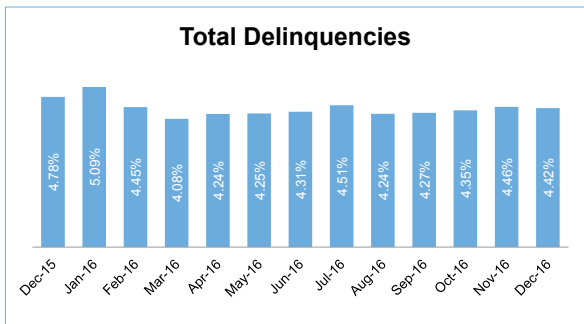


**APPENDIX**

» **December 2016 Data Summary**

	Dec-16	Monthly Change	YTD Change	Yearly Change
Delinquencies	4.42%	-0.91%	-13.23%	-7.49%
Foreclosure	0.95%	-3.29%	-27.24%	-30.53%
Foreclosure Starts	59,700	-1.16%	-16.97%	-23.56%
Seriously Delinquent (90+) or in Foreclosure	2.29%	-1.56%	-22.35%	-22.86%
New Originations (data as of Nov-16)	687K	-1.8%	28.1%	50.5%

	Dec-16	Nov-16	Oct-16	Sep-16	Aug-16	Jul-16	Jun-16	May-16	Apr-16	Mar-16	Feb-16	Jan-16	Dec-15
Delinquencies	4.42%	4.46%	4.35%	4.27%	4.24%	4.51%	4.31%	4.25%	4.24%	4.08%	4.45%	5.09%	4.78%
Foreclosure	0.95%	0.98%	0.99%	1.00%	1.04%	1.09%	1.10%	1.13%	1.17%	1.25%	1.30%	1.30%	1.37%
Foreclosure Starts	59,700	60,400	56,500	61,700	68,800	61,300	69,300	62,100	58,700	72,800	84,300	71,900	78,100
Seriously Delinquent (90+) or in Foreclosure	2.29%	2.33%	2.33%	2.32%	2.36%	2.46%	2.47%	2.55%	2.62%	2.70%	2.82%	2.95%	2.97%
New Originations		687K	699K	730K	772K	643K	710K	658K	607K	609K	453K	416K	536K





APPENDIX

Month	TOTAL ACTIVE COUNT	30 DAYS	60 DAYS	90+ DAYS	FC	Total Non-Current	FC Starts	Average Days Delinquent for 90+	Average Days Delinquent for FC	Ratio of 90+ to FC
1/31/05	47,706,128	1,197,062	339,920	458,719	276,745	2,272,446	50,922	242	324	165.8%
1/31/06	50,900,620	1,242,434	387,907	542,378	258,613	2,431,332	76,477	207	308	209.7%
1/31/07	53,900,458	1,425,030	468,441	551,439	393,973	2,838,883	117,419	203	267	140.0%
1/31/08	55,478,782	1,743,420	676,266	950,639	813,560	4,183,885	195,033	190	256	116.8%
1/31/09	55,788,441	2,001,314	932,436	1,878,981	1,321,029	6,133,760	250,621	193	323	142.2%
1/31/10	55,098,009	1,945,589	903,778	2,972,983	2,068,572	7,890,922	292,308	253	418	143.7%
1/31/11	53,861,778	1,750,601	746,634	2,078,130	2,245,250	6,820,615	277,374	333	527	92.6%
1/31/12	52,687,781	1,592,463	652,524	1,796,698	2,205,818	6,247,503	223,394	395	666	81.5%
1/31/13	51,229,692	1,464,583	587,661	1,551,415	1,742,689	5,346,348	156,654	460	803	89.0%
1/31/14	50,380,779	1,341,074	529,524	1,278,955	1,213,046	4,362,599	97,467	486	935	105.4%
1/31/15	50,412,744	1,238,453	465,849	1,060,002	884,901	3,649,204	93,280	509	1,031	119.8%
1/31/16	50,541,353	1,298,682	444,594	831,284	659,237	3,233,797	71,900	495	1,047	126.1%
2/29/16	50,562,450	1,102,328	377,130	772,441	655,311	2,907,210	84,305	489	1,064	117.9%
3/31/16	50,533,910	986,412	343,124	732,765	630,766	2,693,065	72,762	514	1,071	116.2%
4/30/16	50,662,957	1,063,480	351,929	730,179	595,235	2,740,824	58,728	520	1,088	122.7%
5/31/16	50,654,959	1,072,189	361,463	719,283	574,035	2,726,970	62,085	519	1,092	125.3%
6/30/16	50,568,835	1,112,478	372,917	692,370	558,345	2,736,110	69,250	519	1,087	124.0%
7/31/16	50,669,860	1,198,629	392,644	695,148	550,075	2,836,496	61,253	502	1,084	126.4%
8/31/16	50,725,469	1,099,276	382,249	669,173	527,298	2,677,996	68,820	502	1,060	126.9%
9/30/16	50,683,337	1,115,044	381,662	668,114	509,047	2,673,867	61,664	492	1,051	131.2%
10/31/16	50,631,883	1,134,365	390,991	676,993	503,719	2,706,068	56,451	486	1,051	134.4%
11/30/16	50,739,323	1,181,537	399,378	682,348	497,957	2,761,219	60,418	471	1,044	137.0%
12/31/16	50,863,658	1,163,974	402,193	682,006	482,739	2,730,912	59,739	455	1,036	141.3%

» Loan counts and average days delinquent



**APPENDIX**

State	Del %	FC %	Non-Curr %	Yr/Yr Change in NC%
National	4.4%	0.9%	5.4%	-12.4%
MS	10.3%	1.1%	11.4%	-7.7%
LA *	8.6%	1.4%	10.0%	0.0%
WV	7.2%	1.0%	8.2%	-3.8%
AL	7.3%	0.7%	8.0%	-8.8%
NJ *	4.8%	3.0%	7.8%	-19.3%
NY *	4.7%	2.8%	7.5%	-14.5%
ME *	5.1%	2.4%	7.5%	-13.6%
IN *	6.1%	1.2%	7.3%	-7.9%
RI	5.8%	1.4%	7.2%	-15.1%
OK *	5.7%	1.5%	7.2%	-5.5%
AR	6.2%	0.8%	7.0%	-9.6%
PA *	5.8%	1.2%	7.0%	-10.7%
DE *	5.3%	1.5%	6.7%	-14.0%
CT *	5.1%	1.6%	6.7%	-9.6%
SC *	5.6%	1.0%	6.6%	-9.2%
TN	6.1%	0.5%	6.5%	-10.2%
GA	5.9%	0.6%	6.5%	-9.2%

State	Del %	FC %	Non-Curr %	Yr/Yr Change in NC%
National	4.4%	0.9%	5.4%	-12.4%
MD *	5.4%	1.0%	6.4%	-11.7%
OH *	5.1%	1.2%	6.3%	-9.6%
FL *	4.7%	1.5%	6.2%	-18.7%
TX	5.6%	0.5%	6.1%	-7.3%
NM *	4.4%	1.7%	6.1%	-12.2%
HI *	3.3%	2.5%	5.8%	-19.1%
NC	5.1%	0.6%	5.6%	-9.2%
KY *	4.6%	1.1%	5.6%	-9.7%
KS *	4.7%	0.8%	5.6%	-5.8%
MA	4.4%	1.2%	5.5%	-14.8%
VT *	3.9%	1.6%	5.5%	-4.1%
IL *	4.3%	1.2%	5.5%	-11.9%
MO	4.7%	0.5%	5.2%	-10.1%
MI	4.6%	0.3%	4.9%	-5.8%
WI *	3.9%	0.9%	4.8%	-11.2%
NV	3.5%	1.2%	4.7%	-23.2%
NH	4.0%	0.6%	4.6%	-10.4%

State	Del %	FC %	Non-Curr %	Yr/Yr Change in NC%
National	4.4%	0.9%	5.4%	-12.4%
DC	3.1%	1.5%	4.5%	-16.7%
IA *	3.7%	0.8%	4.5%	-9.0%
WY	3.8%	0.6%	4.3%	2.3%
VA	3.9%	0.4%	4.3%	-8.2%
NE *	3.5%	0.4%	3.9%	-9.4%
UT	3.2%	0.4%	3.6%	-17.4%
AZ	3.2%	0.4%	3.5%	-11.7%
AK	2.9%	0.4%	3.3%	13.5%
WA	2.5%	0.7%	3.2%	-23.7%
SD *	2.6%	0.6%	3.2%	-4.8%
CA	2.8%	0.4%	3.2%	-16.5%
OR	2.3%	0.9%	3.1%	-22.4%
ID	2.5%	0.5%	3.1%	-17.2%
MT	2.4%	0.5%	3.0%	-12.3%
MN	2.6%	0.3%	2.9%	-8.6%
ND *	1.9%	0.6%	2.5%	15.1%
CO	2.2%	0.2%	2.4%	-19.9%

» State-by-state rankings by non-current loan population

\* - Indicates Judicial State



# ***DISCLOSURES***

Please refer to the links below for specific disclosures relating to Product Definitions, Metrics Definitions and Extrapolation Methodology.

**>> *PRODUCT DEFINITIONS***

**>> *METRICS DEFINITIONS***

**>> *EXTRAPOLATION METHODOLOGY***

