

November 6, 2017

# Historical data provides insights into past hurricane experience

In November and December, we will begin to observe initial impacts of recent hurricane events on borrower payments. Every storm is different and past storms cannot be used in isolation to predict the default and severity outcomes of subsequent storm events.

This commentary leverages Fannie Mae's Single-Family Loan Performance Dataset to examine the impacts of Hurricanes Katrina and Sandy on single-family mortgage loan delinquency rates.

Fannie Mae releases remittance data for its Connecticut Avenue Securities™ (CAS) deals on the 25<sup>th</sup> business day of each month. The November CAS remittance cycle, which reflects September 1, 2017 payments, will be the first payment cycle in which we can begin to observe initial impacts of recent hurricane events on borrower payments.

[Fannie Mae's Single-Family Loan Performance Dataset](#) provides historical monthly loan performance data on a portion of our single-family book of business to promote better understanding of the credit performance of Fannie Mae mortgage loans. The dataset includes a subset of our fully amortizing, full documentation, single-family, conventional fixed-rate mortgage acquisitions since January 2000, and as such can be leveraged to glean insights into past hurricane events and their impact on areas affected by the storms.

It is important to note that no two hurricane events are identical and as such, one event cannot be used to predict the default and severity outcomes of a subsequent event without taking into account that many factors differ. Factors that impact the loss outcomes include, but are not limited to, the type of storm (e.g., primarily a flood event vs a wind event), the location of the storm, the factors influencing the region prior to the storm, the profile of borrowers and properties in the impacted region, and the magnitude and types of government assistance.

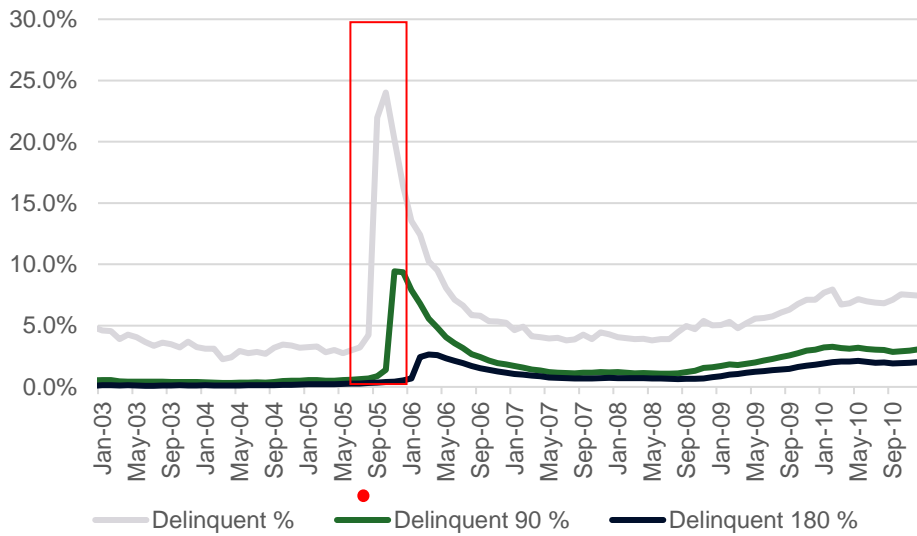
This commentary examines the delinquency performance of loans in the Single-Family Loan Performance Dataset that were located in geographic areas impacted by Hurricanes Katrina and Sandy. To review this performance, we have identified the cohort of loans that were located in counties designated by FEMA for individual assistance as a result of these two storms. The analysis found that, for these particular hurricane events, the state of the regional economy and the magnitude and types of government assistance were larger drivers of long-term serious delinquency than the impact of the storms.



### Hurricane Katrina

The catastrophic events of Hurricane Katrina occurred in August of 2005. The storm, predominantly a flood event, occurred in a concentrated geographic area, during a period of strong overall national economic growth and home price growth. Significant government assistance was provided post-storm that enabled borrowers in many cases to repay existing loans and to repair properties impacted by the storm through a government loan program. This specific government assistance program was not available during Hurricane Sandy and is not currently available for other events. Based on Fannie Mae's Loan Performance Dataset, we observe that delinquencies spiked immediately following the storm, but swiftly recovered to pre-storm levels.

Figure 1. Hurricane Katrina - Delinquent loans as a percent of active UPB in the region



The rate of loans that reached 180-days or greater (D180+) delinquency status increased substantially following the storm, but then began to recover to more normal levels. For comparison, the impact of the great recession resulted in a similar increase in D180+ rates that persisted over a longer time horizon.

Figure 2. Hurricane Katrina - Comparison of 180+ day delinquencies in the Katrina affected region compared to the total loan population excluding the Katrina region

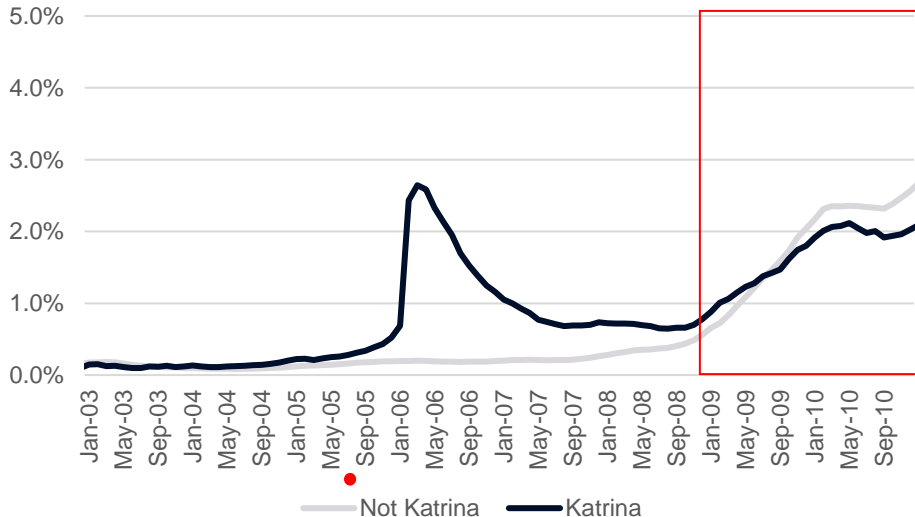




Figure 3. Hurricane Katrina impacted loans – profile distribution

	Not Katrina	Katrina FEMA Region
<b>Loan Count</b>	5,026,492	92,224
<b>Active Unpaid Principal Balance (UPB) (\$B)</b>	\$741.4	\$10.8
<b>Average Loan Size</b>	\$147,492	\$116,834
<b>Weighted Average (WA) Original Combined Loan-to-Value (LTV) Ratio</b>	72.2%	78.4%
<b>WA Min FICO</b>	717	706
<b>WA Debt-to-Income (DTI) Ratio</b>	32.4%	31.3%
<b>WA Delinquency Rate<sup>(1)</sup></b>	1.99%	4.24%

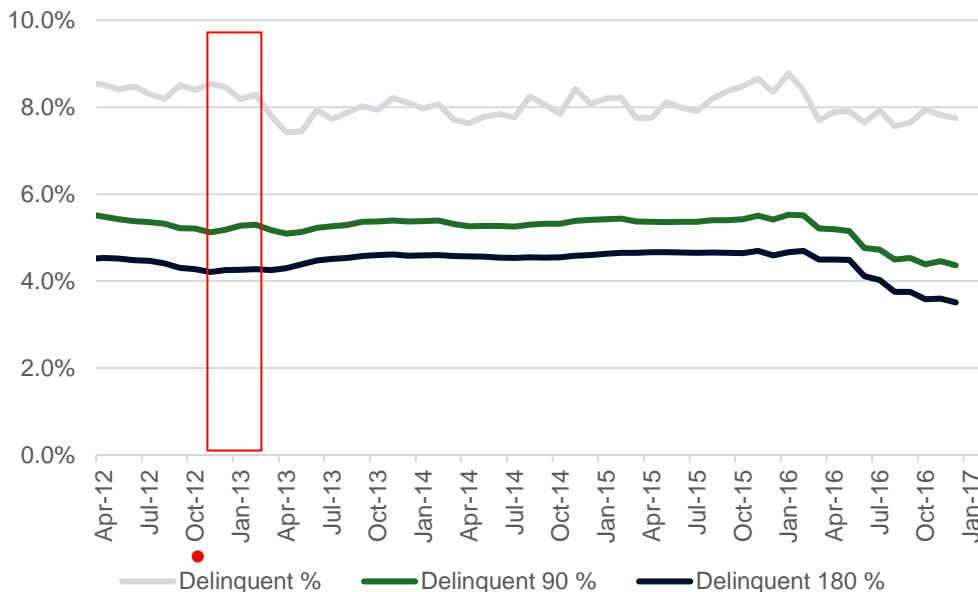
<sup>(1)</sup>30 days or greater delinquent as of the month end prior to the referenced storm

Figures are based on Fannie Mae’s Single-Family Loan Performance Dataset which masks some loan information in the first six months after acquisition due to borrower privacy considerations. Credit characteristics at time of origination.

### Hurricane Sandy

Hurricane Sandy occurred in October of 2012. The impacts of the devastating storm were spread across a broad geographic area. Damage was related to storm surge, high winds, and widespread power outages. The most severe damage was concentrated in the mid-Atlantic region, particularly in New York and New Jersey. The storm occurred during a time in which these areas were still experiencing elevated delinquency rates and significant home equity loss due to the economic impact of the great recession. Significant government assistance was provided post-storm, but the government did not provide financing to repay prior loans. Based on Fannie Mae’s Loan Performance Dataset, we observe that there was no major spike in delinquencies following the storm.

Figure 4. Hurricane Sandy - Delinquent loans as a percent of active UPB in the region





Delinquencies were elevated during this time period due to the recession. The ongoing economic recovery including significant home price growth led to a decline in delinquency rates, which outweighed the impact of storm. This is consistent with trends observed in the overall loan population in Fannie Mae’s book of business as defined in the historical dataset.

Figure 5. Hurricane Sandy - Comparison of 180+ day delinquencies in the Sandy affected region compared to total loan population excluding the Sandy region

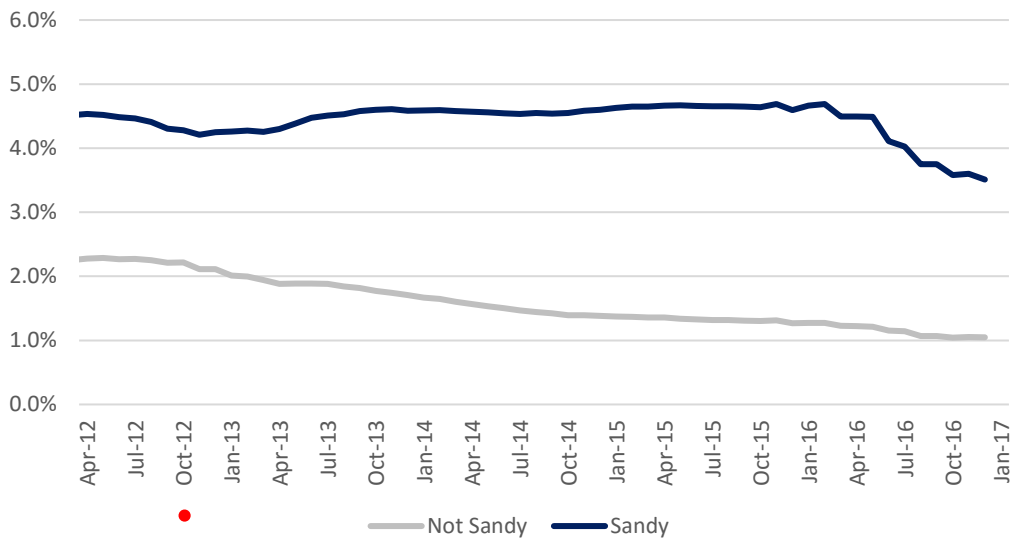


Figure 6. Hurricane Sandy impacted loans – profile distribution

	Not Sandy	Sandy FEMA Region
<b>Loan Count</b>	6,163,412	493,579
<b>Active UPB (\$B)</b>	\$1047.7	\$116.0
<b>Average Loan Size</b>	\$169,991	\$235,085
<b>WA OCLTV</b>	73.6%	69.7%
<b>WA Min FICO</b>	739	736
<b>WA DTI Ratio</b>	34.6%	35.9%
<b>WA Delinquency Rate<sup>(1)</sup></b>	5.31%	8.40%

<sup>(1)</sup>30 days or greater delinquent as of the month end prior to the referenced storm

Figures are based on Fannie Mae’s Single-Family Loan Performance Dataset which masks some loan information in the first six months after acquisition due to borrower privacy considerations. Credit characteristics at time of origination.



### Historical dataset conclusions

The Single-Family Loan Performance Dataset provides interesting insights into the impacts of Hurricanes Katrina and Sandy. Based on these two specific storms, we observe that the economic situation for these storms as well as the magnitude and types of government assistance were more dominant factors in long-term loan performance.

Fannie Mae is focused on providing support and assistance to homeowners in the event of disasters and has made updates to its disaster policies, particularly since the time during which Hurricane Katrina occurred. Fannie Mae now has standing policies in place to enable servicers to provide disaster-related forbearance to borrowers when necessary and further recently released the Extend Modification, an option for borrowers in areas impacted by disaster. These policies and programs are designed to help servicers assist homeowners as they work to recover and rebuild their homes and communities.

Every storm is different. The type of storm, the location of the storm, the factors influencing the region prior to the storm, the profile of borrowers and properties in the impacted region, and the magnitude and types of government assistance are just some of the factors that may influence loss outcomes. It is uncertain whether or not government assistance will be provided, or the degree to which it may be provided, for recent storm events.

### Applicability to CAS

As announced in [August](#) and [September](#), for Hurricanes Harvey and Irma, respectively, loans in Fannie Mae's fixed-severity CAS deals that have been granted disaster-related forbearance will not count as a credit event at 180 days delinquency. Loans that have been granted disaster-related forbearance will be reported as delinquent in the CAS remittance reports. Fannie Mae intends to enhance its [Data Dynamics®](#) tool to add a feature that will allow users to analyze the cohort of loans with disaster-related forbearance at a deal level.

It is too early to predict the ultimate outcome of the potential impacts of Hurricanes Harvey, Irma, and Maria. Fannie Mae's November and December CAS remittances will begin to provide preliminary observations into potential impacts on borrower payments.

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