Milliman's Mortgage Default Index as of 2019 Q3

Default risk of government-backed mortgages decreases once again in 2019 Q3 as refinance borrowers continue to take advantage of low interest rates

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The Milliman Mortgage Default Index (MMDI) is a lifetime default rate estimate calculated at the loan level for a portfolio of single-family mortgages. For the purposes of this index, default is defined as a loan that becomes 180 days delinquent or worse[1]. The results of the MMDI reflect the most recent data acquisition available from Freddie Mac, Fannie Mae, and Ginnie Mae, with measurement dates starting from January 1, 2014.

**Key findings: 2019 Q3**

During the third quarter of 2019, the MMDI for government-sponsored enterprise (GSE) acquisitions (loans acquired by Freddie Mac and Fannie Mae) decreased, dropping from 1.96% in Q2 to 1.81% for loans originating in Q3. Figure 1 provides the quarter-end index results for these loans segmented by purchase and refinance. Like the previous quarter, the Q3 decrease is largely driven by low-risk refinance borrowers once again taking advantage of the drop in interest rates. Refinance loans tend to have lower loan-to-value (LTV) ratios relative to purchase loans.

The MMDI for Ginnie Mae loans increased from 7.84% in Q2 to 8.00% in Q3 as can be seen in Figure 3 (segmented by purchase and refinance). The increase in the MMDI for Ginnie Mae loans is consistent with a continuation of the trend for prior origination quarters, with Ginnie Mae continuing to experience credit score drift relative to GSE acquisitions.

When reviewing quarter-over-quarter changes in the MMDI, it is important to note that the 2019 Q2 MMDI values for GSE and Ginnie Mae acquisitions have been restated since our last publication, changing from 1.99% to 1.96% and 8.15% to 7.84%, respectively. This is a result of updating actual home price movements from forecasts and including updated forecasts for future home price appreciation. Actual home price appreciation has exceeded projections, which can reduce the MMDI from period to period.

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[1] For example, if the MMDI is 10%, then we expect 10% of the mortgages originated in that month to have become 180 days delinquent or worse over its lifetime.
Figure 3 shows a summary of the latest MMDI. Figure 3 is segmented by loan purpose and filtered to Ginnie loans.

**FIGURE 3: MMDI DASHBOARD FOR GINNIE LOANS**

<table>
<thead>
<tr>
<th>GINNIE</th>
<th>DEFAULT RATE</th>
<th>QUARTERLY CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.00%</td>
<td>0.16% ↑</td>
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**TOTAL MONTHLY VOLUME:** $39.06bn  
**Y-O-Y CHANGE:** 31.71%

- **Purchase:** 7.55%
- **Refinance:** 8.44%

**Components of default risk**

The components of the MMDI that inform default risk are borrower risk, underwriting risk, and economic risk. Borrower risk measures the risk of the loan defaulting due to borrower credit quality, initial equity position, and debt-to-income ratio.

Underwriting risk measures the risk of the loan defaulting due to mortgage product features such as amortization type, occupancy status, and others. Economic risk measures the risk of the loan defaulting due to historical and forecasted economic conditions.

**Borrower risk results: 2019 Q3**

During Q3, borrower risk has decreased across all investor and loan types. With the decline in interest rates, rate/term refinance originations increased significantly. As borrowers refinance, they tend to do so at lower LTV ratios (with a cash-out refinance now being capped at 80% across all agencies), which reduces the credit risk of the underlying mortgages.

**Underwriting risk results: 2019 Q3**

Underwriting risk represents additional risk adjustments for property and loan characteristics such as occupancy status, amortization type, documentation types, loan term, and others. Underwriting risk after the global financial crisis remains low and is negative for purchase mortgages, which were generally full documentation, fully amortizing loans. In 2019 Q3, we have seen an increase in the percent of refinance loans that are rate/term. This loan type has a lower risk profile relative to cash-out refinance mortgages.

**Economic risk results: 2019 Q3**

Economic risk is measured by looking at historic and forecasted home prices. Actual home price appreciation has been robust from 2014 through 2019 which has resulted in embedded appreciation for older originations. This results in reduced credit risk for older cohorts. For more recent cohorts, we have observed and continue to anticipate slower home price growth (or negative growth for some local geographies), which contributes to increases in economic risk for recent origination years.

Note that the results above do include upward pressure as a result of economic risk for all investors (Freddie, Fannie, and Ginnie). Our models estimate a slowdown in home price growth relative to prior years, which puts upward pressure on mortgage default risk. If actual home price growth differs from these projections, the MMDI will adjust accordingly in future publications.

**Agency differences**

Freddie and Fannie acquisitions experienced a decreased risk profile over the prior three months. Most of the decrease is attributable to higher borrower credit quality as a function of an increased refinance market (which tends to have lower LTVs).

The credit risk of loans guaranteed by Ginnie Mae continue to experience an uptick in their default risk, which is consistent with the overall increasing trend that has occurred since 2014. Specifically, as the GSE’s have opened underwriting guidelines, higher credit quality originations have shifted towards GSE loans and away from Ginnie Mae loans.

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For more detail on the MMDI components of risk, visit www.milliman.com/MMDI.
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For more information and access to the loan-level detail, including seller, geographic, and channel break-outs, please reach out to Milliman.

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