Profile of Rural Borrowers
May 2016
Nuno Mota
Economic and Strategic Research
Disclaimer

Opinions, analyses, estimates, forecasts, and other views of Fannie Mae's Economic & Strategic Research (ESR) group included in these materials should not be construed as indicating Fannie Mae's business prospects or expected results, are based on a number of assumptions, and are subject to change without notice. How this information affects Fannie Mae will depend on many factors. Although the ESR group bases its opinions, analyses, estimates, forecasts, and other views on information it considers reliable, it does not guarantee that the information provided in these materials is accurate, current, or suitable for any particular purpose. Changes in the assumptions or the information underlying these views could produce materially different results. The analyses, opinions, estimates, forecasts, and other views published by the ESR group represent the views of that group as of the date indicated and do not necessarily represent the views of Fannie Mae or its management.
Overview

• Sizing rural market using HMDA data
  • Rural loans account for approximately 20% of total yearly conventional loan originations for owner-occupied properties and 14% of origination amount
  • For 2008-2014 there were approximately 970,000 conventional rural loans for owner-occupied homes annually, summing to approximately $160 billion

• How is rural lending different than urban based on Fannie Mae acquisitions?
  • Rural borrowers have smaller incomes, live in lower median income areas, are more likely to be self-employed, and less likely to be first-time homebuyers
  • Rural properties are more likely to be second homes and manufactured housing, have larger lot sizes, and a wider distribution of appraisal-to-purchase price ratio
  • Rural loans are for smaller amounts and are less likely to be ARMs

• Evolution of rural lending in the last decade based on Fannie Mae acquisitions
  • Differences between urban and rural areas and across rural areas were most pronounced during the 2005-2008 period and have since tended to decrease
  • The notable exception to this is borrower age, for which the spread between urban/rural and across rural areas has widened over the last decade
SIZING THE RURAL MARKET

* Method for sizing the rural market using Home Mortgage Disclosure Act (HMDA) data is detailed in the Appendix.
Rural Market Size by Total Number of Loans*

Rural loans’ share of the market has hovered around 20% since 2010, slightly lower than the rural share of the population of around 25%

Annual average number of rural loans is 970,000 in 2008-2014

Rural Market Size by Total Loan Amount*

Rural loans tend to be for smaller loan amounts, thus the rural share of total loan amount is around 6 percentage points below its share of the total number of loans.

Annual average total rural loan amount is $161.7 billion in 2008-2014.

State-Level Market Sizing (2004-2014)*

County-Level Market Sizing (2004-2014)*

Showing counties with an average of no more than 20 rural loans per year.

State: MD
County name: Charles County
Annual Avg. Rural Loans: 2,356
County Rural Share: 100.00%

State: AZ
County name: Maricopa County
Annual Avg. Rural Loans: 6,889
County Rural Share: 11.56%

Conventional share of rural loans averages 69.5% (Similarly, 69.0% for urban loans)

Farm Service Agency/Rural Housing Service (FSA/RHS) share of rural loans averages 8.6% (For urban loans the share is only 5.1%)

Rural Property Type*

Share of Rural Loans for Owner-Occupied Properties

Share of rural loans for owner-occupied properties averages 83.4%
(For urban loans the share is higher, at 87.1%)

Share of Rural Loans for Manufactured Housing

Share of rural loans for manufactured housing averages 7.5%
(Only 1.1% for urban loans)

HOW IS RURAL LENDING DIFFERENT?

* Method for analyzing differences between urban and rural borrower and loan attributes using data on Fannie Mae loan acquisitions is detailed in the Appendix.
Socio-Demographic Attributes*

Differences in shares of self-employed borrowers and first-time home buyers, as well as borrower financial characteristics and area income differences are most pronounced

| Rural Mean | $2,368 | $1,468 | $7,410 | 0.36% | 8.0% | 731 | 47.5yrs | 5.4% | 34.7% | 41.7% | 9.4% | $51,677 | $55,194 | 1.05 | 1.6 |

**Property Attributes – Small Relative Differences**

Difference Between Rural and Urban Areas as a Percentage of Urban Mean
(Negative Values Indicate Rural Values are Lower than Urban)

Differences in owner-occupancy, bedrooms, bathrooms, gross living area, and appraisal-to-purchase price ratio are statistically significant but not economically meaningful (smaller than 3% of urban mean)


** Owner-Occupied and Investor Property shares are calculated based on a sample of all loans; not just loans for owner-occupied homes.

*** Indicates difference is not statistically significant at the 5% confidence level.

Rural Mean 87.6% 4.9% 96.0% 59.4yrs 11.0% 6.4% 12.1% 18.0% 48.5% 3.20 2.01 1,963 sq.ft. 1.049 0.5%
Property Attributes – Large Relative Differences*

Difference Between Rural and Urban Areas as a Percentage of Urban Mean
(Negative Values Indicate Rural Values are Lower than Urban)

Given the small share of loans that second homes and manufactured housing account for in urban areas, the percentage differences in these attributes are large.

<table>
<thead>
<tr>
<th>Property Attribute</th>
<th>Rural Mean</th>
<th>Difference</th>
<th>Lot Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second Home*</td>
<td>7.5%</td>
<td>1.8%</td>
<td>104,269 sq.ft.</td>
</tr>
<tr>
<td>Manufactured Housing</td>
<td>2.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Condo</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Second home share difference is calculated based on a sample of all loans; not just loans for owner-occupied homes.
Loan Attributes*  
Difference Between Rural and Urban Areas as a Percentage of Urban Mean  
(Negative Values Indicate Rural Lower than Urban)

Differences in loan origination amount and types of loans are the most economically meaningful

** Indicates the difference is not statistically significant at 5% confidence level.

*** Spread at origination difference is displayed as a percentage of mean urban origination note rate.


<table>
<thead>
<tr>
<th>Rural Mean</th>
<th>Spread At Origination***</th>
<th>Origination Note Rate</th>
<th>Loan Origination Amount</th>
<th>Borrower DTI Ratio**</th>
<th>LTV</th>
<th>CLTV</th>
<th>FRM</th>
<th>ARM</th>
<th>Other Loan Type</th>
<th>FRM 15</th>
<th>FRM 30</th>
<th>FRM Other</th>
<th>ARM 7-1</th>
<th>ARM 5-1</th>
<th>ARM Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.8 bps</td>
<td>5.04%</td>
<td>$166.9k</td>
<td>37.0</td>
<td>70.4%</td>
<td>71.8%</td>
<td>96.3%</td>
<td>3.6%</td>
<td>0.07%</td>
<td>27.2%</td>
<td>61.4%</td>
<td>7.8%</td>
<td>0.7%</td>
<td>1.9%</td>
<td>0.9%</td>
<td></td>
</tr>
</tbody>
</table>

5/24/2016
EVOLUTION OF RURAL LENDING IN THE LAST DECADE
How was the experience over the last decade across the urban/rural divide?

- **Socio-Demographic Attributes***
  - Rural borrower incomes and median tract incomes fell relative to those of urban borrowers and census tracts during the 2008-2012 period
  - The difference in percentage of first time homebuyers increased post 2008
  - The difference in borrower age has been increasing since 2004, with a slight reversion of the trend in the 2009-2011 period

- **Property Attributes***
  - The difference in rural/urban owner-occupancy became more pronounced during the 2008-2012 period
  - During this same 2008-2012 period, the difference in property size decreased, while the average lot size difference increased

- **Loan Attributes***
  - Rural/Urban differences in spread at origination and mortgage rate have become less pronounced over the last decade
  - Borrower DTI differences between Rural/Urban loans increased during the 2008-2013 period

How different was the experience over the last decade across rural areas?

- **Socio-Demographic Attributes***
  - Differences in borrower age and the share of borrowers that are Millennials across rural areas have been widening
  - Differences in borrower FICO scores, monthly housing expenditures, and share of first-time homebuyers across rural areas were widest in the 2005-2008 period and have since decreased

- **Property Attributes***
  - Differences in property age were widest in the 2005-2008 period, decreased in the subsequent years, and have started to become wider since mid-2010

- **Loan Attributes***
  - Differences in loan type (FRM or ARM) across rural areas were widest in the 2005-2008 period and have since decreased
  - Difference in loan origination were also widest during that period then decreased and have been increasing slightly since mid-2010

All the above point toward differences across rural areas being most pronounced during the lead up to the housing crisis and having normalized since. Some differences remain post-housing crisis, which are indicative of the differing vitality of housing markets across rural areas in the post-crisis period.

## Contrasting Current Rural Loans Across Areas (2013-2015)*

<table>
<thead>
<tr>
<th>State Name</th>
<th>Borrower Age</th>
<th>FICO Score</th>
<th>Loan Amount ($1,000)</th>
<th>Property Age</th>
<th>Monthly Income ($)</th>
<th>Monthly Housing Expenditures ($)</th>
<th>DTI Ratio</th>
<th>Manufactured Housing**</th>
<th>Second Homes**</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT</td>
<td>44</td>
<td>761</td>
<td>190</td>
<td>17</td>
<td>6,155</td>
<td>1,312</td>
<td>34.6%</td>
<td>3.8%</td>
<td>9.8%</td>
</tr>
<tr>
<td>ND</td>
<td>37</td>
<td>752</td>
<td>189</td>
<td>18</td>
<td>7,298</td>
<td>1,374</td>
<td>32.7%</td>
<td>2.6%</td>
<td>1.8%</td>
</tr>
<tr>
<td>SD</td>
<td>40</td>
<td>762</td>
<td>148</td>
<td>20</td>
<td>6,169</td>
<td>1,143</td>
<td>32.6%</td>
<td>1.3%</td>
<td>5.7%</td>
</tr>
<tr>
<td>VT</td>
<td>45</td>
<td>751</td>
<td>160</td>
<td>34</td>
<td>6,093</td>
<td>1,325</td>
<td>36.3%</td>
<td>0.9%</td>
<td>21.3%</td>
</tr>
<tr>
<td>WY</td>
<td>42</td>
<td>756</td>
<td>200</td>
<td>20</td>
<td>6,909</td>
<td>1,331</td>
<td>33.7%</td>
<td>4.9%</td>
<td>5.1%</td>
</tr>
<tr>
<td>Average</td>
<td>41</td>
<td>756</td>
<td>177</td>
<td>22</td>
<td>6,525</td>
<td>1,297</td>
<td>34.0%</td>
<td>2.7%</td>
<td>8.7%</td>
</tr>
<tr>
<td>Avg. No VT</td>
<td>41</td>
<td>758</td>
<td>182</td>
<td>19</td>
<td>6,633</td>
<td>1,290</td>
<td>33.4%</td>
<td>3.2%</td>
<td>5.6%</td>
</tr>
</tbody>
</table>

** States with highest rural share of total state loans and low number of loans in HMDA:
- MT, ND, SD, VT, WY

Average: 41 years, 756 FICO, 177 loan amount, 22 property age, 6,525 monthly income, 1,297 monthly housing expenditures, 34.0% DTI ratio, 2.7% manufactured housing, 8.7% second homes.

** States with large share of total rural market and above average share of state loans that are rural:
- AL, IN, KY, MN, MO, NC, OK, SC, TN, WI

Average: 45 years, 749 FICO, 140 loan amount, 20 property age, 5,856 monthly income, 1,064 monthly housing expenditures, 32.5% DTI ratio, 2.1% manufactured housing, 10.2% second homes.

** States with highest number of rural loans in HMDA but with rural loans accounting for a small share of total state loans:
- CA, TX

Average: 46 years, 748 FICO, 219 loan amount, 18 property age, 7,681 monthly income, 1,720 monthly housing expenditures, 35.8% DTI ratio, 2.4% manufactured housing, 9.8% second homes.

* Median attributes based on Fannie Mae acquisitions of PMM loans on owner-occupied homes in 2013-2015.
** Share of all state’s Fannie Mae acquisitions of PMM loans in 2013-2015.
Conclusion

• Rural loans account for between 14% and 20% of conventional owner-occupied loan originations by loan amount and volume, respectively

• The analysis conducted indicates that there are important differences between urban and rural areas in terms of borrower attributes, property attributes, and loan characteristics

• Differences across rural areas are also highlighted, indicating that rural loans should not be viewed as one homogenous group
Details on Sizing the Rural Market

- To obtain an estimate of the rural market size, this project makes use of the Home Mortgage Disclosure Act (HMDA) data from 2004 to 2014
  - Market sized via total loan number and total origination amount method

- Analysis of HMDA data is restricted to first-lien loans originated in a given year
  - Further breakdowns are made by whether loans are conventional, for owner-occupied properties, and whether they are purchase money or refinance loans

- Loans categorized into either rural or urban are based on the census tract as defined by the Federal Housing Finance Agency (FHFA)
  - Latest rural areas definition detailed in the December 2015 “Enterprise Duty to Serve Underserved Markets Proposed Rule” (DTS Rule)
Details on How Rural Lending is Different

• Throughout, comparisons are made between Fannie Mae acquisitions of purchase money and refinance loans on owner-occupied homes in rural versus urban areas for 2004 to 2015

• Reported differences between urban and rural loans are the rural indicator coefficient estimates from regressions of state monthly average attributes of urban and rural loans that control for acquisition year, refi status, and state

\[ \text{Attribute}_{mo, re, st, yr} = \alpha + \beta \ast Rural + \lambda_{re} + \lambda_{st} + \lambda_{yr} + \epsilon_{mo, st, re, yr} \]

• Where:
  • \( mo \) = acquisition month
  • \( re \) = refinance indicator (\( \lambda_{re} \) is refinance indicator variable)
  • \( st \) = state (\( \lambda_{st} \) is state indicator variable)
  • \( yr \) = acquisition year (\( \lambda_{yr} \) is acquisition year indicator variable)

• \( \beta \) coefficient reported in the charts shows the difference between urban and rural loans for each attribute
Distributional Differences in Property Appraisal Relative to Purchase Price in 2015

Histograms show distribution of state monthly mean appraisal to purchase price ratio in Fannie Mae acquisitions of purchase money and refinance loans on owner-occupied homes in 2015.

Rural distribution is wider, suggestive of greater challenge in property appraisals in a rural setting.

Hence, having a higher mean but also a greater probability of an appraisal below 95% of purchase price in rural areas.
Distributional Differences in Lot Size in 2015

Not only do rural properties typically have a larger lot size, but the distribution of lot size in rural areas is also significantly wider.

Histograms shows distribution of state monthly mean lot size in Fannie Mae acquisitions of purchase money and refinance loans on owner-occupied homes in 2015.