Fannie Mae™

Mortgage Lender Sentiment Survey® – Technical Notes

Fannie Mae has been conducting the Mortgage Lender Sentiment Survey (MLSS), a quarterly online survey of lenders analyzing their current activities and market expectations, since the first quarter of 2014. Survey questions cover changes in and expectations for consumer mortgage demand, lenders' credit standards, post-mortgage origination execution strategy, mortgage servicing rights execution, and profit margin outlook. Each quarter's questionnaire also includes a special topic section that explores industry challenges, opportunities, and emerging topics. With these findings, mortgage and housing professionals are able to better understand industry trends and assess their own business practices.

Sample Information

The MLSS sample is comprised of Fannie Mae lender partners' senior executives, such as CEOs and CFOs, who have opted to take the survey. Lenders are classified by size, based on their loan origination volumes (larger, mid-sized, and smaller), and by type (depository institutions, credit unions, and mortgage banks). Each quarter, approximately 3,000 senior executives are selected to participate in the survey. The sample is designed to be split as evenly as possible across the groups classified by lender size. To ensure as many lenders are invited to participate from each group as possible, one senior executive is randomly selected from each lender within each size group of lenders before a second executive from that lender is selected.

Invitations

The executives who are selected receive an email from Fannie Mae with a unique survey URL to participate in the study. Survey participation is voluntary. While the survey is open, reminder emails are sent to executives who were invited to participate but have not completed the survey yet. Typically, three waves of reminder emails are sent to obtain the desired minimum of 200 respondents, which allows for analysis across all lender sizes and lender types.

Data Collection

The MLSS opens on the first Wednesday of the month in February (Q1), May (Q2), August (Q3), and November (Q4). Once the survey is open, responses are accepted for approximately 12 calendar days.

PSB Research manages the survey fieldwork to ensure all responses remain anonymous and cannot be linked back to individual people or institutions. Because the survey is online, all respondents are able to take it at their leisure with the option of stopping before it has been completed and returning to it later where they previously left off.

Weighting

Independent weighting schemes are used for the total, lender size, and lender type results.

Total and Lender Size Weighting Scheme

In the **Total and Lender Size Weighting Scheme**, each lender size group (larger, mid-sized, and smaller) is weighted equally within the overall sample, and each lending institution is weighted equally within their respective lender size group. There is no lender type weighting in this scheme.

The final sample composition of each wave of the MLSS usually includes a greater number of smaller institutions than larger institutions due to their greater number. If all institutions had an equal weight, reporting on all institutions as a whole (referred to as '*total*' in reporting) would reflect the opinions and attitudes of smaller institutions more than they represent in the actual market. This would be problematic since larger institutions represent a larger percentage of the market share for mortgage lending. To help account for this, larger, mid-sized, and smaller institutions are weighted equally, as three separate groups, at 1/3 each in the total. Within each size group, each institution is weighted equally regardless of the number of responses from an individual institution. If two executives from the same institution respond to the survey, they are both weighted so that their responses represent a single institutional respondent within their group. If an institution only has one respondent, it is only weighted according to the overall lender size group distribution of institutions.

Data points from Total, Larger Institutions, Mid-sized Institutions, and Smaller Institutions are reported using the **Total and Lender Size Weighting Scheme**.

An example of the **Total and Lender Size Weighting Scheme** is laid out below:

Group Weights		Institution Weights		Respondent Weights	
Larger Institutions	33.33%	Institution 1	50%	Respondent 1	50%
				Respondent 2	50%
		Institution 2	50%	Respondent 3	100%
Mid-sized Institutions	33.33%	Institution 3	33%	Respondent 4	100%
		Institution 4	33%	Respondent 5	100%
		Institution 5	33%	Respondent 6	100%
Smaller Institutions	33.33%	Institution 6	20%	Respondent 7	100%
		Institution 7	20%	Respondent 8	100%
		Institution 8	20%	Respondent 9	100%
		Institution 9	20%	Respondent 10	100%
		Institution 10	20%	Respondent 11	100%

Lender Type Weighting Scheme

The MLSS also reports data by institution type (mortgage banks, depository institutions, and credit unions). In the **Lender Type Weighting Scheme**, each lending institution is weighted equally.

Since lenders of all sizes are included within each group of institution type, results by type cannot be reported using the **Total and Lender Size Weighting Scheme** where they would not accurately represent the opinions of each type of lender due to uneven weighting by size. In the **Lender Type Weighting Scheme**, all institutions are weighted equally. If multiple executives from the same institution respond, each response is weighted equally so that together they represent a single case.

Data points from Mortgage Banks, Depository Institutions, and Credit Unions are reported using the **Lender Type Weighting Scheme**.

An example of the **Lender Type Weighting Scheme** is laid out below:

<table>
<tr><th>Institution Type</th><th colspan="2">Institution Weights</th><th colspan="2">Respondent Weights</th></tr>
<tr><td rowspan="2">Mortgage Bank</td><td rowspan="2">Institution 1</td><td rowspan="2">10%</td><td>Respondent 1</td><td>50%</td></tr>
<tr><td>Respondent 2</td><td>50%</td></tr>
<tr><td rowspan="3">Depository Institution</td><td rowspan="3">Institution 2</td><td rowspan="3">10%</td><td>Respondent 3</td><td>33%</td></tr>
<tr><td>Respondent 4</td><td>33%</td></tr>
<tr><td>Respondent 5</td><td>33%</td></tr>
<tr><td>Depository Institution</td><td>Institution 3</td><td>10%</td><td>Respondent 6</td><td>100%</td></tr>
<tr><td>Credit Union</td><td>Institution 4</td><td>10%</td><td>Respondent 7</td><td>100%</td></tr>
<tr><td>Mortgage Bank</td><td>Institution 5</td><td>10%</td><td>Respondent 8</td><td>100%</td></tr>
<tr><td>Mortgage Bank</td><td>Institution 6</td><td>10%</td><td>Respondent 9</td><td>100%</td></tr>
<tr><td>Credit Union</td><td>Institution 7</td><td>10%</td><td>Respondent 10</td><td>100%</td></tr>
<tr><td>Credit Union</td><td>Institution 8</td><td>10%</td><td>Respondent 11</td><td>100%</td></tr>
<tr><td>Credit Union</td><td>Institution 9</td><td>10%</td><td>Respondent 12</td><td>100%</td></tr>
<tr><td>Mortgage Bank</td><td>Institution 10</td><td>10%</td><td>Respondent 13</td><td>100%</td></tr>
</table>

Statistical Significance Testing

In every wave of the MLSS, data is tested for statistically significant differences against data from both the previous quarter and the same quarter of the previous year. Statistical significance is evaluated using the two-proportion z-score test and reported at the 95% confidence level. The two-proportion z-score is used to determine whether the results from two different groups (e.g., this quarter vs. last quarter, larger vs. mid-sized institutions in the same quarter) to a single survey question on some categorical characteristic are significantly different.

In the example below, the percentage of respondents who think “competition from other lenders” will drive their firm’s profit margin down is significantly higher in Q2 2017 (71%) than it was the previous year in Q2 2016 (44%). Furthermore, the share who said “market trend changes” will drive their firm’s profit margin down is significantly lower in Q2 2017 (26%) than it was in the previous quarter of Q1 2017 (51%). In both cases, the z-scores exceed 1.96, indicating that the results are statistically significantly different from the previous year and the previous quarter respectively at the 95% confidence level.

What do you think will drive the decrease in your firm's profit margin over the next three months? Please select the two most important reasons and rank them in order of importance. (*Showing % rank 1 + 2)*	Total		
	2016	2017	
	Q2	Q1	Q2
N=	*29*	*63*	*49*
Competition from other lenders	44%	66%	71%^
Market trend changes (i.e. shift from refinance to purchase)	8%	51%	26%*
Staffing (personnel costs)	12%	7%	21%
Government regulatory compliance	67%	21%	20%^
Consumer demand	6%	10%	18%
Non-GSE (other investors) pricing and policies	10%	8%	10%
Operational efficiency (i.e. technology)	10%	7%	10%
GSE pricing and policies	22%	13%	9%
Government monetary or fiscal policy	16%	10%	9%
Marketing expenses	3%	4%	4%
Servicing costs	0%	2%	0%

** Denotes a statistically significant change compared with Q1 2017 (previous quarter)*
^ Denotes a statistically significant change compared with Q2 2016 (same quarter of last year)

When survey data is shown as a net score from one question, Net Promoter Score (NPS)[1,2] Testing is used to determine statistical significance at the 95% confidence level. NPS testing takes the quantities of respondents for positive, neutral, and negative responses of two samples for a given question and compares the two samples' net margins of error for overlap.

In the below example, the net share of lenders who say their demand for government refinance mortgages has gone up over the past three months is significantly lower in Q2 2017 (-66%) than in both the previous quarter of Q1 2017 (-53%) and the previous year of Q2 2016 (17%). The margin of error around the Q2 2017 net score did not overlap with the margin of error surrounding either the Q1 2017 or the Q2 2016 net score, indicating that it is significantly different from both of the two earlier quarters.

[1] Bain & Company: Net Promoter System - Net Promoter System Home - Bain & Company. Web. <http://www.netpromotersystem.com/>
[2] Brendan Rocks, "Interval Estimation for the "Net Promoter Score," *The American Statistician 70.4* (2016): 365-72.

Over the <u>past three months</u>, apart from normal seasonal variation, did your firm's consumer demand for single-family refinance mortgages go up, go down, or stay the same? *Showing 'Government'* *"Up" = Went up significantly + Went up somewhat, "Down" = Went down significantly + Went down somewhat*	**Total**		
	2016	2017	
	Q2	Q1	Q2
N=	*124*	*126*	*146*
Net Up	17%	-53%	-66%*^
Count of Positive Responses	44	15	7
Count of Neutral Responses	56	32	34
Count of Negative Responses	24	79	104

** Denotes a statistically significant change compared with Q1 2017 (previous quarter)*
^ Denotes a statistically significant change compared with Q2 2016 (same quarter of last year)