

# User's Guide for Metropolitan Area Market Analysis (MAMA) Reports

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## **2009 Q3 Changes to MAMA**

The 2009 Q3 Metropolitan Area Market Analysis (MAMA) has a few changes influencing the content contained in the reports. Following is a complete list of changes for 2009 Q3.

### **New Home Price Measures**

Previous versions of MAMA used the FHFA All Transactions Index as the basis for estimating 1-yr Home Price Appreciation, 3-yr Home Price Appreciation, and Home Price Acceleration. Due to current housing market conditions, the FHFA index was compromised by the low level of sales activity, leading to values much more heavily influenced by refinance transactions than in the past. In addition, the growth of FHA lending and distressed sales activity further limited the value of the FHFA index.

In order to provide better estimates of home price appreciation in local markets, the “Home Prices” section of the MAMA reports are now based on one of the Loan Performance Home Price Indices (LP HPI) produced by First American Core Logic (FACL). Specifically, MAMA uses LP HPI version 3.0 based on the “Single Family Combined Tier Including Distressed Sales” tier. This tier reflects all arms-length sales transactions of single family attached and detached properties, including all short sales and REO sales. Moving to this index improves the accuracy of MAMA home price appreciation estimates and reduces the reporting time lag. Since these data are updated monthly, published MAMA reports will reflect the latest monthly data available from FACL. The 2009 Q3 MAMA uses LP HPI data through November 2009.

### **Adjusted Home Price Valuation (RMIC) Scores**

RMIC computes a Home Price Valuation score at the metro area and state levels of detail. Available in the “Affordability” section of MAMA reports, this score is calculated by a statistical model that evaluates the current level of home prices relative to income based on the historical balance between home prices and income in the area, along with the cost of financing and other local factors. The recent stress period highlighted the need to adjust this model in order to improve its value as an indicator of potential price over-valuation.

The Home Price Valuation indicators **vs. History**, **vs. State**, and **vs. Nation** are now based on the improved version of the model. Compared to the previous version, the new model produces fewer under-valued assessments in the current environment.

### **Temporarily Lagged Inventory Data**

Vacancy rates and other measures included in the “Housing Inventory” section of MAMA remain based on 2009 Q2 estimates. Moody’s Economy.com has delayed the release of 2009 Q3 estimates due to changes in their methodology for estimating vacancies. When these data are available, MAMA reports will be updated. We anticipate these data to be updated by end February 2010.

### **Note Concerning Unemployment Insurance Benefits**

The “% Receiving UI Benefits” found in the “Employment” section of MAMA reflects only continuing claims for unemployment insurance benefits. Extended benefits and emergency unemployment compensation are not included in these rates. These additional sources have grown to a majority of total UI benefits paid, but the data are not available at local or regional levels for use in MAMA.

## Focus of New MAMA

The MAMA reports provide signals indicating when data has moved outside of "normal" levels. These warning signs focus on how current values for the area compare to historical values for the area. The data studied here includes both trailing and leading indicators of the health of an area's housing market. These data are segmented into five categories:

- Home Prices
- Affordability
- Housing Inventory
- Credit Conditions
- Employment

Each of these categories influences borrower behavior, impacting future demand for housing, future home price appreciation, and default and loss rates. Areas with bright prospects will have few warning signs, while those with many high risk indicators will likely continue to struggle.

## Report Sections

MAMA reports are divided into sections as follows:

Page 1:

High Risk Indicators Summary  
Graphs: Home Price Appreciation, Employment Growth  
Section 1: Home Prices  
Section 2: Employment  
Section 3: Major Industry Concentrations

Page 2:

Graphs: Unemployment Insurance Benefits, Balance of Income/Inflation/Housing Costs  
Graphs: Vacancy Rates, Delinquency Rates  
Section 4: Housing Inventory  
Section 5: Affordability  
Section 6: Credit Conditions

Page 3 (state level reports only):

High Risk Indicators Summary (same as on Page 1)  
Section 7: High Risk Indicators Summary for all metro areas in the state

The following pages describe each section of the MAMA report.

These acronyms will be used in the remainder of this document to represent entities providing data sources:

BLS: Bureau of Labor Statistics  
BOC: Bureau of the Census  
ETA: US Employment and Training Administration  
FHFA: Federal Housing Finance Agency  
MEDC: Moody's Economy.com  
NAR: National Association of Realtors

## High Risk Indicators Summary

The top of page 1 in the MAMA report provides a list of high risk indicators by category. Each of the five categories is rated based on how current values compare to historical values for the area and control limits. Possible rating values include:

Symbol	Meaning	vs. History	vs. Control
●	“High Alert”	All measures indicate high risk	Key measure falls <b>well outside control limits</b>
◐	“Warning”	Some measures indicate high risk	Key measure falls <b>outside control limits</b>
○	“Normal”	No measures indicate high risk	Key measure falls <b>within control limits</b>

Separate ratings are provided for **vs. History** and **vs. Control** comparisons in the Summary. The **vs. Control** indicators isolate one key measure representing the category and determine if the measure currently falls within ranges typically associated with healthy housing markets. These ranges are:

Category	Key Measure	Normal Range	Warning	High Alert
Home Prices	1-yr Home Price Appreciation	2-8%	0-2%, 8-12%	< 0%, > 12%
Employment	Y/Y Employment Growth	1% or greater	0-1%	< 0%
Affordability	Home Price Valuation (RMIC)	Not Overvalued	Overvalued	Substantially Overvalued
Housing Inventory	Total Vacancy Rate	< 11%	11-15%	> 15%
Credit Conditions	60+ Delinquency Rate (McDash)	< 2.5%	2.5-4.0%	> 4.0%

The **vs. History** indicators are based on multiple measures associated with the category. These ratings are made by comparing current values to historical levels observed for the specific metro area/state. Current values are classified as “Very Low”, “Low”, “Average”, “High”, or “Very High” depending on where they lie among the historical distributions. Following is a complete list of measures used to determine High Risk Indicators:

Category	Data	High Risk Values
Home Prices	1-yr Home Price Appreciation	Very High, Very Low
	3-yr Home Price Appreciation	Very High, Very Low
Affordability	Home Price Valuation (RMIC)	Very High, High
	Affordability Index (NAR)	Very Low, Low
	Median Sales Price / Household Income	Very High
Housing Inventory	Total Vacancy Rate	Very High, High
	Housing Inventory / # Households	Very High
	Permits / 1000 Households	Very High, Very Low
Credit Conditions	60+ Delinquency Rate (McDash)	Very High, High
	90+ Delinquency Rate (McDash)	Very High, High
	Foreclosure Rate (McDash)	Very High, High
Employment	Y/Y Employment Growth	Very Low, Low
	% Receiving UI Benefits	Very High
	Y/Y Δ % Receiving UI Benefits	Very High

### Example: High Risk Indicator Summary

High Risk Indicators	vs. History	vs. Control	Value Relative to Metro Historical Average	Metro Value Relative to Control
Home Prices:	<input type="radio"/>	<input checked="" type="radio"/>	Normal	Current 1-yr HPA 0-2%
Employment:	<input checked="" type="radio"/>	<input checked="" type="radio"/>	Y/Y Employment Growth (Very Low), % Receiving UI Benefits (Very High), Y/Y Δ % Receiving UI Benefits (Very High)	Y/Y Employment Growth < 0%
Affordability:	<input type="radio"/>	<input type="radio"/>	Normal	Home Prices Not Overvalued
Housing Inventory:	<input checked="" type="radio"/>	<input type="radio"/>	Total Vacancy Rate (High), Housing Inventory / # Households (Very High)	Total Vacancy Rate < 11%
Credit Conditions:	<input checked="" type="radio"/>	<input type="radio"/>	60+ Delinquency Rate (Very High), 90+ Delinquency Rate (Very High), Foreclosure Rate (Very High)	60+ Delinquency Rate < 2.5%

The Summary begins with symbols indicating **vs. History** and **vs. Control** risk levels for each category. In this example, employment shows a “High Alert” compared with both historical values and control limits. However, affordability doesn’t appear to be a problem by either measure. Home prices appear “Normal” **vs. History**, although a “Warning” appears **vs. Control** since the current 1-year HPA falls in the 0-2% range. Inventory shows a “Warning” **vs. History** since vacancies and inventory levels are high compared to the norm for the area. However, the inventory levels are “Normal” **vs. Control** since the total vacancy rate is below 11%. Finally, delinquency and foreclosure rates are very high compared to historical levels for the area, but the rates are still within the control limits.

If there are multiple categories for an area on "High Alert" **vs. History** or **vs. Control**, then there are multiple factors indicating the potential for poor performance in the short-term.

### Sections Following Risk Summary

The information below the High Risk Indicator Summary provides details for each of the five risk categories. Page 1 covers Home Prices and Employment, while Page 2 covers Affordability, Housing Inventory, and Credit Conditions. Three types of information are generally provided for each category:

1. Raw Data Graph: Key measure values over time
2. Classification Graph: “Very Low” – “Very High” classifications **vs.** key measure over time
3. Panel Data: Current values and comparisons for multiple data elements

On Page 1, Raw Data Graphs are shown for 1-yr Home Price Appreciation and Y/Y Employment Growth rates directly below the Summary. The remainder of Page 1 provides Classification Graphs on the left and corresponding Panel Data on the right. The Panel Data assigns “Very Low” – “Very High” classifications for several data elements, focusing on how current metro area values compare to historical values, current state values, and current national values:

1. **vs. History**: Compare current values to historical levels over time for the metro area/state
2. **vs. State**: Compare current difference between metro area and state value to historical differences between metro area values and state values in the same state (**vs. State** comparisons are not relevant for State MAMA Reports)
3. **vs. Nation**: Compare current difference between metro area and national value to historical differences between metro area values and national values

Page 2 begins with Raw Data Graphs for four data elements: % Receiving UI Benefits, Balance Between Income & Housing Costs in Metro, Total Vacancy Rates, and 60+ Delinquency Rates. The remainder of Page 2 is similar to Page 1, with Classification Graphs on the left and corresponding Panel Data on the right.

### *Understanding Raw Data Graphs*

Raw Data Graphs provide observed historical data without smoothing. These graphs are NOT based on 4-quarter moving averages, but simply provide the quarterly observed values. Note that the scale of the y-axis will vary from one metro area/state to another.

1. 1-yr Home Price Appreciation Rate (Page 1):  
Annual home price growth based on Loan Performance Home Price Index (Single Family Combined Tier Including Distressed Sales); provided for the nation and the metro area/state.
2. Y/Y Employment Growth (Page 1):  
Percentage increase in total non-farm employed positions over the last four quarters; provided for the metro area/state. These data are compiled by MEDC based on BLS data.
3. Pct Receiving UI Benefits (Page 2):  
Also known as the Insured Unemployment Rate, this is the proportion of the eligible workforce that is continuing to receive unemployment insurance benefits. This is estimated by ETA as Number of continuing unemployment insurance claims / Covered employment. These data are only available at the state level.
4. Balance Between Income & Housing Costs (Page 2):  
Cumulative growth since 1980 in the Loan Performance Home Price Index (Single Family Combined Tier Including Distressed Sales), Median Household Income, and local Consumer Price Index (CPI); provided for the metro area/state. The local CPI is estimated by MEDC using data from BLS and BOC.
5. Total Vacancy Rate (Page 2):  
Number of Vacant Housing Units / Total Housing Stock; stock based on average housing stock during the quarter; rates are seasonally adjusted. Rates are estimated by MEDC based on numerous data sources provided by BOC.
6. 60+ Delinquency Rate (McDash) (Page 2):  
Count-based percentage of first lien mortgages 60+ days delinquent (MBA status) based on McDash Core Database covering large segment of industry; provided for the nation and the metro area/state.

### *Understanding Classification Graphs*

Each graph shows how the “Very Low” – “Very High” comparison values have changed over time. The time-series of classifications **vs. History**, **vs. State**, and **vs. Nation** are all provided. Since these graphs reflect 4-quarter moving averages, the most recent levels at the end of the graph will not typically match the current levels shown in the Panel data on the right.

The starting point for the time period graphed will vary depending on the data:

1-yr Home Price Appreciation, 4Q MA:	1980q4
Y/Y Employment Growth, 4Q MA:	1990q4
% Receiving UI Benefits, 4Q MA:	1990q4
Home Price Valuation (RMIC), 4Q MA:	1980q4
Total Vacancy Rate, 4Q MA:	1980q4
60+ Delinquency Rate (McDash), 4Q MA:	2000q4

### *Understanding Panel Data*

Panel Data sections provide data as of the quarter end noted in the top, right corner of the MAMA Report. The “Very Low” – “Very High” designations are based on where current values/differences lie among historical distributions. These levels are defined consistently for **vs. History**, **vs. State**, and **vs. Nation** comparisons as follows:

Very Low:	0-10 <sup>th</sup> Percentile
Low:	10-25 <sup>th</sup> Percentile
Average:	25-75 <sup>th</sup> Percentile
High:	75-90 <sup>th</sup> Percentile
Very High:	90-100 <sup>th</sup> Percentile

NOTE: All highlighted cells correspond to the data elements listed as High Risk Indicators for the area.

## Data Element Definitions

Following are descriptions of each data element included in the MAMA Reports.

### Section 1: Home Prices

1-yr Home Price Appreciation	Year-over-year home price appreciation based on the Loan Performance Home Price Index (Single Family Combined Tier Including Distressed Sales)
3-yr Home Price Appreciation	Home price appreciation over the last 3 years based on the Loan Performance Home Price Index (Single Family Combined Tier Including Distressed Sales)
Home Price Acceleration	Difference between 1-yr HPA this quarter and 1-yr HPA last quarter (1-yr HPA this quarter – 1-yr HPA last quarter)

### Section 2: Employment

Y/Y Employment Growth	Percentage increase in total non-farm employed positions over the last four quarters, compiled by MEDC based on BLS data
% Receiving UI Benefits	Also known as the Insured Unemployment Rate, this is the proportion of the eligible workforce that is continuing to receive <b>regular</b> unemployment insurance benefits. This is estimated by ETA as Continuing unemployment insurance claims / Covered employment. These data are only available at the state level.
Y/Y Δ % Receiving UI Benefits	Year-over-year percentage change in % Receiving UI Benefits. These data are only available at the state level.
Q/Q Δ % Receiving UI Benefits	Quarter-over-quarter percentage change in % Receiving UI Benefits. These data are only available at the state level.

### Section 3: Major Industry Concentrations

The BLS produces estimates of the number of employed workers by various job categories in its Current Establishment Survey. The hierarchical nature of the job categories allows them to be aggregated to different levels of detail. MAMA reports provide analysis based on the highest level of aggregation, often referred to as economic sectors or major industry segments. There are 11 of these in MAMA:

- Education/Health Services
- Financial Activities
- Government
- Information
- Leisure/Hospitality
- Manufacturing
- Natural Resources, Mining, and Construction
- Professional/Business Services
- Transportation and Utilities
- Wholesale/Retail Trade
- Other

Each metro area MAMA report gives focus to those major industries which have a higher proportion of total workers relative to proportions at the state and national levels. Each state level MAMA report highlights major industries with higher proportions of total workers relative to the national level. Both types of reports also provide the top 3 industry concentrations in the area.

Top 3 Concentrations	Three largest major industry concentrations in terms of number of employed workers. Metro area reports show the top 3 for the metro area, while state reports show the top 3 in the state.
High Concentration Relative to State	For metro area reports, three major industries with a high proportion of total employment relative to the proportion observed at state level
High Concentration Relative to Nation	For metro area and state reports, three major industries with a high proportion of total employment relative to the proportion observed nationally

#### *Section 4: Affordability*

Home Price Valuation (RMIC)	Proprietary score representing percentage home prices are over-valued based on relationship between home prices and average income levels; Positive values are over-priced; Negative values are under-priced
Affordability Index (NAR)	Score produced by NAR representing housing affordability; Values over 100 are affordable; values under 100 are not affordable
Median Sales Price	Median price of existing home sales estimated by MEDC based on data from NAR and BOC (seasonally adjusted)
Median Sales Price / Household Income	Ratio between median sales price and median household income based on MEDC estimates of income; household income is extrapolated using per capita income values due to an information lag of 2-4 quarters.
(3-yr Sales Price $\Delta$ ) – (3-yr Income $\Delta$ )	Difference between 3-yr Sales Price Appreciation rate and percentage growth in median household income over the last 3 years (3-yr Growth in Sales Price – 3-yr Growth in MHH income)

#### *Section 5: Housing Inventory*

Total Vacancy Rate	Total number of vacant housing units divided by the average total housing unit stock during the quarter (seasonally adjusted). Rates estimated by MEDC based on numerous survey-associated data sources provided by BOC.
1-yr Change Total Vacancy Rate	Current Total Vacancy Rate / Total Vacancy Rate one year ago
Housing Inventory / # Households	Total housing stock / Total number of households in 1000s, estimated by MEDC based on data from BOC
% Owner Occupied	Owner-occupied housing stock / Total housing stock, estimated by MEDC based on data from BOC
Permits / 1000 Households	Total number of 1-4 unit residential permits over the last 4 quarters / Total number of households in 1000s, estimated by MEDC based on data from BOC

*Section 6: Credit Conditions*

30+ Delinquency Rate (McDash)	Count-based percentage of first lien mortgages 30+ days delinquent (MBA status) based on servicer data from McDash Core Database covering majority of mortgage industry
60+ Delinquency Rate (McDash)	Count-based percentage of first lien mortgages 60+ days delinquent (MBA status) based on servicer data from McDash Core Database covering majority of mortgage industry
90+ Delinquency Rate (McDash)	Count-based percentage of first lien mortgages 90+ days delinquent (MBA status) based on servicer data from McDash Core Database covering majority of mortgage industry
Foreclosure Rate (McDash)	Count-based percentage of first lien mortgages in some stage of foreclosure process based on servicer data from McDash Core Database covering majority of mortgage industry
Personal Bankruptcy Rate	Seasonally adjusted annualized rate of personal bankruptcies in the state for the most recent quarter / Average number of households in the state over last 4 quarters. Bankruptcy figures estimated by MEDC using data from US District Courts.

*Section 7: High Risk Summary for all Metro Areas in the State (State report only)*

For state-level MAMA reports, Page 3 provides a summary of high risk indicators for all metro areas in the state. This summary includes the ratings for each of the 5 risk categories.

## Frequently Asked Questions

How should I think about the default risk in an area if there are mixed signals?

Think of MAMA's High Risk Indicators like the set of warning signals on your vehicle's dashboard. Each signal is a notice that some element of risk has reached a level where further attention is warranted, but the attention needed varies from indicator to indicator. For example, the oil pressure light or low fuel indicator is likely to generate a prompter response than the "service needed" or "check windshield wiper fluid" lights. Likewise in MAMA, home prices and affordability may demand more of our attention than housing inventory or credit conditions, depending on our focus. However, for housing markets to appreciate at healthy levels, housing demand and supply must be in balance. This generally requires steady employment growth, affordable house prices, and moderate inventory levels.

*In the current environment, positive housing inventory data should be discounted due to shadow inventory associated with seriously delinquent mortgages. The properties securing these mortgages are still occupied, so these are not counted as vacancies. More focus should be given to employment and affordability data. Reducing inventory levels will require net job growth and affordable home price levels relative to income.*

Why don't you have a single score to rank areas?

The scores we have developed and the scores we have seen from other sources do not possess sufficient resolving power to warrant their use as single values to rank relative risk.

How do the "Very Low" – "Very High" classifications relate to the warning signs?

Depending on the indicator, "Very Low," "Low," "High," "Very High," or some combination of these may correspond to heightened default risk. For example, both "Very Low" and "Very High" home price appreciation levels are considered warning signs. When California home price growth was through the roof in the early-mid 2000s, it was reflecting a home price bubble inflated in part by speculators. Likewise, the recent strong depreciation in California is a bad sign since borrowers acquiring new loans may lose equity quickly after purchasing a new home.

The table on Page 2 indicates which classifications ("Very Low" – "Very High") represent high risk signals for each data element.

Why do I get no high risk indicators when data are "Very Low" or "Very High" in some cases?

Not every extreme of every indicator is indicative of heightened default risk. When an extreme reading of an indicator is not associated with heightened default risk, no warning is needed, and so none is given. For example, very low vacancy rates would reflect sufficient demand for housing, likely leading to future home price appreciation.

What do **vs. History**, **vs. Control**, **vs. State**, and **vs. Nation** mean, and which of these is most important?

The comparison of a current area value **vs. History** places that value in the distribution of all historical values recorded for the area.

The comparison of a current area value **vs. Control** compares that value to fixed control limits. These limits were selected based on study of historical values across all areas over time. The same set of targets is applied for every metro area/state. A comparison **vs. Control** tells us if the current value falls in a range consistent with those typically observed in healthy housing markets.

The comparison **vs. State** is made in two steps. First, compute the difference between the current value for the metro area and the current value for the state. Second, place this difference in the distribution of all historical differences recorded between the state values and the metro area values for all metro areas in the state. A comparison **vs. State** tells us if the gap between the metro area value and the state value is extreme relative to all historical differences among the metro areas in the state.

The comparison **vs. Nation** is made in two steps. First, compute the difference between the current value for the metro area and the current national (average) value. Second, place this difference in the distribution of all historical differences recorded between the national values and the metro area values. A comparison **vs. Nation** tells us if the gap between the metro area value and the national average value is extreme relative to all historical differences between metro areas and the nation.

Which of the five categories (Home Prices, Affordability, etc.) is most important for projecting future default rates?

High home price appreciation levels can mask problems with the other categories, so it can be viewed as most important under certain conditions. Otherwise, the amplitude and timeliness of change in default risk is generally greatest in response to employment growth, with negative employment growth serving as a sign of growing default risk, and historically high employment growth generally associated with declining or stable default risk.

Extremely low affordability, especially when combined with low or negative employment growth is a danger sign, though there may be a significant lag in the timing of excessive default rates when home prices run ahead of household income. The greater the affordability gap when default rates climb, however, the greater the likely retreat of home appreciation, with the resulting greater severity of defaults that fail to cure. Probably the least forward-looking indicator of default risk would be the observed delinquency and foreclosure rates, except for the associated potential impact of increasing housing supply in the form of future distressed sales.

Why don't you include the "official" unemployment rates from the Bureau of Labor Statistics (BLS)?

Unemployment rates based on the BLS Household Survey (estimated counts of labor force participants and their work status) suffer from definitional and measurement process deficiencies that make them poor initial indicators of housing market conditions, although their behavior may be helpful to note once other indicators of trouble kick in. For example, in the presence of large percentage drops in employment reported by the BLS Establishment Survey (reported and estimated counts of jobs by industry), unemployment rates may spike upwards, remain stable and relatively low, or even decline. The loss of jobs, and ensuing loss of household income, is a bad signal for housing demand, but the unemployment rate may give a misleading signal by failing to capture counts of workers who have lost jobs and moved away with their families, or workers who have lost their jobs but are no longer counted as workforce participants.

Why are some pieces of data from the old versions of MAMA not included in this new version?

The new edition of MAMA Reports focuses on indicators of area variation in mortgage default risk. Some of the economic measures reported in earlier editions add interesting color to a report on housing market activity, but do not add significant value for detecting changes in area mortgage default risk vulnerability. Once presence or absence of heightened default risk has been assessed, these additional economic measures can still be studied for additional insight into market conditions, but these are not provided here.