

ECONOMIC REAL ESTATE TRENDSSM

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PMI MORTGAGE INSURANCE CO.



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Model Changes to Improve PMI's U.S. Market Risk Index

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PMI's Economics & Strategy Department works continually to improve the forecasting accuracy of our U.S. Market Risk Index. Sometimes these changes are small, but at other times they are more significant — as they are with this quarter's release of the Risk Index. We have made a number of changes to the model in order to make this PMI's most robust Risk Index yet.

Specifically, two changes to the underlying model accounted for the bulk of the enhancements to the Risk Index. First, in order to get more accurate readings on MSA-level home values, we substituted

the repeat-transaction home price index from the firm Loan Performance (LP, a division of First American CoreLogic, Inc.) for that produced by the Federal Housing Finance Agency (FHFA, formerly the Office

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FIGURE 1: REFINANCINGS HAVE BIASED HOME VALUES UPWARD RECENTLY





Model Changes

(continued from page 1)

of Federal Housing Enterprise Oversight, OFHEO). Second, we moved from state-based measures of mortgage foreclosures to MSA-based measures in order to more accurately capture the home price impact of foreclosures at a local level.

PMI's Risk Index is an estimate of the probability that house prices in an MSA will be lower in two years than they are today. It does not indicate the pattern of house price movements over that two-year period, nor does it estimate the magnitude of price movements. An updated Risk Index is produced each quarter for all 381 MSAs in the nation.

Figure 1 compares the year-ago changes in national house price indices (HPIs) as measured by both LP and FHFA. It is clear that the performance of house values in the LP measure has been significantly worse in the past few years than the FHFA measure. While there are several reasons for this (including the more restrictive coverage of the FHFA database), one of the key reasons for the difference between the two HPIs is that the FHFA index includes refinance transactions, while the LP measure only includes purchase activity. FHFA does produce purchase-only HPIs at the national and state levels, but not at the MSA level. A number of studies have shown that the inclusion of refinance transactions in HPIs creates a biased estimate of house values because the non-arms length feature of a refinance provides an opportunity for an overvaluation.¹ Using the MSA-based FHFA HPI creates the risk of upward house price bias in the Risk Index. Substituting the LP HPI removes this risk, since it includes only purchase activity.

Early in 2008, we began including foreclosure data in the Risk Index. This modification was made because foreclosed properties are more than just an increment to the supply of homes for

sale; our research suggests that they add additionally to downward price movements. As a result, rising foreclosure rates in a given area should put more downward pressure on house prices than an increase in homes for sale of the same magnitude.

While there are many sources of data on foreclosed properties, only the quarterly Mortgage Delinquency Survey from the Mortgage Bankers Association (MBA) has the combination of broad coverage, data quality, and lengthy time series required for our modeling work. Unfortunately, the MBA data are available only at the national and state levels, not the MSA level. Even with this limitation, the addition of the MBA foreclosure data in our Risk Index models has improved its forecasting ability. With the current revision of the Risk Index, we have also combined the state-level MBA data with PMI's own data on foreclosures by MSA, and as a result, we have been able to estimate consistent series of home foreclosures by MSA. Adding the MSA-based foreclosure data allows us to create more accurate estimates of the Risk Index by MSA, since local foreclosure rates can differ substantially from state averages.

In addition to changes in the model that creates the Risk Index, we have also revamped the classification of the scores into various risk categories (see **Table 1**).

TABLE 1: RISK CATEGORIES

Prior Range	New Range	Description
0-10	0-10	Minimal
10-20	10-30	Low
20-40	30-50	Moderate
40-60	50-70	Elevated
60-100	70-100	High

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¹ See, for example, "Removing Appraisal Bias from a Repeat-Transactions House Price Index: A Basic Approach," Andrew Leventis, OFHEO Working Paper 06-1, February 2006.

Economic Trends in the Nation's MSAs

PMI's proprietary U.S. Market Risk Index measures the likelihood of lower home price in two years for each of the nation's 381 metropolitan statistical areas and divisions (MSAs). The Risk Index uses economic, housing, and mortgage market factors (including home price appreciation, employment, affordability, excess housing supply, interest rates, and foreclosure activity) to determine these probabilities.

According to PMI's Risk Index, risk in most of the nation's MSAs continued to increase as the nation's recession deepened during the third quarter of 2008. Increasing rates of unemployment and foreclosure placed further downward pressure on current rates of house price appreciation and upward pressure on housing supply that jointly resulted in increasing risk of price declines in the next two years. MSAs in **Florida, California, Arizona**, and **Nevada** continue to lead the nation in risk, with a growing number of MSAs in the **Industrial Midwest** and along the **East Coast** seeing marked increases in their probabilities of lower house prices in two years.

During the third quarter of 2008, risk increased in all of the nation's 50 largest MSAs. Looking at all of the 381 MSAs, 369 (97 percent) of them saw an increase in risk – highlighting the breadth of the economic and housing downturns. The average risk score rose from 21.9 to 28.9 between the second and third quarters of 2008.

Trends in Risk

Among the nation's 50 largest MSAs, 16 had a risk score exceeding 70, placing them in the highest risk category. Seven had risk scores between 50 and 70, which led to their designation of elevated risk. We estimate that approximately half of the nation's 50 largest MSAs have an elevated (Risk Index of 50-70) or high (Risk Index of 70-100) probability of lower house prices by the end of the third quarter of 2010 relative to the third quarter of 2008.

Across all of the nation's 381 MSAs, 26 percent (100) ranked in the elevated and high risk categories. On the other hand, 66 percent (251) of the MSAs had a minimal (Risk Index of 0-10) or low (Risk Index of 10-30) probability of lower prices in two years. This pattern is consistent with last quarter's results. Additionally, risk is rising fastest in the larger urban centers, while the smaller MSAs (although seeing increases in risk) are faring relatively better in their current and projected price performance. What is unique to this quarter, however, is the marked increase in risk across more regions of the nation. While the MSAs located in **California, Nevada, Florida**, and **Arizona** consistently rank as the highest risk areas, increased risk is also appearing in the **Industrial Midwest** and **East Coast**. This development is consistent with current economic events, as unemployment rates in both of these regions have risen sharply in response to the decline in manufacturing activity (especially autos) and the financial sector crisis.

One of the two primary drivers of the increased risk scores is the continued high level of foreclosure rates. According to the Mortgage Bankers Association's National Delinquency Survey, the percentage of loans on which foreclosure actions started during the third quarter was 1.07 percent, down by one basis point from last quarter but up by 29 basis points from a year ago on a non-seasonally adjusted basis. (Note that foreclosure moratoria in some states that went into effect in the third quarter were probably responsible for much of that quarter's small drop in foreclosure rates, but that will only push many of the foreclosures into 2009 rather than eliminate them.) The delinquency rate for mortgage loans on one-to-four-unit residential properties stood at 6.99 percent of all loans outstanding at the end of the third quarter of 2008, up by 58 basis points from the second quarter of 2008, and up by 140 basis points from a year ago on a seasonally adjusted basis. Nine states had rates of foreclosure starts that were above the national average: **Nevada, Florida, Arizona, California, Michigan, Rhode Island, Illinois, Indiana**, and **Ohio**.

During the third quarter, risk increased most in the **Central** and **Eastern** regions of the nation. **Illinois** and **Michigan** saw significant increases in their average risk scores, primarily in response to rising unemployment and foreclosure rates. Increasing unemployment rates also accounted for a significant increase in average

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Worst Performing MSAs

COMPARISON BY PMI RISK SCORE

MSA	RISK CLASSIFICATION	RISK SCORE
Riverside-San Bernardino-Ontario CA	High	99.9
Miami-Miami Beach-Kendall FL	High	99.9
Lake Havasu City-Kingman AZ	High	99.9
Cape Coral-Fort Myers FL	High	99.9
Fort Lauderdale-Pompano Beach-Deerfield Beach FL	High	99.8
Lakeland-Winter Haven FL	High	99.8
Los Angeles-Long Beach-Glendale CA	High	99.8
Punta Gorda FL	High	99.8
West Palm Beach-Boca Raton-Boynton Beach FL	High	99.6
Naples-Marco Island FL	High	99.5

COMPARISON BY ANNUAL HOUSE PRICE APPRECIATION RATE

MSA	RISK CLASSIFICATION	HOUSE PRICE APPRECIATION RATE
Los Angeles-Long Beach-Glendale CA	High	-27.99
Sacramento-Arden-Arcade-Roseville CA	High	-28.31
Bakersfield CA	High	-28.48
Vallejo-Fairfield CA	High	-28.62
Modesto CA	High	-29.09
Riverside-San Bernardino-Ontario CA	High	-29.21
Stockton CA	High	-29.34
Oakland-Fremont-Hayward CA	Elevated	-29.57
Merced CA	High	-29.74
Salinas CA	High	-29.77

COMPARISON BY Demeaned UNEMPLOYMENT RATE

MSA	RISK CLASSIFICATION	DEMEANED UNEMPLOYMENT RATE
El Centro CA	High	8.80
Palm Coast FL	High	5.20
Cape Coral-Fort Myers FL	High	4.65
Elkhart-Goshen IN	Elevated	4.64
Punta Gorda FL	High	4.12
Monroe MI	Moderate	3.97
Naples-Marco Island FL	High	3.52
Ocala FL	High	3.38
Flint MI	High	3.23
Riverside-San Bernardino-Ontario CA	High	3.01

COMPARISON BY AFFORDABILITY SCORE

MSA	RISK CLASSIFICATION	AFFORDABILITY SCORE
Honolulu HI	High	63.88
Atlantic City-Hammonton NJ	High	67.29
Yuma AZ	High	67.34
Kingston NY	High	71.02
Ocean City NJ	High	73.49
New York-White Plains-Wayne NY-NJ	Elevated	79.20
Nassau-Suffolk NY	Elevated	81.03
Grand Junction CO	Low	81.05
Parkersburg-Marietta-Vienna WV-OH	Moderate	82.88
Barnstable Town MA	Elevated	83.09

Best Performing MSAs

COMPARISON BY PMI RISK SCORE

MSA	RISK CLASSIFICATION	RISK SCORE
Lawton OK	Minimal	<1
Texarkana TX-Texarkana AR	Minimal	<1
Fayetteville NC	Minimal	<1
McAllen-Edinburg-Mission TX	Minimal	<1
Killeen-Temple-Fort Hood TX	Minimal	<1
Cheyenne WY	Minimal	<1
Wichita Falls TX	Minimal	<1
Little Rock-North Little Rock-Conway AR	Minimal	<1
Laredo TX	Minimal	<1
Tulsa OK	Minimal	<1

COMPARISON BY ANNUAL HOUSE PRICE APPRECIATION RATE

MSA	RISK CLASSIFICATION	HOUSE PRICE APPRECIATION RATE
Peoria IL	High	23.55
Binghamton NY	Minimal	8.92
Florence-Muscle Shoals AL	Minimal	8.83
Sherman-Denison TX	Minimal	8.56
Victoria TX	Minimal	8.34
Odessa TX	Minimal	7.98
Sheboygan WI	Minimal	7.31
Rocky Mount NC	Low	6.86
College Station-Bryan TX	Minimal	6.71
Charleston WV	Minimal	5.93

COMPARISON BY Demeaned UNEMPLOYMENT RATE

MSA	RISK CLASSIFICATION	DEMEANED UNEMPLOYMENT RATE
Odessa TX	Minimal	-2.03
Farmington NM	Minimal	-2.00
Lafayette LA	Minimal	-1.68
Charleston WV	Minimal	-1.67
Longview TX	Minimal	-1.66
Lake Charles LA	Minimal	-1.62
Las Cruces NM	Minimal	-1.60
Salt Lake City UT	Low	-1.55
McAllen-Edinburg-Mission TX	Minimal	-1.50
Morgantown WV	Minimal	-1.49

COMPARISON BY AFFORDABILITY SCORE

MSA	RISK CLASSIFICATION	AFFORDABILITY SCORE
Fayetteville NC	Minimal	179.71
Canton-Massillon OH	Minimal	166.03
Cheyenne WY	Minimal	163.65
Lawton OK	Minimal	163.49
Cleveland-Elyria-Mentor OH	Minimal	156.48
Springfield IL	Minimal	152.89
Killeen-Temple-Fort Hood TX	Minimal	151.34
Fargo ND-MN	Minimal	150.97
Rochester NY	Minimal	148.32
Tulsa OK	Minimal	147.72



MSA

	STATE	RISK RANK	PMI U.S. MARKET RISK INDEX ¹		PRICE APPRECIATION ³			
			3Q '08	2Q '08 ²	Volatility ⁴	3Q '08	3Q '07	Difference
Riverside-San Bernardino-Ontario CA	CA	High	99.9	99.9	35.0	-29.21	-15.10	-14.11
Miami-Miami Beach-Kendall FL	FL	High	99.9	99.9	28.1	-27.92	-3.49	-24.42
Fort Lauderdale-Pompano Beach-Deerfield Beach FL	FL	High	99.8	99.5	27.8	-23.23	-9.52	-13.71
Los Angeles-Long Beach-Glendale CA	CA	High	99.8	99.6	29.0	-27.99	-8.79	-19.20
West Palm Beach-Boca Raton-Boynton Beach FL	FL	High	99.6	98.7	31.4	-19.29	-13.56	-5.73
Las Vegas-Paradise NV	NV	High	99.4	95.9	32.7	-27.08	-11.76	-15.32
Tampa-St. Petersburg-Clearwater FL	FL	High	99.2	97.1	22.0	-16.52	-9.40	-7.12
Orlando-Kissimmee FL	FL	High	98.7	95.6	26.0	-20.04	-9.82	-10.22
Santa Ana-Anaheim-Irvine CA	CA	High	98.3	97.0	26.8	-21.37	-8.38	-12.99
Jacksonville FL	FL	High	97.3	91.1	13.9	-8.30	-3.18	-5.12
Phoenix-Mesa-Scottsdale AZ	AZ	High	96.8	85.1	28.6	-24.18	-9.69	-14.49
San Diego-Carlsbad-San Marcos CA	CA	High	95.7	93.1	30.2	-24.52	-12.21	-12.31
Providence-New Bedford-Fall River RI-MA	RI	High	95.1	88.3	23.0	-13.54	-4.91	-8.62
Sacramento--Arden-Arcade--Roseville CA	CA	High	95.0	92.8	31.9	-28.31	-14.34	-13.97
Edison-New Brunswick NJ	NJ	High	72.2	53.2	17.2	-5.95	-4.52	-1.43
Detroit-Livonia-Dearborn MI	MI	High	70.1	67.9	6.9	-7.18	-2.87	-4.31
Oakland-Fremont-Hayward CA	CA	Elevated	68.2	55.4	24.2	-29.57	-10.38	-19.19
Nassau-Suffolk NY	NY	Elevated	65.6	42.5	16.2	-8.09	-3.99	-4.10
Newark-Union NJ-PA	NJ	Elevated	64.9	40.6	13.8	-7.21	-2.83	-4.38
Washington-Arlington-Alexandria DC-VA-MD-WV	DC	Elevated	62.3	37.2	23.2	-14.45	-6.19	-8.27
Virginia Beach-Norfolk-Newport News VA-NC	VA	Elevated	55.0	40.2	15.7	-4.76	-0.46	-4.29
Baltimore-Towson MD	MD	Elevated	53.3	24.7	16.6	-5.76	-0.33	-5.43
New York-White Plains-Wayne NY-NJ	NY	Elevated	50.5	26.2	14.4	-6.00	-2.13	-3.88
Boston-Quincy MA	MA	Moderate	42.8	16.9	16.0	-6.80	-5.93	-0.87
Minneapolis-St. Paul-Bloomington MN-WI	MN	Moderate	37.1	25.3	10.9	-11.39	-3.18	-8.21
San Jose-Sunnyvale-Santa Clara CA	CA	Moderate	30.9	17.0	18.7	-22.79	-4.43	-18.36
Portland-Vancouver-Beaverton OR-WA	OR	Low	22.2	12.1	12.0	-8.32	2.36	-10.68
Atlanta-Sandy Springs-Marietta GA	GA	Low	21.0	11.9	4.5	-5.56	-1.56	-4.00
San Francisco-San Mateo-Redwood City CA	CA	Low	19.5	12.8	15.4	-17.02	0.17	-17.19
Cambridge-Newton-Framingham MA	MA	Low	17.8	5.4	11.9	-3.74	-2.27	-1.47
Philadelphia PA	PA	Low	13.3	6.0	11.0	-3.30	0.86	-4.15
Warren-Troy-Farmington Hills MI	MI	Low	12.2	7.0	8.4	-8.33	-6.10	-2.22
Seattle-Bellevue-Everett WA	WA	Low	10.5	5.7	10.3	-9.88	3.88	-13.76
Chicago-Naperville-Joliet IL	IL	Low	10.0	5.7	9.0	-10.35	-1.43	-8.93
St. Louis MO-IL	MO	Minimal	9.3	1.8	5.9	-4.32	0.37	-4.69
Milwaukee-Waukesha-West Allis WI	WI	Minimal	8.3	3.6	8.7	-3.66	-0.47	-3.20
Cincinnati-Middletown OH-KY-IN	OH	Minimal	7.2	2.9	2.6	-0.81	0.93	-1.75
Nashville-Davidson--Murfreesboro--Franklin TN	TN	Minimal	6.3	2.9	3.8	-2.56	2.98	-5.54
Austin-Round Rock TX	TX	Minimal	5.4	2.3	7.1	5.81	9.88	-4.06
Kansas City MO-KS	MO	Minimal	5.4	2.7	2.5	-2.88	2.17	-5.05
Denver-Aurora CO	CO	Minimal	4.1	2.5	4.8	-3.09	-2.21	-0.88
Indianapolis-Carmel IN	IN	Minimal	3.9	1.8	1.2	1.05	1.84	-0.79
Cleveland-Elyria-Mentor OH	OH	Minimal	3.4	<1	8.8	-6.41	-8.30	1.90
Columbus OH	OH	Minimal	2.8	<1	5.0	-2.84	0.46	-3.31
Charlotte-Gastonia-Concord NC-SC	NC	Minimal	2.2	<1	2.0	-3.23	4.54	-7.77
San Antonio TX	TX	Minimal	<1	<1	3.6	2.16	8.13	-5.98
Pittsburgh PA	PA	Minimal	<1	<1	3.3	4.49	2.24	2.25
Houston-Sugar Land-Baytown TX	TX	Minimal	<1	<1	1.7	5.07	4.55	0.52
Fort Worth-Arlington TX	TX	Minimal	<1	<1	1.2	1.44	4.11	-2.67
Dallas-Plano-Irving TX	TX	Minimal	<1	<1	1.0	2.95	3.44	-0.49

Weighted Average Values by Risk Rank:⁵

High	95.9	92.5	26.9	-22.5	-9.2	-13.3
Elevated	57.1	34.0	17.0	-9.6	-3.5	-6.2
Moderate	37.0	20.9	14.3	-13.2	-4.2	-8.9
Low	14.8	8.0	9.3	-8.1	-0.7	-7.4
Minimal	3.4	1.4	3.6	0.3	2.3	-2.0
All	46.5	38.5	15.08	-11.02	-3.30	-7.71

Top 50 Weighted Averages:

AFFORDABILITY INDEX ⁵		
3Q '08	3Q '07	Difference
89.04	83.88	5.17
88.23	83.70	4.52
93.33	90.50	2.84
89.86	86.37	3.49
102.11	99.69	2.42
122.23	116.40	5.83
98.03	96.22	1.80
100.06	97.38	2.68
91.71	90.97	0.74
95.95	95.31	0.64
106.66	102.25	4.41
106.93	103.14	3.79
97.36	96.05	1.31
112.89	107.79	5.10
84.90	85.17	-0.27
112.06	116.38	-4.32
109.43	103.61	5.82
81.03	81.42	-0.39
95.87	96.32	-0.45
100.19	97.14	3.05
93.54	92.74	0.80
99.16	99.31	-0.14
79.20	83.89	-4.69
92.62	93.94	-1.33
101.74	102.12	-0.38
100.48	97.98	2.51
88.92	87.63	1.29
117.81	119.77	-1.95
106.84	103.00	3.84
99.70	103.36	-3.66
108.71	110.15	-1.43
119.24	123.56	-4.32
95.67	93.35	2.32
118.46	114.30	4.16
116.14	117.24	-1.09
112.19	111.47	0.73
127.02	130.03	-3.01
114.58	115.03	-0.45
107.29	110.62	-3.33
114.82	115.53	-0.71
115.06	115.58	-0.52
128.53	133.91	-5.38
156.48	167.09	-10.61
137.78	141.89	-4.11
127.47	123.97	3.50
120.62	122.51	-1.90
131.87	133.10	-1.23
130.14	133.98	-3.84
132.60	134.02	-1.42
129.85	132.16	-2.31

97.5	94.5	2.9
89.4	90.5	-1.0
99.0	98.8	0.1
110.9	110.3	0.6
126.1	128.5	-2.4
105.95	105.73	0.22

UNEMPLOYMENT RATE		
Rate ⁶	Demeaned ⁷	
3Q '08	3Q '08	2Q '08
9.10	3.01	1.89
5.90	-0.07	-0.57
6.00	1.11	0.06
7.97	1.48	0.28
7.27	1.61	0.38
7.07	1.95	0.98
6.93	2.10	0.89
6.33	1.65	0.46
5.80	1.31	0.59
6.50	1.74	0.60
5.03	0.26	-0.91
6.50	1.62	0.90
7.84	2.50	1.36
7.33	2.09	1.29
5.30	0.42	0.01
10.33	1.73	2.16
6.73	0.96	0.14
5.13	0.62	0.11
5.77	0.34	-0.03
4.23	0.29	-0.15
4.57	0.59	0.06
4.77	-0.05	-0.54
5.67	-0.95	-1.31
5.12	-0.01	-0.43
5.57	1.45	0.71
6.50	-0.48	-1.13
5.70	-1.22	-1.83
6.23	1.30	0.77
5.40	-0.09	-0.64
4.31	-0.34	-0.70
5.70	0.47	-0.03
7.80	1.73	2.02
4.50	-1.03	-1.80
6.97	0.72	-0.17
7.10	1.46	0.52
5.13	-0.35	-0.92
6.37	1.21	0.18
5.83	1.45	0.74
4.53	-0.91	-1.53
6.20	0.49	-0.06
5.30	-0.29	-0.70
5.23	0.72	0.17
7.17	1.68	1.43
6.13	1.04	0.03
6.97	1.16	0.10
4.93	-0.71	-1.34
5.27	-0.14	-0.48
5.00	-1.14	-1.62
5.00	-0.66	-1.19
5.20	-0.86	-1.56

7.1	1.5	0.6
5.3	-0.1	-0.6
5.7	0.6	-0.1
6.2	0.5	-0.1
5.6	0.1	-0.6
6.14	0.58	-0.11

EXPLANATORY NOTES

- The **U.S. Market Risk IndexSM score** translates to a percentage that predicts the probability that house prices will be lower in two years. For example, a Risk Index score of 100 means there is a 100 percent chance that the Loan Performance All Transactions House Price Index for that MSA will be lower two years from the date of the data.
- Historical risk scores may change as updated/revised source data become available.
- Past **price appreciation** is a key predictor of future price appreciation potential. In general, rapid and continued increases in the rate of price appreciation lead to increases in the risk of future price declines.
- Price volatility** is calculated as the standard deviation of quarterly two-year house price appreciation rates for the previous five years. In general, higher price volatility indicates a greater risk of future home price declines.
- Using per capita income, Loan Performance house price appreciation rates, and a blended interest rate based on the mix of 30-year fixed rate and 1-year adjustable rate mortgages (as reported by the Mortgage Bankers Association), PMI's proprietary **Affordability IndexSM** measures how affordable homes are today relative to a baseline of 1995. An Affordability Index score exceeding 100 indicates that homes have become more affordable; a score below 100 means they are less affordable. The value of this index is generally inversely related to the value of the Risk Index – as affordability increases, the Risk Index score declines. By using a blended rate, the index factors in the use of adjustable rate mortgage products, which can increase affordability.
- The **local unemployment rate** is calculated with Bureau of Labor Statistics MSA-wide quarterly averages, not seasonally adjusted.
- The **demeaned unemployment rate** is the current unemployment rate minus the five-year average unemployment rate. A negative number means that the current unemployment rate is lower than the five-year average, indicating that labor markets are strong by the area's historical standards. High employment levels are generally associated with strong housing demand.
- All averages are population weighted.



Model Changes

(continued from page 2)

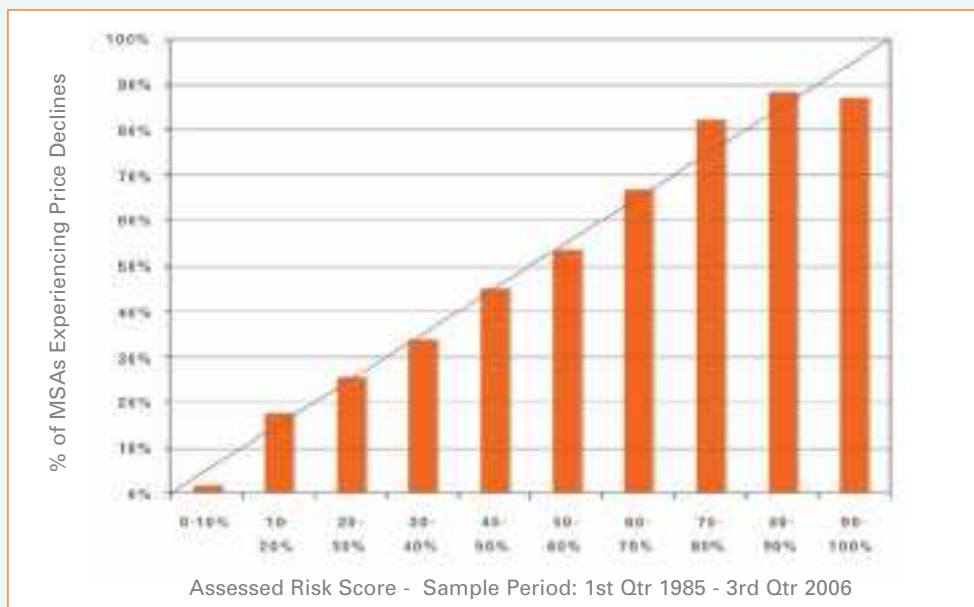
Based on the historical record of the number of MSAs with price declines in the following two years, the new ranges are a better reflection of the description of the risk categories. For example, MSAs with a Risk Index in the range of 20-30 weren't very likely to see house price declines, so were more accurately placed in the "low" risk category than the "moderate" risk category – hence the expansion of the "low" category to 10-30 from 10-20.

Although we made a few other minor technical modifications to the underlying models that aren't detailed here, the changes to the Risk Index primarily result from the two items discussed above. As we discover additional data that pertain to future house price behavior, we may make further changes to the

structure of the models that determine the Risk Index. At this point, however, with the current data the Risk Index is as accurate as we believe possible.

Figure 2 shows the historical accuracy of the Risk Index, based on our latest specification. To assess model accuracy, we generated all quarterly MSA risk scores between the first quarter of 1985 and the third quarter of 2006 using the new model framework – resulting in 27,395 observations. Segmenting this data into deciles, the percentage of MSAs that actually had lower prices two years later are shown by the bars in the chart. It's clear from these results that the new Risk Index has yielded consistently accurate results over the past 20 years, as the bars are close to the 45 degree line that indicates perfect results. ♦

FIGURE 2: HISTORICAL ACCURACY RATE OF THE PMI RISK INDEX





Trends in the Nation's MSAs

(continued from page 3)

risk scores in **Massachusetts** and **Maryland**. Overall, however, the effect of higher foreclosure rates on risk scores was substantially less in the **East** than it was in the **Midwest**.

Florida and **California MSAs** continued to have some of the highest risk scores, on average, in the nation during the third quarter. In **Florida**, risk continued to increase most in the northern portion of the state, primarily in response to higher rates of unemployment. **Fort Walton Beach**, **Gainesville**, and **Tallahassee** all had risk score increases of between 19-27 percentage points in the third quarter. As a result, we classify all of **Florida's 20 MSAs** as having a high probability of lower house prices in two years relative to today's prices. The average probability of lower prices in two years for all of **Florida's MSAs** climbed to 96 in the third quarter, compared with an average of 90 in the second quarter.

California is seeing a growing divergence in risk paths between regions in the state. The outlook for price declines is substantially higher in the southern and central regions of the state than in the northern MSAs. The greatest probability of decline is in the **Central Valley MSAs** of **Bakersfield** and **Stockton**, with risk scores of 98.1 for both. **San Diego** and **Oxnard** have the highest risk scores in the south, at 95.7 and 95.5, respectively. Due primarily to lower rates of foreclosure, **San Francisco** and **San Jose** have much lower risk scores than the rest of the state, at 19.5 and 30.9, respectively. Nevertheless, all of **California's MSAs** are seeing upward pressure on risk scores in response to rising rates of unemployment. This trend increased average risk scores in the state by approximately 11 percentage points in the third quarter.

Trends in Home Price Appreciation

There was a significant increase in the percentage of MSAs seeing declines in their annual rate of house price appreciation relative to a year earlier. Across all 381 MSAs, 67 percent had negative rates of house price appreciation over the past twelve months. This was almost twice as high as the same quarter in 2008, when only 35 percent saw annual declines. According to the Loan Performance (LP) House Price Index (HPI), for the twelve months ending in September, price growth remained weakest in **California**, **Florida**, **Nevada**, and **Arizona**. Over this period, price declines in **California MSAs** averaged 24.9 percent, **Florida MSAs** averaged a 16.6 percent drop, **Nevada** averaged an 18.6 percent decline, and **Arizona** averaged a 13.6 percent decline. On the other end of the spectrum, **Texas** continued to have increases in house prices, as the economic downturn has been less severe there and the magnitude of the housing problems facing the country (including, for example, the oversupply of homes for sale) has been less in the Loan Star State. **Texas MSAs** averaged a 2.8 percent increase in prices for the twelve months ending in September. Only five of the state's 26 MSAs had a decline in prices over that period, with the largest decline occurring in **Wichita Falls** at 3.0 percent.

Trends in Housing Affordability

Housing affordability was little changed in the third quarter from the second, mostly from a slowing in personal income growth in response to rising unemployment rates as the recession deepened. Moreover, mortgage rates were higher in most of the third quarter as the credit crunch worsened. PMI's proprietary Affordability Index measures how affordable homes are today in a given MSA relative to a baseline of 1995. An Affordability Index

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Trends in the Nation's MSAs

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score exceeding 100 indicates that homes have become more affordable; a score below 100 means they are less affordable.

For all 381 MSAs, the weighted average Affordability Index reading was 114.5 in the third quarter, compared with the second quarter reading of 115.5. Across the nation, 62 percent of the MSAs showed marginally lower affordability. Affordability improved slightly, however, in 59 percent of the 100 MSAs ranked in the two highest risk classifications, mostly in response to sharply falling house prices – which averaged 14.0 percent, far exceeding the decline in income growth over the period.

Trends in Employment

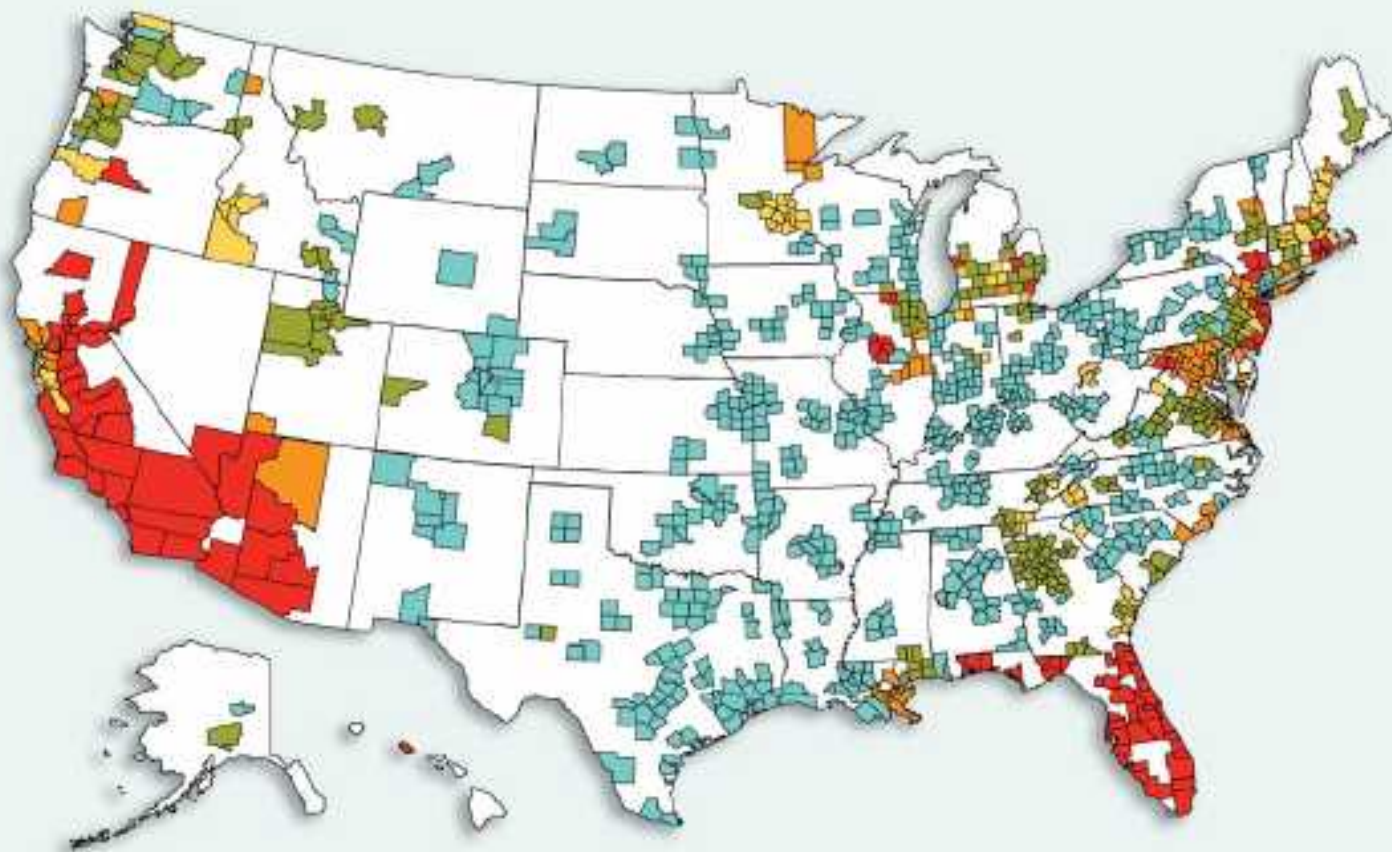
Unemployment rates are increasing rapidly across the nation. Across all 381 MSAs, unemployment rates averaged 5.97 percent in the third quarter compared with 5.24 percent in the second quarter, and 5.04 percent in the first quarter.

While the states most affected by the housing recession all are seeing rising rates of unemployment, it is also rising broadly across the majority of the nation's MSAs as the current recession both broadens and deepens. **Michigan**, primarily a manufacturing state, continued to lead the nation with an 8.7 percent unemployment rate in the third quarter, followed closely by **Rhode Island**, both a manufacturing and financial services state, at 8.4 percent. Even highly diversified **California** is seeing a substantial rise in its unemployment rate – climbing from 5.93 percent in the first quarter to 7.60 percent in the third.

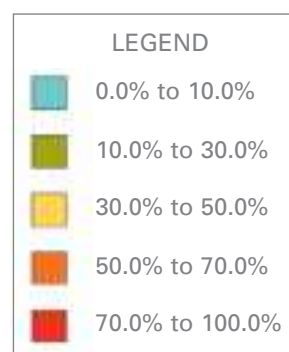
Conclusion

PMI's Risk Index increased substantially in the third quarter of 2008 as the nation had further house price declines, high foreclosure rates, and rising rates of unemployment. With the recession continuing, higher unemployment rates and rising foreclosure rates will put additional upward pressure on risk. Offsetting this (to some extent) will be further increases in affordability, as declining mortgage rates and house prices raise affordability by more than slower income growth lowers it. On balance, it is likely that the Risk Index will rise further in many MSAs in coming quarters. ♦

Geographic Distribution of HOUSE PRICE RISK



The above map depicts in color the geographic distribution of house price risk for all 381 MSAs and the District of Columbia. Each MSA is assigned a risk rank and corresponding color. Among the 50 largest MSAs, **Riverside-San Bernardino-Ontario, CA** (ranks the highest on the index, with a 99.9 percent chance that home prices will be lower in two years). At the other end of the risk spectrum lies a group of MSAs, largely located in the central and southern part of the nation, whose risk scores are moderate to low.



The Risk Index scores for all 381 MSAs are provided in an appendix, available on the publications page of the media center at www.pmigroup.com.

Cautionary Statement: Statements in this document that are not historical facts or that relate to future plans, events or performance are 'forward-looking' statements within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements include, but are not limited to, PMI's U.S. Market Risk Index and PMI Affordability Index and any related discussion, and statements relating to future economic and housing market conditions. Forward-looking statements are subject to a number of risks and uncertainties including, but not limited to, the following factors: changes in economic conditions, economic recession or slowdowns, adverse changes in consumer confidence, declining housing values, higher unemployment, deteriorating borrower credit, changes in interest rates, the effects of natural disasters, or a combination of these factors. Readers are cautioned that any statements with respect to future economic and housing market conditions are based upon current economic conditions and, therefore, are inherently uncertain and highly subject to changes in the factors enumerated above. Other risk and uncertainties are discussed in the Company's filings with the Securities and Exchange Commission, including our reports on Form 10-Q for the quarter ended June 30, 2008 and Form 10-Q for the quarter ended September 30, 2008.

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METROPOLITAN AREA ECONOMIC INDICATORS STATISTICAL MODEL OVERVIEW

The U.S. Market Risk Index is based on the results of applying a statistical model to data on local economic conditions, income, and interest rates, as well as judgmental adjustments in order to reflect information that goes beyond the Risk Index's quantitative scope. For each Metropolitan Statistical Area (MSA) or Metropolitan Statistical Area Division (MSAD), the statistical model estimates the probability that an index of metropolitan-area-wide home prices will be lower in two years, with an index value of 100 implying a 100 percent probability that house prices will be lower in two years.

House price data are provided by LoanPerformance, a First American CoreLogic company. The LoanPerformance house price index (HPI) is a repeat-sales index that tracks changes in sales prices for the same homes over time, thereby providing a more accurate "constant-quality" view of house price trends than transaction-based measures. The index incorporates more than 30 years worth of repeat sales transactions, representing more than 45 million observations sourced from First American CoreLogic's industry leading property information database. The LoanPerformance HPI provides a multi-tier market evaluation based on price, time between sales, property type and loan type (conforming vs. nonconforming).

Periodically, we may re-estimate our model to update the statistical parameters with the latest available data. We also may make adjustments from time to time to account for general macroeconomic developments that are not captured by our model.

Please contact your PMI representative for more information or printed versions.

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