

# ECONOMIC REAL ESTATE TRENDS<sup>SM</sup>



SPRING 2008

PMI MORTGAGE INSURANCE CO.

## In This Issue



Economic Trends in  
the Nation's MSAs

PMI U.S. Market  
Risk Index Model

Geographic Distribution  
of House Price Risk

**DAVID W. BERSON, Ph.D.**  
Chief Economist and Strategist  
THE PMI GROUP, INC.

**LAVAUGHN M. HENRY, Ph.D.**  
Director of Economic Analysis  
THE PMI GROUP, INC.

## How Far Will House Prices Decline?

By David W. Berson, Ph.D., Chief Economist and Strategist, The PMI Group, Inc.

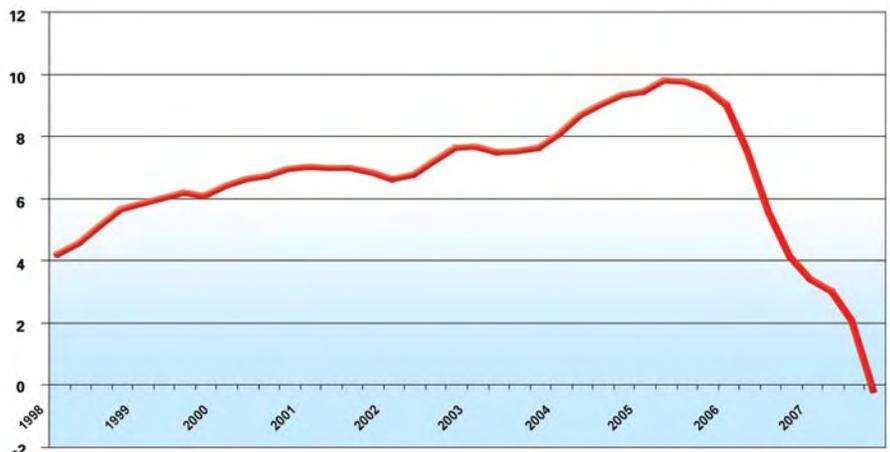
After several years of unsustainable gains, house prices are now declining in many parts of the country as well as for the country as a whole. According to the Office of Federal Housing Enterprise Oversight (OFHEO), national house prices dropped for the first time since its price series began in 1991. Prices in the seasonally adjusted purchase-only index fell by 0.3 percent in the fourth quarter of 2007 from the previous year. Even worse, when annualized, the decline in prices between the third quarter and the fourth quarter was 5.1 percent, suggesting that the downturn in prices was intensifying as 2007 came to a close. Broader measures of house prices, such as that from S&P/Case-Shiller, show four-quarter prices down by a record 8.9 percent in the last quarter of the year, and by 19.8 percent at annual rates in that quarter. Given these large, and intensifying, price declines, how far will house prices fall before they start to recover?

Our models indicate that the decline in house prices is only about one-third to one-half over, due primarily to the magnitude of the supply/demand imbalance in the

housing market. This assumes that the current economic downturn is both short and modest, and that the disarray in financial markets ends soon. Given the drop in prices already

*(continued on page 2)*

**OFHEO House Price Appreciation Rates  
(Purchases Only)**





## How Far Will House Prices Decline?

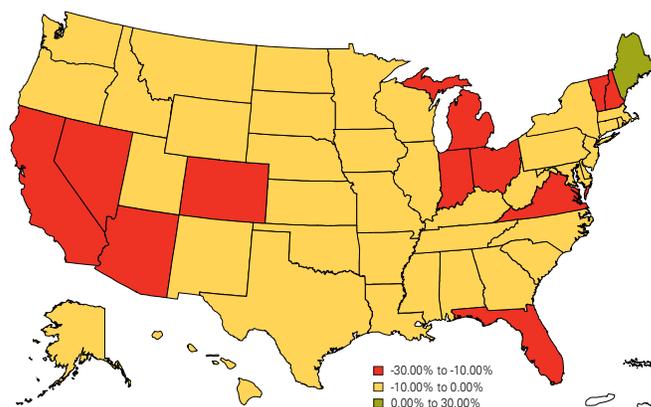
*(continued from page 1)*

seen, the broad S&P/Case-Shiller house price index could decline by roughly 15-25 percent. The narrower OFHEO index could decline by a lesser 5-10 percent, because it excludes jumbo loans and the large portion of subprime and Alt-A loans that Fannie Mae and Freddie Mac don't participate in. The difference between these measures is a rough estimate of how much worse the price decline is likely to be for houses using subprime, Alt-A, or jumbo mortgage financing.

The key reason for these national price declines is the worsening of the supply/demand imbalance in the housing market. The average price of a house, as with all goods and services, ultimately depends on demand and supply. Housing demand rose sharply between 2002-2006 in response to a number of factors: record-low mortgage rates, significant growth in market liquidity, poor returns in alternative investments (such as equities), surging investor demand, and mortgage lenders extending the edge of the credit envelope. In reaction to the skyrocketing demand for houses, builders ramped up their construction of new homes, which continued even after housing demand began to decline. The result has been a terrific imbalance between the demand and supply of homes, with the months' supply at their highest levels since 1981 for new homes and 1988 for existing single-family homes. This has also led to a decline in homeowner's equity. According to the Federal Reserve's Flow of Funds report, the average debt-to-value ratio for households rose to 52 percent in 2007 – the first time this measure has ever been above 50 percent in the nearly 60-year length of the survey.

The odds of the ultimate price decline being toward the lower end of these ranges (5 percent for OFHEO and 15 percent for S&P/Case-Shiller) has increased recently because of policy changes that have taken place in the past few weeks. They include the relaxing of the Fannie Mae/Freddie Mac excess capital requirements and the end of their portfolio limitations, as well as significant easing of monetary policy by the Federal Reserve and several innovative changes by the Fed in allowing the highest grade of mortgage-backed securities to be used as collateral at its open market window. These moves are all positive, but were done

**OFHEO STATE HOUSE PRICE APPRECIATION RATES  
(Purchase Only - 4<sup>th</sup> Qtr Annualized)**



in response to a recent period when the odds of a price decline toward the top of these ranges had increased due to the worsening conditions in the markets. Despite the February uptick in existing home sales, there are still no signs of a sustained increase in housing demand, which is necessary in order to reduce the stock of homes for sale and begin to steady house prices.

We still expect the housing market to stabilize sometime in the second half of this year in response to expansionary monetary and fiscal policy, while builders continue to reduce the number of single-family housing starts into 2009. If this occurs, then the inventory of unsold homes should peak later this year and fall throughout next year. As a result, the downward pressure on national house prices should begin to abate in the second half of 2008. It is likely, however, that prices will continue declining well into 2009, as inventories will still be large (even if falling).

When all of this information is taken together, the middle of these ranges may still be the most likely course for home price declines. That would mean the S&P/Case-Shiller index would fall by around 20 percent from its peak in mid-2006, and the OFHEO index would drop by around 8 percent from its peak in mid-2007. Of course, there will be significant regional variation around these national averages, as some markets continue to see house price gains while others see very sharp declines. ♦

# Economic Trends in the Nation's MSAs

**PMI's U.S. Market Risk Index measures the likelihood of home price declines in two years for each of the nation's 381 metropolitan statistical areas (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 the nation's MSAs began to diverge along two distinctly different paths during the fourth quarter of 2007. Risks continued to increase in states where the growth in house prices had significantly exceeded historical norms in recent years (e.g., **Florida, California, Arizona, and Nevada**). But, in areas of the country where prices had grown at a more sustainable rate, risk began to decline modestly.

In the fourth quarter of 2007, risk in 32 of the nation's 50 largest MSAs declined by 1-5 percentage points. In the previous quarter none of the top 50 MSAs experienced a decline. Of the remaining 18 MSAs in the top 50, 11 were in **Florida, California, Arizona, and Nevada**. This trend was consistent nationwide, as risk declined in 62 percent of the nation's 381 MSAs. Only 6 percent (24 MSAs) saw an increase in risk of greater than 5 percentage points.

## Trends in Risk

Among the nation's 50 largest MSAs, 15 ranked in the two highest risk categories. Among those MSAs, 14 were in **California, Florida, Nevada, and Arizona**. Risk of lower prices in two years was greater than 50 percent in all of these MSAs, with 10 of the 14 exceeding their third quarter probabilities. The average increase in risk was 5.5 percentage points.

The greatest increase in risk occurred in **Florida**, up by 7.0 percentage points. **Orlando** had the largest increase in the state, rising by nearly 10 percentage points to 85.3 percent. This increase also made it the most likely to have lower prices in two years among the state's large MSAs. The risk index in **Miami-Miami Beach-Kendall** (the state's biggest MSA), remained much lower than the state's other large MSAs with a score of 61.0, versus an average of 81.6 for the **Orlando, Ft. Lauderdale, West Palm Beach** and **Tampa** MSAs.

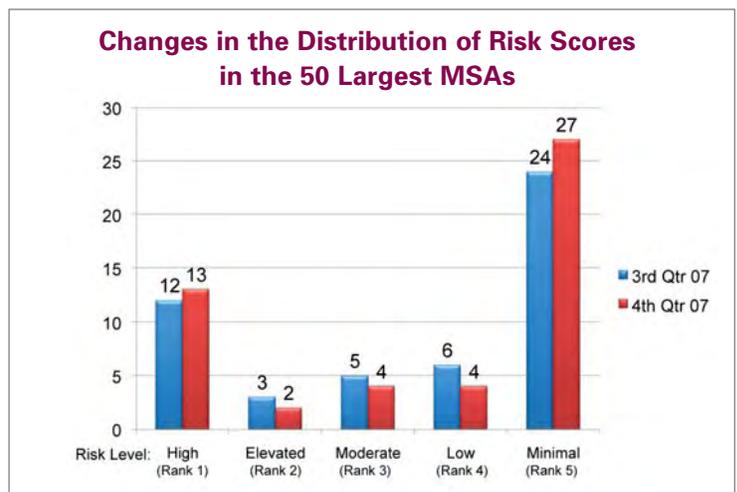
The increase in Miami's risk score from the previous quarter was a minimal 3.2 percentage points. The risk outlook for **Miami** remains negative due to a falloff in investor demand and a continued increase in new housing units that has resulted in record buildup of unsold inventory. The Florida Association of Realtors reported sales of existing homes in Miami dropped by 47.9 percent for the twelve months ending in January 2008. The national decline was only 23.4 percent.

Although California's MSAs showed, on average, a higher probability of lower home prices in two years, the rate of increase was significantly below that of the third quarter. For the eight **California** MSAs among the nation's top 50, the average increase in risk score was 2.1 percentage points between the third and fourth quarters of 2007. This was substantially below the 19.0 percentage point increase that occurred between the second and third quarters.

Risk in northern California MSAs grew by more than the 2.1 percentage point state average. **Oakland** saw the only decline, albeit a small one. Risk in **San Jose** rose by 6.8 percentage points to 51.1 percent, which is the first time the MSA's score exceeded 50 percent in this cycle. In **San Francisco**, the probability of price declines in two years rose by 5.6 percentage points, although at 30.2 percent, the risk score is still relatively low.

All of the major MSAs in southern California remain in the riskiest category, although there wasn't much change in the southern California risk scores between the third and fourth quarters. The **Riverside-San Bernardino-Ontario** MSA lead the top 50 MSAs with a 93.2 percent chance of lower house prices in two years.

In the nine MSAs shared between **Arizona** (6) and **Nevada** (3), the risk of price declines in two years continued to increase. In **Arizona**, only **Yuma** saw a decline. Its risk score declined by 4.3 percentage points to 71.0 percent. The remaining five MSAs increased by an average of 10.0 percentage points to an average risk score of 60.2 percent. The state's largest MSA, **Phoenix-Mesa-Scottsdale**, also had the highest risk score, which increased by 1.5 percentage points to 84.0 percent. Nevada's largest MSA, **Las Vegas-Paradise**, also had the highest risk score at 91.9 percent; an increase of 2.6 percentage points from the third quarter. The average increase in the state was 7.1 percentage points. Both of these states continue to suffer from excess supply caused by historically high and prolonged investor demand and rapid new home construction.



(continued on page 6)



**MSA**

	RISK RANK	PMI U.S. MARKET RISK INDEX <sup>1</sup>		PRICE APPRECIATION <sup>2</sup>			
		4Q '07	3Q '07	Volatility <sup>3</sup>	4Q '07	4Q '06	Acceleration <sup>4</sup>
Riverside-San Bernardino-Ontario, CA	1	93.2	93.5	15.67	-7.14	8.32	-15.46
Las Vegas-Paradise, NV	1	91.9	89.3	21.14	-5.99	5.42	-11.41
Orlando-Kissimmee, FL	1	85.2	73.9	16.40	-2.95	11.89	-14.85
Fort Lauderdale-Pompano Beach-Deerfield Beach, FL (MSAD)	1	84.1	77.9	13.60	-6.90	8.19	-15.09
Phoenix-Mesa-Scottsdale, AZ	1	84.0	82.5	21.56	-3.42	8.85	-12.27
Santa Ana-Anaheim-Irvine, CA (MSAD)	1	80.6	81.3	13.94	-6.11	5.44	-11.56
West Palm Beach-Boca Raton-Boynton Beach, FL (MSAD)	1	79.6	71.3	15.93	-10.39	6.38	-16.77
Sacramento-Arden-Arcade-Roseville, CA	1	77.7	72.5	16.74	-11.02	-3.09	-7.93
Tampa-St. Petersburg-Clearwater, FL	1	77.6	71.6	11.91	-4.57	10.53	-15.11
Los Angeles-Long Beach-Glendale, CA (MSAD)	1	77.2	79.0	13.16	-3.23	9.54	-12.77
San Diego-Carlsbad-San Marcos, CA	1	72.7	69.2	16.42	-7.20	-0.53	-6.67
Oakland-Fremont-Hayward, CA (MSAD)	1	63.8	64.8	13.12	-7.17	1.58	-8.75
Miami-Miami Beach-Kendall, FL (MSAD)	1	61.0	57.8	10.57	0.27	15.83	-15.56
San Jose-Sunnyvale-Santa Clara, CA	2	51.1	44.3	13.51	-2.28	4.15	-6.43
Providence-New Bedford-Fall River, RI-MA	2	47.3	45.6	11.20	-2.57	1.61	-4.18
Washington-Arlington-Alexandria, DC-VA-MD-WV (MSAD)	3	36.6	37.2	12.22	-2.87	6.40	-9.27
San Francisco-San Mateo-Redwood City, CA (MSAD)	3	30.2	24.6	10.54	-0.86	1.80	-2.66
Nassau-Suffolk, NY (MSAD)	3	29.6	32.8	7.95	-1.10	4.41	-5.52
Boston-Quincy, MA (MSAD)	3	20.4	22.1	9.67	-2.83	-0.62	-2.21
Edison-New Brunswick, NJ (MSAD)	4	19.1	22.9	7.72	-1.47	4.27	-5.75
Virginia Beach-Norfolk-Newport News, VA-NC	4	17.0	19.3	12.98	3.05	10.43	-7.38
Minneapolis-St. Paul-Bloomington, MN-WI	4	15.8	19.1	5.58	-2.19	2.09	-4.28
Detroit-Livonia-Dearborn, MI (MSAD)	4	14.6	16.6	5.30	-6.13	-2.28	-3.85
Baltimore-Towson, MD	5	9.7	12.1	9.71	1.97	9.20	-7.22
Warren-Troy-Farmington Hills, MI (MSAD)	5	9.3	11.4	4.67	-6.73	-2.01	-4.73
Cambridge-Newton-Framingham, MA (MSAD)	5	8.7	11.2	7.46	-1.80	-1.12	-0.68
Portland-Vancouver-Beaverton, OR-WA	5	8.7	10.0	11.59	4.24	13.64	-9.40
New York-White Plains-Wayne, NY-NJ (MSAD)	5	7.0	9.8	6.31	0.85	6.50	-5.64
Newark-Union, NJ-PA (MSAD)	5	5.0	6.5	6.14	0.83	5.16	-4.33
Seattle-Bellevue-Everett, WA (MSAD)	5	3.8	7.1	10.38	5.86	14.42	-8.55
Atlanta-Sandy Springs-Marietta, GA	5	3.5	3.1	1.30	1.63	4.01	-2.37
Nashville-Davidson--Murfreesboro--Franklin, TN	5	2.2	1.6	4.89	4.57	9.70	-5.13
Philadelphia, PA (MSAD)	5	2.1	2.8	5.98	2.04	6.58	-4.54
St. Louis, MO-IL	5	1.7	1.5	2.48	2.56	4.41	-1.85
Chicago-Naperville-Joliet, IL (MSAD)	5	1.6	2.6	3.63	1.62	6.06	-4.44
Milwaukee-Waukesha-West Allis, WI	5	1.5	1.8	4.44	1.45	4.37	-2.93
Denver-Aurora, CO	5	1.0	1.1	2.45	-0.49	0.65	-1.13
Cleveland-Elyria-Mentor, OH	5	<1	1.0	2.82	-1.74	-0.18	-1.56
Austin-Round Rock, TX	5	<1	<1	6.79	7.95	9.78	-1.83
Charlotte-Gastonia-Concord, NC-SC	5	<1	<1	4.15	6.09	8.20	-2.12
Kansas City, MO-KS	5	<1	<1	1.67	0.82	3.14	-2.32
Columbus, OH	5	<1	<1	2.23	0.11	0.89	-0.78
Cincinnati-Middletown, OH-KY-IN	5	<1	<1	1.57	0.11	2.50	-2.40
Memphis, TN-MS-AR	5	<1	<1	1.95	1.35	5.81	-4.46
San Antonio, TX	5	<1	<1	4.22	8.25	7.78	0.47
Indianapolis-Carmel, IN	5	<1	<1	1.14	1.69	1.15	0.54
Houston-Sugar Land-Baytown, TX	5	<1	<1	1.83	4.79	6.44	-1.65
Dallas-Plano-Irving, TX (MSAD)	5	<1	<1	1.37	2.95	3.92	-0.97
Pittsburgh, PA	5	<1	<1	1.36	2.80	4.12	-1.32
Fort Worth-Arlington, TX (MSAD)	5	<1	<1	1.08	2.89	4.99	-2.10

**Weighted Average Values by Risk Rank:<sup>8</sup>**

1	75.4	73.7	14.49	-5.17	6.45	-11.62
2	53.0	48.4	13.06	-2.40	3.91	-6.31
3	38.8	40.6	14.69	-1.88	6.89	-8.77
4	10.7	12.9	4.91	-2.02	1.76	-3.78
5	1.0	1.3	2.40	1.92	3.92	-2.00

**Top 50 Weighted Averages:**

All	28.5	28.6	8.15	-0.68	5.69	-6.37
-----	------	------	------	-------	------	-------

AFFORDABILITY INDEX <sup>5</sup>		
4Q '07	3Q '07	Difference
65.17	60.33	4.84
83.58	80.29	3.29
75.55	73.24	2.31
65.99	62.60	3.38
71.50	69.25	2.25
69.30	65.25	4.05
75.94	71.39	4.55
84.16	78.67	5.49
74.59	71.92	2.67
63.63	59.48	4.15
82.82	77.61	5.21
75.35	71.17	4.18
61.50	59.12	2.38
73.49	69.66	3.83
85.60	82.36	3.23
77.19	75.22	1.96
82.31	78.32	3.99
74.65	72.77	1.88
88.07	86.70	1.37
80.42	76.86	3.56
85.00	82.14	2.86
90.26	88.42	1.84
107.91	106.01	1.90
86.42	82.58	3.84
112.62	109.48	3.15
94.23	92.69	1.54
78.73	77.29	1.44
77.74	75.35	2.39
87.67	84.42	3.25
84.95	80.94	4.01
96.79	99.28	-2.49
104.46	103.37	1.09
96.77	93.72	3.05
103.37	102.77	0.60
96.37	94.18	2.19
106.51	104.61	1.91
107.08	106.11	0.96
129.62	126.69	2.93
109.69	110.38	-0.69
111.43	109.85	1.58
111.35	109.07	2.28
126.39	124.25	2.14
126.52	124.57	1.95
124.83	121.91	2.92
120.78	119.41	1.37
132.63	131.15	1.48
127.46	125.00	2.46
126.31	126.25	0.06
131.21	127.45	3.76
133.23	130.15	3.08

67.03	63.36	3.67
82.91	79.22	3.69
115.08	111.49	3.59
76.04	74.36	1.69
83.16	81.92	1.24
91.60	89.08	2.52

UNEMPLOYMENT RATE		
Rate <sup>6</sup>	Demeaned <sup>7</sup>	
4Q '07	4Q '07	3Q '07
6.10	0.51	-0.10
5.33	0.38	-0.21
4.10	-0.42	-0.70
3.90	-0.82	-1.17
3.47	-1.10	-1.70
4.23	0.00	-0.29
4.60	-0.47	-1.02
5.67	0.68	0.26
4.47	-0.12	-0.49
5.10	-0.95	-1.33
4.83	0.31	-0.01
4.93	-0.37	-0.68
3.90	-1.93	-2.01
5.00	-1.49	-1.69
4.88	0.20	0.16
3.13	-0.47	-0.68
4.13	-0.95	-1.07
3.70	-0.47	-0.44
3.81	-0.59	-0.23
3.60	-0.70	-0.67
3.27	-0.42	-0.68
4.13	0.30	0.42
8.87	1.51	1.53
3.73	-0.59	-0.65
6.83	1.44	1.45
3.19	-0.82	-0.55
4.83	-1.75	-1.93
4.73	-1.45	-1.27
3.93	-0.81	-0.77
3.70	-1.98	-1.74
4.30	-0.13	-0.12
4.03	-0.08	-0.76
4.20	-0.63	-0.66
5.27	0.16	-0.09
4.70	-1.45	-1.04
4.97	0.04	0.18
3.97	-1.17	-1.34
5.63	0.58	0.77
3.47	-1.45	-1.46
4.73	-0.84	-0.72
5.00	-0.34	-0.26
4.70	0.09	0.15
4.80	0.09	0.19
5.20	-0.12	-0.72
3.83	-1.30	-1.26
3.87	-0.22	-0.16
4.00	-1.64	-1.52
4.07	-1.56	-1.52
4.10	-0.86	-0.93
3.97	-1.13	-1.11

4.51	-0.32	-0.72
5.18	-0.81	-0.94
5.07	-0.82	-0.89
4.55	0.18	0.25
3.27	-0.62	-0.58
4.52	-0.65	-0.73

## EXPLANATORY NOTES

- The **U.S. Market Risk Index<sup>SM</sup> 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 OFHEO All Transactions House Price Index for that MSA will be lower two years from the date of the data.
- 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 previous and current year appreciation, **acceleration** measures the change in the rate of house price appreciation. For example, consider a metropolitan area where the property value of a typical house was \$100,000 at the end of 2000, \$110,000 in 2001, and \$111,100 in 2002. House price appreciation for this area is 10 percent for the year 2001 and 1 percent for the year 2002. Because the appreciation rate dropped by 9 percentage points from the year 2000 to the year 2001, house price acceleration is -9 percentage points at the end of 2002.
- Using per capita income, OFHEO 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 Index<sup>SM</sup>** 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.



## Trends in the Nation's MSAs *(continued from page 3)*

### Trends in Home Price Appreciation

According to the Office of Federal Housing Enterprise Oversight's (OFHEO) seasonally-adjusted purchase-only house price index, home price appreciation has decelerated in each of the last nine quarters. Based on data from the conventional conforming portion of the mortgage market, home values fell by 1.3 percent in the fourth quarter from the third quarter of 2007. This is an acceleration in the rate of decline, from the 0.3 percent drop, that occurred between the second and third quarters. Over the past four quarters, prices also fell by 0.3 percent.

On a year-over-year basis, the number of MSAs with negative home price appreciation increased in the fourth quarter. Of the 381 MSAs tracked by OFHEO, 110 had negative four-quarter price appreciation, compared with 89 in the previous quarter. Of those that declined, the average drop was 4.8 percent, compared with 3.9 percent in the previous quarter. Among the 50 largest MSAs, 25 had negative four-quarter appreciation rates, with an average decline of 4.4 percent. On a one-quarter basis, however, the number of MSAs with falling prices declined to 151 from 179 in the third quarter of 2007. In the 50 largest MSAs, 20 declined in the fourth quarter, down from 33 in the third. (Broader measures of national house prices have shown larger declines than the OFHEO index, mostly because they contain jumbo loans and a larger share of subprime and Alt-A loans – the portions of the mortgage market in most distress).

### Trends in Housing Affordability

Housing affordability generally improved during the fourth quarter. PMI's proprietary affordability index measures how affordable homes are today in a given MSA 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 than in the baseline year.

For all 381 MSAs, the weighted average affordability index reading was **106.62** in the fourth quarter of 2007, compared with the third quarter reading of **104.25**. Across the nation, 311 MSAs showed improved affordability while the remaining 70 were either unchanged or showed a decline.

### Changes in Risk Scores in the Nation's 381 MSAs

SCORE CHANGE	3RD VS. 2ND QUARTER 2007	4TH VS. 3RD QUARTER 2007
Declined by more than 15 points	0	1
Declined between 10 and 15 points	1	0
Declined between 5 and 10 points	0	15
Declined between 0 and 5 points	7	220
Rose between 0 and 5 points	281	121
Rose between 5 and 10 points	21	17
Rose between 10 and 15 points	21	4
Rose by more than 15 points	50	3

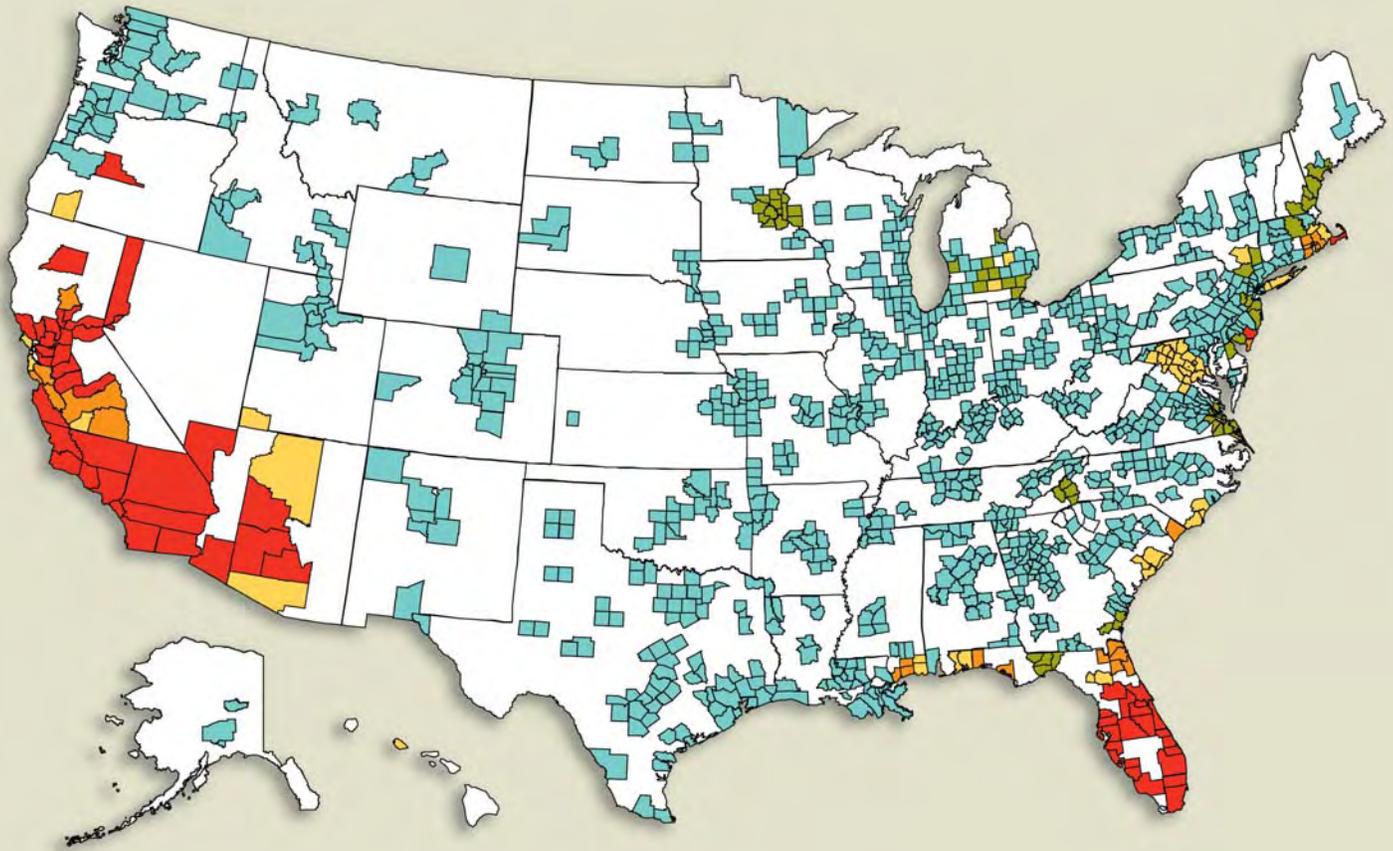
Affordability remains challenged in the 15 MSAs with risk scores in the two highest risk ranks. Affordability among this group averaged 73.88, marginally improved from 70.16 in the third quarter. Even so, affordability within this group is still poor relative to historical averages. Home prices and incomes need to come in better balance before we can expect to see meaningful reductions in risk scores.

### Trends in Employment

Among the top 50 MSAs, the average change in demeaned unemployment was a rise of 0.1 percentage points for the quarter. Overall, unemployment rates remain low in most areas, but are rising in an increasing number of MSAs. While the areas exhibiting worsening employment conditions were located in MSAs across the country, there was a distinct trend in the areas where risk and employment both weakened.

Of the 16 MSAs in the top 50 where unemployment rates and PMI's risk score both deteriorated, **11** were in **California, Florida, Nevada, and Arizona**. This reflects, in part, the effect that the housing downturn is having directly on housing-related employment, and its spillover effects on the retail trade and financial services sectors within those markets. Moreover, the slump in mortgage lending is having a negative effect on financial services employment. Employment growth remains challenged in sections of the industrial **Midwest**, largely due to the continued weakness in auto manufacturing and related industries. The weakness in auto demand could spill over into other states, especially those in the **South**, that have auto production and related facilities. ◆

# 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 93 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](http://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 report on Form 10-K for the year ended December 31, 2007.

© 2008 PMI Mortgage Insurance Co.

## 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% probability that house prices will be lower in two years.

Home prices are measured with a Repeat Sales Index provided by the Office of Federal Housing Enterprise Oversight (OFHEO). This method follows homes that are sold repeatedly over the observation period and uses the change in the purchase prices to construct a price index. The index is based on data from Fannie Mae and Freddie Mac and covers only homes financed with loans securitized by these two companies. Consequently, this index does not apply to high-end properties requiring jumbo loans.

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.

The ERET report is produced quarterly.

You can download a PDF version online:  
<http://www.pmi-us.com>



800.966.4PMI (4764)  
[www.pmi-us.com](http://www.pmi-us.com)