

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

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PMI MORTGAGE INSURANCE CO.

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## New Market; New Model

By Mark F. Milner, Chief Risk Officer, PMI Mortgage Insurance Co.

**Between slowing appreciation, falling demand, and layoffs in the construction industry, we began to see a change in the housing market by early 2006. The contraction of the subprime lending industry in early 2007 added momentum to the transition, and today we are in a vastly different market than we were even as recently as a year ago.**

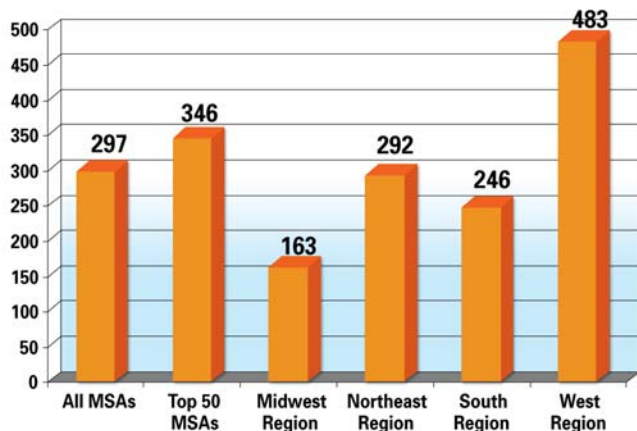
In recognition of this, we are introducing an enhanced U.S. Market Risk Index<sup>SM</sup>.

Our new model gives more weight to the recent volatility of an area's price movements and is better suited for the very different market we are in today.

Our prior model, in contrast, was tuned to the rapidly appreciating market we were in from about 2002 to 2006.

We included a new measure of price volatility and incorporated the use of variable interest rate products, as well as  
(continued on page 2)

### Geographic Distribution of Risk Scores



### OFHEO House Price Appreciation Rates





## New Market; New Model

*(continued from page 1)*

the role interest rate movements and expectations play in mortgage origination and ultimately housing demand, and fine-tuned some of the other predictive variables. We updated the list of top 50 metropolitan statistical areas (MSAs) to reflect shifts in population, welcoming **Jacksonville** and **West Palm Beach, FL** into the top 50, and saying goodbye to **Memphis, TN** and **New Orleans, LA**. We also weighted the average score by population, giving us a more accurate metric. Finally, we introduced a ranking system that groups MSAs with similar risk levels based on shared characteristics, providing an easier way to compare scores and their drivers.

While the new model draws on some different inputs, the output is the same: a risk index that predicts the likelihood that home prices in a given metropolitan statistical area will be lower in two years.

Building models to predict risk is both an art and a science. It's a science in that there are standard principals of good model management – one of which is to continually update and improve your models, and another of which is to validate them through back testing. It's an art in that there are many possible paths and no single right answer. On both counts, we're proud of this new model and hope you find it useful.

Turning to the larger context of the market, we don't know what the future holds. We know that some borrowers are stretched beyond what they can pay, or saddled with mortgages that aren't friendly over the long term, resulting in rising delinquencies. We also know that home price appreciation, which for the last few years offset many of these problems by allowing for frequent refinancing, has slowed to more normal levels in many areas and ceased entirely in some, for the time being. How long the pain will last is not yet clear.

What is clear is that now more than ever, it's important to look at homeownership as a long-term investment. A study we did in 2006 found that homeowners who owned their homes for 10 years or longer almost always saw a positive return on their investment. Homeowners who owned for five or seven years also usually saw a positive return, but were more likely to see losses.

What's also clear is that homeownership is not a get-rich-quick scheme.

If you are thinking about buying, choose your mortgage carefully. Make sure you fully understand the loan product you're taking on, including whether the payment can increase and, if so, by how much. Choose a mortgage that meets your situation and will work for you over the long term.

If you already own and are in over your head (or think you might be soon), call your lender now. Foreclosures are time consuming and expensive and don't benefit anyone: chances are good that your lender would rather work with you than take your house. But putting a workout plan in place can take some time, so don't wait. Calling now gives you a better chance of staying in your home.

The market's changing tide does not mean now is a bad time to buy or own a house. In fact, the new environment offers promise to potential homebuyers who have been priced out of the market due to rapid appreciation over the past several years. For current and new homeowners alike, homeownership will be the cornerstone of a long-term wealth building strategy, as it has for generations of Americans through a variety of economic cycles. ♦

# Risk Overview for Selected MSAs

**T**he U.S. Market Risk Index<sup>SM</sup> on pages 4 and 5 ranks the likelihood that home prices will be lower in two years for the nation's 50 largest metropolitan statistical areas (MSAs). The model uses first quarter house price data from the Office of Federal Housing Enterprise Oversight (OFHEO), employment data from the Bureau of Labor Statistics (BLS), PMI's proprietary Affordability Index<sup>SM</sup>, and other data.

## High Risk, High Volatility, Low Affordability MSAs

Riverside, CA, Phoenix, AZ, Las Vegas, NV, and West Palm Beach, FL rank highest on the index, with a 60 percent or greater chance that home prices will be lower in two years. Five of the 11 MSAs facing a greater-than-50 percent chance of a price decline are in California (Los Angeles, Santa Ana, Oakland, Sacramento, and San Diego) and four are in Florida (Orlando, Fort Lauderdale, Miami, and Tampa); the other two are Boston, MA and Washington, DC. All 15 of the MSAs in risk groups 1 and 2 have a common history of several years of rapidly rising rates of price appreciation, coincident with substantial declines in affordability, followed by a sharp decrease in the rate of price appreciation, from an average of 22.7 percent during the fourth quarter of 2006 to 3.1 percent during the first quarter of 2007 (a deceleration of 19.6 percentage points). In fact, these MSAs had the lowest average rates of appreciation in the first quarter of 2007 when measured against the other groups. The story is similar with housing affordability. These higher risk MSAs had an average affordability score of 66.7, compared to an average of 123.79 for MSAs in risk group 5.

California's MSAs have seen high price volatility for several quarters and, most recently, significantly slowing rates of appreciation. In fact Oakland, Sacramento, and San Diego all registered price declines in the latest period. Affordability remains extremely challenging after the prolonged period of rapid appreciation. Current low levels of unemployment continue to support the housing market but the demeaned rates are edging back toward the average. Overall, weakening housing demand and prices have resulted in high risk scores for many of the California MSAs.

The Florida MSAs, like California, show high probabilities of lower prices in two years. These areas have seen appreciation rates slow markedly from recent highs, a hallmark of high volatility. Current appreciation rates are mixed coming in as low as -2.16 percent in West Palm Beach and as high as 11.44 percent in Miami. Affordability continues to decline as income growth can't keep up with rising prices. Offsetting these risk elements to a degree, unemployment rates remain low by historical standards thereby supporting the market. The Risk and Affordability index scores for the MSAs in both Florida and California indicate a heightened vulnerability to unexpected economic shocks.

Phoenix has seen the biggest drop in the rate of appreciation of all 50 MSAs, from 37.33 percent in Q1'06 to 4.52 percent in Q1'07, and its volatility is the highest in the country. While in-migration from California has slowed, reducing upward pressure on home prices, affordability continues to drop. Unemployment remains below its long-term average, somewhat offsetting these risk factors. Las Vegas has seen a less dramatic, yet still significant, slowing of appreciation, from 16.06 percent in Q1'06 to 1.69 in Q1'07, coupled with a decline in affordability and low unemployment. Its volatility is the second highest in the nation. Collectively, these trends have resulted in both Phoenix and Las Vegas being near the top of the list for riskiest MSAs.

## Low Risk, Low Volatility, High Affordability MSAs

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. Although Detroit and Warren, MI are exceptions, the most common characteristics of these MSAs is that their rates of price volatility and appreciation have been fairly low and stable over an extended period of time. They have also posted historically strong rates of housing affordability and unemployment is historically low. These MSAs did benefit modestly from the national run up in house prices over the previous five years, but not to the extent that the MSAs along the coasts did, and as a result are not seeing significant deceleration. For example, between the fourth quarter of 2006 and the first quarter of 2007, the rate of price appreciation fell by only 2.2 percentage points, from an average of 6.18 percent to 3.98 percent. Likewise affordability remained high with an index average of 108.80.

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# Behind the New PMI

## U.S. Market Risk Index<sup>SM</sup> Model

The PMI U.S. Market Risk Index estimates the probability that house prices in a selected MSA will be lower two years from the date of the estimate. To achieve this we have designed an econometric model that looks at a variety of economic variables and how they interact to predict the probability of future house price movement. Foremost among these factors are historical changes in house price volatility, housing affordability, and local employment trends. The net effect of these influences provides the basis of an MSA's U.S. Market Risk Index score and rank.

### Variable Class: Home Prices

Historical price volatility—the degree to which two-year house price appreciation rates in a given area have varied over the preceding five years—is a good indication of future house price movement. In general, if all other variables are held constant, greater volatility in house prices leads to a greater probability that the house price index in a given MSA will at some point decline below current levels in the future. When measured at the national level, the correlation between quarterly house price volatility and the U.S. Market Risk Index was 0.82 for the period 1997-2007.

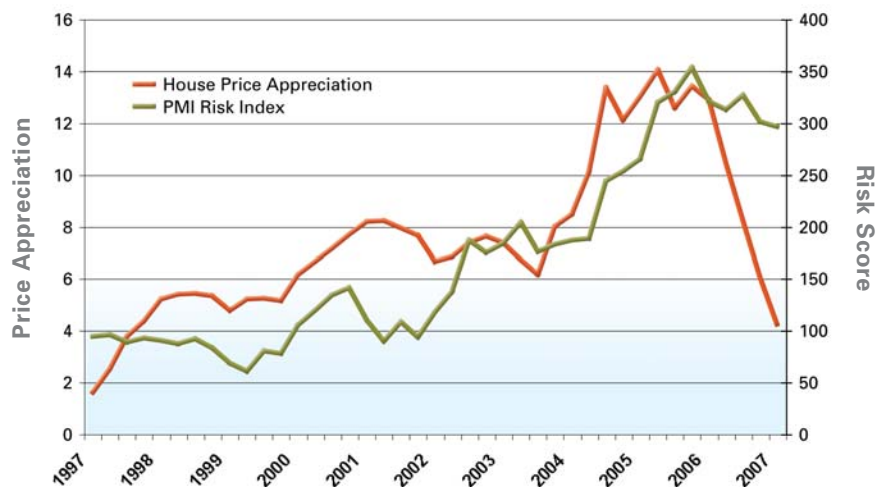
Similarly, past price appreciation is an important predictor of future price appreciation. In general, sustained increases in the rate of price appreciation, without commensurate increases in personal income, lead to declining affordability. When this happens, buyers leave the market and demand falls, resulting in a buildup of supply and softening prices. Thus, a rapid and continued increase in the rate of price appreciation increases the risk that prices will decline at some point in the future, which is reflected in a higher Risk Index score. As the market begins to correct and the rate of price appreciation slows, the Risk Index score will gradually decline. However, should appreciation rates fall rapidly, the Risk Index will adjust to reflect the increased likelihood that price declines, at least in the short run, are more likely before the market stabilizes. The correlation between the U.S. Market Risk Index Score and quarterly OFHEO house price appreciation rates for the period 1997-2007 measured 0.72.

(continued on page 5)

Historical Paths of PMI Risk Score and OFHEO House Price Volatility



Historical Paths of PMI Risk Score and OFHEO House Price Appreciation Rate





## Behind the New Model

(continued from page 4)

### Variable Class: Affordability

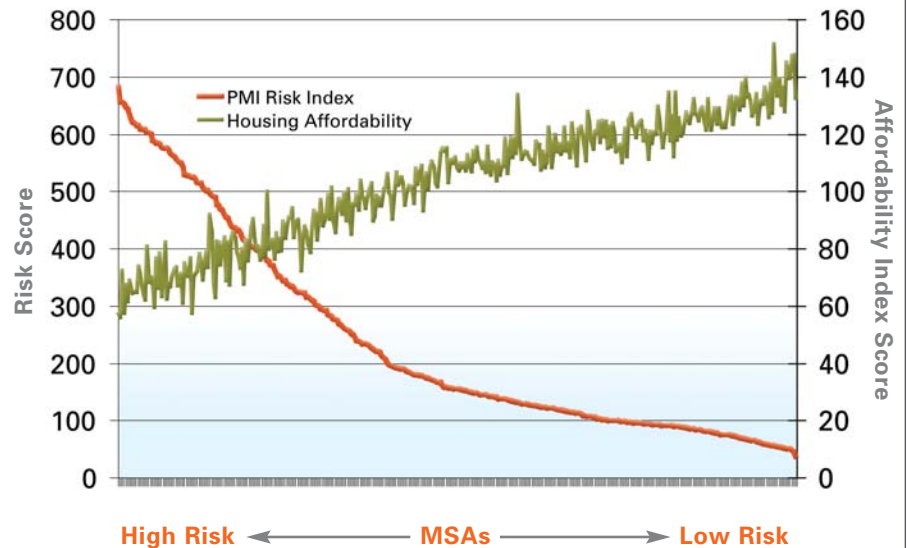
Declines in housing affordability are associated with a higher risk of price decline, and thus a higher Risk Index score. Using per capita income, OFHEO house price appreciation rates, and a blended interest rate based on the mix of 30-year fixed rate and 1-year adjustable rate mortgages, PMI's proprietary Affordability Index<sup>SM</sup> measures buyer purchasing power over time relative to the baseline year of 1995. An Affordability Index score exceeding 100 indicates that homes have become more affordable; a score below means they are less affordable. By using a blended interest rate, the index seeks to account for the use of adjustable rate mortgage products, which can increase affordability. The blended rate is constructed using the percentage of adjustable rate mortgage applications, as provided by the Mortgage Bankers Association. As the use of adjustable rate products declines, the rate becomes more reflective of the 30-year fixed rate series, and vice versa. As of the first quarter 2007, the correlation between the U.S. Market Risk Index scores and the Affordability Index measured -0.94 for all 379 MSAs tracked.

### Variable Class: Employment

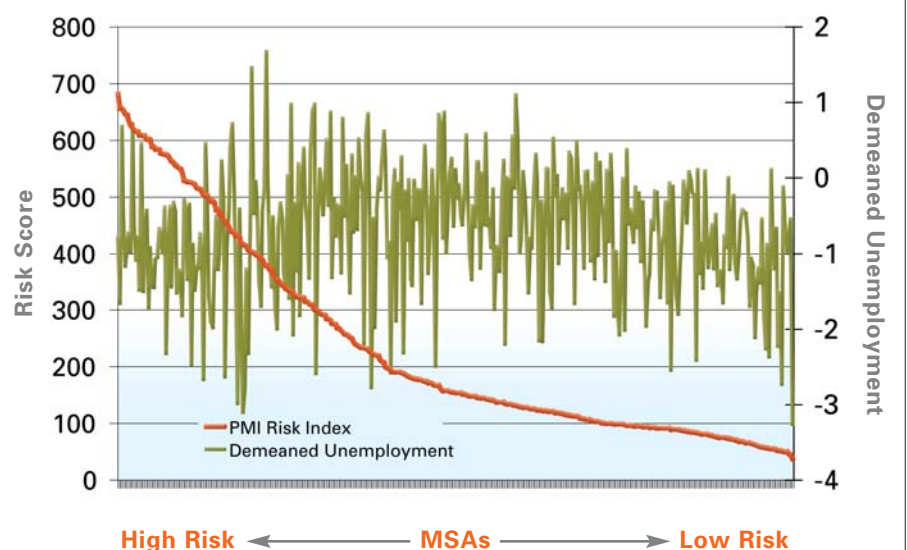
Employment is measured by a demeaned unemployment rate – the current rate for the MSA compared to the average rate for that area for the previous five-year period. A negative value for the demeaned rate indicates that the current level of unemployment is below the historical average (i.e., a “strong” labor market), while a positive value indicates that unemployment is above its historical average (i.e., a “weak” labor market). The effect of unemployment can be mixed—depending on where the MSA is in a cycle.

In addition to house price volatility, affordability, and employment, the PMI U.S. Market Risk Index takes into account other economic influences to arrive at the summary score. Among these are slope and level characteristics of the yield curve, which can affect demand for housing, and current house price levels relative to lagged price levels, denoting trend movements. While each variable exerts a distinct influence on the index, trends in volatility, affordability, and employment have the most significant effect. ♦

First Quarter 2007 PMI Risk Index Score and Housing Affordability



First Quarter 2007 PMI Risk Index Score and Demeaned Unemployment





## MSA

	RANK	SCORE <sup>1</sup>	PRICE APPRECIATION <sup>2</sup>			
			Volatility <sup>3</sup>	1Q '07	1Q '06	Acceleration <sup>4</sup>
Riverside-San Bernardino-Ontario, CA	1	652	14.68	4.14	21.64	-17.49
Phoenix-Mesa-Scottsdale, AZ	1	646	22.46	4.52	37.33	-32.81
Las Vegas-Paradise, NV	1	614	20.84	1.69	16.08	-14.39
West Palm Beach-Boca Raton-Boynton Beach, FL (MSAD)	1	607	14.00	-2.16	28.12	-30.28
Los Angeles-Long Beach-Glendale, CA (MSAD)	2	586	12.94	4.82	23.57	-18.76
Santa Ana-Anaheim-Irvine, CA (MSAD)	2	577	11.41	0.85	19.85	-19.01
Oakland-Fremont-Hayward, CA (MSAD)	2	572	10.59	-0.90	18.63	-19.53
Orlando-Kissimmee, FL	2	563	17.27	7.94	32.52	-24.59
Sacramento-Arden-Arcade-Roseville, CA	2	560	10.05	-4.41	12.98	-17.39
San Diego-Carlsbad-San Marcos, CA	2	555	10.60	-1.92	8.20	-10.12
Fort Lauderdale-Pompano Beach-Deerfield Beach, FL (M	2	542	12.01	2.68	29.38	-26.70
Miami-Miami Beach-Kendall, FL (MSAD)	2	524	11.57	11.44	28.70	-17.26
Tampa-St. Petersburg-Clearwater, FL	2	506	12.24	5.11	26.74	-21.64
Boston-Quincy, MA (MSAD)	2	501	6.08	-1.32	5.45	-6.76
Washington-Arlington-Alexandria, DC-VA-MD-WV (MSAD)	2	500	10.91	3.65	21.67	-18.03
San Jose-Sunnyvale-Santa Clara, CA	3	491	13.45	2.28	17.56	-15.28
Virginia Beach-Norfolk-Newport News, VA-NC	3	476	14.52	7.88	22.01	-14.14
Nassau-Suffolk, NY (MSAD)	3	445	3.73	2.25	12.91	-10.66
San Francisco-San Mateo-Redwood City, CA (MSAD)	3	411	9.78	1.32	14.83	-13.51
Baltimore-Towson, MD	3	400	10.48	6.64	19.94	-13.30
Providence-New Bedford-Fall River, RI-MA	3	397	6.29	0.85	9.13	-8.27
Jacksonville, FL	3	394	9.54	7.46	21.95	-14.49
Portland-Vancouver-Beaverton, OR-WA	3	389	12.01	11.00	21.46	-10.46
Edison, NJ (MSAD)	3	362	4.10	2.21	14.97	-12.76
Seattle-Bellevue-Everett, WA (MSAD)	3	343	10.26	12.56	18.62	-6.06
Cambridge-Newton-Framingham, MA (MSAD)	3	336	4.83	-0.50	4.41	-4.90
Minneapolis-St. Paul-Bloomington, MN-WI	3	322	3.35	1.69	6.59	-4.90
New York-White Plains-Wayne, NY-NJ (MSAD)	3	322	4.68	3.93	16.07	-12.15
Newark-Union, NJ-PA (MSAD)	3	314	4.28	3.63	13.65	-10.02
Detroit-Livonia-Dearborn, MI (MSAD)	4	284	3.65	-2.98	1.20	-4.18
Philadelphia, PA (MSAD)	4	237	5.61	5.63	13.72	-8.08
Warren-Troy-Farmington Hills, MI (MSAD)	4	236	2.59	-1.75	1.36	-3.12
Atlanta-Sandy Springs-Marietta, GA	4	212	1.88	4.02	4.85	-0.83
Milwaukee-Waukesha-West Allis, WI	4	189	3.95	3.42	7.83	-4.41
St. Louis, MO-IL	4	182	1.94	4.22	7.17	-2.95
Nashville-Davidson-Murfreesboro-Franklin, TN	4	177	4.50	8.32	9.02	-0.69
Chicago-Naperville-Joliet, IL (MSAD)	4	175	3.42	5.07	10.66	-5.59
Denver-Aurora, CO	4	156	4.00	1.09	3.12	-2.03
Austin-Round Rock, TX	4	136	5.34	10.94	7.63	3.32
Kansas City, MO-KS	4	136	1.23	2.51	4.71	-2.20
Charlotte-Gastonia-Concord, NC-SC	4	125	2.94	8.47	6.06	2.41
Cleveland-Elyria-Mentor, OH	4	121	1.57	-0.31	2.29	-2.60
San Antonio, TX	4	102	3.66	10.53	9.31	1.22
Cincinnati-Middletown, OH-KY-IN	5	97	1.08	2.27	3.99	-1.72
Columbus, OH	5	93	1.15	0.97	3.61	-2.63
Indianapolis-Carmel, IN	5	84	1.41	2.31	3.07	-0.76
Houston-Sugar Land-Baytown, TX	5	79	1.72	5.93	5.52	0.41
Dallas-Plano-Irving, TX (MSAD)	5	75	2.11	3.66	3.80	-0.14
Fort Worth-Arlington, TX (MSAD)	5	74	1.58	4.02	3.43	0.59
Pittsburgh, PA	5	64	1.16	2.66	5.22	-2.57

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

1	639	18.43	3.16	27.21	-24.04
2	552	11.74	3.07	21.24	-18.18
3	368	6.89	4.44	15.33	-10.89
4	184	3.24	4.11	7.08	-2.97
5	79	1.57	3.72	4.37	-0.64

AFFORDABILITY INDEX <sup>5</sup>		
1Q '07	4Q '06	Difference
57.2	59.4	-2.2
67.1	70.1	-3.0
73.7	74.6	-0.9
64.0	61.4	2.6
59.5	61.7	-2.2
63.2	63.6	-0.4
67.4	65.9	1.5
70.1	74.8	-4.7
72.7	68.6	4.1
73.2	71.1	2.1
60.8	61.4	-0.7
57.2	63.7	-6.5
68.9	71.7	-2.8
78.4	76.6	1.8
73.3	75.2	-1.9
67.8	68.7	-1.0
82.2	88.3	-6.1
67.2	68.2	-1.0
75.6	74.8	0.8
83.4	88.3	-4.9
79.7	78.9	0.8
75.8	80.5	-4.7
78.1	86.0	-7.9
76.1	76.6	-0.5
83.5	91.8	-8.3
90.7	89.5	1.2
84.7	85.7	-1.0
72.0	74.0	-2.0
81.4	83.7	-2.3
98.6	94.9	3.6
93.4	97.0	-3.6
103.6	101.0	2.6
94.8	98.5	-3.7
103.1	105.2	-2.1
101.4	104.4	-3.0
105.8	113.0	-7.2
93.0	96.3	-3.2
103.1	104.2	-1.2
108.2	116.9	-8.7
108.5	109.8	-1.2
110.3	119.9	-9.6
122.3	119.7	2.6
117.0	127.1	-10.1
121.9	122.3	-0.5
121.1	120.6	0.5
128.0	130.2	-2.3
121.3	125.2	-3.9
123.6	126.2	-2.6
126.4	130.0	-3.6
128.6	129.6	-1.0

64.23	65.98	-1.75
66.09	67.32	-1.22
76.89	79.44	-2.55
101.27	104.24	-2.97
123.79	126.13	-2.34

UNEMPLOYMENT	
Rate <sup>6</sup>	Demeaned <sup>7</sup>
5.07	-0.51
3.57	-1.17
4.40	-0.80
3.40	-1.51
4.83	-1.45
3.50	-0.79
4.47	-0.95
3.17	-1.45
5.17	-0.33
4.17	-0.46
3.00	-1.83
3.20	-2.48
3.40	-1.34
5.20	0.44
3.20	-0.52
4.57	-1.99
3.33	-0.51
3.97	-0.46
3.87	-1.22
4.17	-0.48
5.92	-0.06
3.27	-1.37
5.43	-1.70
4.27	-0.53
4.57	-1.26
4.26	0.02
4.53	0.18
4.70	-1.83
4.60	-0.62
8.03	0.50
4.50	-0.68
6.60	0.51
4.23	-0.17
5.27	-0.08
5.37	-0.04
4.17	-0.16
4.67	-1.67
4.33	-1.00
3.70	-1.25
5.13	-0.26
4.60	-0.81
5.83	0.12
4.27	-1.03
5.17	-0.01
4.67	-0.32
4.53	0.07
4.43	-1.19
4.43	-1.24
4.57	-0.78
4.83	-1.07

4.22	-0.91
4.08	-1.09
4.48	-1.05
4.95	-0.59
4.60	-0.83

EXPLANATORY NOTES

1. 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 10 percent chance that the OFHEO All Transactions House Price Index for that MSA will be lower two years from the date of the data.
2. 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.
3. **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.
4. 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.
5. 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.
6. The **local unemployment rate** is calculated with Bureau of Labor Statistics MSA-wide quarterly averages, not seasonally adjusted.
7. 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.
8. All averages are population weighted.

# Introduction of PMI U.S. Market Risk Ranks

With this issue of ERET, we are introducing a new ranking procedure that is designed to highlight meaningful differences between categories of risk while minimizing focus on marginal changes in scores that do not represent significant changes in an MSA's risk profile.

The ranking categories were designed based on a mixture of risk scores and volatility. In general, a risk rank is designed to have approximately twice the price volatility than the preceding risk rank. The following table details this result for the first quarter 2007 results.

RISK RANK	Score Range	Average Score	Average Volatility	Volatility Multiple to Next Rank
1	> = 600	639	18.4	1.6
2	500-599	552	11.7	1.7
3	300-499	368	6.9	2.1
4	100-299	184	3.2	2.1
5	0-99	79	1.6	—

Given this definition, the various ranks differ in their dependencies on the primary determinants of price volatility and rate of price change (acceleration), housing affordability, and demeaned unemployment. The relative importance of each of these factors to the final risk score varies as one moves from the highest to lowest risk categories.

**Risk Rank 1**, the highest risk category, is characterized by high levels of price volatility and acceleration, coupled with low housing affordability. The relationship to demeaned unemployment, however, is mixed with most MSAs being characterized by exceptionally strong levels of employment. Collectively, these trends imply that the price and affordability characteristics of the market are the primary risk determinants today, with labor following in relative importance.

**Risk Rank 2**, the second highest risk category, is characterized by high to moderate levels of price volatility and acceleration, coupled with moderately low levels of housing affordability. Because the price signal is mixed in this category, the relative importance of an individual MSA's employment performance rises in importance. This group is largely characterized by exceptionally low levels of demeaned unemployment.

**Risk Rank 3**, the middle category, is best characterized as having a balance in the relative importance of each of the primary determinants – price volatility and acceleration, affordability, and employment. MSAs in this category generally tend to be characterized by moderate levels of price volatility and acceleration, housing affordability, and demeaned unemployment, resulting in moderate risk scores.

**Risk Rank 4**, the second lowest risk category, is characterized by low to moderate levels of price volatility and acceleration, moderately high levels of housing affordability, and relatively weaker labor markets (i.e., relatively higher levels of demeaned unemployment).

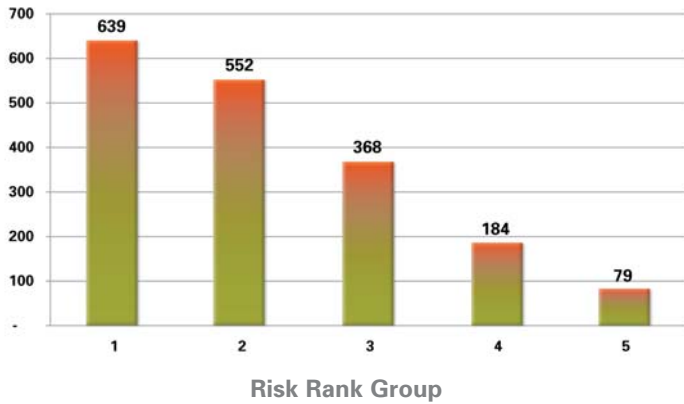
**Risk Rank 5**, the lowest risk category, is characterized by low levels of price volatility and acceleration, coupled with exceptionally high levels of housing affordability. As with rank 1, the relative importance of employment performance in this category takes a back seat to the other primary determinants, price volatility and affordability, with strong housing affordability being the most important determinant.

These characteristics are demonstrated in the following series of charts, which are based on the individual characteristics of the top 50 MSAs. (Note: All values are weighted by rank category population.) ♦

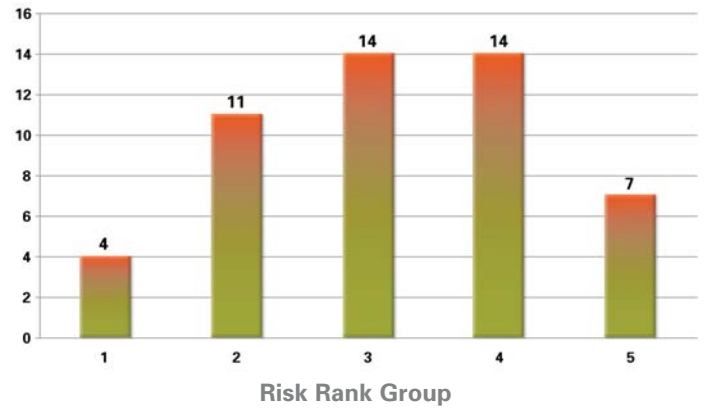
	Probability of Price Decline	Price Volatility	Price Acceleration	Housing Affordability	Demeaned Unemployment
Risk Rank 1	Very High	Very High	Very High	Very Low	Low
Risk Rank 2	Moderately High	Moderately High	Moderately High	Moderately Low	Low
Risk Rank 3	Moderate	Moderate	Moderate	Moderate	Moderate
Risk Rank 4	Moderately Low	Moderately Low	Moderately Low	Moderately High	High
Risk Rank 5	Very Low	Very Low	Very Low	Very High	Mixed



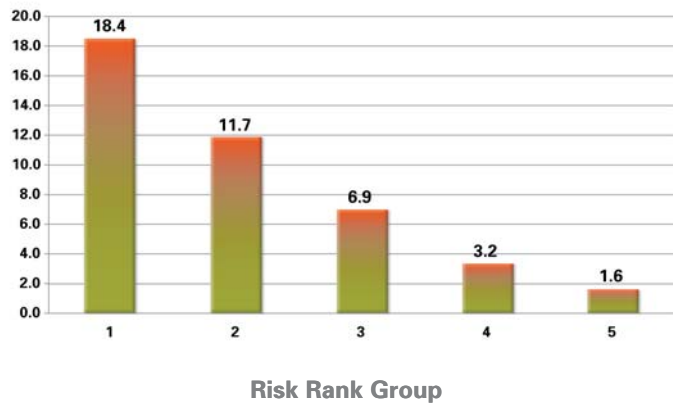
**Risk Index Score**



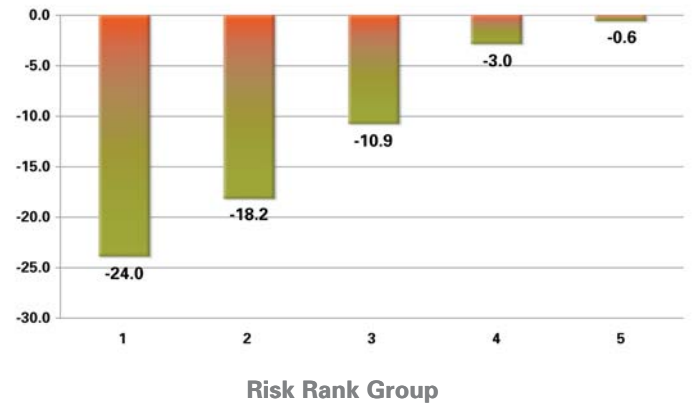
**Group Count**



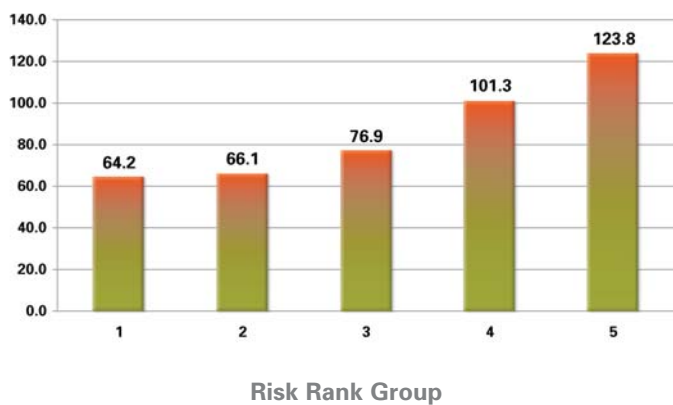
**Price Volatility**



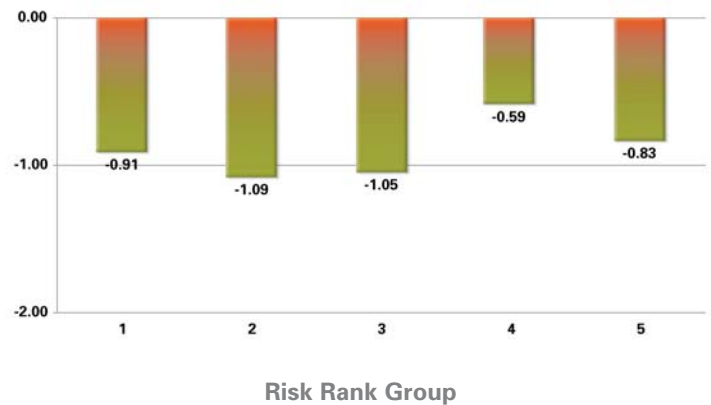
**Price Acceleration**



**Housing Affordability**



**Demeaned Unemployment**





## Risk Overview for Selected MSAs

*(continued from page 3)*

The exceptions noted above are located in the industrial Midwest and include **Detroit** and **Warren, MI**, whose housing markets are showing signs of continued stress. Although volatility has been fairly low, high and increasing rates of unemployment in those MSAs caused by continued layoffs in the auto and related industries are driving these risk scores higher. Despite the fact that the annual rates of price appreciation in these two MSAs were negative during the first quarter of 2007, -2.98 and -1.75, respectively, risk scores are fairly low because the probability of a continued slide in house prices is reduced the longer that price growth actually stays negative. Simply put, prices can't fall forever. At some point the market will revert to its mean positive growth rate, resulting in a reduced probability of further declines.

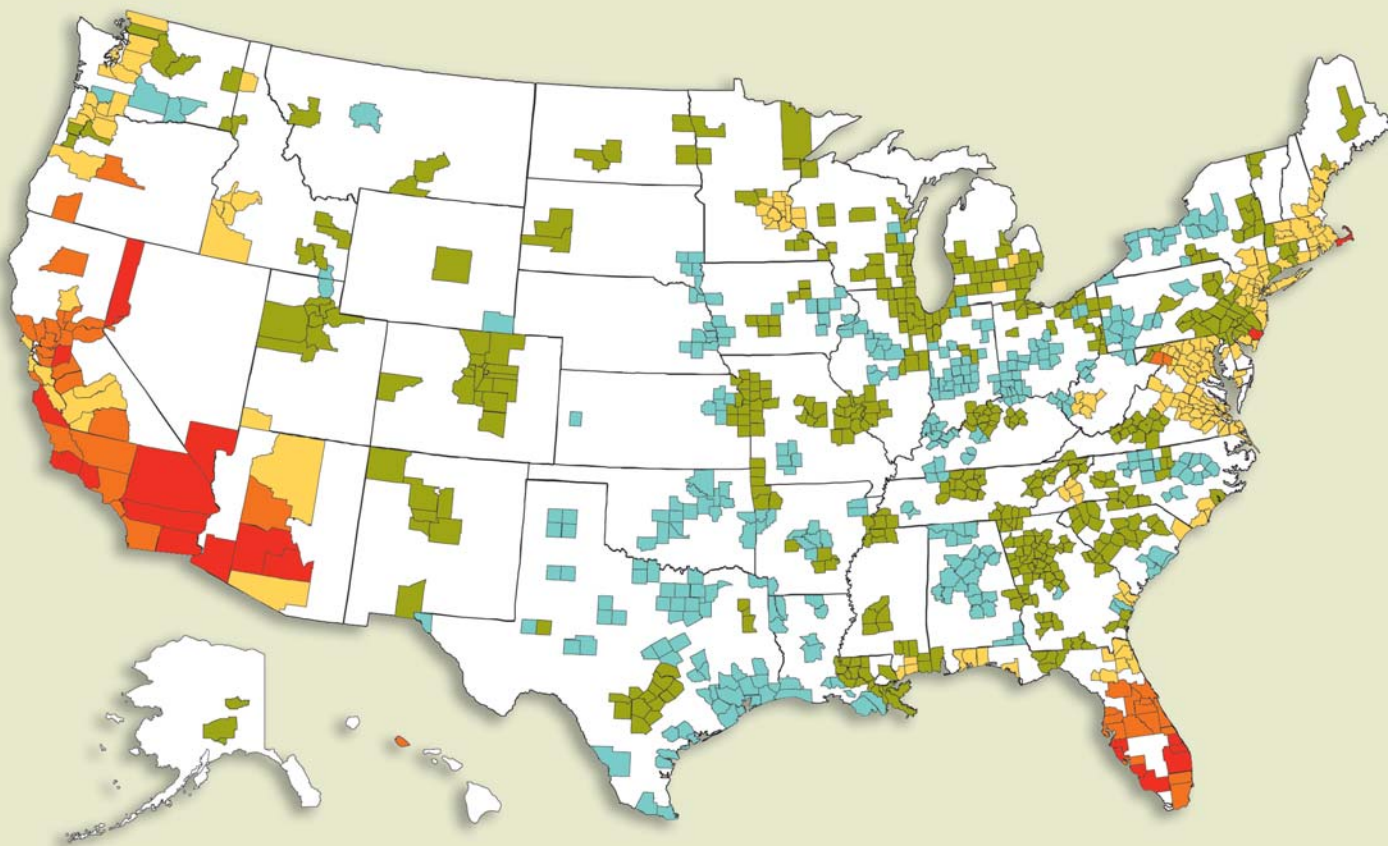
### Middle Rank MSAs

Price growth has slowed markedly in the northeast and along the mid-Atlantic corridor, while continuing to be strong in the northwestern states. For example, **Cambridge, MA** has seen its rates of appreciation decline over the previous 12 months to -0.50 percent. Again, because prices have already begun adjusting downward, the probability that prices will be lower two years from now is not as high as in the MSAs that have seen a sharp recent trend reversal.

Other MSAs in the region, specifically **Nassau-Suffolk** and **New York, NY**, **Providence, RI**, **Baltimore, MD**, and **Edison** and **Newark, NJ**, have experienced slowing in the rate of home price appreciation. However, prices have been less volatile there than elsewhere, indicating that they are less likely to decline over the course of the next two years. All of these MSAs fall into the middle of the distribution of the top 50 MSAs; as a group they have an average un-weighted risk score of 397.

Finally, while off their recent highs, many MSAs in the Rocky Mountain and northwestern states have continued to experience substantial rates of price appreciation and volatility. Coupled with this, their affordability numbers, although not bad when compared to those of California and Florida, fell substantially during the first quarter of 2007. Notable among this final group are **Seattle, WA** and **Portland, OR**, which moved into the mid tier of the risk distribution. ♦

# Geographic Distribution of HOUSE PRICE RISK



The above map depicts in color the geographic distribution of house price risk for all 379 MSAs and the District of Columbia. Each MSA is assigned a risk rank and corresponding color. Among the 50 largest MSAs, **Riverside, CA**, **Phoenix, AZ**, **Las Vegas, NV**, and **West Palm Beach, FL** rank highest on the index, with a 60 percent or greater 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 379 MSAs are provided in an appendix, available on the publications page of the media center at [www.pmigroup.com](http://www.pmigroup.com).



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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 10% probability of falling house prices.

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.

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