

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

FALL 2008

PMI MORTGAGE INSURANCE CO.

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## Huge Shifts in Mortgage Origination Trends

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

Two trends in the way households are selecting mortgages have emerged as a result of the unprecedented turmoil in the housing and mortgage finance markets, which have expanded into the broader financial markets. First, households are selecting more government-insured mortgages. Second, households are moving away from adjustable-rate mortgages (ARMs) to fixed-rate mortgages (FRMs).

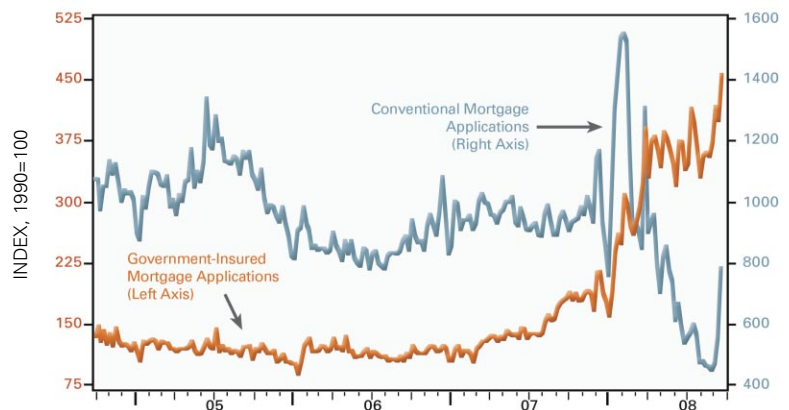
The move toward government-insured loans – those issued by the Federal Housing Administration (FHA) or the Veteran's Administration (VA) – in large part represents a shift away from jumbo, subprime, and Alt-A loans, which were primarily ARM markets. Moreover, these shifts appear to be accelerating as we move through 2008.

**F**igure 1 shows the index of mortgage applications for both FHA/VA and conventional loans from the Mortgage Bankers Association's (MBA) weekly survey. Applications for government-insured loans began to pick up in 2007 and they have

surged in 2008, climbing in the most recent week to their highest levels in the eighteen-year history of the survey. At the same time, conventional mortgage applications dropped sharply throughout 2008, although they have picked up in recent weeks.

*(continued on page 2)*

**Figure 1: FHA/VA Applications Up Strongly in 2008**



Source: Mortgage Bankers Association / Haver Analytics



## Huge Shifts in Mortgage Origination

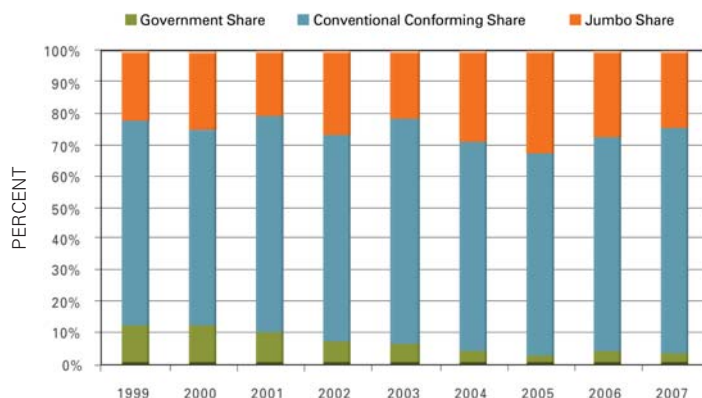
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The decline in conventional mortgage applications reflects the evisceration of the subprime and Alt-A markets, and the significant drop in jumbo loan activity as mortgage rates have spiked in that portion of the market. The low point in conventional mortgage applications came in the first half of August, and could have been reflecting a pull-back by Fannie Mae and Freddie Mac (the GSEs) as they attempted to conserve capital. Because the other parts of the conventional market had already been pared so much, it is unlikely that there were additional meaningful declines there. Overall the conventional mortgage applications market is down by about fifty percent in 2008, while applications for government-insured mortgages have surged by a factor of three over last year's average,

Mortgage applications are not the same as originations because applications can be rejected by lenders. The link between the two is close enough, however, to make reasonable inferences about the resulting mortgage originations. The applications data suggest that the FHA/VA share of originations in 2008 has climbed to about 18 percent of total single-family mortgage originations. Moreover, this share probably climbed to at least 25 percent in the July-August period, when conventional applications fell the most.

**Figure 2** shows the shares of FHA/VA, conventional conforming, and jumbo loans back to 1999. (Note that conventional loans are simply the sum of conventional conforming and jumbo loans, with the former defined as non-government insured loans that are less than the Fannie Mae/Freddie Mac conforming mortgage loan limit). The jump over the past year in the share of government-insured mortgage loans is very unusual. Over the nearly decade-long period shown in **Figure 2**, the highest government share was 12.7 percent in 2000. The last time that share was higher than 2008 was in 1994, and even then it was only modestly higher at 18.6 percent. In recent years, the government-insured share averaged only 3.0-3.5 percent, which makes the jump to around 18 percent for the year – and around 25 percent in July-August – even starker.

**Figure 2: The FHA/VA Share Has Been Low in Recent Years**



Source: HMDA, FHA, VA, Fannie Mae

**Figure 3: FRM Rates and FRM-ARM Spread Both Down**



Source: Freddie Mac / Haver Analytics

The other notable feature in **Figure 1** is the surge in mortgage applications that began near the end of August and continued into mid-September. This surge likely is resulting from the sharp drop in mortgage rates (as shown in **Figure 3**) that occurred after Fannie Mae and Freddie Mac were placed into conservatorship and is reflected in both FHA/VA and conventional mortgage applications.

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# 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 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, the probability of lower future house prices in the nation's MSAs continued to move along two distinctly different tracks during the second quarter of 2008, a trend that began in the fourth quarter of 2007. In general, while risk rose on average across the nation, it increased most in those MSAs largely affected by rising rates of foreclosures and unemployment. Specifically, the bulk of the MSAs in **Florida, California, Arizona, and Nevada** continue to lead the nation in risk (and many of these MSAs are becoming riskier), while many MSAs in the rest of the nation are continuing to show relatively low risk of future price declines.

In the second quarter 17 of the largest 50 MSAs ranked in the highest risk category. This is a sharp reversal from the previous quarter, when risk declined in 35 of them. Moreover, 359 of the nation's 381 MSAs (94 percent) showed an increase in risk; up from 86 percent seeing a decline in the first quarter. Despite the increased risk in a large number and share of MSAs, the average increase was not significant. The population weighted average score for all 381 MSAs rose from 22.3 to 28.3 between the first and second quarters of 2008. This says that the odds of lower home prices in two years for most areas of the country are still moderately low.

## Trends in Risk

Identically to the first quarter, 17 of the largest 50 MSAs ranked in the two highest risk categories. Sixteen of these MSAs were in **California, Florida, Nevada, and Arizona**. **Providence-New Bedford-Fall River, MA** was the only major MSA in the highest risk categories that was not in one of these four states. Risk of lower prices in two years is greater than 70 percent in all of these MSAs, with 14 having risk greater than 90 percent. Across all of the nation's 381 MSAs, 62 (16 percent) ranked in the elevated and high risk of decline categories. Alternatively, 304 (80 percent) of the nation's MSAs had a minimal-to-low risk of a cumulative two-year price decline. These values are effectively unchanged from

the first quarter when 15 percent were in the elevated to high-risk categories, and 81 percent had a minimal to low risk of decline.

The primary driver of the increased risk scores is the continued increase in foreclosure rates. According to the Mortgage Bankers Association's National Delinquency Survey, the rate of foreclosure starts and the percentage of loans in the process of foreclosure set new records during the second quarter of 2008. The increases in foreclosures in **California and Florida** overwhelmed improvements in states like **Texas, Massachusetts, and Maryland**. For the quarter, a majority of the states saw relatively little change in foreclosure rates. **California and Florida** alone accounted for 39 percent of all of the foreclosures started in the country during the second quarter and 73 percent of the increase in foreclosures between the first and second quarters. Only eight states had rates of foreclosure starts that were above the national average: **Nevada, Florida, California, Arizona, Michigan, Rhode Island, Indiana, and Ohio**. The remaining states plus the District of Columbia were below the national average.

The greatest increase in risk occurred in MSAs located in Florida, Arizona, and California. In **Florida**, risk continued to increase fastest in the northern portion of the state. **Tallahassee, Pensacola, and Gainesville** led the increase with risk scores increasing between 37 and 54 percentage points. With the exception of Tallahassee, the remaining 21 of the state's 22 MSAs all have risk scores above 90 percent. Tallahassee's risk score is 89.5 percent. The average probability of a cumulative decline in prices for the state as a whole by the end of the second quarter of 2010 exceeds 98 percent.

**California** also continued to see an increased risk of future price declines in the second quarter. All of the state's 28 MSAs experienced an increase in their risk score. Additionally, they are all in the highest risk category, and 24 of the 28 had risk scores over 90 percent. The state averaged a 95.4 percent probability of price decline. The greatest probability of decline is in **El Centro, CA** (99.8 percent), while the lowest probability of decline is in **San Francisco** (71.6 percent). In general, the northern California MSAs continue to possess less risk than the Central Valley and southern California MSAs. Two of the state's largest MSAs, **Los Angeles-Long Beach-Glendale and Riverside-San Bernardino-Ontario**, had risk scores of 98.5 and 99.5 percent, respectively.

Although risk is still rising in the state, excess housing supply is continuing to decline in selected MSAs across the state. For example, according to the California Association of Realtors, after peaking in  
*(continued on page 8)*

# The Effects of Increasing Foreclosure and Unemployment Rates on House Prices

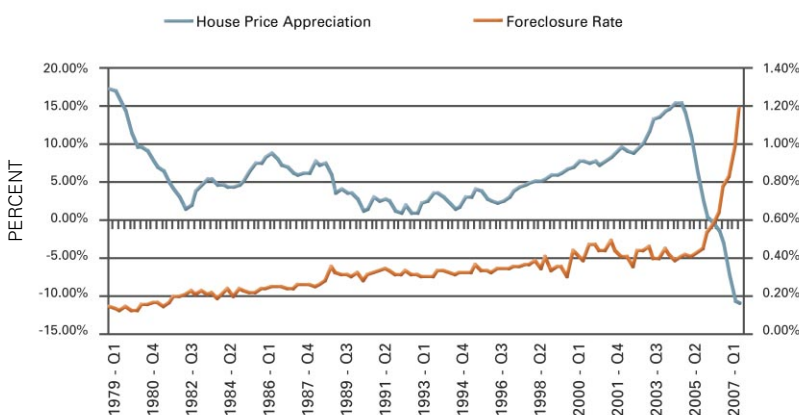
We're seeing the largest correction in housing prices since the Great Depression as a result of the massive run-up in prices that took place during the housing boom. Foreclosure rates have reached record levels, and now, to further compound the problem, national unemployment rates have jumped in response to extremely slow economic growth. We shouldn't be surprised that house prices are falling. Regional data show that house price appreciation is strongly tied to foreclosure and unemployment rates. But, since this is the first time in the post-war period that prices are falling on a national basis for a sustained period of time, the same relationship between foreclosures and unemployment is impacting national home price appreciation as well.

## Focus on Foreclosures

According to the Mortgage Bankers Association's (MBA) National Delinquency Survey, the rate of foreclosure starts and the percentage of loans in the process of foreclosure set new records during the second quarter of 2008. The percentage of loans on which foreclosures were started in that quarter was 1.08 percent, up by 7 basis points from the prior quarter and up by 49 basis points from a year earlier (non-seasonally adjusted data). The national foreclosure numbers continue to be driven by the deteriorating housing situations in California, Florida, Arizona and Nevada. There has been relatively little change in the remainder of the nation. **Figure 1** shows nearly 20 years worth of data comparing the national foreclosure rate and 12-month house price appreciation rates.

According to the Loan Performance National House Price Index (HPI), after peaking during the third quarter of 2005 at 15.7 percent, house price appreciation rates have rapidly declined to their current all-time lows of -10.7 percent. Foreclosure rates began to rise about a year after price appreciation peaked, but they really began to spike after house price appreciation turned negative. While this relationship of falling house prices and rising foreclosure rates seems reasonable, there is little correlation between these two over time; mostly because it's only been in the past couple of years that national house prices have declined. Because of the local nature of real estate, and because there are many examples of house prices falling at the regional level, the negative relationship between rising foreclosures and falling house prices is illustrated best at the regional level.

**Figure 1: United States**



Source: Loan Performance / Haver Analytics

For most of the last thirty years, there has been a very strong lagged relationship between changes in house prices and foreclosure rates in California. During the early 1990s, for example, the state's economy suffered a serious recession as the defense sector shrank in response to the end of the Cold War, and pulled the housing market down with it. House price appreciation declined from an annual growth rate of 18.2 percent in the fourth quarter of 1988 to -4.6 percent in the fourth quarter of 1993. By the time house prices stabilized in the second quarter of 1996, foreclosure rates in the state had risen fourfold from 0.18 percent to 0.70 percent. When house price appreciation

*(continued on page 5)*

## Effects of Increasing Foreclosure and Unemployment

(continued from page 4)

increased from early 1996 to its peak in 2005, foreclosure rates fell consistently. And now with house prices falling sharply, foreclosure rates in California are skyrocketing. There has been a clear and significant negative correlation between house price appreciation and foreclosure rates in California over time.

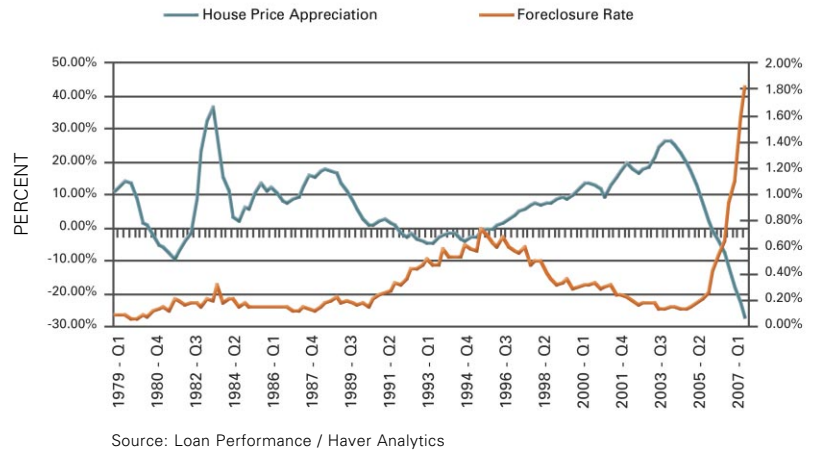
Despite the strong negative relationship between foreclosure rates and house price appreciation, there are other things that are causing foreclosure rates to rise and house prices to fall. Some of these other factors include the misalignment of credit and affordability, declining homeowner's equity, rising unemployment rates, upward adjustable-rate mortgage (ARM) resets, mortgage fraud, and record investor buying of homes. The decline in homeowners' equity is especially interesting as a factor in the recent drop in house prices.

It is well-established in the lending community that the less equity a borrower has, the greater the odds of a mortgage delinquency. Homeowners' equity is a function of the initial loan-to-value (LTV) ratio, house price appreciation, scheduled amortization payments, and special equity additions/withdrawals over the life of the loan. During the recent period of unsustainably rapid increases in house prices, many homeowners withdrew significant amounts of equity from their homes with cash-out refinancing, closed-end second mortgages, and home equity lines of credit (HELOCs), which prevented the LTVs on their homes from rising. Amortization doesn't provide much equity early on either, as it occurs slowly in the first years of new loans, and has very little effect on equity growth during that period. Moreover, original LTVs fell sharply over the years of the housing boom, especially in response to increased use of loans with simultaneous second mortgages (so-called "piggyback" loans), which often had LTVs of 100 percent.

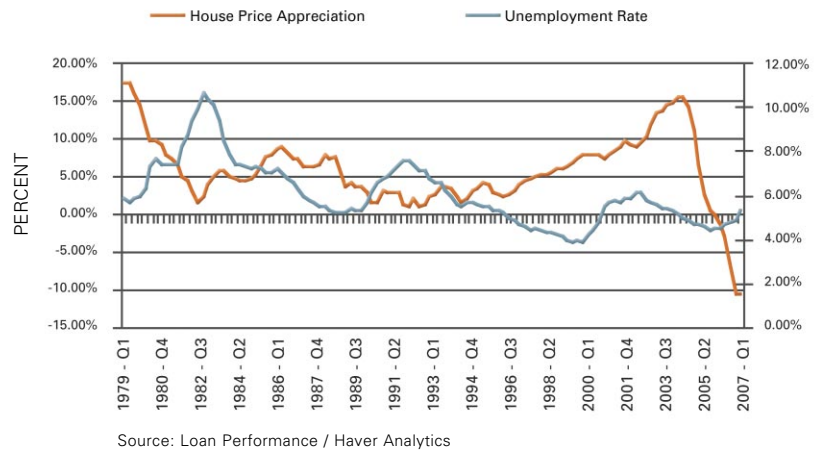
When combined with home price declines, these factors have caused a sharp rise in the debt-to-value ratio of American households. According to the Federal Reserve, the average household's real estate equity fell to 45.2 percent in the second quarter of 2008, an all-time low (or a debt-to-value ratio of 54.8 percent, an all-time high).

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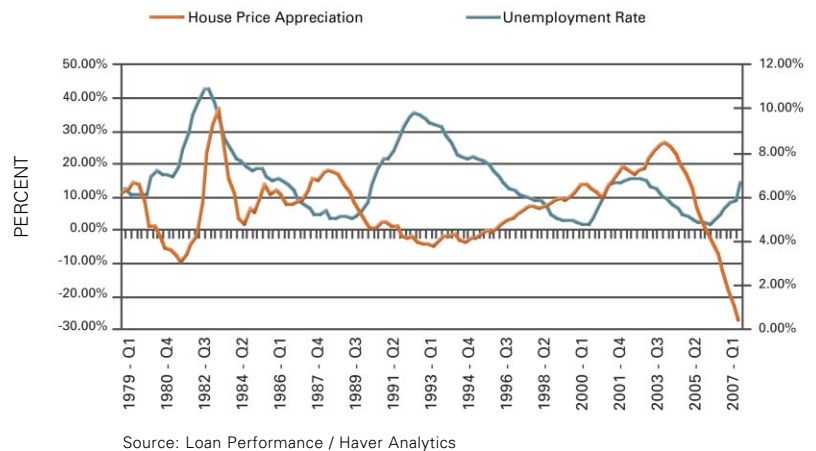
### Figure 2: California



### Figure 3: United States



### Figure 4: California





**MSA**

	STATE	RISK RANK	PMI U.S. MARKET RISK INDEX <sup>1</sup>		PRICE APPRECIATION <sup>3</sup>			
			2Q '08	1Q '08 <sup>2</sup>	Volatility <sup>4</sup>	2Q '08	2Q '07	Difference
Fort Lauderdale-Pompano Beach-Deerfield Beach, FL (MSAD)	FL	High	99.5	93.5	19.03	-18.11	0.50	-18.61
Riverside-San Bernardino-Ontario, CA	CA	High	99.5	96.5	21.25	-22.95	0.83	-23.78
Orlando-Kissimmee, FL	FL	High	99.4	90.8	18.07	-10.34	2.98	-13.32
Miami-Miami Beach-Kendall, FL (MSAD)	FL	High	99.3	87.0	13.76	-10.68	7.25	-17.93
Tampa-St. Petersburg-Clearwater, FL	FL	High	99.0	87.7	15.03	-13.14	1.22	-14.36
Las Vegas-Paradise, NV	NV	High	98.5	84.6	23.83	-17.67	-0.56	-17.11
Los Angeles-Long Beach-Glendale, CA (MSAD)	CA	High	98.5	87.2	17.88	-14.28	1.72	-16.00
Santa Ana-Anaheim-Irvine, CA (MSAD)	CA	High	97.7	85.0	19.45	-15.31	-2.56	-12.75
Jacksonville, FL	FL	High	97.5	71.3	10.15	-5.36	5.18	-10.54
Phoenix-Mesa-Scottsdale, AZ	AZ	High	96.3	81.3	22.88	-11.06	1.07	-12.14
Sacramento-Arden-Arcade-Roseville, CA	CA	High	96.3	84.4	22.18	-17.68	-7.03	-10.65
San Diego-Carlsbad-San Marcos, CA	CA	High	95.9	81.7	20.97	-14.51	-4.28	-10.23
Oakland-Fremont-Hayward, CA (MSAD)	CA	High	94.4	75.7	17.15	-14.77	-3.86	-10.91
San Jose-Sunnyvale-Santa Clara, CA	CA	High	87.1	54.7	14.21	-8.33	0.88	-9.21
Providence-New Bedford-Fall River, RI-MA	RI	High	72.4	41.9	13.97	-4.74	-1.35	-3.39
San Francisco-San Mateo-Redwood City, CA (MSAD)	CA	High	71.6	25.7	12.32	-5.84	-0.48	-5.36
Edison-New Brunswick, NJ (MSAD)	NJ	Moderate	35.1	16.6	11.09	-3.29	0.22	-3.51
Nassau-Suffolk, NY (MSAD)	NY	Moderate	29.4	17.2	11.03	-3.61	0.46	-4.06
Washington-Arlington-Alexandria, DC-VA-MD-WV (MSAD)	DC	Moderate	26.0	20.4	15.81	-9.14	0.88	-10.02
Virginia Beach-Norfolk-Newport News, VA-NC	VA	Moderate	25.4	12.4	13.36	-0.70	5.40	-6.10
Detroit-Livonia-Dearborn, MI (MSAD)	MI	Low	17.8	9.5	6.53	-10.81	-4.00	-6.81
Minneapolis-St. Paul-Bloomington, MN-WI	MN	Low	14.8	7.1	7.19	-3.49	0.41	-3.90
Newark-Union, NJ-PA (MSAD)	NJ	Low	14.4	6.0	8.74	-2.86	2.16	-5.02
Baltimore-Towson, MD	MD	Low	10.1	4.8	11.40	-2.11	4.99	-7.10
New York-White Plains-Wayne, NY-NJ (MSAD)	NY	Minimal	9.8	5.0	9.00	-1.65	2.86	-4.52
Boston-Quincy, MA (MSAD)	MA	Minimal	7.7	11.2	11.74	-2.91	-2.30	-0.62
Warren-Troy-Farmington Hills, MI (MSAD)	MI	Minimal	7.3	4.0	6.23	-8.57	-3.92	-4.65
Portland-Vancouver-Beaverton, OR-WA	OR	Minimal	6.4	2.9	10.81	-0.18	7.95	-8.13
Chicago-Naperville-Joliet, IL (MSAD)	IL	Minimal	6.3	1.2	4.98	-1.15	3.11	-4.26
Atlanta-Sandy Springs-Marietta, GA	GA	Minimal	3.5	1.8	1.31	0.02	4.00	-3.98
Seattle-Bellevue-Everett, WA (MSAD)	WA	Minimal	2.3	1.5	9.58	0.07	9.83	-9.75
Philadelphia, PA (MSAD)	PA	Minimal	2.1	1.1	7.75	0.59	3.77	-3.18
Cambridge-Newton-Framingham, MA (MSAD)	MA	Minimal	1.6	3.3	8.65	-2.23	-1.24	-0.99
Nashville-Davidson--Murfreesboro--Franklin, TN	TN	Minimal	1.6	<1	4.48	3.07	6.89	-3.83
Cleveland-Elyria-Mentor, OH	OH	Minimal	1.1	<1	3.67	-1.79	-0.86	-0.92
St. Louis, MO-IL	MO	Minimal	<1	<1	3.38	0.78	3.71	-2.93
Milwaukee-Waukesha-West Allis, WI	WI	Minimal	<1	<1	5.33	0.27	2.72	-2.45
Charlotte-Gastonia-Concord, NC-SC	NC	Minimal	<1	<1	4.44	5.24	8.89	-3.65
Cincinnati-Middletown, OH-KY-IN	OH	Minimal	<1	<1	2.18	-0.41	2.39	-2.80
Denver-Aurora, CO	CO	Minimal	<1	<1	2.35	0.38	0.44	-0.06
Columbus, OH	OH	Minimal	<1	<1	2.80	0.48	0.32	0.16
Austin-Round Rock, TX	TX	Minimal	<1	<1	7.38	4.98	10.66	-5.68
Kansas City, MO-KS	MO	Minimal	<1	<1	2.30	0.05	3.23	-3.19
Indianapolis-Carmel, IN	IN	Minimal	<1	<1	1.18	1.72	2.67	-0.95
Memphis, TN-MS-AR	TN	Minimal	<1	<1	1.84	0.98	3.64	-2.67
San Antonio, TX	TX	Minimal	<1	<1	3.95	4.02	8.84	-4.82
Pittsburgh, PA	PA	Minimal	<1	<1	1.47	3.21	3.71	-0.49
Houston-Sugar Land-Baytown, TX	TX	Minimal	<1	<1	1.74	4.44	5.47	-1.04
Dallas-Plano-Irving, TX (MSAD)	TX	Minimal	<1	<1	0.93	2.06	4.82	-2.77
Fort Worth-Arlington, TX (MSAD)	TX	Minimal	<1	<1	0.89	3.07	4.07	-1.00

**Weighted Average Values by Risk Rank:<sup>5</sup>**

High	95.6	78.6	17.4	-13.4	0.3	-13.7
Elevated	N/A	N/A	N/A	N/A	N/A	N/A
Moderate	28.7	17.6	13.2	-5.2	1.3	-6.5
Low	14.0	6.7	8.5	-4.4	1.1	-5.6
Minimal	3.3	1.7	4.9	0.3	3.6	-3.3
All	35.3	28.5	10.03	-4.90	2.22	-7.12

Top 50 Weighted Averages:

AFFORDABILITY INDEX <sup>6</sup>		
2Q '08	2Q '07	Difference
81.52	75.82	5.70
81.86	73.86	8.01
86.37	84.41	1.96
73.89	70.77	3.12
88.80	84.68	4.13
105.76	100.03	5.73
78.71	74.38	4.33
88.71	83.03	5.68
90.09	89.29	0.80
82.92	79.86	3.06
102.06	95.13	6.94
98.71	93.27	5.44
91.86	86.64	5.22
87.15	84.47	2.68
96.42	94.51	1.90
100.40	98.47	1.93
88.89	88.25	0.64
88.15	86.08	2.07
91.76	88.41	3.35
93.53	93.26	0.27
121.63	115.38	6.26
101.70	100.39	1.31
98.85	97.76	1.09
96.28	95.82	0.45
90.24	88.76	1.47
95.98	97.06	-1.08
129.71	124.94	4.78
86.67	87.05	-0.38
106.92	107.29	-0.38
107.68	107.39	0.29
91.95	93.06	-1.11
106.58	107.33	-0.75
107.02	106.35	0.67
111.69	114.24	-2.55
141.57	142.18	-0.61
114.99	115.75	-0.76
114.11	114.83	-0.72
114.89	118.41	-3.52
138.04	138.50	-0.46
118.24	119.05	-0.81
135.88	136.36	-0.48
114.25	115.60	-1.35
122.60	123.48	-0.88
142.00	143.40	-1.41
134.94	137.54	-2.60
129.22	132.71	-3.49
140.97	142.96	-2.00
138.33	141.07	-2.74
135.46	137.71	-2.25
140.58	144.43	-3.85

80.0	75.7	4.3
N/A	N/A	N/A
90.5	88.5	2.0
103.6	101.6	2.0
115.4	116.1	-0.7

103.71 102.37 1.34

UNEMPLOYMENT RATE		
Rate <sup>7</sup>	Demeaned <sup>8</sup>	
2Q '08	2Q '08	1Q '08
4.73	0.06	-0.61
7.50	1.89	0.98
4.93	0.46	-0.16
5.03	-0.57	-1.67
5.47	0.89	0.21
5.93	0.98	0.42
6.40	0.28	-0.65
4.83	0.59	0.08
5.10	0.60	-0.01
3.67	-0.91	-1.17
6.43	1.29	0.75
5.53	0.90	0.35
5.73	0.14	-0.45
5.63	-1.13	-1.66
6.56	1.36	0.69
4.60	-0.64	-1.14
4.70	0.01	-0.23
4.40	0.11	-0.18
3.63	-0.15	-0.30
3.93	0.06	0.02
9.73	2.16	0.99
4.77	0.71	0.07
5.17	-0.03	-0.30
4.00	-0.54	-0.84
4.87	-1.31	-1.63
4.58	-0.43	-0.54
7.70	2.02	1.03
5.07	-1.83	-1.96
6.40	-0.17	-0.99
5.40	0.77	0.40
3.73	-1.80	-1.92
5.10	-0.03	-0.34
3.87	-0.70	-0.79
5.07	0.74	0.05
7.03	1.43	0.39
5.90	0.52	0.56
4.67	-0.92	-0.32
5.80	0.10	-0.40
5.30	0.18	-0.06
4.83	-0.70	-0.97
5.03	0.03	-0.13
3.73	-1.53	-1.46
5.33	-0.06	-0.32
4.60	0.17	-0.29
6.40	0.87	0.19
4.07	-1.34	-1.38
4.83	-0.48	-0.61
4.23	-1.62	-1.68
4.40	-1.56	-1.67
4.27	-1.19	-1.43

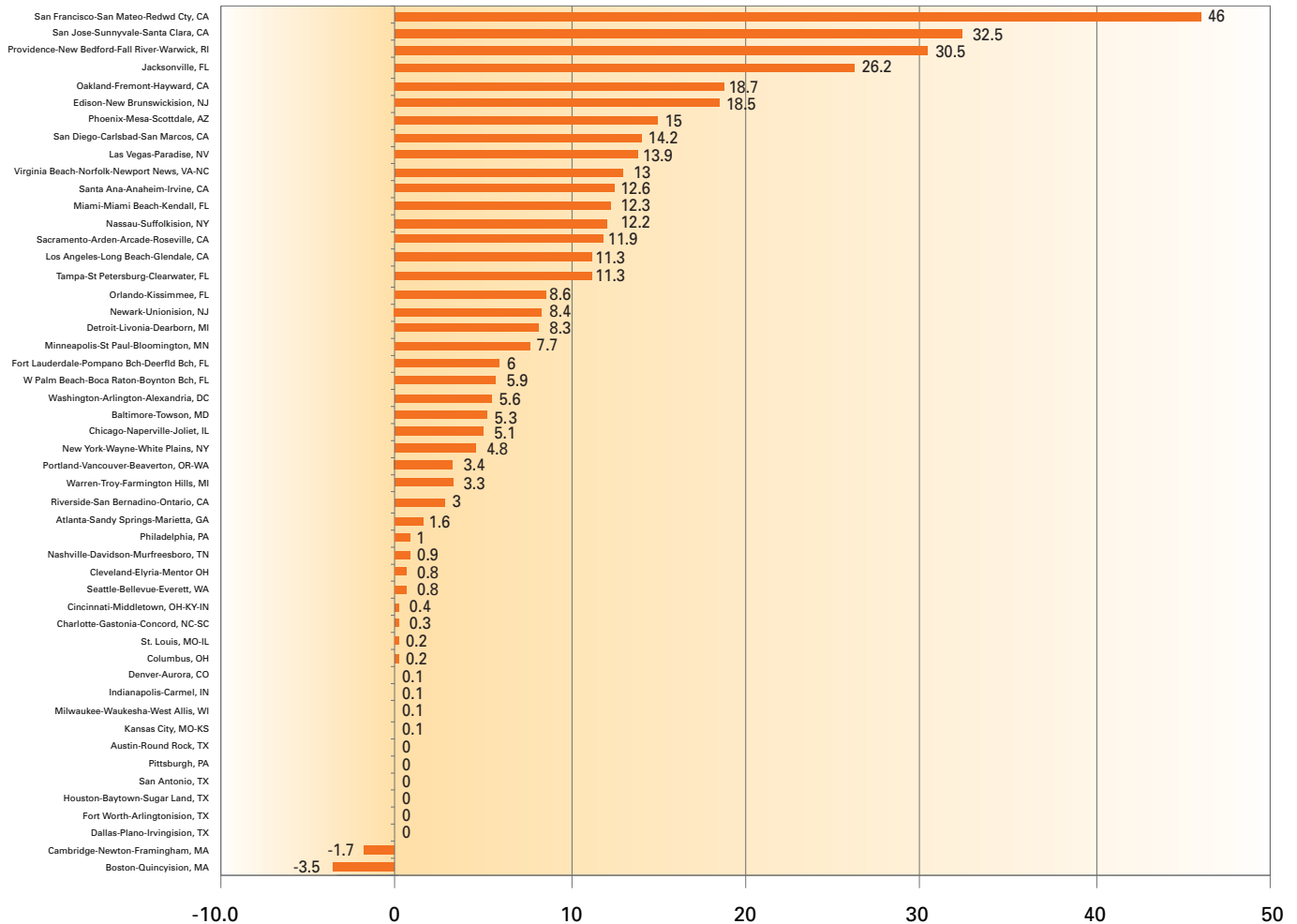
5.2	0.4	-0.3
N/A	N/A	N/A
4.1	0.0	-0.2
5.6	0.5	-0.1
5.1	-0.5	-0.8

5.25 -0.10 -0.55

## 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.
- 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 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.

## Change in Risk Index Scores 2nd Quarter 2008 vs. 1st Quarter 2008



### Trends in the Nation's MSAs

(continued from page 3)

November 2007 the average month's supply of unsold inventory in the state declined from 14.1 months to 7.0 months in June. Inventories remain highest in the Central Valley and southern portion of the state. The **Los Angeles MSA**, for example, held 9.1 months of excess supply at the end of June, while **San Francisco** had 6.5 months.

#### Trends in Home Price Appreciation

Home price appreciation rates are continuing to diverge along with risk scores. For all of the country's 381 MSAs, 59 percent had positive rates of house price appreciation over the past twelve months, which is roughly the same as the first quarter's 58 percent. According to the Office of Federal Housing Enterprise Oversight's (OFHEO) repeat-transaction home price index (HPI), price growth remained strongest in the central portion of the nation and weakest again in the states of **California, Florida, Nevada, Arizona,** and **Michigan**. For the past twelve months **California MSAs** averaged a decline in prices of 16.8 percent,

**Florida MSAs** averaged a 13.0 percent drop, Nevada averaged a 12.6 percent decline, **Arizona** averaged a 7.7 percent decline, and **Michigan** fell by an average of 4.0 percent. (Broader measures of house prices have shown larger declines in house prices than the OFHEO index.)

#### Trends in Housing Affordability

PMI's measure of housing affordability increased, albeit insignificantly, during the second quarter. This reflects the continued decline in house price depreciation occurring during the second quarter, as well as increases in mortgage rates and a slowdown in personal income growth over the period. 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.

For all 381 MSAs, the weighted average Affordability Index edged up to 109.3 in the second quarter, compared with the first quarter (continued on page 9)



## Trends in the Nation's MSAs

*(continued from page 8)*

reading of 108.6. Across the nation, 39.9 percent of the nation's 381 MSAs showed higher affordability in the second quarter than in the first. Affordability remains challenged in the 17 MSAs with risk scores in the two highest risk ranks, with affordability averaging 90.0 – marginally improved from 85.5 in the first quarter. Home prices may need to fall further in those areas in order to improve affordability by enough so that risk is meaningfully reduced. Recent sharp declines in mortgage rates will help this process.

### Trends in Employment

Unemployment rates are generally increasing across the nation. Across all 381 MSAs, the average unemployment rate rose to 5.23 percent during the second quarter. This was modestly above the first quarter average of 5.17 percent. Unemployment rates rose in 38 percent of the nation's 381 MSAs.

Rising unemployment rates have spread beyond those states most affected by the housing recession. This is symptomatic of the weakening of the general economy, causing unemployment rate increases to spread to other important sectors such as professional services and manufacturing. While unemployment rates remain high among the **California MSAs**, they remain a significant impediment to the housing markets in **Michigan** and **Illinois**.

In summary, the second quarter of 2008 saw a continued divergence in the paths of the housing markets. We see risk, as measured by the potential for further declines in prices, increasing in those states that have already been deeply affected by the downturn; those with excessive home price run-ups during the housing boom, large increases in foreclosures, and the biggest increases in unemployment rates. Any broad stabilization in house prices in these areas will not occur until the excess supply of houses, fueled in part by the continuing stream of mortgage foreclosures, slows to more historically normal rates. In much of the remainder of the country's MSAs, however, risk of lower prices in two years is relatively low and little changed from last quarter's measure. ◆

## Huge Shifts in Mortgage Origination

*(continued from page 2)*

An interesting component of this recent surge in applications is that they didn't occur everywhere. Refinance applications have jumped for both FHA/VA and conventional loans as mortgage rates have declined, but purchase applications rose for conventional loans and fell for government-insured mortgages. It's not clear at this point why this difference in purchase activity is occurring.

The fall in FRM rates that has occurred in recent weeks has also reduced the spread between FRM and ARM rates (see **Figure 3**). When a borrower uses an ARM loan, they are taking on additional interest rate risk that the lender normally holds and so need to be compensated for that risk. As the spread between FRM and ARM rates declines, so does the compensation the borrower receives, and ARMs become a less attractive option. The combination of both the low level of FRM rates and the reduced spread between FRM and ARM rates has caused the ARM share of mortgage applications to also fall sharply.

Looking ahead, we anticipate subprime and Alt-A lending to remain moribund, suggesting that the FHA/VA share should remain elevated relative to recent historical levels. It's likely that Fannie Mae and Freddie Mac will expand their activity in response to the recent changes there, which should cap the government-insured share of the market, and may even cause it to fall if GSE activity picks up significantly.

The jumbo market is also likely to revive over the next year, putting some additional downward pressure on the FHA/VA share. As a result, the peak in government-insured mortgage activity is probably over, but the decline in the share of FHA/VA loans may be slow. It is likely, however, that the ARM share of mortgage originations will stay depressed as long as mortgage rates are low and FHA/VA and GSE lending dominate the mortgage market. ◆



## Effects of Increasing Foreclosure and Unemployment

(continued from page 5)

About 40 percent of all households have no mortgage, but the value of their homes is included in the Fed's measure. If we were able to accurately measure the debt-to-value ratio for only those households that have a mortgage, the debt-to-value ratios would be significantly higher than the already-record level in the Fed's figures.

The effect of increasing foreclosure rates on house prices is both direct and indirect. The direct effect relates to increasing the supply of housing. Increasing the supply of housing during a period of falling (or even flat) demand will result in downward pressure on prices.

An indirect affect of increased foreclosures on house prices relates to the average sales price of foreclosed homes relative to other homes on the market. Foreclosed houses are often in worse condition than similar houses not in foreclosure, resulting in lower sales prices. In addition, many lending institutions that own foreclosed homes are more willing to drop their sales price than an owner occupant is in order to remove that property from their books. This is especially true if the owner occupant's motivation for the sale is to trade-up or trade down (for non-economic reasons).

### Focus on Unemployment

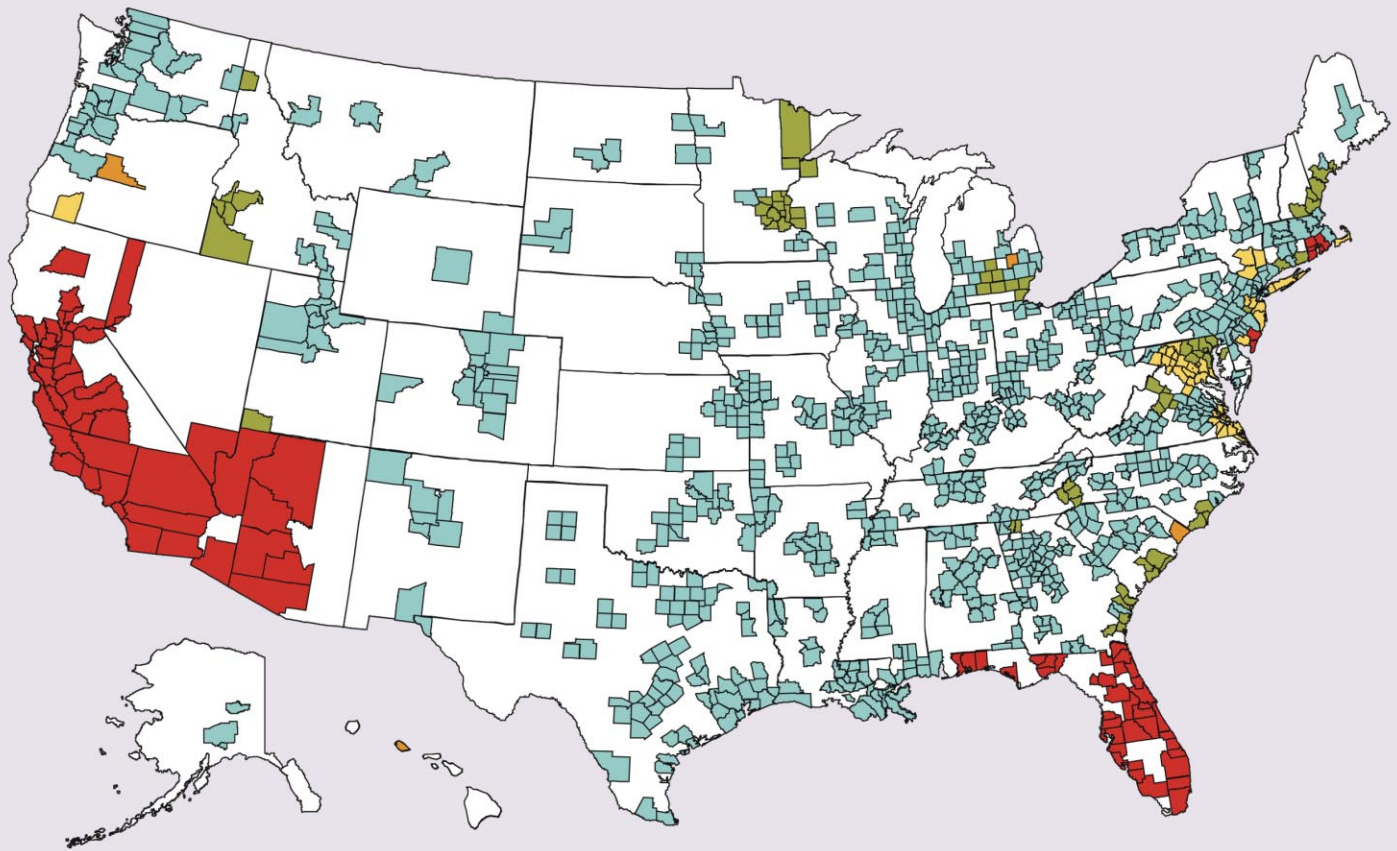
There is also a negative relationship between house price appreciation and changes in the unemployment rate, but it too is difficult to discern at the national level given the paucity of times in which house prices have fallen (see [Figure 3](#)). Moreover, the lags between changes in house prices and movements in the unemployment rate are complex.

The relationship between house price appreciation and unemployment is more easily observed at the regional level. [Figure 4](#) shows the nearly 30-year comparison of the California unemployment rate and house price appreciation rates.

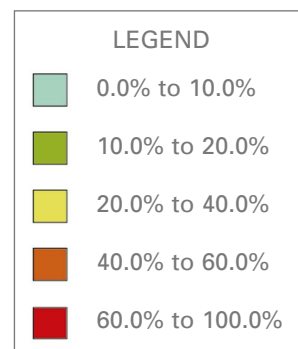
Periods of high and/or rising unemployment rates tend to be correlated with periods in which house price appreciation was negative in the state, and vice versa. The relationship, while strong, isn't perfect. An example of this is the increase in unemployment rates in California as a result of the 2001 recession, when house prices mostly rose throughout that period of rising unemployment. Still, the correlation between these two series is strong and not unexpected given that the ability to pay on a mortgage (determined in large part by whether the household has lost a job or not) impacts foreclosure rates.

While it's difficult to see the expected relationship between changes in house prices and movements in foreclosure and unemployment rates at the national level, the relationships are strong and easily seen at the regional level. The rise in foreclosure rates and the drop in house prices is more easily seen in the current period, however, because the magnitude of the movements has been so large. For prices to stabilize nationally, foreclosure rates must begin to decline on a broad basis while unemployment rates stop increasing. The good news is that the foreclosure and unemployment rates in many of the nation's states and MSAs have only increased modestly, making the downward pressure on house prices in those areas relatively small. Unfortunately, much of California, Florida, Arizona and Nevada continue to see rising foreclosure and unemployment rates, putting more downward pressure on house prices. ♦

# 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, **Fort Lauderdale-Pompano Beach-Deerfield Beach, FL** (ranks the highest on the index, with a 99.5 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-Q for the quarter ended March 31, 2008 and Form 10-Q for the quarter ended July 1, 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.

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.

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