

DEMOGRAPHIA

The Housing Downturn in the United States 2009 First Quarter Update



May 2009



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The Housing Downturn in the United States

2009 First Quarter Update

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Introduction

Every year, the *Demographia International Housing Affordability Survey* outlines measures the price of housing relative to incomes in the major metropolitan areas of six nations.¹ Over the last two years, housing prices have declined in many of these metropolitan areas. The most significant declines to date have been in the United States. This report is offered to provide updated information on markets in the United States, because substantial and broader price declines have occurred in the six months since publication of the 5th *Annual Demographia* report.

This report provides analysis of the housing downturn in 49 major metropolitan area markets,² where the loss in value is now more than \$4.5 trillion, or \$15,000 per capita.

The Housing Downturn: National Analysis

The bursting of the housing bubble has brought the steepest and swiftest decline in house values in recorded US history.

The national median house price fell from its peak in July 2006 to January 2009 by 29 percent.³ This loss, over a 2.5 year period, is comparable to the Great Depression house value loss of 27 percent over a four year period (1929-1933).⁴

The losses have been even more severe in the largest metropolitan areas. At the end of the first quarter of 2009, median prices averaged⁵ 21 percent below prices at the peak of the housing bubble.

Indeed, between 1952 and 2006, the value of the housing stock never declined for more than a three month period. The bubble changed all that. The value of the housing stock has now fallen nine straight quarters.

¹ <http://www.demographia.com/dhi.pdf>.

² Detroit and Nashville are excluded due to insufficient data.

³ Calculated from National Association of Realtors data.

⁴ <http://www.demographia.com/db-ff.pdf> and <http://www.newgeography.com/content/00623-the-panic-2008-how-bad-is-it>

⁵ Unweighted.

Phases of the Housing Downturn

The housing turndown has occurred in two phases.⁶ Overall, it is estimated that major metropolitan areas have experienced a \$4.65 trillion loss in housing value, \$2.44 trillion in Phase 1 and \$2.21 trillion in Phase 2 (Figure 1).

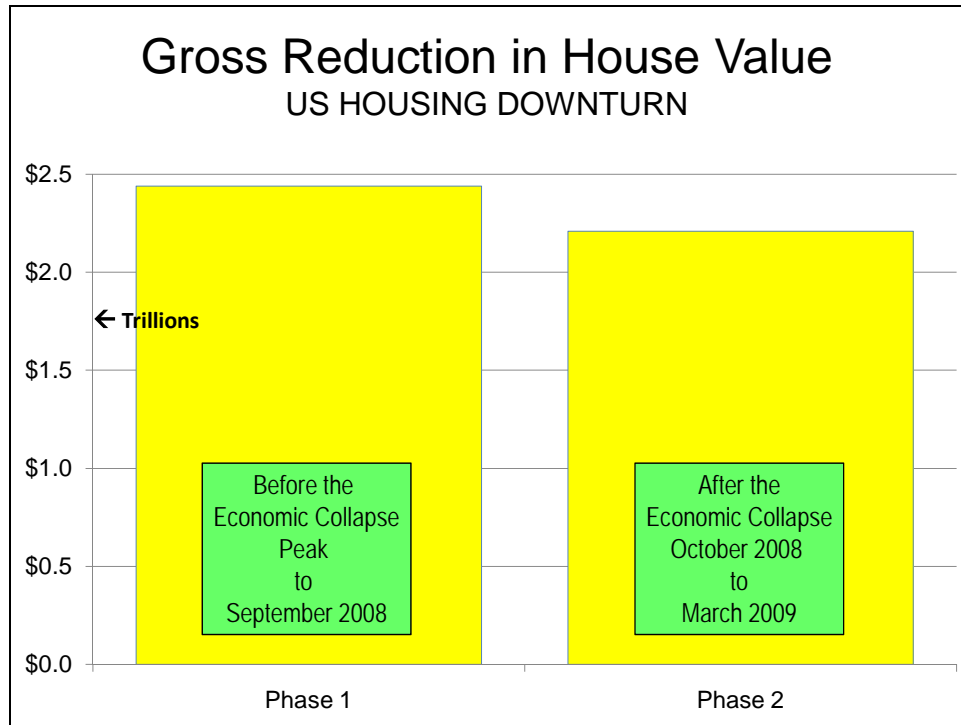


Figure 1

Phase 1: Before the Financial Collapse: Phase 1 covers the period before the financial collapse. This from the peak of the housing bubble to Meltdown Monday, September 15, 2008, the day of the Lehman Brothers bankruptcy. It is generally acknowledged that the huge losses in the United States housing market were the proximate cause of the financial collapse. It is estimated that Phase 1 house price losses were 18 percent in the United States. Overall, it is estimated that the average house declined by \$67,000 in value, while gross value losses at the national level are estimated at \$2.44 trillion from peak. Comprehensive house price data by metropolitan area is readily available only on a quarterly basis and as a result, this report considers Phase 1 to include the entire month of September.

In Phase 1, the heaviest losses in housing value were concentrated in a relatively small number of markets (Table 1).

Ground Zero Markets: In nine markets, referred to as “Ground Zero” markets, the average losses per house were more than 25 percent and \$75,000. These markets include all of the major metropolitan areas in California (Los Angeles, San Francisco, Riverside-San Bernardino, San Diego, San Jose and Sacramento as well as Miami, Tampa-St.

⁶ See also: <http://www.newgeography.com/content/00602-housing-downturn-moves-into-phase-ii>.

Petersburg, Washington, DC, Phoenix and Las Vegas). In Ground Zero markets, house values dropped by an average of 31 percent. The average house price loss in Phase 1 is estimated at \$175,000 in these Ground Zero markets and the gross value loss is estimated at \$1.79 trillion, three-quarters of the total loss of \$2.44 trillion. Each of the Ground Zero markets is classified as *More Prescriptive Land Use Regulation Markets* or *Smart Growth Emphasis Markets* (Box). Economic research shows that such markets, with their greater regulatory inflexibility, tend to experience larger house price increases, consistent with the general economic principle that limitations on supply tends to drive up prices.⁷

Other More Prescriptive Markets: Other More Prescriptive Markets generally experienced house price losses in Phase 1. Overall, these markets averaged a loss of 9 percent. The average house price declined by an estimated \$37,000, while the gross loss in value is estimated at \$0.50 trillion or one-fifth of the total \$2.44 trillion loss.

More Prescriptive Markets: Overall: Overall, the More Prescriptive Markets experienced an average price decline of 21 percent in Phase 1, or \$96,000 per house. The estimated \$2.29 Trillion in losses represented 94 percent of the total \$2.44 trillion national loss.

More Responsive Markets: More Responsive Markets experienced the smallest average price reductions in Phase 1, at 6 percent. The average price loss per house was \$12,000, which is 1/16th that of the Ground Zero Market losses per house. Gross losses are estimated at \$0.16 trillion in the More Responsive Markets, or 6 percent of the national \$2.44 trillion loss.

Phase 2: After the Financial Collapse: Phase 2 covers the period after the financial collapse of Meltdown Monday, which is continuing. The financial collapse and the resulting stress in mortgage and credit markets spread the housing distress much more generally to virtually all markets (Figure 2).

Ground Zero Markets: Prices continued to decline in the Ground Zero Markets, dropping another 25 percent in Phase 2, a smaller rate than in Phase 1. Overall, the decline from peak prices to the present is 48 percent. The share of losses declined substantially, however, as Ground Zero Markets accounted for 44 percent of the gross losses, and account for 59 percent of the losses thus far through Phase 2. The average house price fell another \$95,000, with the total average price now down \$269,000 from peak.

Other More Prescriptive Markets: Prices declined 18 percent in the Other More Prescriptive Markets, which represents acceleration from Phase 1. Overall the decline from peak prices to the present is 25 percent. The share of losses increased substantially, however, to 38 percent of the gross losses. Thus far through Phase 2, the Other More Prescriptive Markets have accounted for 29 percent of the gross loss in value. The

⁷ <http://www.demographia.com/db-dhi-econ.pdf>. For a description of the relationship between prescriptive land use regulation and the international financial collapse, see <http://www.freedompolitics.com/articles/housing-421-undead-crisis.html> and <http://www.demographia.com/db-meltdowngraphic.pdf>.

average house price fell \$63,000 in Phase 2, with the total average price now down \$100,000 from peak.

More Prescriptive Markets: Overall: Overall, the More Prescriptive Markets experienced an average price decline of 21 percent in Phase 2 (equal to that of Phase 1), or \$77,000 per house. More Prescriptive Markets accounted for 82 percent of the gross losses in Phase 2 and 88 percent of the \$4.65 trillion in losses in Phases 1 and 2.

More Responsive Markets: Prices declines accelerated strongly in the More Responsive Markets, from 6 percent in Phase 1 to 16 percent in Phase 2. Overall the decline from peak prices to the present is 21 percent. The share of losses increased substantially, however, to 19 percent of the gross losses. Thus far through Phase 2, the Other More Responsive Markets have accounted for 12 percent of the gross loss in value. The average house price fell \$31,000 in Phase 2, with the total average price now down \$43,000 from peak.

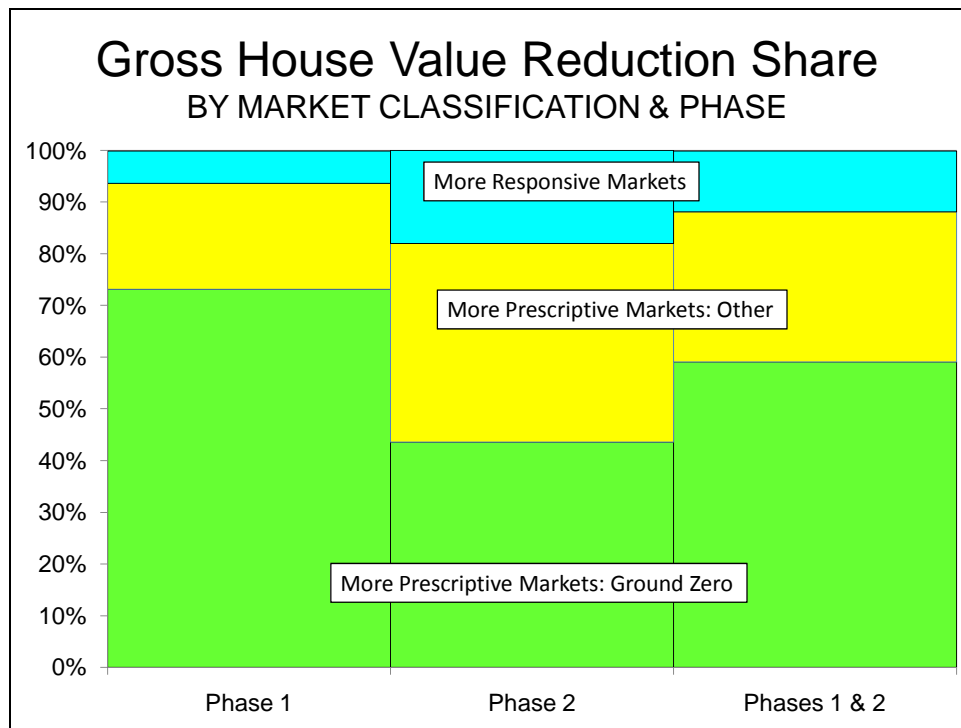


Figure 2

There are signs that the decline in house values may be slowing or even stalling. However, substantial financial damage has been inflicted. Moreover, house prices in the most expensive markets seem unlikely to return to their artificially high peaks at any point in the immediate future.

Major Metropolitan Area Analysis

The data by major metropolitan area is outlined below.

Estimated Change in Gross Housing Value (Table 2): The largest gross losses in housing value have occurred in Los Angeles, at \$695 billion, San Francisco at nearly \$446 billion and New York, at \$418 billion. Losses also exceed \$250 billion in Miami, Chicago and Washington, DC.

Estimated Average Price Reduction per House (Table 3): The largest estimated losses per house are in San Francisco (\$492,000) and San Jose (\$459,000). House prices have also fallen more than \$250,000 in San Diego, Los Angeles and Riverside-San Bernardino. The smallest estimated loss has been in Oklahoma City, at \$6,000. Austin and San Antonio have also experienced price losses of less than \$15,000.

Median Multiple (House Price/Household Income) Trend (Table 4): Historically, the Median Multiple (median house price divided by median household income) has averaged 3.0 or less in the United States.

Pre-Housing Bubble: Before the housing bubble (1980-2000), the Median Multiple averaged 2.9.⁸ The average in More Prescriptive Markets was 3.4, with the Ground Zero Markets at 3.8 and the Other Prescriptive Markets at 2.9, The More Responsive Markets had an average Median Multiple of 2.5.

Peak of the Bubble: The third quarter of 2007 represented the peak of the housing bubble in many markets. By this point, the Median Multiple averaged 4.6. The average in More Prescriptive Markets was 5.8, with the Ground Zero Markets at 7.3 and the Other Prescriptive Markets at 4.8, The More Responsive Markets had an average Median Multiple of 3.2.

Phase I: At the end of Phase 1 (third quarter of 2008) the Median Multiple had dropped to 3.9. The average in More Prescriptive Markets was 4.6, with the Ground Zero Markets at 5.2 and the Other Prescriptive Markets at 4.2, The More Responsive Markets had an average Median Multiple of 3.0.

Phase II: The most current data indicates that the Median Multiple has dropped to 3.1, nearly to the historic ratio of 2.9. The average in More Prescriptive Markets was 3.6, slightly above the pre-housing bubble average of 3.4. The Ground Zero Markets fell to 3.8, equaling the pre-housing bubble level. The Other Prescriptive Markets dropped to 3.5, still above the pre-housing bubble level of 2.9, The More Responsive Markets had an average Median Multiple of 2.6, just above the 2.5 pre-housing bubble level.

Median House Price Reductions from Peak (Table 5): The largest percentage losses in house prices have occurred in Riverside-San Bernardino (-57.7%), Sacramento (-56.5%), San Francisco (-52.5%), Phoenix (-51.5%), Cleveland (-51.5%) and Las Vegas (-51.3%). All of these markets

⁸ Based upon John F. Kennedy School of Government data, Harvard University.

experienced the greatest part of the loss in Phase 1, except for Cleveland, where more than 60 percent of the loss occurred in Phase 2. The smallest losses occurred in Oklahoma City (-3.3%), Raleigh (-5.3%), Austin (-6.1%), San Antonio (-6.2%) and Salt Lake City (-6.7%).

Median House Prices Compared to Prices at Historic Ratio (Table 6): Median house prices remain above the historic (1980-2000) Median Multiple level in 31 of the 49 metropolitan areas. In New York, prices would need to fall another \$122,000 to reach the historic ratio. Prices would need to fall \$95,000 in Portland, \$94,000 in Seattle, \$75,000 in Baltimore and \$74,000 in Salt Lake City.

Median house prices already have fallen back to or below the historic (1980-2000) Median Multiple level in 18 metropolitan areas. This includes Ground Zero Markets Las Vegas, Riverside-San Bernardino and Sacramento.

Box

LAND USE MARKET CATEGORIES

The land use market categories used in this report are as follows:

More Prescriptive Land Use Regulation Markets are those classified as "growth management," "growth control," "containment" and "containment-light" in *From Traditional to Reformed A Review of the Land Use Regulations in the Nation's 50 largest Metropolitan Areas* (Brookings Institution, 2006) as well as markets *Demographia* has determined to have significant rural zoning (large lot zoning) or significant restrictions on urban fringe development (New York, Chicago, Milwaukee, Minneapolis-St. Paul, Virginia Beach and Washington). More prescriptive markets can also be called *smart growth emphasis markets*.

More Responsive Land Use Regulation Markets are all others. In these markets, residential development is allowed to occur based upon market preferences and fundamental environmental regulation. More responsive markets can also be called *traditional markets*.

Table 1
Average House Price Reduction from Peak: United States
By Phase of the Housing Downturn

Factor	MORE PRESCRIPTIVE LAND USE MARKETS			MORE RESPONSIVE LAND USE MARKETS	ALL MARKETS
	Ground Zero	Other	All		
CHANGE IN PRICE PER HOUSE					
Phase 1	-31.4%	-9.4%	-20.8%	-5.9%	-17.9%
Phase 2	-24.7%	-17.7%	-20.8%	-16.0%	-19.8%
Phases 1 & 2	-48.4%	-25.4%	-37.3%	-21.0%	-34.1%
AVERAGE LOSS IN VALUE PER HOUSE					
Phase 1	-\$174,800	-\$36,900	-\$96,200	-\$12,200	-\$66,800
Phase 2	-\$94,500	-\$62,900	-\$76,500	-\$31,100	-\$60,600
Phases 1 & 2	-\$269,300	-\$99,800	-\$172,700	-\$43,300	-\$127,400
GROSS LOSS IN VALUE (TRILLIONS)					
Phase 1	-\$1.79	-\$0.50	-\$2.29	-\$0.16	-\$2.44
Phase 2	-\$0.96	-\$0.85	-\$1.81	-\$0.40	-\$2.21
Phases 1 & 2	-\$2.75	-\$1.35	-\$4.10	-\$0.55	-\$4.65
SHARE OF TOTAL MAJOR METROPOLITAN AREA LOSS					
Phase 1	73.1%	20.5%	93.6%	6.4%	100.0%
Phase 2	43.6%	38.4%	82.0%	18.0%	100.0%
Phases 1 & 2	59.1%	29.0%	88.1%	11.9%	100.0%

Phase 1: Peak to September 2008

Phase 2: October 2008 to March 2009

Ground Zero: Markets with average losses exceeding \$100,000 per house in Phase 1

Metropolitan areas (MSA) over 1,000,000 except Detroit and Nashville omitted due to incomplete data

Average price data estimated using National Association of Realtors regional median to average factors

Table 2
Estimated Change in Gross Housing Value
By Phase of the Housing Downturn

MAJOR METROPOLITAN MARKETS	Phase 1	Phase 2	2
MORE PRESCRIPTIVE LAND USE MARKETS: GROUND ZERO			
Las Vegas, NV	\$47.9	\$25.1	\$73.0
Los Angeles-Orange County, CA	\$485.9	\$209.1	\$695.1
Miami-West Palm Beach, FL	\$176.0	\$139.3	\$315.3
Phoenix, AZ	\$90.2	\$60.6	\$150.8
Riverside-San Bernardino, CA	\$167.6	\$50.7	\$218.3
Sacramento, CA	\$94.1	\$22.7	\$116.8
San Diego, CA	\$157.6	\$35.9	\$193.4
San Francisco, CA	\$231.7	\$214.3	\$446.0
San Jose, CA	\$87.0	\$80.9	\$167.9
Tampa-St. Petersburg, FL	\$59.5	\$37.4	\$96.9
Washington, DC-VA-MD-WV	\$186.1	\$88.1	\$274.3
Total: More Prescriptive Markets: Ground Zero	\$1,783.9	\$964.1	\$2,748.0
MORE PRESCRIPTIVE LAND USE MARKETS: OTHER			
Baltimore.MD	\$12.5	\$28.9	\$41.4
Boston, MA-NH	\$68.9	\$99.1	\$168.0
Chicago, IL	\$100.3	\$183.6	\$283.9
Denver, CO	\$20.7	\$23.0	\$43.7
Hartford, CT	\$7.3	\$9.4	\$16.7
Jacksonville, FL	\$9.8	\$9.1	\$18.8
Memphis, TN-AR-MS	\$7.5	\$11.9	\$19.4
Milwaukee, WI	\$5.8	\$7.2	\$13.0
Minneapolis-St. Paul, MN-WI	\$33.3	\$34.8	\$68.1
New Orleans, LA	\$3.6	\$4.8	\$8.4
New York, NY-NJ,-CT-PA	\$106.7	\$311.6	\$418.3
Orlando, FL	\$36.8	\$36.7	\$73.5
Portland, OR-WA	\$13.6	\$19.3	\$32.9
Providence, RI-MA	\$24.7	\$19.3	\$44.0
Seattle-Tacoma, WA	\$40.5	\$31.5	\$72.1
Virginia Beach-Norfolk, VA-NC	\$6.5	\$20.9	\$27.4
Total: More Prescriptive Markets: Other	\$498.5	\$851.3	\$1,349.9
Total: More Prescriptive Markets	\$2,282.4	\$1,815.4	\$4,097.8
MORE RESPONSIVE LAND USE MARKETS			
Atlanta, GA	\$39.2	\$56.5	\$95.7

Austin, TX	\$1.4	\$3.6	\$5.0
Birmingham, AL	\$5.3	\$10.1	\$15.4
Buffalo, NY	\$0.0	\$5.1	\$5.1
Charlotte, NC-SC	\$4.8	\$20.8	\$25.6
Cincinnati, OH-KY-IN	\$8.1	\$18.2	\$26.3
Cleveland, OH	\$19.7	\$33.0	\$52.7
Columbus, OH	\$10.4	\$21.1	\$31.5
Dallas-Fort Worth, TX	\$11.0	\$24.1	\$35.1
Houston, TX	\$0.0	\$32.2	\$32.2
Indianapolis, IN	\$5.9	\$12.5	\$18.4
Kansas City, MO-KS	\$7.6	\$13.5	\$21.1
Louisville, KY-IN	\$3.1	\$6.2	\$9.3
Oklahoma City, OK	\$0.9	\$0.8	\$1.7
Philadelphia, PA-NJ-DE-MD	\$3.2	\$59.6	\$62.8
Pittsburgh, PA	\$3.9	\$15.0	\$18.9
Raleigh, NC	\$4.3	-\$0.3	\$3.9
Richmond, VA	\$8.6	\$18.2	\$26.8
Rochester, NY	\$0.0	\$5.5	\$5.5
Salt Lake City, UT	\$4.6	\$0.0	\$4.6
San Antonio, TX	\$0.1	\$0.2	\$0.3
St. Louis, MO-IL	\$14.0	\$40.5	\$54.5
Total: Responsive Markets	\$156.1	\$396.4	\$552.5
Total: All Markets	\$2,438.5	\$2,211.8	\$4,650.3

In Billions

Phase 1: Peak to September 2008

Phase 2: October 2008 to March 2009

Table 3
Estimated Average Price Reduction per House
By Phase of the Housing Downturn

MAJOR METROPOLITAN MARKETS	Phase 1		Phase 2		Phase 1 & Phase 2	
	Average Loss	% Loss	Average Loss	% Loss	Average Loss	% Loss
MORE PRESCRIPTIVE LAND USE MARKETS: GROUND ZERO						
Las Vegas, NV	-\$118,900	-33.7%	-\$62,300	-26.6%	-\$181,200	-51.3%
Los Angeles-Orange County, CA	-\$223,900	-34.1%	-\$96,300	-22.3%	-\$320,200	-48.8%
Miami-West Palm Beach, FL	-\$129,700	-26.4%	-\$102,500	-28.4%	-\$232,200	-47.3%
Phoenix, AZ	-\$92,100	-31.0%	-\$61,900	-30.2%	-\$154,000	-51.9%
Riverside-San Bernardino, CA	-\$200,100	-44.3%	-\$60,500	-24.1%	-\$260,600	-57.7%
Sacramento, CA	-\$195,700	-45.5%	-\$47,200	-20.1%	-\$242,900	-56.5%
San Diego, CA	-\$263,000	-38.7%	-\$59,900	-14.4%	-\$322,900	-47.5%
San Francisco, CA	-\$255,700	-27.3%	-\$236,400	-34.7%	-\$492,100	-52.5%
San Jose, CA	-\$237,800	-24.9%	-\$221,300	-30.8%	-\$459,100	-48.0%
Tampa-St. Petersburg, FL	-\$76,000	-25.9%	-\$47,800	-22.0%	-\$123,800	-42.2%
Washington, DC-VA-MD-WV	-\$141,200	-25.3%	-\$66,800	-16.0%	-\$208,000	-37.3%
Average: More Prescriptive Markets: Ground Zero	-\$174,800	-31.4%	-\$94,500	-24.7%	-\$269,300	-48.4%
MORE PRESCRIPTIVE LAND USE MARKETS: OTHER						
Baltimore, MD	-\$18,200	-4.9%	-\$41,800	-11.9%	-\$60,000	-16.3%
Boston, MA-NH	-\$63,700	-13.4%	-\$91,500	-22.1%	-\$155,200	-32.5%
Chicago, IL	-\$43,100	-12.4%	-\$78,900	-26.0%	-\$122,000	-35.2%
Denver, CO	-\$32,100	-11.4%	-\$35,600	-14.3%	-\$67,700	-24.1%
Hartford, CT	-\$23,000	-7.7%	-\$29,900	-10.8%	-\$52,900	-17.7%
Jacksonville, FL	-\$28,900	-11.6%	-\$27,000	-12.3%	-\$55,900	-22.4%
Memphis, TN-AR-MS	-\$23,900	-13.1%	-\$38,100	-24.0%	-\$62,000	-34.0%
Milwaukee, WI	-\$15,100	-5.4%	-\$18,500	-7.1%	-\$33,600	-12.1%
Minneapolis-St. Paul, MN-WI	-\$36,000	-12.7%	-\$37,500	-15.1%	-\$73,500	-25.9%
New Orleans, LA	-\$14,900	-6.7%	-\$20,000	-9.6%	-\$34,900	-15.6%
New York, NY-NJ,-CT-PA	-\$29,500	-5.6%	-\$86,400	-17.3%	-\$115,900	-21.9%
Orlando, FL	-\$73,500	-21.5%	-\$73,500	-27.5%	-\$147,000	-43.1%
Portland, OR-WA	-\$25,500	-7.0%	-\$36,300	-10.8%	-\$61,800	-17.0%
Providence, RI-MA	-\$63,700	-18.9%	-\$49,900	-18.2%	-\$113,600	-33.6%
Seattle-Tacoma, WA	-\$49,400	-11.3%	-\$38,500	-9.9%	-\$87,900	-20.1%
Virginia Beach-Norfolk, VA-NC	-\$16,000	-5.0%	-\$51,700	-17.0%	-\$67,700	-21.2%
Average: More Prescriptive Markets: Other	-\$36,900	-9.4%	-\$62,900	-17.7%	-\$99,800	-25.4%
Average: More Prescriptive Markets	-\$96,200	-20.8%	-\$76,500	-20.8%	-\$172,700	-37.3%
MORE RESPONSIVE LAND USE MARKETS						
Atlanta, GA	-\$31,100	-14.1%	-\$44,800	-23.6%	-\$75,900	-34.4%
Austin, TX	-\$4,200	-1.7%	-\$10,700	-4.5%	-\$14,900	-6.1%
Birmingham, AL	-\$17,100	-8.0%	-\$32,200	-16.5%	-\$49,300	-23.2%
Buffalo, NY	\$0	0.0%	-\$16,600	-13.1%	-\$16,600	-13.1%
Charlotte, NC-SC	-\$11,600	-4.2%	-\$49,400	-18.7%	-\$61,000	-22.1%
Cincinnati, OH-KY-IN	-\$14,400	-8.7%	-\$32,700	-21.7%	-\$47,100	-28.6%
Cleveland, OH	-\$33,700	-19.3%	-\$56,200	-39.9%	-\$89,900	-51.5%
Columbus, OH	-\$15,300	-8.1%	-\$31,100	-17.9%	-\$46,400	-24.5%
Dallas-Fort Worth, TX	-\$8,300	-4.2%	-\$18,200	-9.7%	-\$26,500	-13.5%
Houston, TX	\$0	0.0%	-\$27,300	-13.6%	-\$27,300	-13.6%
Indianapolis, IN	-\$13,400	-8.6%	-\$28,100	-19.7%	-\$41,500	-26.6%
Kansas City, MO-KS	-\$14,200	-7.4%	-\$25,000	-14.0%	-\$39,200	-20.4%
Louisville, KY-IN	-\$8,900	-5.0%	-\$18,000	-10.6%	-\$26,900	-15.1%
Oklahoma City, OK	-\$2,900	-1.7%	-\$2,700	-1.6%	-\$5,600	-3.3%
Philadelphia, PA-NJ-DE-MD	-\$2,100	-0.8%	-\$38,800	-14.5%	-\$40,900	-15.2%
Pittsburgh, PA	-\$5,500	-3.9%	-\$21,400	-15.8%	-\$26,900	-19.0%
Raleigh, NC	-\$17,200	-5.8%	\$1,400	0.5%	-\$15,800	-5.3%
Richmond, VA	-\$26,800	-8.9%	-\$56,900	-20.8%	-\$83,700	-27.9%

Rochester, NY	\$0	0.0%	-\$19,900	-14.5%	-\$19,900	-14.5%
Salt Lake City, UT	-\$18,200	-6.7%	-\$100	0.0%	-\$18,300	-6.7%
San Antonio, TX	-\$4,600	-2.3%	-\$7,700	-4.0%	-\$12,300	-6.2%
St. Louis, MO-IL	-\$17,600	-9.3%	-\$50,500	-29.3%	-\$68,100	-35.8%
Average: More Responsive Markets	-\$12,200	-5.9%	-\$31,100	-16.0%	-\$43,300	-21.0%
Average: All Markets	-\$66,800	-17.9%	-\$60,600	-19.8%	-\$127,400	-34.1%

Phase 1: Peak to September 2008

Phase 2: October 2008 to March 2009

Metropolitan areas (MSA) over 1,000,000 except Detroit and Nashville omitted due to incomplete data

"Ground zero:" Markets with average losses exceeding \$100,000 per house in Phase 1

Average price data estimated using National Association of Realtors regional median to average factors

Table 4
Median Multiple (House Price/Household Income) Trend
Pre-Housing Bubble and Housing Bubble

	Pre-Bubble	Housing Bubble			Median Price Reduction Required to Reach 1996 Median Multiple
	1980-2000 Average	2007: 3rd Quarter	2008: 3rd Quarter	2009: 1st Quarter	
MAJOR METROPOLITAN MARKETS					
PRESCRIPTIVE LAND USE MARKETS: GROUND ZERO					
Las Vegas, NV	3.4	5.3	3.7	2.7	At or Below
Los Angeles, CA	4.5	10.1	7.2	5.1	\$33,500
Miami-West Palm Beach, FL	3.4	7.0	5.6	4.0	\$32,300
Phoenix, AZ	2.8	4.7	3.4	2.4	At or Below
Riverside-San Bernardino, CA	3.7	6.6	3.9	3.0	At or Below
Sacramento, CA	3.6	5.6	3.5	2.8	At or Below
San Diego, CA	4.9	9.5	5.9	5.1	\$11,100
San Francisco, CA	5.0	11.2	8.0	5.2	\$18,500
San Jose, CA	4.5	10.2	8.1	5.1	\$55,400
Tampa-St. Petersburg, FL	2.8	4.7	3.6	2.8	\$1,700
Washington, DC-VA-MD-WV	2.9	5.3	3.9	3.3	\$31,200
Average: Prescriptive Markets: Ground Zero	3.8	7.3	5.2	3.8	
PRESCRIPTIVE LAND USE MARKETS: OTHER					
Baltimore, MD	2.6	4.6	4.2	3.7	\$74,700
Boston, MA-NH	3.5	6.1	5.3	4.1	\$41,900
Chicago, IL	2.9	4.8	4.4	3.0	\$7,800
Denver, CO	2.9	4.3	3.7	3.2	\$18,000
Hartford, CT	3.1	4.2	3.7	3.3	\$14,300
Jacksonville, FL	2.3	3.6	3.3	2.9	\$32,000
Memphis, TN-MS-AR	3.0	3.1	2.7	2.0	At or Below
Milwaukee, WI	2.8	4.4	4.0	3.8	\$51,400
Minneapolis-St. Paul, MN-WI	2.4	3.6	3.1	2.6	\$15,700
New Orleans, LA	3.1	3.3	3.1	2.8	At or Below
New York, NY-NJ-PA	3.9	7.7	7.0	5.8	\$122,200
Orlando, FL	2.9	5.2	4.1	3.0	\$4,000
Portland, OR-WA	2.7	5.4	4.9	4.4	\$94,700
Providence, RI-MA	3.1	5.4	4.4	3.6	\$29,400
Seattle, WA	3.3	6.2	5.2	4.7	\$94,400
Virginia Beach-Norfolk, VA	2.6	4.7	4.3	3.5	\$53,600
Average: Prescriptive Markets: Other	2.9	4.8	4.2	3.5	
Average: Prescriptive Markets	3.4	5.8	4.6	3.6	
RESPONSIVE LAND USE MARKETS					
Atlanta, GA	2.4	3.1	2.6	2.0	At or Below
Austin, TX	2.8	3.3	3.3	3.2	\$20,500
Birmingham, AL	3.0	3.5	3.4	2.7	At or Below
Buffalo, NY	1.9	2.5	2.5	2.1	\$10,900
Charlotte, NC-SC	3.0	4.1	3.9	3.2	\$10,100
Cincinnati, OH-KY-IN	2.3	2.8	2.5	2.0	At or Below
Cleveland, OH	2.2	2.8	2.3	1.4	At or Below
Columbus, OH	2.4	2.9	2.7	2.2	At or Below
Dallas-Fort Worth, TX	2.7	2.7	2.7	2.4	At or Below
Houston, TX	2.5	2.9	2.9	2.5	At or Below

Indianapolis, IN	2.1	2.3	2.2	1.7	At or Below
Kansas City, MO-KS	2.5	2.9	2.7	2.3	At or Below
Louisville, KY-IN	2.4	3.1	2.9	2.6	\$8,100
Oklahoma City, OK	2.8	2.9	2.8	2.8	At or Below
Philadelphia, PA-NJ-DE-MD	2.4	4.2	4.0	3.4	\$61,500
Pittsburgh, PA	2.1	2.8	2.6	2.2	\$3,400
Raleigh, NC	3.3	3.9	3.7	3.7	\$26,700
Richmond, VA	2.8	4.1	3.7	3.0	\$9,500
Rochester, NY	2.2	2.4	2.5	2.0	At or Below
Salt Lake City, UT	2.6	4.3	3.8	3.8	\$73,800
San Antonio, TX	3.0	3.3	3.2	3.1	\$5,200
St. Louis, MO-IL	2.2	2.9	2.9	1.9	At or Below
Average: Responsive Markets	2.5	3.2	3.0	2.6	
Average: All Markets	2.9	4.6	3.9	3.1	

Median Multiple: Median house price divided by median household income.
Metropolitan areas (MSA) over 1,000,000 except Detroit and Nashville omitted due to incomplete data
"Ground Zero:" Markets with average losses exceeding \$100,000 per house in Phase 1

Table 5
Median House Price Reductions from Peak
By Major Metropolitan Area: Ranked by Reduction Percentage

Rank	Major Metropolitan Areas	Median House Price Reduction: Phase 1 from Phase 1	Median House Price Reduction: Phase 2 from Phase 2	Median House Price Reduction: Phases 1 & 2	Median House Price Reduction from Peak
1	Riverside-San Bernardino, CA	-44.3%	-24.1%	-57.7%	-\$235,600
2	Sacramento, CA	-45.5%	-20.1%	-56.5%	-\$219,600
3	San Francisco, CA	-27.3%	-34.7%	-52.5%	-\$444,800
4	Phoenix, AZ	-31.0%	-30.2%	-51.9%	-\$139,200
5	Cleveland, OH	-19.3%	-39.9%	-51.5%	-\$74,300
6	Las Vegas, NV	-33.7%	-26.6%	-51.3%	-\$163,800
7	Los Angeles-Orange County, CA	-34.1%	-22.3%	-48.8%	-\$289,400
8	San Jose, CA	-24.9%	-30.8%	-48.0%	-\$415,000
9	San Diego, CA	-38.7%	-14.4%	-47.5%	-\$291,900
10	Miami-West Palm Beach, FL	-26.4%	-28.4%	-47.3%	-\$185,200
11	Orlando, FL	-21.5%	-27.5%	-43.1%	-\$117,200
12	Tampa-St. Petersburg, FL	-25.9%	-22.0%	-42.2%	-\$98,800
13	Washington, DC-VA-MD-WV	-25.3%	-16.0%	-37.3%	-\$165,900
14	St. Louis, MO-IL	-9.3%	-29.3%	-35.8%	-\$56,300
15	Chicago, IL	-12.4%	-26.0%	-35.2%	-\$100,900
16	Atlanta, GA	-14.1%	-23.6%	-34.4%	-\$60,600
17	Memphis, TN-AR-MS	-13.1%	-24.0%	-34.0%	-\$49,400
18	Providence, RI-MA	-18.9%	-18.2%	-33.6%	-\$102,600
19	Boston, MA-NH	-13.4%	-22.1%	-32.5%	-\$140,200
20	Cincinnati, OH-KY-IN	-8.7%	-21.7%	-28.6%	-\$42,600
21	Richmond, VA	-8.9%	-20.8%	-27.9%	-\$66,800
22	Indianapolis, IN	-8.6%	-19.7%	-26.6%	-\$34,300
23	Minneapolis-St. Paul, MN-WI	-12.7%	-15.1%	-25.9%	-\$60,800
24	Columbus, OH	-8.1%	-17.9%	-24.5%	-\$38,400
25	Denver, CO	-11.4%	-14.3%	-24.1%	-\$61,200
26	Birmingham, AL	-8.0%	-16.5%	-23.2%	-\$39,300
27	Jacksonville, FL	-11.6%	-12.3%	-22.4%	-\$44,600
28	Charlotte, NC-SC	-4.2%	-18.7%	-22.1%	-\$48,700
29	New York, NY-NJ,-CT-PA	-5.6%	-17.3%	-21.9%	-\$104,700
30	Virginia Beach-Norfolk, VA-NC	-5.0%	-17.0%	-21.2%	-\$54,000
31	Kansas City, MO-KS	-7.4%	-14.0%	-20.4%	-\$32,400
32	Seattle-Tacoma, WA	-11.3%	-9.9%	-20.1%	-\$79,500
33	Pittsburgh, PA	-3.9%	-15.8%	-19.0%	-\$24,300
34	Hartford, CT	-7.7%	-10.8%	-17.7%	-\$47,800
35	Portland, OR-WA	-7.0%	-10.8%	-17.0%	-\$51,100
36	Baltimore.MD	-4.9%	-11.9%	-16.3%	-\$47,900
37	New Orleans, LA	-6.7%	-9.6%	-15.6%	-\$27,800
38	Philadelphia, PA-NJ-DE-MD	-0.8%	-14.5%	-15.2%	-\$37,000

39	Louisville, KY-IN	-5.0%	-10.6%	-15.1%	-\$21,500
40	Rochester, NY	0.0%	-14.5%	-14.5%	-\$18,000
41	Houston, TX	0.0%	-13.6%	-13.6%	-\$21,800
42	Dallas-Fort Worth, TX	-4.2%	-9.7%	-13.5%	-\$21,100
43	Buffalo, NY	0.0%	-13.1%	-13.1%	-\$15,000
44	Milwaukee, WI	-5.4%	-7.1%	-12.1%	-\$27,800
45	Salt Lake City, UT	-6.7%	0.0%	-6.7%	-\$16,500
46	San Antonio, TX	-2.3%	-4.0%	-6.2%	-\$9,800
47	Austin, TX	-1.7%	-4.5%	-6.1%	-\$11,900
48	Raleigh, NC	-5.8%	0.5%	-5.3%	-\$12,600
49	Oklahoma City, OK	-1.7%	-1.6%	-3.3%	-\$4,500

Phase 1: Peak to September 2008

Phase 2: October 2008 to March 2009

Metropolitan areas (MSA) over 1,000,000 except Detroit and Nashville omitted due to incomplete data

Table 6
Median House Prices Compared to Prices at Historic Ratio
By Major Metropolitan Area

Rank	Major Metropolitan Areas	Median Multiple			Median House Price 2009: 1st Quarter	Excess Above 1980-2000 Median Multiple
		Historic Average (1980-2000)	2007:3rd Quarter	2009: 1st Quarter		
1	New York, NY-NJ-PA	3.9	7.7	5.8	\$374,500	\$122,200
2	Portland, OR-WA	2.7	5.4	4.4	\$248,600	\$94,700
3	Seattle, WA	3.3	6.2	4.7	\$315,200	\$94,400
4	Baltimore, MD	2.6	4.6	3.7	\$245,800	\$74,700
5	Salt Lake City, UT	2.6	4.3	3.8	\$230,100	\$73,800
6	Philadelphia, PA-NJ-DE-MD	2.4	4.2	3.4	\$206,000	\$61,500
7	San Jose, CA	4.5	10.2	5.1	\$450,000	\$55,400
8	Virginia Beach-Norfolk, VA	2.6	4.7	3.5	\$201,000	\$53,600
9	Milwaukee, WI	2.8	4.4	3.8	\$201,500	\$51,400
10	Boston, MA-NH	3.5	6.1	4.1	\$290,700	\$41,900
11	Los Angeles, CA	4.5	10.1	5.1	\$303,500	\$33,500
12	Miami-West Palm Beach, FL	3.4	7.0	4.0	\$206,000	\$32,300
13	Jacksonville, FL	2.3	3.6	2.9	\$154,100	\$32,000
14	Washington, DC-VA-MD-WV	2.9	5.3	3.3	\$279,400	\$31,200
15	Providence, RI-MA	3.1	5.4	3.6	\$202,400	\$29,400
16	Raleigh, NC	3.3	3.9	3.7	\$223,000	\$26,700
17	Austin, TX	2.8	3.3	3.2	\$182,300	\$20,500
18	San Francisco, CA	5.0	11.2	5.2	\$402,000	\$18,500
19	Denver, CO	2.9	4.3	3.2	\$192,900	\$18,000
20	Minneapolis-St. Paul, MN-WI	2.4	3.6	2.6	\$174,100	\$15,700
21	Hartford, CT	3.1	4.2	3.3	\$222,300	\$14,300
22	San Diego, CA	4.9	9.5	5.1	\$323,200	\$11,100
23	Buffalo, NY	1.9	2.5	2.1	\$99,200	\$10,900
24	Charlotte, NC-SC	3.0	4.1	3.2	\$171,500	\$10,100
25	Richmond, VA	2.8	4.1	3.0	\$172,500	\$9,500
26	Louisville, KY-IN	2.4	3.1	2.6	\$121,100	\$8,100
27	Chicago, IL	2.9	4.8	3.0	\$185,600	\$7,800
28	San Antonio, TX	3.0	3.3	3.1	\$148,300	\$5,200
29	Orlando, FL	2.9	5.2	3.0	\$154,800	\$4,000
30	Pittsburgh, PA	2.1	2.8	2.2	\$103,400	\$3,400
31	Tampa-St. Petersburg, FL	2.8	4.7	2.8	\$135,300	\$1,700
	Atlanta, GA	2.4	3.1	2.0	\$115,600	At or Below
	Birmingham, AL	3.0	3.5	2.7	\$130,400	At or Below
	Cincinnati, OH-KY-IN	2.3	2.8	2.0	\$106,500	At or Below
	Cleveland, OH	2.2	2.8	1.4	\$69,900	At or Below
	Columbus, OH	2.4	2.9	2.2	\$118,300	At or Below
	Dallas-Fort Worth, TX	2.7	2.7	2.4	\$135,700	At or Below
	Houston, TX	2.5	2.9	2.5	\$138,500	At or Below
	Indianapolis, IN	2.1	2.3	1.7	\$94,600	At or Below
	Kansas City, MO-KS	2.5	2.9	2.3	\$126,600	At or Below
	Las Vegas, NV	3.4	5.3	2.7	\$155,300	At or Below
	Memphis, TN-MS-AR	3.0	3.1	2.0	\$96,100	At or Below
	New Orleans, LA	3.1	3.3	2.8	\$150,800	At or Below
	Oklahoma City, OK	2.8	2.9	2.8	\$129,900	At or Below
	Phoenix, AZ	2.8	4.7	2.4	\$129,200	At or Below
	Riverside-San Bernardino, CA	3.7	6.6	3.0	\$172,500	At or Below

Rochester, NY	2.2	2.4	2.0	\$105,600	At or Below
Sacramento, CA	3.6	5.6	2.8	\$169,300	At or Below
St. Louis, MO-IL	2.2	2.9	1.9	\$100,900	At or Below

Phase 1: Peak to September 2008

Phase 2: October 2008 to March 2009

Metropolitan areas (MSA) over 1,000,000 except Detroit and Nashville omitted due to incomplete data