



Ownership, Rental Costs and the Prospects of Building Home Equity

An Analysis of 100 Metropolitan Areas

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Executive Summary

The bubble that developed in the U.S. housing market from the years 1996 to 2006 pushed prices in many markets far out of line with fundamental values. The correction that began in the middle of 2006 has helped to bring house prices back in line with their long-run trend growth path. Nonetheless, house prices in some of the most inflated markets are still hugely out of line with rents and income.

This paper compares ownership and rental costs in the 100 largest metropolitan areas. It also makes projections for the potential for accumulating home equity in these markets, assuming that a homeowner remains in their home for four years, the median holding period for moderate income households.¹ It applies the methodology used in an earlier paper (Baker, Pelletiere, and Rho, 2008) to a larger set of cities. (The [Appendix](#) provides a full explanation of the methodology.)

Ownership and Rental Costs: A Historical Perspective

As explained in our earlier paper, house prices nationwide have typically risen at approximately the same rate as the overall pace of inflation.² Over most of the 20th century, from 1895 to 1995, there was virtually no change in real house prices. Beginning in 1995, house prices began to hugely outpace inflation as the speculative bubble in the stock market spilled over into the housing market.

It should have been easy to see that this bubble could not be sustained, since the fundamentals in the housing market had not changed, as demonstrated clearly by the fact that there was no remotely comparable increase in rents over this period. As a result, sale prices rose to levels where they were hugely out-of-line with rents. At a ratio of sales price to annual rent of 15 to 1, ownership costs are roughly comparable to rents. At the peak of the bubble, the ratio of ownership costs to rents of comparable units crossed 20 to 1 and even 25 to 1, in the most inflated markets. For purposes of analysis, this paper treats a ratio of 15 to 1 as being an equilibrium sale price,³ and defines a bubble market as one in which the ratio of sale price to annual rent exceeds 18 to 1.

Ownership and Rental Costs in 2008

The basic comparison of ownership and rental costs is shown [Table 1](#). These comparisons use calculations based on 75 percent of the median house sale price, based on data from the Census Bureau's American Community Survey, for ownership costs. The low, middle, and high cost scenarios assume 6 percent, 7 percent, and 8 percent thirty-year fixed rate mortgages, respectively (see the [Appendix](#) for a full explanation).

¹ This is based on an analysis of homeownership among moderate income families in the 80s and 90s, Reid, C., 2004. "Achieving the American Dream? A Longitudinal Analysis of the Homeownership Experience of Low-Income Families," Department of Geography, University of Washington. See also Huarin, D.R & Rosenthal, S.S., 2004. The Sustainability of Homeownership: Factors Affecting the Duration of Homeownership and Rental Spells. Washington, D.C.: US Department of Housing and Urban Development.

² Baker, Dean, Danilo Pelletiere, and Hye Jin Rho, 2008. "The Cost of Maintaining Ownership in the Current Crisis," Washington, D.C.: Center for Economic and Policy Research
<http://www.cepr.net/index.php/publications/reports/the-cost-of-maintaining-ownership-in-the-current-crisis/>.

³ This is a rule of thumb, which would indicate for example that in a balanced market a rental unit comparable in quality to a home purchased for \$150,000 should rent for roughly \$10,000 a year or \$833 a month.

TABLE 1
100 Cities Comparison

Rank by Population	List of Cities (Metropolitan Statistical Areas)	Monthly Ownership Costs			Monthly Rental Costs	
		Low	Middle	High	FMR* Two Bedroom	FMR Three-Bedroom
1	New York-Northern New Jersey-Long Island, NY-NJ-PA MSA	\$2,415	\$2,756	\$3,245	\$1,318	\$1,621
2	Los Angeles-Long Beach-Santa Ana, CA MSA	\$3,054	\$3,485	\$4,104	\$1,300	\$1,746
3	Chicago-Naperville-Joliet, IL-IN-WI MSA	\$1,335	\$1,524	\$1,794	\$944	\$1,154
4	Dallas-Fort Worth-Arlington, TX MSA	\$758	\$865	\$1,019	\$871	\$1,156
5	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	\$1,227	\$1,400	\$1,649	\$932	\$1,116
6	Houston-Sugar Land-Baytown, TX MSA	\$710	\$810	\$954	\$852	\$1,136
7	Miami-Fort Lauderdale-Pompano Beach, FL MSA	\$1,636	\$1,867	\$2,198	\$1,035	\$1,324
8	Washington-Arlington-Alexandria, DC-VA-MD-WV MSA	\$2,303	\$2,627	\$3,094	\$1,324	\$1,708
9	Atlanta-Sandy Springs-Marietta, GA MSA	\$991	\$1,131	\$1,332	\$824	\$1,003
10	Boston-Cambridge-Quincy, MA-NH MSA	\$2,051	\$2,340	\$2,755	\$1,353	\$1,618
11	Detroit-Warren-Livonia, MI MSA	\$850	\$970	\$1,142	\$805	\$963
12	San Francisco-Oakland-Fremont, CA MSA	\$3,637	\$4,149	\$4,887	\$1,592	\$2,125
13	Phoenix-Mesa-Scottsdale, AZ MSA	\$1,343	\$1,532	\$1,804	\$862	\$1,256
14	Riverside-San Bernardino-Ontario, CA MSA	\$1,917	\$2,187	\$2,576	\$1,142	\$1,622
15	Seattle-Tacoma-Bellevue, WA MSA	\$1,921	\$2,192	\$2,581	\$942	\$1,331
16	Minneapolis-St. Paul-Bloomington, MN-WI MSA	\$1,236	\$1,411	\$1,661	\$848	\$1,110
17	San Diego-Carlsbad-San Marcos, CA MSA	\$2,771	\$3,162	\$3,724	\$1,355	\$1,976
18	St. Louis, MO-IL MSA	\$816	\$930	\$1,096	\$711	\$916
19	Tampa-St. Petersburg-Clearwater, FL MSA	\$1,008	\$1,150	\$1,354	\$883	\$1,119
20	Baltimore-Towson, MD MSA	\$1,600	\$1,826	\$2,150	\$1,013	\$1,301
21	Denver-Aurora, CO MSA	\$1,274	\$1,454	\$1,712	\$876	\$1,244
22	Pittsburgh, PA MSA	\$596	\$680	\$801	\$666	\$828
23	Portland-Vancouver-Beaverton, OR-WA MSA	\$1,462	\$1,668	\$1,964	\$757	\$1,102
24	Cincinnati-Middletown, OH-KY-IN MSA	\$795	\$907	\$1,068	\$726	\$972
25	Cleveland-Elyria-Mentor, OH MSA	\$767	\$876	\$1,031	\$725	\$929
26	Sacramento-Arden-Arcade-Roseville, CA MSA	\$1,973	\$2,251	\$2,651	\$982	\$1,417
27	Orlando-Kissimmee, FL MSA	\$1,232	\$1,405	\$1,655	\$915	\$1,146
28	San Antonio, TX MSA	\$597	\$681	\$802	\$780	\$1,006
29	Kansas City, MO-KS MSA	\$805	\$919	\$1,082	\$754	\$1,020
30	Las Vegas-Paradise, NV MSA	\$1,575	\$1,797	\$2,116	\$996	\$1,382
31	San Jose-Sunnyvale-Santa Clara, CA MSA	\$3,778	\$4,311	\$5,077	\$1,293	\$1,859
32	Columbus, OH MSA	\$847	\$967	\$1,138	\$718	\$903
33	Indianapolis-Carmel, IN MSA	\$745	\$850	\$1,001	\$726	\$939
34	Virginia Beach-Norfolk-Newport News, VA-NC MSA	\$1,211	\$1,381	\$1,627	\$904	\$1,247
35	Charlotte-Gastonia-Concord, NC-SC MSA	\$873	\$996	\$1,173	\$740	\$932
36	Providence-New Bedford-Fall River, RI-MA MSA	\$1,573	\$1,795	\$2,114	\$1,020	\$1,221
37	Austin-Round Rock, TX MSA	\$925	\$1,055	\$1,243	\$935	\$878

TABLE 1 (Continued)

Rank by Population	List of Cities (Metropolitan Statistical Areas)	Monthly Ownership Costs			Monthly Rental Costs	
		Low	Middle	High	FMR - Two Bedroom	FMR Three- Bedroom
38	Milwaukee-Waukesha-West Allis, WI MSA	\$1,045	\$1,192	\$1,404	\$795	\$1,002
39	Nashville-Davidson-Murfreesboro-Franklin, TN MSA	\$868	\$990	\$1,166	\$723	\$938
40	Jacksonville, FL MSA	\$997	\$1,137	\$1,339	\$816	\$1,024
41	Memphis, TN-MS-AR MSA	\$665	\$758	\$893	\$743	\$990
42	Louisville-Jefferson County, KY-IN MSA	\$748	\$853	\$1,005	\$663	\$926
43	Richmond, VA MSA	\$1,102	\$1,257	\$1,480	\$870	\$1,161
44	Oklahoma City, OK MSA	\$598	\$683	\$804	\$641	\$865
45	Hartford-West Hartford-East Hartford, CT MSA	\$1,307	\$1,492	\$1,757	\$985	\$1,183
46	Buffalo-Niagara Falls, NY MSA	\$557	\$636	\$748	\$704	\$871
47	Birmingham-Hoover, AL MSA	\$706	\$806	\$949	\$690	\$876
48	Salt Lake City, UT MSA	\$1,164	\$1,328	\$1,564	\$754	\$1,061
49	Raleigh-Cary, NC MSA	\$1,013	\$1,156	\$1,361	\$797	\$1,002
50	Rochester, NY MSA	\$626	\$715	\$842	\$773	\$928
51	New Orleans-Metairie-Kenner, LA MSA	\$898	\$1,024	\$1,206	\$990	\$1,271
52	Tucson, AZ MSA	\$1,069	\$1,220	\$1,437	\$769	\$1,110
53	Tulsa, OK MSA	\$611	\$697	\$820	\$666	\$880
54	Honolulu, HI MSA	\$2,921	\$3,332	\$3,924	\$1,630	\$2,377
55	Fresno, CA MSA	\$1,438	\$1,640	\$1,932	\$805	\$1,171
56	Bridgeport-Stamford-Norwalk, CT MSA	\$2,658	\$3,033	\$3,572	\$1,171	\$1,399
57	Albany-Schenectady-Troy, NY MSA	\$923	\$1,053	\$1,240	\$851	\$817
58	New Haven-Milford, CT MSA	\$1,400	\$1,598	\$1,882	\$1,142	\$1,367
59	Dayton, OH MSA	\$667	\$761	\$897	\$678	\$913
60	Albuquerque, NM MSA	\$907	\$1,035	\$1,219	\$760	\$1,107
61	Omaha-Council Bluffs, NE-IA MSA	\$732	\$835	\$983	\$710	\$948
62	Allentown-Bethlehem-Easton, PA-NJ MSA	\$1,074	\$1,226	\$1,443	\$816	\$1,056
63	Oxnard-Thousand Oaks-Ventura, CA MSA	\$3,120	\$3,560	\$4,192	\$1,422	\$2,038
64	Bakersfield, CA MSA	\$1,225	\$1,398	\$1,647	\$679	\$981
65	Worcester, MA MSA	\$1,515	\$1,728	\$2,035	\$965	\$1,154
66	Grand Rapids-Wyoming, MI MSA	\$739	\$843	\$993	\$702	\$896
67	Baton Rouge, LA MSA	\$722	\$824	\$970	\$758	\$966
68	El Paso, TX MSA	\$491	\$560	\$660	\$567	\$813
69	Columbia, SC MSA	\$661	\$755	\$889	\$692	\$855
70	McAllen-Edinburg-Mission, TX MSA	\$355	\$405	\$476	\$609	\$730
71	Akron, OH MSA	\$741	\$845	\$995	\$743	\$945
72	Greensboro-High Point, NC MSA	\$707	\$807	\$950	\$719	\$911
73	Sarasota-Bradenton-Venice, FL MSA	\$1,231	\$1,405	\$1,655	\$1,002	\$1,280
74	Springfield, MA MSA	\$1,094	\$1,248	\$1,470	\$844	\$1,010
75	Knoxville, TN MSA	\$751	\$857	\$1,009	\$633	\$848
76	Stockton, CA MSA	\$1,889	\$2,155	\$2,538	\$914	\$1,255
77	Poughkeepsie-Newburgh-Middletown, NY MSA	\$1,673	\$1,909	\$2,248	\$1,103	\$1,352

TABLE 1 (Continued)

Rank by Population	List of Cities (Metropolitan Statistical Areas)	Monthly Ownership Costs			Monthly Rental Costs	
		Low	Middle	High	FMR - Two Bedroom	FMR Three- Bedroom
78	Little Rock-North Little Rock-Conway, AR MSA	\$628	\$717	\$844	\$678	\$908
79	Toledo, OH MSA	\$677	\$773	\$910	\$656	\$846
80	Syracuse, NY MSA	\$557	\$635	\$748	\$713	\$913
81	Charleston-North Charleston, SC MSA	\$958	\$1,093	\$1,287	\$823	\$1,072
82	Greenville-Mauldin-Easley, SC MSA	\$688	\$785	\$924	\$649	\$857
83	Colorado Springs, CO MSA	\$1,093	\$1,248	\$1,469	\$797	\$1,137
84	Wichita, KS MSA	\$576	\$657	\$774	\$622	\$796
85	Cape Coral-Fort Myers, FL MSA	\$1,236	\$1,410	\$1,660	\$886	\$1,204
86	Boise City-Nampa, ID MSA	\$996	\$1,136	\$1,338	\$660	\$960
87	Lakeland, FL MSA	\$730	\$833	\$981	\$745	\$945
88	Youngstown-Warren-Boardman, OH-PA MSA	\$525	\$599	\$705	\$587	\$739
89	Madison, WI MSA	\$1,161	\$1,325	\$1,560	\$807	\$1,083
90	Scranton-Wilkes-Barre, PA MSA	\$624	\$712	\$839	\$627	\$795
91	Des Moines-West Des Moines, IA MSA	\$772	\$881	\$1,038	\$732	\$938
92	Palm Bay-Melbourne-Titusville, FL MSA	\$1,016	\$1,159	\$1,365	\$815	\$1,098
93	Jackson, MS MSA	\$619	\$706	\$832	\$747	\$899
94	Harrisburg-Carlisle, PA MSA	\$806	\$920	\$1,083	\$722	\$911
95	Augusta-Richmond County, GA-SC MSA	\$600	\$685	\$806	\$654	\$876
96	Ogden-Clearfield, UT MSA	\$1,002	\$1,143	\$1,346	\$692	\$952
97	Chattanooga, TN-GA MSA	\$670	\$764	\$900	\$639	\$787
98	Portland-South Portland-Biddeford, ME MSA	\$1,248	\$1,424	\$1,677	\$1,036	\$1,305
99	Modesto, CA MSA	\$1,640	\$1,871	\$2,204	\$864	\$1,239
100	Deltona-Daytona Beach-Ormond Beach, FL MSA	\$985	\$1,124	\$1,324	\$845	\$1,093

Source: Census Bureau, HUD, and authors' calculations, see Appendix.

*Fair Market Rent (FMR)

The rental costs shown in the comparison are Fiscal Year 2008 Fair Market Rents (FMR) for two- and three-bedroom units as determined by the Department of Housing and Urban Development.⁴ The Fair Market Rents for a three-bedroom unit are shown in the last column.

The Prospects for Accumulating Equity

In addition to the comparison of annual ownership and rental costs, the relative merits of owning and renting will also be affected by the extent to which homeowners can accumulate equity. This will depend to a large extent on the future course of house prices. On average, nationwide house

⁴ FMRs are produced by the Department of Housing and Urban Development as “the amount that would be needed to pay the gross rent (shelter rent plus utilities) of privately owned, decent, and safe rental housing of a modest (non-luxury) nature with suitable amenities.” (Notice of Final Fair Market Rents for Fiscal Year 2008. Full document available at: [www.huduser.org/datasets/fmr/fmr2008f/FR_Preamble_FY2008F.pdf]). An important way this measure differs from other measures of typical rents is that it is based on the rents paid by recent movers. For more information on how FMRs are calculated, review the available documentation at [<http://www.huduser.org/datasets/fmr.html>].

prices have increased at the same rate as the overall rate of inflation, although there have been sharp divergences from this trend in many metropolitan areas over certain periods.

[Table 2](#) calculates the equity that homeowners will accumulate in their home after four years assuming the set of housing costs in the low, middle and high cost scenarios in [Table 1](#). (The calculations are explained in the [Appendix](#).) The calculations also evaluate equity after deducting 6 percent of the projected sales price for realtor fees and other costs associated with selling a home.

TABLE 2
Equity in 2012

Rank by Population	List of Cities (Metropolitan Statistical Area)	Equity in 2012		
		Low	Middle	High
1	New York-Northern New Jersey-Long Island, NY-NJ-PA MSA	-102,428	-106,287	-109,625
2	Los Angeles-Long Beach-Santa Ana, CA MSA	-222,719	-227,598	-231,820
3	Chicago-Naperville-Joliet, IL-IN-WI MSA	-2,098	-4,231	-6,077
4	Dallas-Fort Worth-Arlington, TX MSA	83,880	82,669	81,620
5	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	14,492	12,532	10,836
6	Houston-Sugar Land-Baytown, TX MSA	87,837	86,703	85,721
7	Miami-Fort Lauderdale-Pompano Beach, FL MSA	-33,172	-35,786	-38,047
8	Washington-Arlington-Alexandria, DC-VA-MD-WV MSA	-80,522	-84,201	-87,384
9	Atlanta-Sandy Springs-Marietta, GA MSA	46,314	44,730	43,360
10	Boston-Cambridge-Quincy, MA-NH MSA	-27,540	-30,816	-33,650
11	Detroit-Warren-Livonia, MI MSA	50,599	49,241	48,067
12	San Francisco-Oakland-Fremont, CA MSA	-253,875	-259,684	-264,711
13	Phoenix-Mesa-Scottsdale, AZ MSA	-24,072	-26,217	-28,073
14	Riverside-San Bernardino-Ontario, CA MSA	-56,953	-60,016	-62,665
15	Seattle-Tacoma-Bellevue, WA MSA	-108,427	-111,496	-114,151
16	Minneapolis-St. Paul-Bloomington, MN-WI MSA	-8,429	-10,404	-12,113
17	San Diego-Carlsbad-San Marcos, CA MSA	-157,371	-161,798	-165,629
18	St. Louis, MO-IL MSA	32,933	31,630	30,503
19	Tampa-St. Petersburg-Clearwater, FL MSA	41,847	40,237	38,843
20	Baltimore-Towson, MD MSA	-32,409	-34,966	-37,178
21	Denver-Aurora, CO MSA	-8,072	-10,107	-11,868
22	Pittsburgh, PA MSA	61,174	60,221	59,397
23	Portland-Vancouver-Beaverton, OR-WA MSA	-72,330	-74,665	-76,686
24	Cincinnati-Middletown, OH-KY-IN MSA	40,454	39,184	38,086
25	Cleveland-Elyria-Mentor, OH MSA	45,251	44,025	42,964
26	Sacramento-Arden-Arcade-Roseville, CA MSA	-107,621	-110,772	-113,499
27	Orlando-Kissimmee, FL MSA	9,400	7,433	5,730
28	San Antonio, TX MSA	90,017	89,064	88,239
29	Kansas City, MO-KS MSA	45,699	44,413	43,300
30	Las Vegas-Paradise, NV MSA	-32,060	-34,576	-36,752
31	San Jose-Sunnyvale-Santa Clara, CA MSA	-355,346	-361,381	-366,603
32	Columbus, OH MSA	28,982	27,628	26,457
33	Indianapolis-Carmel, IN MSA	49,520	48,330	47,300
34	Virginia Beach-Norfolk-Newport News, VA-NC MSA	10,449	8,515	6,842

TABLE 2 (Continued)

Rank by Population	List of Cities (Metropolitan Statistical Area)	Equity in 2012		
		Low	Middle	High
35	Charlotte-Gastonia-Concord, NC-SC MSA	29,919	28,524	27,318
36	Providence-New Bedford-Fall River, RI-MA MSA	-25,748	-28,261	-30,436
37	Austin-Round Rock, TX MSA	70,007	68,530	67,251
38	Milwaukee-Waukesha-West Allis, WI MSA	12,745	11,076	9,632
39	Nashville-Davidson-Murfreesboro-Franklin, TN MSA	26,567	25,181	23,982
40	Jacksonville, FL MSA	26,832	25,241	23,863
41	Memphis, TN-MS-AR MSA	68,348	67,286	66,367
42	Louisville-Jefferson County, KY-IN MSA	33,003	31,809	30,775
43	Richmond, VA MSA	21,500	19,740	18,217
44	Oklahoma City, OK MSA	54,431	53,475	52,648
45	Hartford-West Hartford-East Hartford, CT MSA	13,494	11,405	9,598
46	Buffalo-Niagara Falls, NY MSA	77,934	77,045	76,275
47	Birmingham-Hoover, AL MSA	47,404	46,276	45,300
48	Salt Lake City, UT MSA	-19,237	-21,097	-22,706
49	Raleigh-Cary, NC MSA	19,004	17,386	15,985
50	Rochester, NY MSA	82,898	81,898	81,032
51	New Orleans-Metairie-Kenner, LA MSA	88,907	87,473	86,232
52	Tucson, AZ MSA	1,764	56	-1,422
53	Tulsa, OK MSA	58,599	57,624	56,780
54	Honolulu, HI MSA	-114,657	-119,323	-123,360
55	Fresno, CA MSA	-55,743	-58,040	-60,027
56	Bridgeport-Stamford-Norwalk, CT MSA	-183,685	-187,931	-191,605
57	Albany-Schenectady-Troy, NY MSA	49,104	47,630	46,355
58	New Haven-Milford, CT MSA	36,521	34,284	32,348
59	Dayton, OH MSA	51,393	50,327	49,405
60	Albuquerque, NM MSA	28,805	27,356	26,102
61	Omaha-Council Bluffs, NE-IA MSA	47,823	46,654	45,643
62	Allentown-Bethlehem-Easton, PA-NJ MSA	12,779	11,063	9,578
63	Oxnard-Thousand Oaks-Ventura, CA MSA	-203,481	-208,464	-212,776
64	Bakersfield, CA MSA	-49,364	-51,322	-53,016
65	Worcester, MA MSA	-29,098	-31,518	-33,612
66	Grand Rapids-Wyoming, MI MSA	44,484	43,304	42,282
67	Baton Rouge, LA MSA	61,802	60,648	59,651
68	El Paso, TX MSA	55,100	54,316	53,637
69	Columbia, SC MSA	55,993	54,936	54,022
70	McAllen-Edinburg-Mission, TX MSA	90,437	89,871	89,381
71	Akron, OH MSA	54,594	53,410	52,387
72	Greensboro-High Point, NC MSA	54,592	53,463	52,485
73	Sarasota-Bradenton-Venice, FL MSA	31,544	29,577	27,875
74	Springfield, MA MSA	16,338	14,591	13,079
75	Knoxville, TN MSA	24,862	23,663	22,625
76	Stockton, CA MSA	-109,757	-112,775	-115,386

TABLE 2 (Continued)

Rank by Population	List of Cities (Metropolitan Statistical Area)	Equity in 2012		
		Low	Middle	High
77	Poughkeepsie-Newburgh-Middletown, NY MSA	-22,728	-25,401	-27,714
78	Little Rock-North Little Rock-Conway, AR MSA	58,420	57,416	56,548
79	Toledo, OH MSA	44,009	42,928	41,992
80	Syracuse, NY MSA	80,231	79,341	78,571
81	Charleston-North Charleston, SC MSA	35,592	34,062	32,738
82	Greenville-Mauldin-Easley, SC MSA	40,268	39,169	38,218
83	Colorado Springs, CO MSA	4,482	2,736	1,224
84	Wichita, KS MSA	53,684	52,764	51,968
85	Cape Coral-Fort Myers, FL MSA	1,321	-653	-2,362
86	Boise City-Nampa, ID MSA	-12,665	-14,256	-15,633
87	Lakeland, FL MSA	56,960	55,793	54,784
88	Youngstown-Warren-Boardman, OH-PA MSA	54,014	53,176	52,450
89	Madison, WI MSA	-5,217	-7,072	-8,677
90	Scranton-Wilkes-Barre, PA MSA	46,251	45,254	44,391
91	Des Moines-West Des Moines, IA MSA	46,078	44,844	43,776
92	Palm Bay-Melbourne-Titusville, FL MSA	23,090	21,467	20,063
93	Jackson, MS MSA	77,648	76,659	75,804
94	Harrisburg-Carlisle, PA MSA	37,456	36,168	35,054
95	Augusta-Richmond County, GA-SC MSA	57,424	56,465	55,636
96	Ogden-Clearfield, UT MSA	-5,621	-7,222	-8,607
97	Chattanooga, TN-GA MSA	41,025	39,955	39,029
98	Portland-South Portland-Biddeford, ME MSA	37,197	35,204	33,479
99	Modesto, CA MSA	-77,449	-80,070	-82,337
100	Deltona-Daytona Beach-Ormond Beach, FL MSA	36,217	34,643	33,281

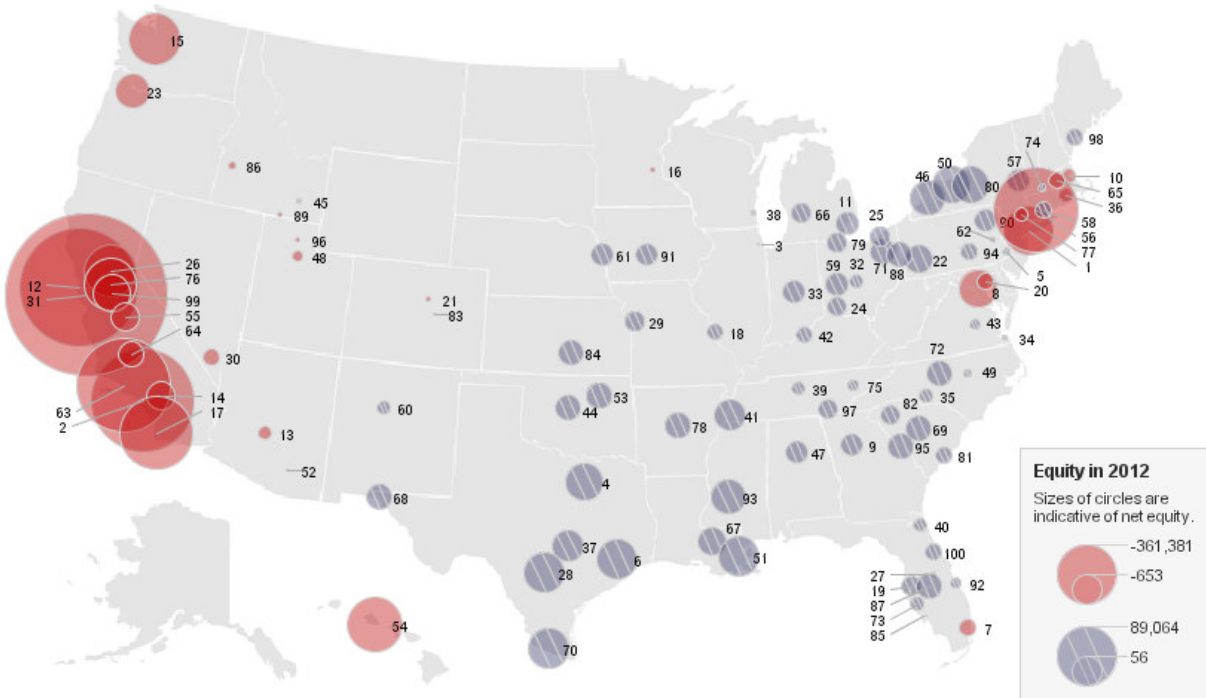
Source: Census Bureau, HUD, and authors' calculations, see Appendix. (**Bolded MSAs** will have negative equity in 2012 in this calculation.)

[Figure 1](#) (next page) shows the projected equity in the 100 largest metropolitan areas after four years for a household buying a home at 75 percent of the median price. Blue circles indicate positive equity, while red circles imply negative equity. The calculations deduct 6 percent of the projected sales price for realtor fees and other selling costs. The numbers in Figure 1 correspond to the Metropolitan Statistical Areas (MSAs) listed in Tables 1 and 2. (The [Appendix](#) has a full description of the methodology.)

Implications for Rental Markets

In bubble markets, renting is becoming an increasingly attractive refuge for homeowners saddled with a depreciating asset. Nationwide households evicted as a result of foreclosure are also likely to turn to rental markets for housing. Additionally, homeowners who are making a transition in their lives or households or individuals entering the housing market for the first time are even more likely to put off the decision to own in the current market.

FIGURE 1
100 City Comparison



Source: Census Bureau and authors' calculations.

Statistical indicators also reflect the increasing demand for rental housing. According to the most recent Census numbers,⁵ in the past year, the number of renter households in the United States increased by nearly 1 million. By contrast, the number of homeowner households increased by just 139,000. The ability for metropolitan area housing markets to accommodate this shift to rental units will vary considerably.

Many metro areas have a large surplus of rental units as a result of the shift to homeownership and declining populations.⁶ In these communities, middle-income households should face little difficulty finding affordable rental housing. Recently built or converted townhomes and multifamily condominiums may be converted en masse to rental by their developers and a growing number of single-family homes and individual condominiums will be offered for rental as the inventory of homes for sale grows. In these housing markets, the rental market will be able to welcome new entrants immediately and should provide a sufficient stock of rental options and fairly stable rents over time.

The difficulty is that these slack markets are also more likely to be non-bubble metro areas where there will be only limited growth in the demand for rental housing as a result of the foreclosure crisis, as shown in [Table 3](#).

⁵ U.S. Census Bureau, 2008, April 28. Census Bureau Reports on Residential Vacancies and Homeownership. Retrieved April 28, 2008 from: www.census.gov/hhes/www/housing/hvs/qtr108/q108press.pdf.

⁶ See [Appendix Table](#), traditionally a rental vacancy rate of between 5 and 7% has been considered an indication of a balanced rental market.

TABLE 3
Vacancy Rates in Bubble and Non-Bubble Metro Areas, 2006

Market Type	Number	Average Middle-Income Owner to Rental Cost Ratio	Average Homeowner Vacancy Rate	Average Renter Vacancy Rate	Average Total Vacancy Rate*
<i>All Cities</i>	<i>100</i>	<i>1.49</i>	<i>2.25</i>	<i>8.20</i>	<i>10.11</i>
Non-Bubble	60	1.18	2.41	9.23	10.00
Bubble	40	1.94	2.01	6.65	8.79

Source: Census Bureau, HUD and authors' calculations.

*Includes all vacant units including those not for sale or rent.

As Table 3 indicates, housing markets are tighter in the bubble markets, defined as those in which the middle ownership costs are over 1.5 times the FMR. This is in part because in many of these markets owners converted thousands of existing rental units for sale during the boom, and because of genuinely stronger demand for all housing relative to supply in many of these markets.

In general, homes that are repossessed by lending institutions or held on the market for sale will stay vacant for a considerable amount of time before conversion to rental housing if they convert at all. While this is not a serious constraint in already slack rental markets or in markets with elastic demand, in already tight and growing housing markets, demand for housing is unlikely to diminish and the demand for rental homes will grow rapidly as the demand for ownership units declines. In these markets, the lag in conversion of the stock, and the foreclosure of existing rental homes⁷, will restrict supply and push up prices, at least in the short run. The friction is increased by local zoning, condo rules, and other local anti-rental restrictions that further hinder the ability of these units to easily and legally convert to rentals.

Even if it is of limited duration, the spike in rents will have significant consequences. In this regard, no metropolitan area has a surplus of decent rental housing for its lowest income residents.⁸ Even moderate pressure on the unsubsidized, private stock of affordable rental housing that these households depend on will have an immediate and injurious impact on these communities, including an increase in homelessness.

⁷ A National Low Income Housing Coalition (NLIHC) study found that in four New England states, Connecticut, Massachusetts, New Hampshire and Rhode Island, a conservative estimate is that 45% of all units scheduled for auction or that become bank-owned from January 2007 to March 2008 were rental homes. Moreover, while the number of single family homes in the latter stages of foreclosure was 3.5 times greater in the first quarter of 2008 compared to the first quarter of 2007, the number of multifamily units increased over five fold in this same period. Source: Wardrip, K.E. & Pelletiere, D., 2008. "Properties, Units, and Tenure in the Foreclosure Crisis: An Initial Analysis of Properties at the End of the Foreclosure Process in New England". Washington, D.C.: National Low Income Housing Coalition. Research Note #08-01. Available online at: <http://www.nlihc.org/doc/RN-08-01-Multi-Unit-Foreclosure-FINAL-05-06-08.pdf>. This finding mirrors other national results. A recent report found that "38 percent of foreclosures now involve rental properties," affecting "at least 168,000 households nationwide," and that roughly half of the recent foreclosures in Nevada, Illinois and New York involved rental properties. Source: CBS Evening News, 2008, March 27. Foreclosure crisis causing crisis for renters. Transcript received from Lexis-Nexis March 28, 2008.

⁸ The most recent metropolitan area data on the local shortage comes from the 2000 Census and is made available by HUD at the State of the Cities Data Systems: Comprehensive Housing Affordability Strategy (CHAS), available online at <http://socds.huduser.org/chas/index.html>. For a discussion of these data as well as a state level analysis of more recent data see, Pelletiere, D. (2007). American Community Survey Estimate Shows Larger National, State Affordable Rental Housing Shortages. Washington, D.C.: National Low Income Housing Coalition. Research Note #07-01.

Policy Implications

With or without proactive policy, the transition from owner-occupied housing to rental housing is happening. There are a variety of factors that make it likely that the transition of the housing stock may not keep up in many areas. In these bubble markets, policy makers must not only be less committed to sustaining ownership and home values, but also must proactively facilitate the conversion to rental of vacant, foreclosed and delinquent units to limit the pressure on the rental market. Even in slack markets, it is necessary to limit the impact on the most vulnerable renters and more importantly to use the opportunity provided by the current market to relieve the pressure on these households by providing additional affordable housing through programs to purchase, renovate, and reuse foreclosed and vacant units to house those at risk of homelessness.

Appendix

The source for the median rent and median house sale prices are the Census Bureau's 2006 American Community Survey, data profile tables for metropolitan statistical areas, available [here](#).⁹ The rent reported for 2006 was increased in accordance with the change in the rental component of the Bureau of Labor Statistics, consumer price index for the specific metropolitan area, from the second half of 2006 to the second half of 2007, available [here](#).¹⁰ The median sale price reported for 2006 was adjusted by the increase in the Office of Federal Housing Enterprise Oversight's (OFHEO) House Price Index for the metropolitan area from the fourth quarter of 2006 to the fourth quarter of 2007. These data appear in the OFHEO release of HPI data for the fourth quarter of 2007, available [here](#).¹¹

The calculations in the low-, middle-, and high-cost scenarios use the monthly payment on a 30-year fixed rate mortgage at 6 percent, 7 percent, and 8 percent interest rates, respectively, for 75 percent of the median house price for each metropolitan area.

The scenarios assume alternative property tax rates of 0.75 percent, 1.0 percent, and 1.5 percent. State and local property tax collections for fiscal year 2004-2005 (the most recent year for which data is available) were equal to approximately 1.2 percent of the combined value of residential real estate owned by households, and real estate owned by both non-financial non-farm corporate and non-corporate businesses. Data on property tax collections for 2004-2005 (\$335.7 billion) can be found in the 2008 Economic Report of the President, Table B-86, available [here](#).¹² Data on the value of residential real estate at the end of 2004 (\$16.7 billion) can be found in the Federal Reserve Board's Flow of Funds Accounts, Table B.100, Line 4, data on the value of the real estate held by non-farm non-financial corporate businesses (\$5.9 trillion) is available in Table B.102, Line 3, and data for the value of the real estate held by non-farm non-financial non-corporate businesses (\$5.6 trillion) is available in Table B.103, Line 3, found [here](#).¹³

The low-, middle-, and high-cost scenarios assume combined maintenance and insurance costs of 0.75 percent, 1.0 percent, and 1.5 percent of the sale price, respectively. Implicitly, the maintenance costs should also include some utilities to be fully comparable to the rental cost figure, since most market rents include the cost of at least some utilities.

The calculations for equity after four years assume that the house price adjusts over this period to a trend value that is pegged at 15 times the annual rent of the property. The annual rent is assumed to be 1.333 times the median rent for the city as calculated above. This figure is further adjusted upward by a factor of 12.55 percent, which would be the rent in four years, assuming an average annual rental inflation rate of 3.0 percent.

The calculation of net equity assumes that the seller incurs total sales cost equal to 6.0 percent of the sale price. This is subtracted from the sale price as calculated above. The net equity in the low, middle, and high scenarios is then the difference between this amount and the balance outstanding on alternatively, a 6.0 percent, 7.0 percent, and 8.0 percent 30-year fixed rate mortgage.

⁹ http://factfinder.census.gov/servlet/ADPGeoSearchByListServlet?ds_name=ACS_2006_EST_G00_&lang=en&ts=224860494546.

¹⁰ <http://data.bls.gov/cgi-bin/dsrv?cu>

¹¹ <http://www.ofheo.gov/media/pdf/4q07hpi.pdf>

¹² <http://www.gpoaccess.gov/eop/tables08.html>

¹³ <http://www.federalreserve.gov/releases/z1/Current/z1r-5.pdf>

APPENDIX TABLE
National Vacancy Rates, listed alphabetically

Population Rank	Name of Metropolitan Statistical Area	Total Housing Units	Occupied	Vacant	Vacancy Rate*	Homeowner Vacancy rate	Rental Vacancy rate	Low
71	Akron, OH MSA	306654	280837	25817	11.9	3.2	9.4	740.7
57	Albany-Schenectady-Troy, NY MSA	378061	337905	40156	9.4	1.4	5.7	922.6
60	Albuquerque, NM MSA	347485	318482	29003	12.0	1.1	7.2	907.1
62	Allentown-Bethlehem-Easton, PA-NJ MSA	329955	305792	24163	13.7	1.6	4.7	1074.2
9	Atlanta-Sandy Springs-Marietta, GA MSA	2056264	1826990	229274	9.0	3.6	12.1	991.2
95	Augusta-Richmond County, GA-SC MSA	224159	196092	28067	8.0	2.8	10.3	600.2
37	Austin-Round Rock, TX MSA	613448	560280	53168	11.5	1.7	8.4	924.9
64	Bakersfield, CA MSA	262651	238229	24422	10.8	2.1	5.4	1225.5
20	Baltimore-Towson, MD MSA	1101389	1003904	97485	11.3	1.3	8.2	1600.4
67	Baton Rouge, LA MSA	312025	279234	32791	9.5	1.7	4.1	721.9
47	Birmingham-Hoover, AL MSA	490157	426691	63466	7.7	2.9	9.3	706.1
86	Boise City-Nampa, ID MSA	228236	213517	14719	15.5	1.7	6.9	996.0
10	Boston-Cambridge-Quincy, MA-NH MSA	1811929	1684493	127436	14.2	1.6	5.2	2050.6
56	Bridgeport-Stamford-Norwalk, CT MSA	349344	325913	23431	14.9	1.1	5.0	2658.1
46	Buffalo-Niagara Falls, NY MSA	520214	459740	60474	8.6	1.6	8.6	557.0
85	Cape Coral-Fort Myers, FL MSA	341117	248128	92989	3.7	4.8	15.8	1235.8
81	Charleston-North Charleston, SC MSA	274130	234389	39741	6.9	3.1	9.4	958.0
35	Charlotte-Gastonia-Concord, NC-SC MSA	677623	613645	63978	10.6	2.6	9.6	872.9
97	Chattanooga, TN-GA MSA	224843	203599	21244	10.6	2.4	8.3	669.8
3	Chicago-Naperville-Joliet, IL-IN-WI MSA	3714217	3385287	328930	11.3	2.4	8.9	1335.4
24	Cincinnati-Middletown, OH-KY-IN MSA	903669	801736	101933	8.9	2.9	13.0	795.0
25	Cleveland-Elyria-Mentor, OH MSA	47792	43607	4185	11.4	2.8	7.8	767.5
83	Colorado Springs, CO MSA	252186	228414	23772	10.6	1.6	11.8	1093.4
69	Columbia, SC MSA	302835	270229	32606	9.3	2.5	9.8	661.4
32	Columbus, OH MSA	766658	679926	86732	8.8	3.1	12.7	847.2
4	Dallas-Fort Worth-Arlington, TX MSA	2312670	2085819	226851	10.2	2.9	10.9	758.4
59	Dayton, OH MSA	379391	340778	38613	9.8	2.3	10.2	667.2

Appendix Table (Continued)

Population Rank	Name of Metropolitan Statistical Area	Total Housing Units	Occupied	Vacant	Vacancy Rate*	Homeowner Vacancy rate	Rental Vacancy rate	Low
100	Deltona-Daytona Beach-Ormond Beach, FL MSA	243415	203394	40021	6.1	3.6	10.2	985.4
21	Denver-Aurora, CO MSA	1026748	945880	80868	12.7	2.6	7.6	1273.9
91	Des Moines-West Des Moines, IA MSA	231212	216526	14686	15.7	2.2	3.7	772.3
11	Detroit-Warren-Livonia, MI MSA	1896971	1689855	207116	9.2	3.4	11.2	849.8
68	El Paso, TX MSA	249289	229911	19378	12.9	2.0	10.0	491.0
55	Fresno, CA MSA	299578	277256	22322	13.4	2.3	5.4	1437.5
66	Grand Rapids-Wyoming, MI MSA	316530	289147	27383	11.6	1.6	7.6	739.1
72	Greensboro-High Point, NC MSA	305950	275011	30939	9.9	2.0	11.5	707.0
82	Greenville-Mauldin-Easley, SC MSA	263984	232112	31872	8.3	2.4	8.2	688.0
94	Harrisburg-Carlisle, PA MSA	229112	211096	18016	12.7	1.9	6.0	806.0
45	Hartford-West Hartford-East Hartford, CT MSA	489245	456247	32998	14.8	1.3	6.6	1307.4
54	Honolulu, HI MSA	332718	299217	33501	9.9	0.9	4.7	2920.6
6	Houston-Sugar Land-Baytown, TX MSA	2098682	1863152	235530	8.9	2.3	10.9	710.2
33	Indianapolis-Carmel, IN MSA	737383	644556	92827	7.9	4.0	13.0	744.9
93	Jackson, MS MSA	216432	192004	24428	8.9	2.5	10.2	618.9
40	Jacksonville, FL MSA	569277	496366	72911	7.8	3.2	9.6	996.6
29	Kansas City, MO-KS MSA	848207	770828	77379	11.0	2.6	9.8	805.3
75	Knoxville, TN MSA	302201	274568	27633	10.9	1.6	8.9	750.7
87	Lakeland, FL MSA	269359	224818	44541	6.0	2.5	6.7	730.4
30	Las Vegas-Paradise, NV MSA	756217	665509	90708	8.3	3.5	9.3	1574.6
78	Little Rock-North Little Rock-Conway, AR MSA	291107	264312	26795	10.9	2.8	6.9	628.4
2	Los Angeles-Long Beach-Santa Ana, CA MSA	4379471	4143240	236231	18.5	1.3	3.6	3054.2
42	Louisville-Jefferson County, KY-IN MSA	539531	489229	50302	10.7	2.7	9.3	747.8
89	Madison, WI MSA	243362	218143	25219	9.6	1.3	8.2	1161.1
70	McAllen-Edinburg-Mission, TX MSA	239953	202984	36969	6.5	2.3	13.8	354.6
41	Memphis, TN-MS-AR MSA	537304	472807	64497	8.3	3.3	11.8	664.7
7	Miami-Fort Lauderdale-Pompano Beach, FL MSA	2380712	2015417	365295	6.5	3.3	6.8	1636.0
38	Milwaukee-Waukesha-West Allis, WI MSA	650711	605162	45549	14.3	1.3	6.9	1044.9

Appendix Table (Continued)

Population Rank	Name of Metropolitan Statistical Area	Total Housing Units	Occupied	Vacant	Vacancy Rate*	Homeowner Vacancy rate	Rental Vacancy rate	Low
16	Minneapolis-St. Paul-Bloomington, MN-WI MSA	1310820	1232889	77931	16.8	1.6	8.1	1236.3
99	Modesto, CA MSA	171281	160431	10850	15.8	2.9	4.5	1640.2
39	Nashville-Davidson-Murfreesboro-Franklin, TN MSA	626941	574954	51987	12.1	1.8	9.9	867.5
58	New Haven-Milford, CT MSA	348418	320838	27580	12.6	1.2	7.0	1400.4
51	New Orleans-Metairie-Kenner, LA MSA	435140	353386	81754	5.3	2.1	5.5	897.6
1	New York-Northern New Jersey-Long Island, NY-NJ-PA	7338731	6709151	629580	11.7	1.6	4.5	2415.3
96	Ogden-Clearfield, UT MSA	171714	158848	12866	13.3	2.9	7.4	1001.9
44	Oklahoma City, OK MSA	514665	457291	57374	9.0	2.3	11.2	598.5
61	Omaha-Council Bluffs, NE-IA MSA	346070	319229	26841	12.9	2.7	7.9	731.8
27	Orlando-Kissimmee, FL MSA	854155	749928	104227	8.2	4.7	7.8	1231.8
63	Oxnard-Thousand Oaks-Ventura, CA MSA	270664	259093	11571	23.4	1.2	2.3	3119.7
92	Palm Bay-Melbourne-Titusville, FL MSA	260654	220587	40067	6.5	3.7	15.9	1015.8
5	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	2374020	2160502	213518	11.1	1.7	9.8	1226.9
13	Phoenix-Mesa-Scottsdale, AZ MSA	1622934	1427108	195826	8.3	3.2	8.3	1342.8
22	Pittsburgh, PA MSA	1103616	980765	122851	9.0	2.3	10.5	596.3
98	Portland-South Portland-Biddeford, ME MSA	252020	210844	41176	6.1	2.6	7.3	1247.9
23	Portland-Vancouver-Beaverton, OR-WA MSA	873585	819196	54389	16.1	1.6	5.4	1461.8
77	Poughkeepsie-Newburgh-Middletown, NY MSA	244490	226176	18314	13.3	1.3	3.7	1673.1
36	Providence-New Bedford-Fall River, RI-MA MSA	673896	613641	60255	11.2	1.3	6.6	1573.4
49	Raleigh-Cary, NC MSA	408985	369171	39814	10.3	2.2	9.0	1013.2
43	Richmond, VA MSA	504361	458695	45666	11.0	1.3	8.1	1101.8
14	Riverside-San Bernardino-Ontario, CA MSA	1400811	1235889	164922	8.5	2.8	5.5	1917.0
50	Rochester, NY MSA	440428	397836	42592	10.3	1.5	10.9	626.4
26	Sacramento-Arden-Arcade-Roseville, CA MSA	837151	753246	83905	10.0	2.3	6.3	1972.6
48	Salt Lake City, UT MSA	383861	351280	32581	11.8	0.7	6.5	1164.2
28	San Antonio, TX MSA	739846	663074	76772	9.6	1.8	10.6	596.8
17	San Diego-Carlsbad-San Marcos, CA MSA	1125820	1039619	86201	13.1	2.8	5.1	2771.4
12	San Francisco-Oakland-Fremont, CA MSA	1679709	1551115	128594	13.1	1.8	7.0	3636.8

Appendix Table (Continued)

Population Rank	Name of Metropolitan Statistical Area	Total Housing Units	Occupied	Vacant	Vacancy Rate*	Homeowner Vacancy rate	Rental Vacancy rate	Low
31	San Jose-Sunnyvale-Santa Clara, CA MSA	627091	601239	25852	24.3	0.6	4.0	3778.0
73	Sarasota-Bradenton-Venice, FL MSA	383228	307668	75560	5.1	4.5	5.2	1231.5
90	Scranton-Wilkes-Barre, PA MSA	257366	226177	31189	8.3	1.5	6.0	624.1
15	Seattle-Tacoma-Bellevue, WA MSA	1383397	1293236	90161	15.3	1.4	6.0	1920.8
74	Springfield, MA MSA	282017	258921	23096	12.2	1.6	5.7	1093.8
18	St. Louis, MO-IL MSA	1212569	1095451	117118	10.4	2.1	8.4	815.5
76	Stockton, CA MSA	223471	210462	13009	17.2	2.1	5.9	1889.0
80	Syracuse, NY MSA	284678	253573	31105	9.2	1.7	9.4	556.9
19	Tampa-St. Petersburg-Clearwater, FL MSA	1294527	1110528	183999	7.0	3.8	7.5	1007.9
79	Toledo, OH MSA	298581	263013	35568	8.4	3.0	11.5	677.1
52	Tucson, AZ MSA	418213	371370	46843	8.9	2.4	7.3	1069.2
53	Tulsa, OK MSA	392848	353107	39741	9.9	1.5	9.0	610.5
34	Virginia Beach-Norfolk-Newport News, VA-NC MSA	676976	621181	55795	12.1	1.6	4.9	1210.6
8	Washington-Arlington-Alexandria, DC-VA-MD-WV MSA	2104307	1942516	161791	13.0	2.1	7.0	2302.8
84	Wichita, KS MSA	63969	57520	6449	9.9	1.9	14.0	576.0
65	Worcester, MA MSA	314228	290280	23948	13.1	1.0	8.3	1514.7
88	Youngstown-Warren-Boardman, OH-PA MSA	262227	234545	27682	9.5	2.5	10.5	525.0

Note: Bubble markets highlighted in Gray. The names of slack Rental Markets have **red text** (with vacancy rates of 9% or more)

Source: 2006 American Community Survey and authors' calculations

* Includes all vacant units including those not for sale or rent