



The Changing Prospects for Building Home Equity

An Updated Analysis of Rents and the Price of Housing in 100 Metropolitan Areas

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Executive Summary

In the Spring of 2008, we released a report comparing ownership and rental costs in the 100 largest metropolitan areas (Rho, Pelletiere, and Baker, 2008). Based on some simple assumptions drawn from historical relationships between home prices and rents, current interest rates and fees, and the homeownership patterns among moderate income families in the 80s and 90s¹, that report also projected in each of these cities the potential for a first-time homebuyer to accumulate home equity. At that time we found that in 34 bubble markets, new homeowners would likely lose home equity by 2012 if they purchased a modest home.

Since the publication of that paper, housing prices have continued their steep descent in much of the country and rents have risen modestly. Recently released data enables us to not only update our findings but also assess what our analysis says about the progress that has been made toward finding the bottom of the housing market and therefore the potential for new home buyers purchasing today to acquire equity in the near future.

In this update we find the prospects for building equity by 2012 somewhat improved in 36 cities. Though we only predict that two cities, Cape Coral-Ft Myers and Orlando-Kissimmee, FL, have turned the corner from negative to positive equity, in another 24 negative equity cities the predicted losses have declined. In 64 cities, the prospects for equity declined, but only nine metro areas where we had already predicted losses showed further declines. Thus, we conclude that while many communities have yet to hit bottom and significant price declines must still be reckoned with in many areas, recent price declines mean that many communities are moving back toward the historical track of modest equity increases for homebuyers.

Given the remaining mismatch between home prices and rent levels in most bubble markets, we argue it is still unwise for policy makers to attempt to directly intervene in housing markets to maintain what are historically unprecedented high home prices. Policies that encourage occupancy, discourage vacancy, and maintain employment to stabilize hard hit communities are likely to be the best approach to assuring prices do not fall any further than is necessary to reestablish a stable housing market.

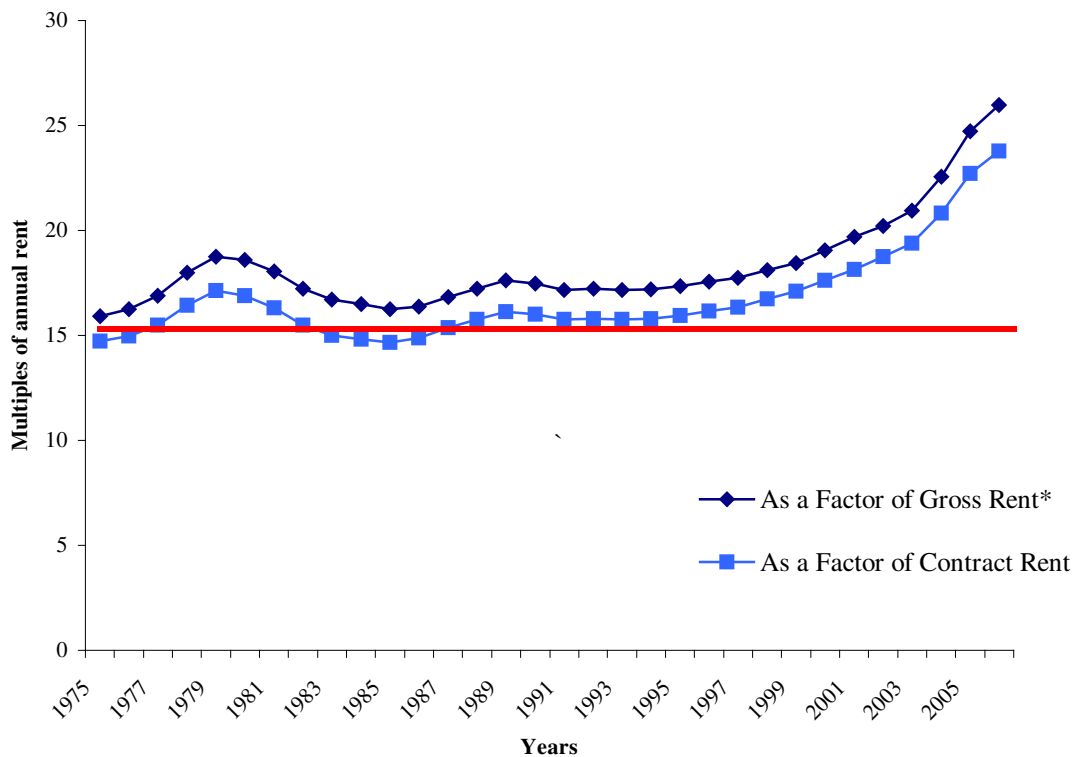
¹ Reid, C., 2004. "Achieving the American Dream? A Longitudinal Analysis of the Homeownership Experience of Low-Income Families," Department of Geography, University of Washington. See also Huarin, D.R & Rosenthal, S.S., 2004. *The Sustainability of Homeownership: Factors Affecting the Duration of Homeownership and Rental Spells*. Washington, D.C.: US Department of Housing and Urban Development.

Ownership and Rental Costs: A Historical Perspective

Historically, home prices and rents have moved in line with the economy and with each other. Home prices nationwide have typically risen at approximately the same rate as the overall rate of inflation. As a result, over most of the 20th century – from 1895 to 1995 – there was virtually no change in real home prices. Rental costs show a similar trend, moving up and down with home prices.

Moreover, the relationship between rent and home prices showed remarkable stability. In recent decades, the median home price has been roughly 15 times median annual rent (see **Figure 1**). In times of rapidly increasing home prices, such as in the late 1970s and late 1980s, national home prices briefly rose above this ratio, but remained below 20 times rents and quickly fell back in line. This might be seen as empirical evidence of the textbook premise in economics that the price of a house, even an owner-occupied house, is the current value of the rent payments that could be earned from renting the property at market prices.²

FIGURE 1
US Median Home Price as a Factor of Median Annual Rent (2007 Constant Dollars)



*Gross rent is contract rent plus utilities where they are not included.

² Green, R.K. and Malpezzi, S. 2003. A Primer on U.S. Housing Markets and Housing Policy. Washington, D.C.: Urban Institute Press. Pg. 31.

It is apparent that the situation diverged radically from the typical pattern in the most recent home price boom. At the peak of the bubble in 2007, the national ratio of median annual rents to median home prices exceeded 25 to 1. Given the theoretical and empirical underpinnings of the relationship between home prices and rents, and since the fundamentals in the housing market had not changed, it should have been easy for market watchers and policy makers to grasp the extent of the housing price bubble. Now that the bubble has burst, the ratio of annual rents to home prices can provide a rough but useful indicator of the floor for prices in US housing markets.

For purposes of analysis, this paper treats a home price that is 15 times the annual rent of a comparable home for rent as being an equilibrium sale price,³ and defines a bubble market as one in which the ratio of annual rent to price exceeds 18 to 1.

Ownership and Rental Costs in 2008

The basic comparison of ownership and rental costs is shown in [Appendix Table 1](#). For ownership costs, these comparisons use calculations based on 75 percent of the median house sale price, based on data from the Census Bureau's 2007 American Community Survey and adjusted forward to the second quarter of 2008 based on recent Housing Price Index trends. 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).

The comparable rental costs shown are Fiscal Year 2008 Fair Market Rents (FMR) for two- and three-bedroom units as determined by the Department of Housing and Urban Development. The Fiscal Year 2008 FMRs are adjusted to June 2008.

Changes in monthly ownership costs varied throughout the 100 metropolitan areas. Prices fell as much as 24.6 percent in Stockton, CA and rose as much as 11.8 percent in Columbia, SC. In general, metro areas most affected by the housing bubble – such as in California, Florida, and Arizona – saw the largest decrease in ownership costs over the latest two quarters.

This clearly shows the deflating housing bubble that developed over the last decade. In fact, markets in Orlando-Kissimmee and Cape Coral-Fort Myers, Florida have lost their bubble status since our last report, due to the rapid deflation of house prices. Out of 33 metropolitan areas that saw a decrease in ownership costs, 26 were in bubble markets, 19 of which were located in California and Florida. In comparison, there were only 14 bubble markets that saw an increase in ownership costs out of 67 metro areas with inflated house prices.

³ This historically derived rule of thumb 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. In other words, the ratio of annual rents to home price would be 15 to 1.

The Prospects for Accumulating Equity

Despite the collapsing housing bubble and consequent fall in house prices in bubble markets, the prospects for accumulating equity still look grim for homeowners as prices are still far from reaching their historical norm. The relative merits of owning and renting will be affected by the extent to which homeowners can accumulate equity. Even with the general increase in house prices at the same rate as the overall rate of inflation, homebuyers are at risk of facing plunging home values in bubble inflated markets.⁴

Table 1 below shows that more than 60 metropolitan areas will accumulate less equity in 2012 for a recently purchased home than a home owned from six-months ago. Out of 100 metro areas, 33 are projected to accumulate negative equity in 2012, as opposed to 34 metro areas in our previous report. In fact, all 33 metro areas are in bubble markets as indicated by **Table 1** below. They will generally accumulate slightly *less* negative equity in 2012 than our previous report predicted, due to the decline in house prices and the modest increases in rents assumed in this analysis which is returning the annual rent to price ratio to historical levels. Nevertheless, house prices across the bubble markets still have a long way to fall. In comparison, metro areas without housing bubbles will likely accumulate positive equity in a relatively short period of time.

⁴ [Appendix 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 [Appendix 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 1

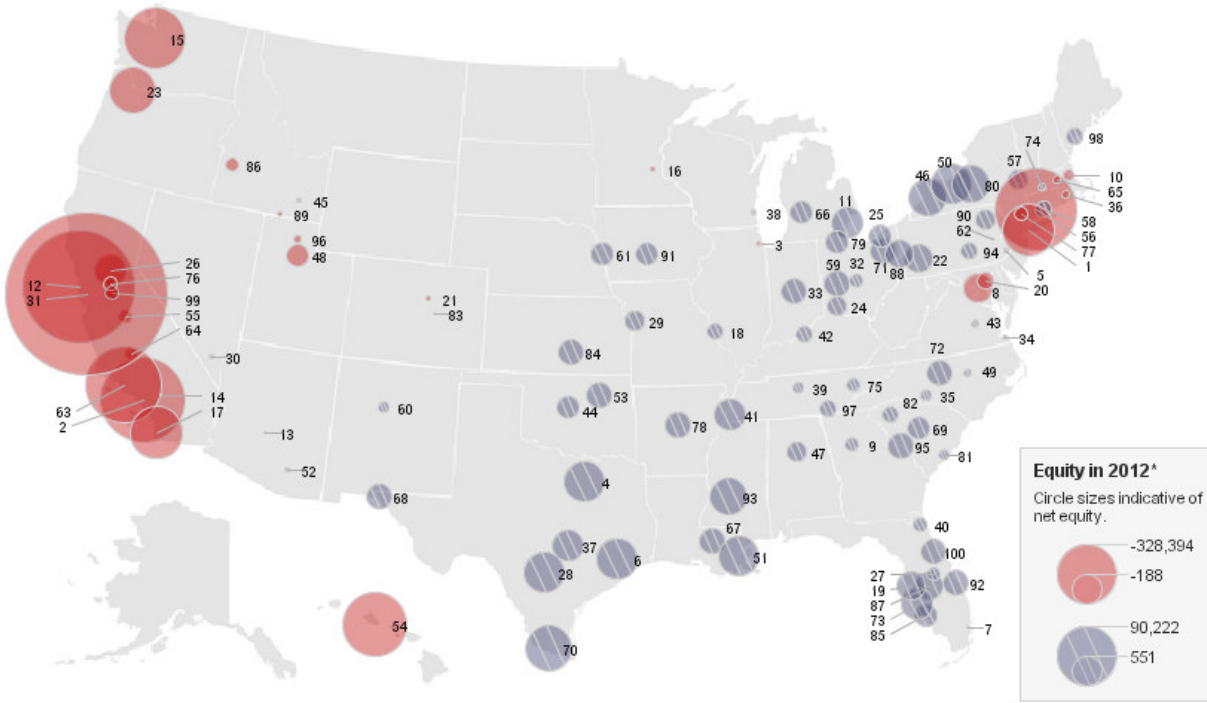
| | | Equity in 2012 (Middle) | |
|---------------------------|--|--|--|
| | | Positive | Negative (Bubble Markets Only) |
| Bubble Market* | Virginia Beach-Norfolk-Newport News, VA-NC <i>Las Vegas-Paradise, NV</i> Philadelphia-Camden-Wilmington, PA-NJ-DE-MD Milwaukee-Waukesha-West Allis, WI Hartford-West Hartford-East Hartford, CT Richmond, VA | | <i>San Jose-Sunnyvale-Santa Clara, CA</i> <i>San Francisco-Oakland-Fremont, CA</i> <i>Los Angeles-Long Beach-Santa Ana, CA</i> <i>Bridgeport-Stamford-Norwalk, CT</i> <i>Oxnard-Thousand Oaks-Ventura, CA</i> Honolulu, HI <i>Sacramento-Arden-Arcade-Roseville, CA</i> Seattle-Tacoma-Bellevue, WA <i>San Diego-Carlsbad-San Marcos, CA</i> <i>New York-Northern New Jersey-Long Island, NY-NJ-PA</i> Portland-Vancouver-Beaverton, OR-WA <i>Washington-Arlington-Alexandria, DC-VA-MD-WV</i> Salt Lake City, UT <i>Baltimore-Towson, MD</i> <i>Fresno, CA</i> <i>Stockton, CA</i> |
| | | | <i>Bakersfield, CA</i> Boise City-Nampa, ID <i>Modesto, CA</i> <i>Poughkeepsie-Newburgh-Middletown, NY</i> <i>Boston-Cambridge-Quincy, MA-NH</i> <i>Worcester, MA</i> Ogden-Clearfield, UT <i>Providence-New Bedford-Fall River, RI-MA</i> <i>Denver-Aurora, CO</i> <i>Minneapolis-St. Paul-Bloomington, MN-WI</i> <i>Madison, WI</i> Chicago-Naperville-Joliet, IL-IN-WI Colorado Springs, CO Allentown-Bethlehem-Easton, PA-NJ <i>Phoenix-Mesa-Scottsdale, AZ</i> <i>Miami-Fort Lauderdale-Pompano Beach, FL</i> <i>Riverside-San Bernardino-Ontario, CA</i> |
| Non-bubble Markets | Charleston-North Charleston, SC <i>Tucson, AZ</i> Springfield, MA Raleigh-Cary, NC Albuquerque, NM Nashville-Davidson-Murfreesboro-Franklin, TN Charlotte-Gastonia-Concord, NC-SC Knoxville, TN <i>Orlando-Kissimmee, FL</i> Columbus, OH Atlanta-Sandy Springs-Marietta, GA Jacksonville, FL Greenville-Mauldin-Easley, SC St. Louis, MO-IL Louisville-Jefferson County, KY-IN Chattanooga, TN-GA Harrisburg-Carlisle, PA New Haven-Milford, CT Portland-South Portland-Biddeford, ME Cincinnati-Middletown, OH-KY-IN Albany-Schenectady-Troy, NY Scranton-Wilkes-Barre, PA Birmingham-Hoover, AL Kansas City, MO-KS Des Moines-West Des Moines, IA Columbia, SC Grand Rapids-Wyoming, MI Cleveland-Elyria-Mentor, OH Oklahoma City, OK <i>Cape Coral-Fort Myers, FL</i> | Omaha-Council Bluffs, NE-IA <i>Deltona-Daytona Beach-Ormond Beach, FL</i> Indianapolis-Carmel, IN Greensboro-High Point, NC <i>Palm Bay-Melbourne-Titusville, FL</i> El Paso, TX Wichita, KS Akron, OH Tulsa, OK <i>Dayton, OH</i> Baton Rouge, LA Augusta-Richmond County, GA-SC Little Rock-North Little Rock-Conway, AR <i>Youngstown-Warren-Boardman, OH-PA</i> Lakeland, FL Pittsburgh, PA <i>Tampa-St. Petersburg-Clearwater, FL</i> <i>Detroit-Warren-Livonia, MI</i> Austin-Round Rock, TX Memphis, TN-MS-AR <i>Sarasota-Bradenton-Venice, FL</i> Jackson, MS Buffalo-Niagara Falls, NY Syracuse, NY New Orleans-Metairie-Kenner, LA Rochester, NY San Antonio, TX Dallas-Fort Worth-Arlington, TX Houston-Sugar Land-Baytown, TX <i>McAllen-Edinburg-Mission, TX</i> | |
| | | | |

Note: Cities in *red italicized* text have a higher equity estimate than in our previous report. Listed by the size of equity (lowest to highest).

*As identified in Rho, Pelletiere, and Baker (2008).

Figure 2 shows the updated projections of 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 sale price for realtor fees and other selling costs. The numbers in **Figure 2** correspond to the Metropolitan Statistical Areas (MSAs) listed in Appendix Tables 1 and 2. (The [Appendix](#) has a full description of the methodology.)

FIGURE 2
100 City Comparison



Source: Census Bureau and authors' calculations.

*Map is based on projected equity using mid-housing cost scenario.

Policy Implications

With this update it seems likely that prices will continue to fall in some bubble markets and that the mismatch between current home prices and rents will persist and, in some areas, grow. Even in areas with positive equity predictions, recent price increases have lowered our estimates in many instances. The analysis here is intended to provide a rough national picture of market variations and trends and is based on a national price-to-rent ratio. Still, the primary policy conclusion is that policy makers must be extremely cautious in intervening in housing markets, particularly either purchasing or encouraging others to purchase homes with the goal of increasing equity in the short term. Local historical price-to-rent ratios are an excellent standard for timing and planning such interventions.

This does not mean, however, that policy makers in areas that can expect significant further home price deflation should not intervene or assist homeowners and renters. There are a number of policies that may serve to cushion the fall in prices and make sure that falling prices do not significantly overshoot the historical local price-to-rent ratio.

A top priority must be efforts to limit displacement and community disruption by keeping current owners in their homes, either as owners with more affordable mortgages that reflect lower post-deflation prices or as renters. Without such efforts, backed by government influence and money, a vicious cycle of extreme disinvestment is likely to develop in many communities.

In areas where there is no non-speculative, qualified home purchase demand, communities must proactively facilitate the conversion to rental of vacant, foreclosed, and delinquent units. This will keep homes occupied and support local businesses and also relieve pressure on the rental market where there is not a sufficient supply. For the foreseeable future there will be more renters in US housing markets and many communities that do not proactively accommodate them will either face thinner housing markets or a potentially disruptive, unregulated shadow rental market.

Even in slack markets, it is likely to be necessary to limit the impact on the most vulnerable renters as more households put off the decision to buy. As a matter of policy, declining values and market disruption may present a once-in-a-lifetime opportunity to provide additional affordable housing through programs to purchase, renovate, and reuse foreclosed and vacant units to house those at risk of homelessness.

Appendix

The comparable rental costs used here are Fiscal Year 2008 Fair Market Rents (FMR) for two- and three-bedroom units as determined by the Department of Housing and Urban Development. 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 [here](#).⁵ An important way this measure differs from other measures of typical rents is that it is based on the rents paid by recent movers. FMRs for June 2008 was calculated by applying 2006-to-2008 Trend Factor of 3% for 1.5 Years. For more information on how FMRs are calculated, review the available documentation [here](#).⁶ The Fiscal Year 2008 FMRs are adjusted to June 2008 on this paper using HUD’s methodology, resulting in a constant 0.74 percent increase for all metropolitan areas in comparison to rental costs used in our earlier report.

Seventy-five percent of home values are used to represent a level of for-sale housing similarly “of a modest (non-luxury) nature with suitable amenities.” The source for the median house sale prices is the Census Bureau’s 2007 American Community Survey, data profile tables for metropolitan statistical areas, available [here](#).⁷ The median sale price reported for 2007 was adjusted by the increase in the Office of Federal Housing Enterprise Oversight’s (OFHEO) House Price Index for the metropolitan area from the second quarter of 2007 to the second quarter of 2008. These data appear in the OFHEO release of HPI data for the second quarter of 2008, available [here](#).⁸

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](#).⁹ Data on the value of residential real estate at the end of 2004 (\$16.7 trillion) 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, all of which can be found [here](#).¹⁰

⁵ http://www.huduser.org/datasets/fmr/fmr2008f/FR_Preamble_FY2008F.pdf

⁶ <http://www.huduser.org/datasets/fmr.html>

⁷ http://factfinder.census.gov/servlet/ADPGeoSearchByListServlet?ds_name=ACS_2007_1YR_G00_&lang=en&ts=242219279757

⁸ <http://www.ofheo.gov/media/PDF/2q08hpi.pdf>

⁹ <http://www.gpoaccess.gov/eop/tables08.html>

¹⁰ <http://www.federalreserve.gov/releases/z1/Current/z1r-5.pdf>

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.

APPENDIX TABLE 1
100 Cities Comparison

| Rank by Population | List of Cities (Metropolitan Statistical Areas) | October Report | | | | | May Report | | | | | % Change in Monthly Ownership Costs |
|-----------------------|--|-------------------------|---------|---------|----------------------|-----------------------|-------------------------|---------|---------|----------------------|-----------------------|---|
| | | Monthly Ownership Costs | | | Monthly Rental Costs | | Monthly Ownership Costs | | | Monthly Rental Costs | | |
| | | Low | Middle | High | FMR* Two Bedroom | FMR Three- Bedroom | Low | Middle | High | FMR* Two Bedroom | FMR Three- Bedroom | |
| 1 | New York-Northern New Jersey-Long Island, NY-NJ-PA MSA | \$2,405 | \$2,744 | \$3,232 | \$1,328 | \$1,633 | \$2,415 | \$2,756 | \$3,245 | \$1,318 | \$1,621 | -0.4 |
| 2 | Los Angeles-Long Beach-Santa Ana, CA MSA | \$2,742 | \$3,129 | \$3,685 | \$1,310 | \$1,759 | \$3,054 | \$3,485 | \$4,104 | \$1,300 | \$1,746 | -10.2 |
| 3 | Chicago-Naperville-Joliet, IL-IN-WI MSA | \$1,348 | \$1,538 | \$1,811 | \$951 | \$1,163 | \$1,335 | \$1,524 | \$1,794 | \$944 | \$1,154 | 0.9 |
| 4 | Dallas-Fort Worth-Arlington, TX MSA | \$775 | \$884 | \$1,041 | \$877 | \$1,165 | \$758 | \$865 | \$1,019 | \$871 | \$1,156 | 2.1 |
| 5 | Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA | \$1,262 | \$1,440 | \$1,696 | \$939 | \$1,124 | \$1,227 | \$1,400 | \$1,649 | \$932 | \$1,116 | 2.9 |
| 6 | Houston-Sugar Land-Baytown, TX MSA | \$740 | \$845 | \$995 | \$858 | \$1,144 | \$710 | \$810 | \$954 | \$852 | \$1,136 | 4.3 |
| 7 | Miami-Fort Lauderdale-Pompano Beach, FL MSA | \$1,447 | \$1,651 | \$1,944 | \$1,043 | \$1,334 | \$1,636 | \$1,867 | \$2,198 | \$1,035 | \$1,324 | -11.5 |
| 8 | Washington-Arlington-Alexandria, DC-VA-MD-WV MSA | \$2,175 | \$2,482 | \$2,923 | \$1,334 | \$1,721 | \$2,303 | \$2,627 | \$3,094 | \$1,324 | \$1,708 | -5.5 |
| 9 | Atlanta-Sandy Springs-Marietta, GA MSA | \$1,017 | \$1,160 | \$1,366 | \$830 | \$1,010 | \$991 | \$1,131 | \$1,332 | \$824 | \$1,003 | 2.6 |
| 10 | Boston-Cambridge-Quincy, MA-NH MSA | \$2,009 | \$2,292 | \$2,700 | \$1,363 | \$1,630 | \$2,051 | \$2,340 | \$2,755 | \$1,353 | \$1,618 | -2.0 |
| 11 | Detroit-Warren-Livonia, MI MSA | \$795 | \$907 | \$1,069 | \$811 | \$970 | \$850 | \$970 | \$1,142 | \$805 | \$963 | -6.4 |
| 12 | San Francisco-Oakland-Fremont, CA MSA | \$3,471 | \$3,961 | \$4,664 | \$1,604 | \$2,141 | \$3,637 | \$4,149 | \$4,887 | \$1,592 | \$2,125 | -4.6 |
| 13 | Phoenix-Mesa-Scottsdale, AZ MSA | \$1,209 | \$1,379 | \$1,624 | \$868 | \$1,265 | \$1,343 | \$1,532 | \$1,804 | \$862 | \$1,256 | -10.0 |
| 14 | Riverside-San Bernardino-Ontario, CA MSA | \$1,596 | \$1,821 | \$2,144 | \$1,150 | \$1,634 | \$1,917 | \$2,187 | \$2,576 | \$1,142 | \$1,622 | -16.8 |
| 15 | Seattle-Tacoma-Bellevue, WA MSA | \$1,981 | \$2,260 | \$2,661 | \$949 | \$1,341 | \$1,921 | \$2,192 | \$2,581 | \$942 | \$1,331 | 3.1 |
| 16 | Minneapolis-St. Paul-Bloomington, MN-WI MSA | \$1,233 | \$1,407 | \$1,657 | \$854 | \$1,118 | \$1,236 | \$1,411 | \$1,661 | \$848 | \$1,110 | -0.3 |
| 17 | San Diego-Carlsbad-San Marcos, CA MSA | \$2,484 | \$2,834 | \$3,338 | \$1,365 | \$1,991 | \$2,771 | \$3,162 | \$3,724 | \$1,355 | \$1,976 | -10.4 |
| 18 | St. Louis, MO-IL MSA | \$838 | \$956 | \$1,126 | \$716 | \$923 | \$816 | \$930 | \$1,096 | \$711 | \$916 | 2.8 |
| 19 | Tampa-St. Petersburg-Clearwater, FL MSA | \$922 | \$1,052 | \$1,239 | \$890 | \$1,127 | \$1,008 | \$1,150 | \$1,354 | \$883 | \$1,119 | -8.5 |
| 20 | Baltimore-Towson, MD MSA | \$1,597 | \$1,822 | \$2,146 | \$1,021 | \$1,311 | \$1,600 | \$1,826 | \$2,150 | \$1,013 | \$1,301 | -0.2 |
| 21 | Denver-Aurora, CO MSA | \$1,276 | \$1,455 | \$1,714 | \$883 | \$1,253 | \$1,274 | \$1,454 | \$1,712 | \$876 | \$1,244 | 0.1 |
| 22 | Pittsburgh, PA MSA | \$626 | \$714 | \$841 | \$671 | \$834 | \$596 | \$680 | \$801 | \$666 | \$828 | 4.9 |
| 23 | Portland-Vancouver-Beaverton, OR-WA MSA | \$1,558 | \$1,778 | \$2,094 | \$763 | \$1,110 | \$1,462 | \$1,668 | \$1,964 | \$757 | \$1,102 | 6.6 |
| 24 | Cincinnati-Middletown, OH-KY-IN MSA | \$813 | \$928 | \$1,093 | \$731 | \$979 | \$795 | \$907 | \$1,068 | \$726 | \$972 | 2.3 |
| 25 | Cleveland-Elyria-Mentor, OH MSA | \$780 | \$890 | \$1,048 | \$730 | \$936 | \$767 | \$876 | \$1,031 | \$725 | \$929 | 1.6 |
| 26 | Sacramento-Arden-Arcade-Roseville, CA MSA | \$1,723 | \$1,965 | \$2,315 | \$989 | \$1,428 | \$1,973 | \$2,251 | \$2,651 | \$982 | \$1,417 | -12.7 |
| 27 | Orlando-Kissimmee, FL MSA | \$1,155 | \$1,318 | \$1,552 | \$922 | \$1,155 | \$1,232 | \$1,405 | \$1,655 | \$915 | \$1,146 | -6.2 |
| 28 | San Antonio, TX MSA | \$647 | \$739 | \$870 | \$786 | \$1,013 | \$597 | \$681 | \$802 | \$780 | \$1,006 | 8.5 |
| 29 | Kansas City, MO-KS MSA | \$835 | \$953 | \$1,122 | \$760 | \$1,028 | \$805 | \$919 | \$1,082 | \$754 | \$1,020 | 3.7 |
| 30 | Las Vegas-Paradise, NV MSA | \$1,355 | \$1,546 | \$1,821 | \$1,003 | \$1,392 | \$1,575 | \$1,797 | \$2,116 | \$996 | \$1,382 | -13.9 |
| 31 | San Jose-Sunnyvale-Santa Clara, CA MSA | \$3,611 | \$4,120 | \$4,852 | \$1,303 | \$1,873 | \$3,778 | \$4,311 | \$5,077 | \$1,293 | \$1,859 | -4.4 |
| 32 | Columbus, OH MSA | \$871 | \$994 | \$1,170 | \$723 | \$910 | \$847 | \$967 | \$1,138 | \$718 | \$903 | 2.8 |
| 33 | Indianapolis-Carmel, IN MSA | \$754 | \$860 | \$1,013 | \$731 | \$946 | \$745 | \$850 | \$1,001 | \$726 | \$939 | 1.2 |

APPENDIX TABLE 1 (CONTINUED)

| Rank by Population | List of Cities (Metropolitan Statistical Areas) | October Report | | | | | May Report | | | | | % Change in Monthly Ownership Costs |
|-----------------------|--|-------------------------|---------|---------|----------------------|-----------------------|-------------------------|---------|---------|----------------------|-----------------------|---|
| | | Monthly Ownership Costs | | | Monthly Rental Costs | | Monthly Ownership Costs | | | Monthly Rental Costs | | |
| | | Low | Middle | High | FMR* Two Bedroom | FMR Three- Bedroom | Low | Middle | High | FMR* Two Bedroom | FMR Three- Bedroom | |
| 34 | Virginia Beach-Norfolk-Newport News, VA-NC MSA | \$1,240 | \$1,414 | \$1,666 | \$911 | \$1,256 | \$1,211 | \$1,381 | \$1,627 | \$904 | \$1,247 | 2.4 |
| 35 | Charlotte-Gastonia-Concord, NC-SC MSA | \$918 | \$1,047 | \$1,233 | \$745 | \$939 | \$873 | \$996 | \$1,173 | \$740 | \$932 | 5.1 |
| 36 | Providence-New Bedford-Fall River, RI-MA MSA | \$1,503 | \$1,714 | \$2,019 | \$1,028 | \$1,230 | \$1,573 | \$1,795 | \$2,114 | \$1,020 | \$1,221 | -4.5 |
| 37 | Austin-Round Rock, TX MSA | \$973 | \$1,110 | \$1,307 | \$942 | \$885 | \$925 | \$1,055 | \$1,243 | \$935 | \$878 | 5.2 |
| 38 | Milwaukee-Waukesha-West Allis, WI MSA | \$1,066 | \$1,217 | \$1,433 | \$801 | \$1,009 | \$1,045 | \$1,192 | \$1,404 | \$795 | \$1,002 | 2.1 |
| 39 | Nashville-Davidson-Murfreesboro-Franklin, TN MSA | \$895 | \$1,022 | \$1,203 | \$728 | \$945 | \$868 | \$990 | \$1,166 | \$723 | \$938 | 3.2 |
| 40 | Jacksonville, FL MSA | \$995 | \$1,135 | \$1,337 | \$822 | \$1,032 | \$997 | \$1,137 | \$1,339 | \$816 | \$1,024 | -0.1 |
| 41 | Memphis, TN-MS-AR MSA | \$698 | \$796 | \$938 | \$749 | \$997 | \$665 | \$758 | \$893 | \$743 | \$990 | 5.0 |
| 42 | Louisville-Jefferson County, KY-IN MSA | \$764 | \$872 | \$1,027 | \$668 | \$933 | \$748 | \$853 | \$1,005 | \$663 | \$926 | 2.2 |
| 43 | Richmond, VA MSA | \$1,155 | \$1,317 | \$1,551 | \$876 | \$1,170 | \$1,102 | \$1,257 | \$1,480 | \$870 | \$1,161 | 4.8 |
| 44 | Oklahoma City, OK MSA | \$662 | \$755 | \$889 | \$646 | \$871 | \$598 | \$683 | \$804 | \$641 | \$865 | 10.6 |
| 45 | Hartford-West Hartford-East Hartford, CT MSA | \$1,333 | \$1,520 | \$1,791 | \$992 | \$1,192 | \$1,307 | \$1,492 | \$1,757 | \$985 | \$1,183 | 1.9 |
| 46 | Buffalo-Niagara Falls, NY MSA | \$578 | \$659 | \$776 | \$709 | \$877 | \$557 | \$636 | \$748 | \$704 | \$871 | 3.7 |
| 47 | Birmingham-Hoover, AL MSA | \$750 | \$856 | \$1,008 | \$695 | \$883 | \$706 | \$806 | \$949 | \$690 | \$876 | 6.3 |
| 48 | Salt Lake City, UT MSA | \$1,288 | \$1,469 | \$1,730 | \$760 | \$1,069 | \$1,164 | \$1,328 | \$1,564 | \$754 | \$1,061 | 10.6 |
| 49 | Raleigh-Cary, NC MSA | \$1,040 | \$1,187 | \$1,397 | \$803 | \$1,009 | \$1,013 | \$1,156 | \$1,361 | \$797 | \$1,002 | 2.7 |
| 50 | Rochester, NY MSA | \$650 | \$742 | \$874 | \$779 | \$935 | \$626 | \$715 | \$842 | \$773 | \$928 | 3.9 |
| 51 | New Orleans-Metairie-Kenner, LA MSA | \$957 | \$1,091 | \$1,285 | \$997 | \$1,280 | \$898 | \$1,024 | \$1,206 | \$990 | \$1,271 | 6.6 |
| 52 | Tucson, AZ MSA | \$1,036 | \$1,182 | \$1,392 | \$775 | \$1,118 | \$1,069 | \$1,220 | \$1,437 | \$769 | \$1,110 | -3.1 |
| 53 | Tulsa, OK MSA | \$655 | \$748 | \$881 | \$671 | \$887 | \$611 | \$697 | \$820 | \$666 | \$880 | 7.3 |
| 54 | Honolulu, HI MSA | \$2,991 | \$3,413 | \$4,019 | \$1,642 | \$2,395 | \$2,921 | \$3,332 | \$3,924 | \$1,630 | \$2,377 | 2.4 |
| 55 | Fresno, CA MSA | \$1,273 | \$1,452 | \$1,710 | \$811 | \$1,180 | \$1,438 | \$1,640 | \$1,932 | \$805 | \$1,171 | -11.5 |
| 56 | Bridgeport-Stamford-Norwalk, CT MSA | \$2,543 | \$2,901 | \$3,417 | \$1,180 | \$1,409 | \$2,658 | \$3,033 | \$3,572 | \$1,171 | \$1,399 | -4.3 |
| 57 | Albany-Schenectady-Troy, NY MSA | \$979 | \$1,117 | \$1,315 | \$857 | \$823 | \$923 | \$1,053 | \$1,240 | \$851 | \$817 | 6.1 |
| 58 | New Haven-Milford, CT MSA | \$1,422 | \$1,622 | \$1,911 | \$1,150 | \$1,377 | \$1,400 | \$1,598 | \$1,882 | \$1,142 | \$1,367 | 1.5 |
| 59 | Dayton, OH MSA | \$672 | \$767 | \$903 | \$683 | \$920 | \$667 | \$761 | \$897 | \$678 | \$913 | 0.7 |
| 60 | Albuquerque, NM MSA | \$951 | \$1,085 | \$1,278 | \$766 | \$1,115 | \$907 | \$1,035 | \$1,219 | \$760 | \$1,107 | 4.8 |
| 61 | Omaha-Council Bluffs, NE-IA MSA | \$747 | \$852 | \$1,003 | \$715 | \$955 | \$732 | \$835 | \$983 | \$710 | \$948 | 2.0 |
| 62 | Allentown-Bethlehem-Easton, PA-NJ MSA | \$1,147 | \$1,309 | \$1,541 | \$822 | \$1,064 | \$1,074 | \$1,226 | \$1,443 | \$816 | \$1,056 | 6.8 |
| 63 | Oxnard-Thousand Oaks-Ventura, CA MSA | \$2,828 | \$3,227 | \$3,800 | \$1,433 | \$2,053 | \$3,120 | \$3,560 | \$4,192 | \$1,422 | \$2,038 | -9.3 |
| 64 | Bakersfield, CA MSA | \$1,088 | \$1,242 | \$1,462 | \$684 | \$988 | \$1,225 | \$1,398 | \$1,647 | \$679 | \$981 | -11.2 |
| 65 | Worcester, MA MSA | \$1,433 | \$1,635 | \$1,926 | \$972 | \$1,163 | \$1,515 | \$1,728 | \$2,035 | \$965 | \$1,154 | -5.4 |
| 66 | Grand Rapids-Wyoming, MI MSA | \$750 | \$856 | \$1,008 | \$707 | \$903 | \$739 | \$843 | \$993 | \$702 | \$896 | 1.5 |
| 67 | Baton Rouge, LA MSA | \$781 | \$891 | \$1,049 | \$764 | \$973 | \$722 | \$824 | \$970 | \$758 | \$966 | 8.2 |
| 68 | El Paso, TX MSA | \$526 | \$600 | \$707 | \$571 | \$819 | \$491 | \$560 | \$660 | \$567 | \$813 | 7.1 |

APPENDIX TABLE 1 (CONTINUED)

| Rank by Population | List of Cities (Metropolitan Statistical Areas) | October Report | | | | | May Report | | | | | % Change in Monthly Ownership Costs |
|-----------------------|---|-------------------------|---------|---------|----------------------|-----------------------|-------------------------|---------|---------|----------------------|-----------------------|---|
| | | Monthly Ownership Costs | | | Monthly Rental Costs | | Monthly Ownership Costs | | | Monthly Rental Costs | | |
| | | Low | Middle | High | FMR* Two Bedroom | FMR Three- Bedroom | Low | Middle | High | FMR* Two Bedroom | FMR Three- Bedroom | |
| 69 | Columbia, SC MSA | \$739 | \$843 | \$993 | \$697 | \$861 | \$661 | \$755 | \$889 | \$692 | \$855 | 11.8 |
| 70 | McAllen-Edinburg-Mission, TX MSA | \$359 | \$410 | \$482 | \$614 | \$735 | \$355 | \$405 | \$476 | \$609 | \$730 | 1.2 |
| 71 | Akron, OH MSA | \$769 | \$878 | \$1,034 | \$749 | \$952 | \$741 | \$845 | \$995 | \$743 | \$945 | 3.8 |
| 72 | Greensboro-High Point, NC MSA | \$742 | \$846 | \$997 | \$724 | \$918 | \$707 | \$807 | \$950 | \$719 | \$911 | 4.9 |
| 73 | Sarasota-Bradenton-Venice, FL MSA | \$1,050 | \$1,198 | \$1,411 | \$1,009 | \$1,289 | \$1,231 | \$1,405 | \$1,655 | \$1,002 | \$1,280 | -14.7 |
| 74 | Springfield, MA MSA | \$1,111 | \$1,268 | \$1,493 | \$850 | \$1,017 | \$1,094 | \$1,248 | \$1,470 | \$844 | \$1,010 | 1.6 |
| 75 | Knoxville, TN MSA | \$761 | \$869 | \$1,023 | \$638 | \$854 | \$751 | \$857 | \$1,009 | \$633 | \$848 | 1.4 |
| 76 | Stockton, CA MSA | \$1,425 | \$1,626 | \$1,915 | \$921 | \$1,264 | \$1,889 | \$2,155 | \$2,538 | \$914 | \$1,255 | -24.6 |
| 77 | Poughkeepsie-Newburgh-Middletown, NY MSA | \$1,669 | \$1,905 | \$2,243 | \$1,111 | \$1,362 | \$1,673 | \$1,909 | \$2,248 | \$1,103 | \$1,352 | -0.2 |
| 78 | Little Rock-North Little Rock-Conway, AR MSA | \$667 | \$761 | \$896 | \$683 | \$915 | \$628 | \$717 | \$844 | \$678 | \$908 | 6.2 |
| 79 | Toledo, OH MSA | \$674 | \$769 | \$906 | \$661 | \$852 | \$677 | \$773 | \$910 | \$656 | \$846 | -0.4 |
| 80 | Syracuse, NY MSA | \$588 | \$671 | \$790 | \$718 | \$920 | \$557 | \$635 | \$748 | \$713 | \$913 | 5.5 |
| 81 | Charleston-North Charleston, SC MSA | \$1,060 | \$1,209 | \$1,424 | \$829 | \$1,080 | \$958 | \$1,093 | \$1,287 | \$823 | \$1,072 | 10.6 |
| 82 | Greenville-Mauldin-Easley, SC MSA | \$752 | \$858 | \$1,011 | \$654 | \$863 | \$688 | \$785 | \$924 | \$649 | \$857 | 9.3 |
| 83 | Colorado Springs, CO MSA | \$1,123 | \$1,281 | \$1,508 | \$803 | \$1,145 | \$1,093 | \$1,248 | \$1,469 | \$797 | \$1,137 | 2.7 |
| 84 | Wichita, KS MSA | \$600 | \$684 | \$806 | \$627 | \$802 | \$576 | \$657 | \$774 | \$622 | \$796 | 4.2 |
| 85 | Cape Coral-Fort Myers, FL MSA | \$998 | \$1,138 | \$1,340 | \$893 | \$1,213 | \$1,236 | \$1,410 | \$1,660 | \$886 | \$1,204 | -19.3 |
| 86 | Boise City-Nampa, ID MSA | \$1,053 | \$1,202 | \$1,415 | \$665 | \$967 | \$996 | \$1,136 | \$1,338 | \$660 | \$960 | 5.8 |
| 87 | Lakeland, FL MSA | \$744 | \$849 | \$999 | \$751 | \$952 | \$730 | \$833 | \$981 | \$745 | \$945 | 1.8 |
| 88 | Youngstown-Warren-Boardman, OH-PA MSA | \$529 | \$603 | \$710 | \$591 | \$744 | \$525 | \$599 | \$705 | \$587 | \$739 | 0.7 |
| 89 | Madison, WI MSA | \$1,166 | \$1,330 | \$1,567 | \$813 | \$1,091 | \$1,161 | \$1,325 | \$1,560 | \$807 | \$1,083 | 0.4 |
| 90 | Scranton-Wilkes-Barre, PA MSA | \$663 | \$757 | \$892 | \$632 | \$801 | \$624 | \$712 | \$839 | \$627 | \$795 | 6.3 |
| 91 | Des Moines-West Des Moines, IA MSA | \$796 | \$908 | \$1,070 | \$737 | \$945 | \$772 | \$881 | \$1,038 | \$732 | \$938 | 3.1 |
| 92 | Palm Bay-Melbourne-Titusville, FL MSA | \$876 | \$999 | \$1,177 | \$821 | \$1,106 | \$1,016 | \$1,159 | \$1,365 | \$815 | \$1,098 | -13.8 |
| 93 | Jackson, MS MSA | \$645 | \$736 | \$866 | \$753 | \$906 | \$619 | \$706 | \$832 | \$747 | \$899 | 4.2 |
| 94 | Harrisburg-Carlisle, PA MSA | \$840 | \$958 | \$1,128 | \$727 | \$918 | \$806 | \$920 | \$1,083 | \$722 | \$911 | 4.2 |
| 95 | Augusta-Richmond County, GA-SC MSA | \$634 | \$723 | \$852 | \$659 | \$883 | \$600 | \$685 | \$806 | \$654 | \$876 | 5.6 |
| 96 | Ogden-Clearfield, UT MSA | \$1,048 | \$1,196 | \$1,408 | \$697 | \$959 | \$1,002 | \$1,143 | \$1,346 | \$692 | \$952 | 4.6 |
| 97 | Chattanooga, TN-GA MSA | \$723 | \$825 | \$972 | \$644 | \$793 | \$670 | \$764 | \$900 | \$639 | \$787 | 8.0 |
| 98 | Portland-South Portland-Biddeford, ME MSA | \$1,272 | \$1,451 | \$1,709 | \$1,044 | \$1,315 | \$1,248 | \$1,424 | \$1,677 | \$1,036 | \$1,305 | 1.9 |
| 99 | Modesto, CA MSA | \$1,338 | \$1,526 | \$1,798 | \$870 | \$1,248 | \$1,640 | \$1,871 | \$2,204 | \$864 | \$1,239 | -18.4 |
| 100 | Deltona-Daytona Beach-Ormond Beach, FL MSA | \$925 | \$1,055 | \$1,243 | \$851 | \$1,101 | \$985 | \$1,124 | \$1,324 | \$845 | \$1,093 | -6.1 |

Note: Bubble markets highlighted in Gray. The MSAs whose bubble status has changed have red text.

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

*Fair Market Rent (FMR), adjusted for June 2008

APPENDIX TABLE 2
Equity in 2012

| Rank by Population | List of Cities (Metropolitan Statistical Area) | Equity in 2012 (October Report) | | | Equity in 2012 (May Report) | | |
|-----------------------|---|---------------------------------|-------------------|-------------------|-----------------------------|-------------------|-------------------|
| | | Low | Middle | High | Low | Middle | High |
| 1 | New York-Northern New Jersey-Long Island, NY-NJ-PA MSA | -\$98,121 | -\$101,964 | -\$105,288 | -\$102,428 | -\$106,287 | -\$109,625 |
| 2 | Los Angeles-Long Beach-Santa Ana, CA MSA | -\$163,689 | -\$168,069 | -\$171,859 | -\$222,719 | -\$227,598 | -\$231,820 |
| 3 | Chicago-Naperville-Joliet, IL-IN-WI MSA | -\$2,402 | -\$4,554 | -\$6,417 | -\$2,098 | -\$4,231 | -\$6,077 |
| 4 | Dallas-Fort Worth-Arlington, TX MSA | \$82,575 | \$81,338 | \$80,267 | \$83,880 | \$82,669 | \$81,620 |
| 5 | Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA | \$10,003 | \$7,987 | \$6,242 | \$14,492 | \$12,532 | \$10,836 |
| 6 | Houston-Sugar Land-Baytown, TX MSA | \$83,918 | \$82,735 | \$81,711 | \$87,837 | \$86,703 | \$85,721 |
| 7 | Miami-Fort Lauderdale-Pompano Beach, FL MSA | \$2,862 | \$551 | -\$1,449 | -\$33,172 | -\$35,786 | -\$38,047 |
| 8 | Washington-Arlington-Alexandria, DC-VA-MD-WV MSA | -\$54,948 | -\$58,422 | -\$61,429 | -\$80,522 | -\$84,201 | -\$87,384 |
| 9 | Atlanta-Sandy Springs-Marietta, GA MSA | \$26,763 | \$25,138 | \$23,733 | \$46,314 | \$44,730 | \$43,360 |
| 10 | Boston-Cambridge-Quincy, MA-NH MSA | -\$17,521 | -\$20,731 | -\$23,508 | -\$27,540 | -\$30,816 | -\$33,650 |
| 11 | Detroit-Warren-Livonia, MI MSA | \$61,960 | \$60,689 | \$59,590 | \$50,599 | \$49,241 | \$48,067 |
| 12 | San Francisco-Oakland-Fremont, CA MSA | -\$220,943 | -\$226,489 | -\$231,287 | -\$253,875 | -\$259,684 | -\$264,711 |
| 13 | Phoenix-Mesa-Scottsdale, AZ MSA | \$1,743 | -\$188 | -\$1,858 | -\$24,072 | -\$26,217 | -\$28,073 |
| 14 | Riverside-San Bernardino-Ontario, CA MSA | \$3,306 | \$756 | -\$1,450 | -\$56,953 | -\$60,016 | -\$62,665 |
| 15 | Seattle-Tacoma-Bellevue, WA MSA | -\$117,471 | -\$120,635 | -\$123,373 | -\$108,427 | -\$111,496 | -\$114,151 |
| 16 | Minneapolis-St. Paul-Bloomington, MN-WI MSA | -\$6,229 | -\$8,198 | -\$9,903 | -\$8,429 | -\$10,404 | -\$12,113 |
| 17 | San Diego-Carlsbad-San Marcos, CA MSA | -\$102,905 | -\$106,873 | -\$110,307 | -\$157,371 | -\$161,798 | -\$165,629 |
| 18 | St. Louis, MO-IL MSA | \$30,169 | \$28,830 | \$27,671 | \$32,933 | \$31,630 | \$30,503 |
| 19 | Tampa-St. Petersburg-Clearwater, FL MSA | \$58,999 | \$57,526 | \$56,252 | \$41,847 | \$40,237 | \$38,843 |
| 20 | Baltimore-Towson, MD MSA | -\$29,890 | -\$32,441 | -\$34,648 | -\$32,409 | -\$34,966 | -\$37,178 |
| 21 | Denver-Aurora, CO MSA | -\$6,781 | -\$8,819 | -\$10,582 | -\$8,072 | -\$10,107 | -\$11,868 |
| 22 | Pittsburgh, PA MSA | \$57,123 | \$56,124 | \$55,259 | \$61,174 | \$60,221 | \$59,397 |
| 23 | Portland-Vancouver-Beaverton, OR-WA MSA | -\$88,355 | -\$90,844 | -\$92,998 | -\$72,330 | -\$74,665 | -\$76,686 |
| 24 | Cincinnati-Middletown, OH-KY-IN MSA | \$38,524 | \$37,225 | \$36,101 | \$40,454 | \$39,184 | \$38,086 |
| 25 | Cleveland-Elyria-Mentor, OH MSA | \$44,282 | \$43,036 | \$41,958 | \$45,251 | \$44,025 | \$42,964 |
| 26 | Sacramento-Arden-Arcade-Roseville, CA MSA | -\$118,857 | -\$121,609 | -\$123,990 | -\$107,621 | -\$110,772 | -\$113,499 |
| 27 | Orlando-Kissimmee, FL MSA | \$24,961 | \$23,116 | \$21,519 | \$9,400 | \$7,433 | \$5,730 |
| 28 | San Antonio, TX MSA | \$82,343 | \$81,308 | \$80,414 | \$90,017 | \$89,064 | \$88,239 |
| 29 | Kansas City, MO-KS MSA | \$41,697 | \$40,362 | \$39,208 | \$45,699 | \$44,413 | \$43,300 |
| 30 | Las Vegas-Paradise, NV MSA | \$9,490 | \$7,325 | \$5,451 | -\$32,060 | -\$34,576 | -\$36,752 |
| 31 | San Jose-Sunnyvale-Santa Clara, CA MSA | -\$322,626 | -\$328,394 | -\$333,385 | -\$355,346 | -\$361,381 | -\$366,603 |
| 32 | Columbus, OH MSA | \$26,051 | \$24,659 | \$23,456 | \$28,982 | \$27,628 | \$26,457 |
| 33 | Indianapolis-Carmel, IN MSA | \$49,310 | \$48,106 | \$47,065 | \$49,520 | \$48,330 | \$47,300 |
| 34 | Virginia Beach-Norfolk-Newport News, VA-NC MSA | \$6,896 | \$4,916 | \$3,202 | \$10,449 | \$8,515 | \$6,842 |
| 35 | Charlotte-Gastonia-Concord, NC-SC MSA | \$23,218 | \$21,752 | \$20,484 | \$29,919 | \$28,524 | \$27,318 |

APPENDIX TABLE 2 (CONTINUED)

| Rank by Population | List of Cities (Metropolitan Statistical Area) | Equity in 2012 (October Report) | | | Equity in 2012 (May Report) | | |
|-----------------------|---|---------------------------------|-------------------|-------------------|-----------------------------|-------------------|-------------------|
| | | Low | Middle | High | Low | Middle | High |
| 36 | Providence-New Bedford-Fall River, RI-MA MSA | -\$11,006 | -\$13,407 | -\$15,484 | -\$25,748 | -\$28,261 | -\$30,436 |
| 37 | Austin-Round Rock, TX MSA | \$63,084 | \$61,530 | \$60,185 | \$70,007 | \$68,530 | \$67,251 |
| 38 | Milwaukee-Waukesha-West Allis, WI MSA | \$10,362 | \$8,658 | \$7,184 | \$12,745 | \$11,076 | \$9,632 |
| 39 | Nashville-Davidson-Murfreesboro-Franklin, TN MSA | \$22,894 | \$21,464 | \$20,226 | \$26,567 | \$25,181 | \$23,982 |
| 40 | Jacksonville, FL MSA | \$28,622 | \$27,032 | \$25,657 | \$26,832 | \$25,241 | \$23,863 |
| 41 | Memphis, TN-MS-AR MSA | \$63,712 | \$62,597 | \$61,632 | \$68,348 | \$67,286 | \$66,367 |
| 42 | Louisville-Jefferson County, KY-IN MSA | \$31,326 | \$30,105 | \$29,049 | \$33,003 | \$31,809 | \$30,775 |
| 43 | Richmond, VA MSA | \$13,592 | \$11,747 | \$10,151 | \$21,500 | \$19,740 | \$18,217 |
| 44 | Oklahoma City, OK MSA | \$44,173 | \$43,116 | \$42,201 | \$54,431 | \$53,475 | \$52,648 |
| 45 | Hartford-West Hartford-East Hartford, CT MSA | \$10,798 | \$8,670 | \$6,828 | \$13,494 | \$11,405 | \$9,598 |
| 46 | Buffalo-Niagara Falls, NY MSA | \$75,500 | \$74,577 | \$73,778 | \$77,934 | \$77,045 | \$76,275 |
| 47 | Birmingham-Hoover, AL MSA | \$40,689 | \$39,490 | \$38,453 | \$47,404 | \$46,276 | \$45,300 |
| 48 | Salt Lake City, UT MSA | -\$40,169 | -\$42,226 | -\$44,006 | -\$19,237 | -\$21,097 | -\$22,706 |
| 49 | Raleigh-Cary, NC MSA | \$15,647 | \$13,986 | \$12,548 | \$19,004 | \$17,386 | \$15,985 |
| 50 | Rochester, NY MSA | \$79,987 | \$78,947 | \$78,048 | \$82,898 | \$81,898 | \$81,032 |
| 51 | New Orleans-Metairie-Kenner, LA MSA | \$80,104 | \$78,576 | \$77,254 | \$88,907 | \$87,473 | \$86,232 |
| 52 | Tucson, AZ MSA | \$9,283 | \$7,629 | \$6,197 | \$1,764 | \$56 | -\$1,422 |
| 53 | Tulsa, OK MSA | \$51,736 | \$50,689 | \$49,783 | \$58,599 | \$57,624 | \$56,780 |
| 54 | Honolulu, HI MSA | -\$124,357 | -\$129,135 | -\$133,270 | -\$114,657 | -\$119,323 | -\$123,360 |
| 55 | Fresno, CA MSA | -\$24,411 | -\$26,444 | -\$28,203 | -\$55,743 | -\$58,040 | -\$60,027 |
| 56 | Bridgeport-Stamford-Norwalk, CT MSA | -\$160,609 | -\$164,671 | -\$168,186 | -\$183,685 | -\$187,931 | -\$191,605 |
| 57 | Albany-Schenectady-Troy, NY MSA | \$40,577 | \$39,014 | \$37,661 | \$49,104 | \$47,630 | \$46,355 |
| 58 | New Haven-Milford, CT MSA | \$34,766 | \$32,494 | \$30,529 | \$36,521 | \$34,284 | \$32,348 |
| 59 | Dayton, OH MSA | \$51,790 | \$50,717 | \$49,788 | \$51,393 | \$50,327 | \$49,405 |
| 60 | Albuquerque, NM MSA | \$22,322 | \$20,803 | \$19,489 | \$28,805 | \$27,356 | \$26,102 |
| 61 | Omaha-Council Bluffs, NE-IA MSA | \$46,502 | \$45,309 | \$44,277 | \$47,823 | \$46,654 | \$45,643 |
| 62 | Allentown-Bethlehem-Easton, PA-NJ MSA | \$1,170 | -\$662 | -\$2,247 | \$12,779 | \$11,063 | \$9,578 |
| 63 | Oxnard-Thousand Oaks-Ventura, CA MSA | -\$148,076 | -\$152,594 | -\$156,503 | -\$203,481 | -\$208,464 | -\$212,776 |
| 64 | Bakersfield, CA MSA | -\$23,266 | -\$25,005 | -\$26,509 | -\$49,364 | -\$51,322 | -\$53,016 |
| 65 | Worcester, MA MSA | -\$12,541 | -\$14,830 | -\$16,811 | -\$29,098 | -\$31,518 | -\$33,612 |
| 66 | Grand Rapids-Wyoming, MI MSA | \$43,856 | \$42,658 | \$41,621 | \$44,484 | \$43,304 | \$42,282 |
| 67 | Baton Rouge, LA MSA | \$52,537 | \$51,289 | \$50,210 | \$61,802 | \$60,648 | \$59,651 |
| 68 | El Paso, TX MSA | \$49,868 | \$49,028 | \$48,301 | \$55,100 | \$54,316 | \$53,637 |
| 69 | Columbia, SC MSA | \$43,233 | \$42,052 | \$41,030 | \$55,993 | \$54,936 | \$54,022 |
| 70 | McAllen-Edinburg-Mission, TX MSA | \$90,795 | \$90,222 | \$89,725 | \$90,437 | \$89,871 | \$89,381 |

APPENDIX TABLE 2 (CONTINUED)

| Rank by Population | List of Cities (Metropolitan Statistical Area) | Equity in 2012 (October Report) | | | Equity in 2012 (May Report) | | |
|-----------------------|---|---------------------------------|------------------|------------------|-----------------------------|-------------------|-------------------|
| | | Low | Middle | High | Low | Middle | High |
| 71 | Akron, OH MSA | \$50,840 | \$49,611 | \$48,548 | \$54,594 | \$53,410 | \$52,387 |
| 72 | Greensboro-High Point, NC MSA | \$49,652 | \$48,467 | \$47,442 | \$54,592 | \$53,463 | \$52,485 |
| 73 | Sarasota-Bradenton-Venice, FL MSA | \$66,204 | \$64,526 | \$63,074 | \$31,544 | \$29,577 | \$27,875 |
| 74 | Springfield, MA MSA | \$14,766 | \$12,990 | \$11,454 | \$16,338 | \$14,591 | \$13,079 |
| 75 | Knoxville, TN MSA | \$24,144 | \$22,928 | \$21,875 | \$24,862 | \$23,663 | \$22,625 |
| 76 | Stockton, CA MSA | -\$24,094 | -\$26,370 | -\$28,340 | -\$109,757 | -\$112,775 | -\$115,386 |
| 77 | Poughkeepsie-Newburgh-Middletown, NY MSA | -\$19,955 | -\$22,622 | -\$24,929 | -\$22,728 | -\$25,401 | -\$27,714 |
| 78 | Little Rock-North Little Rock-Conway, AR MSA | \$52,681 | \$51,615 | \$50,693 | \$58,420 | \$57,416 | \$56,548 |
| 79 | Toledo, OH MSA | \$45,738 | \$44,661 | \$43,729 | \$44,009 | \$42,928 | \$41,992 |
| 80 | Syracuse, NY MSA | \$75,997 | \$75,058 | \$74,246 | \$80,231 | \$79,341 | \$78,571 |
| 81 | Charleston-North Charleston, SC MSA | \$18,700 | \$17,007 | \$15,542 | \$35,592 | \$34,062 | \$32,738 |
| 82 | Greenville-Mauldin-Easley, SC MSA | \$29,872 | \$28,670 | \$27,631 | \$40,268 | \$39,169 | \$38,218 |
| 83 | Colorado Springs, CO MSA | \$708 | -\$1,086 | -\$2,637 | \$4,482 | \$2,736 | \$1,224 |
| 84 | Wichita, KS MSA | \$50,530 | \$49,571 | \$48,742 | \$53,684 | \$52,764 | \$51,968 |
| 85 | Cape Coral-Fort Myers, FL MSA | \$46,082 | \$44,489 | \$43,110 | \$1,321 | -\$653 | -\$2,362 |
| 86 | Boise City-Nampa, ID MSA | -\$21,784 | -\$23,467 | -\$24,923 | -\$12,665 | -\$14,256 | -\$15,633 |
| 87 | Lakeland, FL MSA | \$55,940 | \$54,752 | \$53,724 | \$56,960 | \$55,793 | \$54,784 |
| 88 | Youngstown-Warren-Boardman, OH-PA MSA | \$54,449 | \$53,605 | \$52,874 | \$54,014 | \$53,176 | \$52,450 |
| 89 | Madison, WI MSA | -\$4,603 | -\$6,465 | -\$8,077 | -\$5,217 | -\$7,072 | -\$8,677 |
| 90 | Scranton-Wilkes-Barre, PA MSA | \$40,296 | \$39,236 | \$38,319 | \$46,251 | \$45,254 | \$44,391 |
| 91 | Des Moines-West Des Moines, IA MSA | \$43,173 | \$41,901 | \$40,801 | \$46,078 | \$44,844 | \$43,776 |
| 92 | Palm Bay-Melbourne-Titusville, FL MSA | \$49,992 | \$48,593 | \$47,383 | \$23,090 | \$21,467 | \$20,063 |
| 93 | Jackson, MS MSA | \$74,359 | \$73,328 | \$72,437 | \$77,648 | \$76,659 | \$75,804 |
| 94 | Harrisburg-Carlisle, PA MSA | \$32,716 | \$31,375 | \$30,214 | \$37,456 | \$36,168 | \$35,054 |
| 95 | Augusta-Richmond County, GA-SC MSA | \$52,577 | \$51,564 | \$50,688 | \$57,424 | \$56,465 | \$55,636 |
| 96 | Ogden-Clearfield, UT MSA | -\$12,692 | -\$14,366 | -\$15,815 | -\$5,621 | -\$7,222 | -\$8,607 |
| 97 | Chattanooga, TN-GA MSA | \$32,513 | \$31,357 | \$30,357 | \$41,025 | \$39,955 | \$39,029 |
| 98 | Portland-South Portland-Biddeford, ME MSA | \$34,806 | \$32,774 | \$31,016 | \$37,197 | \$35,204 | \$33,479 |
| 99 | Modesto, CA MSA | -\$21,087 | -\$23,224 | -\$25,073 | -\$77,449 | -\$80,070 | -\$82,337 |
| 100 | Deltona-Daytona Beach-Ormond Beach, FL MSA | \$48,733 | \$47,255 | \$45,976 | \$36,217 | \$34,643 | \$33,281 |

Note: Bubble markets highlighted in Gray. The MSAs whose bubble status has changed have **red text**. **Bolded MSAs** will have negative equity in 2012 in this calculation.

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