Price to rent ratios

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May 2, 2008

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Preview

Price to rent ratios are one way of measuring fundamental value in a housing market. For a prospective homeowner, the price of housing relative to rents is a major factor in the buy versus rent decision. For an investor in rental property, the price to rent ratio is a major determinant of the return on investment.

Price to rent ratios also give us a sense for whether current home prices are within the range of historical norms. Rents provide a fundamental floor for home prices since investors will be willing to buy homes and rent them out if the price is low enough. But when the price to rent ratio rises too far above its sustainable level, it is likely to be corrected by falling prices and/or rising rents.

Even after taking into account the most recent home price declines, nearly every U.S. city is above its long-term average price-to-rent ratio. Prices must come down (or rents must rise) another 20-40% in some cities just to achieve historically consistent levels.

Price to Rent Ratios

When people ask me whether home prices are too high, the first question that pops in my head is: relative to what? The most natural comparison is to the rent that would be collected from owning the home. Just as stocks are expensive when P/E ratios are too high, housing is expensive when the price is high relative to rents.

Each city has a natural long-run price to rent ratio that depends on many factors, including the growth rate of rents, the rate of homeownership, mortgage rates, etc. We should not expect to see the same long-run price to rent ratio across cities. As a basic rule, the ratio should be higher in cities that are growing and lower in cities that are stable or declining (just like you would expect a higher P/E for Google than you would for Exxon-Mobile).

In addition, the price to rent ratio does not summarize all of the relevant information for a real estate investment. The return on a housing investment also depends on maintenance, taxes, insurance, appreciation, etc., which can vary from property to property. But as a basic measure of value, the price to rent ratio is a good starting point.

Fundamentally, real estate is a yield oriented investment. When prices are rising, people tend to discount the importance of yield because they make money on the price appreciation. But when prices are falling, it is rent yield that ultimately puts a floor on home prices.

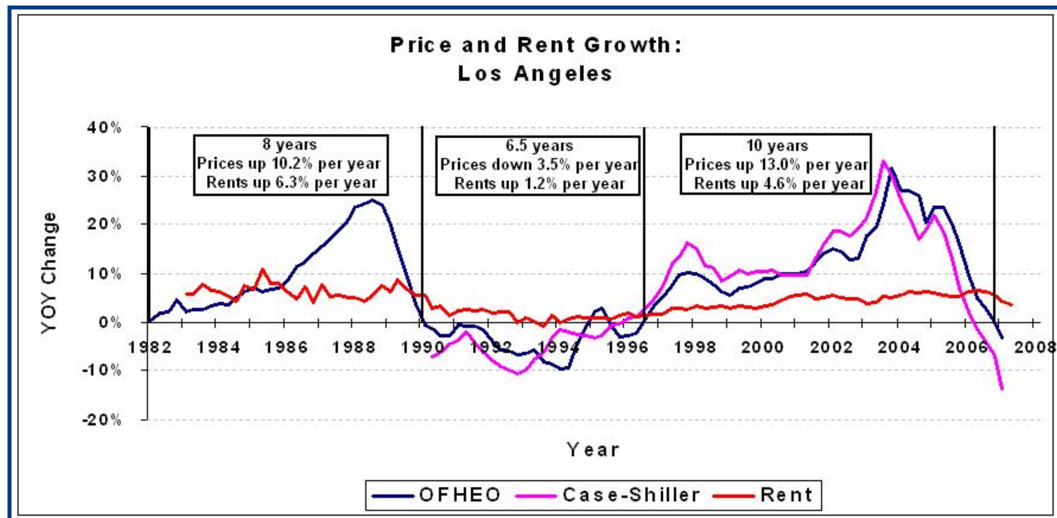
U.S. Cities

In the long-run, we would expect that prices and rents grow at roughly the same rate within each city. If prices rise too fast relative to rents, then either prices will have to fall or rents will have to rise to correct the imbalance. By looking at the price to rent ratio over time, we can get a sense for whether housing is currently cheap or expensive (and how much so).

Using the **Case-Shiller** and **OFHEO** home price indices and rent series from the **Bureau of Labor Statistics**, I can track historical prices and rents for many U.S. cities.

Click here for more information about how these charts are constructed

In "bubble" cities like Los Angeles, we can see how a divergence of prices and rents leads to a correction in the years that follow:



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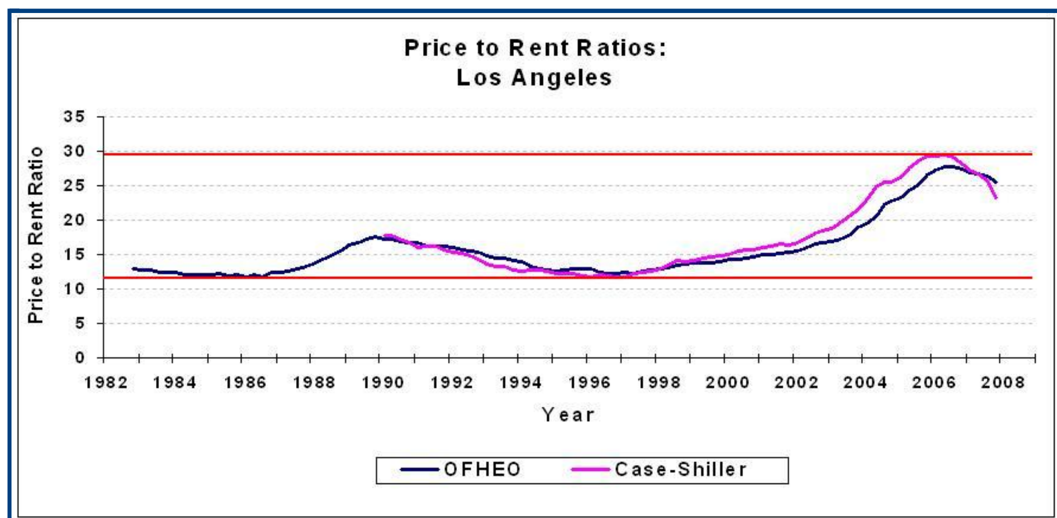
From 1982 to 1990, Los Angeles prices rose by 10.2% per year while rents rose by only 6.3% per year. From 1990 to 1997, prices corrected by an average of 3.5% per year while rents rose by only 1.2% per year. Most recently from 1997-2007, prices rose by 13.0% per year while rents rose by only 4.6% per year. The extreme divergence of prices and rents in cities like this one will likely lead to falling prices and rising rents for some time. It may be many years before the relationship is back to normal.

The relationship between prices and rents can more easily be viewed as a ratio over time. Here is the chart for Los Angeles:



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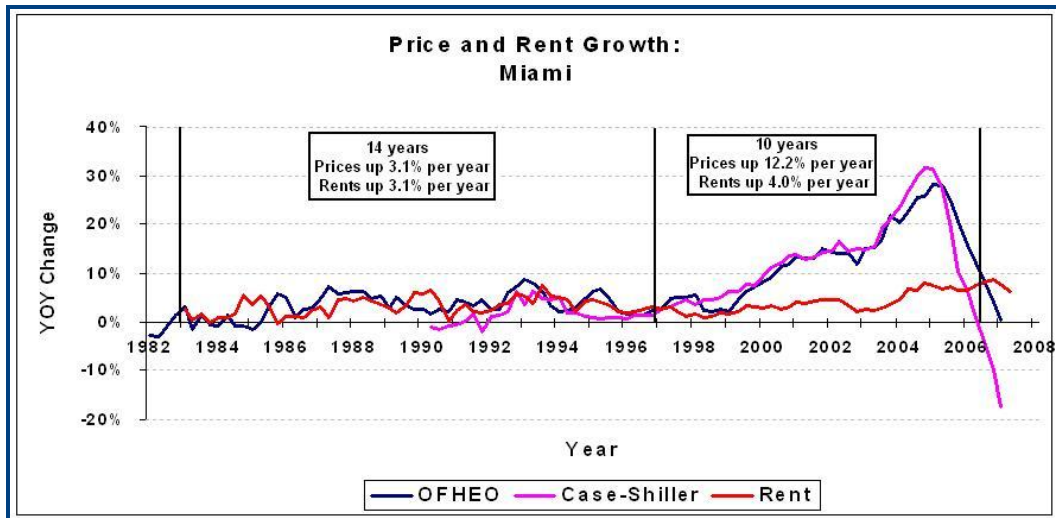
Los Angeles reached a historical high near 30 in 2005-2006 and has now begun the corrective process. Miami is another example of a city that has started its corrective process (though it did not experience a similar divergence in the 1980s):



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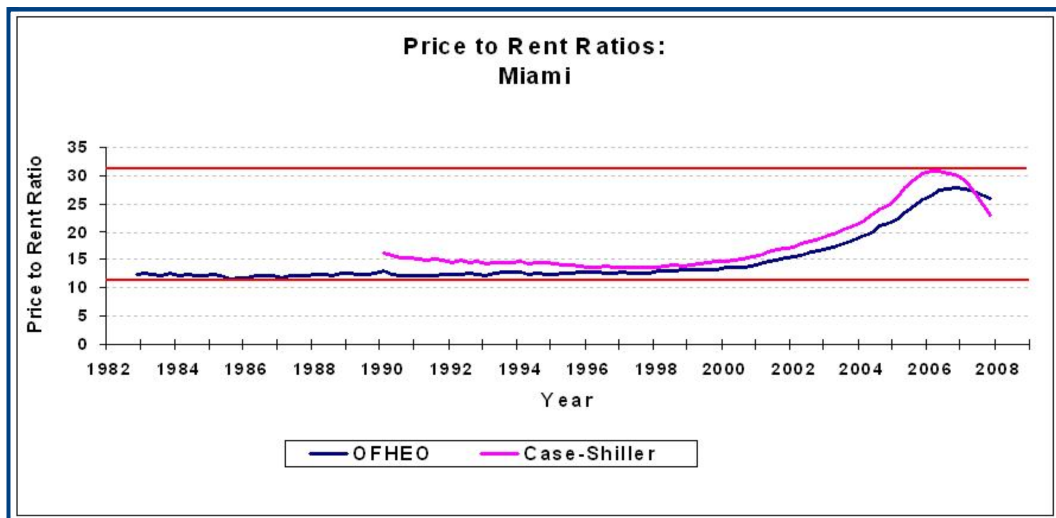
Miami was in a long-run steady state for 14 years where prices and rents were increasing at roughly the same average rate over time. Then beginning in 1997 prices started to diverge as they did in Los Angeles. For the last 10 years, Miami home prices rose by 12.2% per year while rents rose by only 4.0% per year. The chart below displays the price to rent ratio over time:



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It seems that a price to rent ratio near 30 is going to be unsustainable for both Miami and Los Angeles. A quick numerical example should illustrate why this should be so.

Imagine a prospective homeowner buying a house that rents for $2,000 a month. At a price to rent ratio near 30, this house would cost $720,000 ($2,000 x 12 x 30). Borrowing the money at the low rate of 5% would cost $36,000 per year in interest ($720,000 x 5%), not to mention taxes and maintenance. Compared to only $24,000 for renting, it's not a great deal. Alternatively, at a price to rent ratio of 12.5 (near Miami's 1980s level), the house would cost $300,000 ($2,000 x 12 x 12.5) and the financing expense would be $15,000 per year in interest ($300,000 x 5%). Adding taxes and maintenance makes this much more in line with the cost of renting.

Not all cities experienced such a dramatic price and rent divergence, but nearly every city is above its long-term historical average. This means falling prices relative to rents for most of the country for the next few years.

Click here for the price to rent ratio charts for all available cities

One crucial difference between the 1980s and today is that **30-year mortgage rates have declined from over 10% to under 6%**. But my calculations suggest that this should increase price to rent ratios by at most 25-40% after adjusting for other expenses like taxes and maintenance. In any case, most of the price increases were well beyond this amount and occurred after 1997, when mortgage rates were already low. Finally, I don't want to exclude the possibility that mortgage rates will rise and that home prices will fall even further in response.

The table below shows how much prices increased relative to rents since 1997 in all cities for which data are available, as well as how large a possible correction could be. Either prices must fall or rents must rise by these amounts to send the ratio back to historically consistent levels.

	Price to Rent Ratios			Relative to 1990-97		Possible Correction	
	1990-97	Max	Today	Max	Today	Max	Today
Miami, FL	12.6	31.0	25.9	145%	105%	-59%	-51%
Portland, OR	17.1	31.9	31.6	87%	85%	-46%	-46%
Los Angeles, CA	13.9	29.6	25.4	112%	83%	-53%	-45%
Washington, DC	13.9*	30.8	25.0	121%	80%	-55%	-44%
San Fransisco, CA	20.9	41.0	37.2	96%	78%	-49%	-44%
Seattle, WA	21.8	38.0	37.2	75%	71%	-43%	-41%
Tampa, FL	11.9*	24.3	20.2	104%	69%	-51%	-41%
New York, NY	10.5	19.6	17.6	87%	68%	-46%	-40%
Phoenix, AZ	12.5**	24.5	20.6	96%	65%	-49%	-39%
San Diego, CA	19.6	38.8	31.7	98%	62%	-49%	-38%
Minneapolis, MN	11.9	20.5	18.8	73%	59%	-42%	-37%
Milwaukee, WI	15.8	24.2	24.2	53%	53%	-35%	-35%
Boston, MA	14.6	25.7	22.2	76%	52%	-43%	-34%
Philadelphia, PA	12.5	18.6	18.3	49%	47%	-33%	-32%
Honolulu, HI	24.1	37.0	34.5	53%	43%	-35%	-30%
St. Louis, MO	11.7	16.8	16.8	43%	43%	-30%	-30%
Denver, CO	17.2	25.4	24.4	47%	42%	-32%	-30%
Chicago, IL	16.0	23.2	21.2	45%	33%	-31%	-25%
Detroit, MI	7.7	12.1	10.0	58%	30%	-36%	-23%
Atlanta, GA	14.6	20.2	18.3	39%	26%	-28%	-20%
Houston, TX	13.4	16.7	16.7	25%	25%	-20%	-20%
Cincinatti, OH	13.4	16.5	16.3	23%	22%	-19%	-18%
Pittsburgh, PA	10.1	12.1	12.1	19%	19%	-17%	-17%
Dallas, TX	15.0	17.9	17.7	19%	18%	-16%	-15%
Cleveland, OH	11.7	14.2	12.9	21%	10%	-18%	-9%

* 1997 level (limited rent data)
** 2002 level (very limited rent data)

The historical pattern suggests that most cities will experience modest price declines and steadily rising rents (inflation) for many years to come until price to rent ratios reach more normal levels. Lower mortgage rates may raise the long-run averages above their 1990-1997 levels, but I think that people calling for a bottom in home prices are way too early. It will be many years before real estate once again becomes the most favorable asset class.

The Bigger Picture

The $64 billion dollar question is to what extent declining home prices will impact the U.S. consumer and the broad economy. I have so far been impressed and surprised with the strength of U.S. corporate earnings amidst the housing decline. I am still expecting a **substantial earnings slowdown, which could be quite negative for the U.S. stock market**, but the evidence so far is mixed. More on this in months to come.

Conclusion

In this issue, I have argued that prices and rents must grow at roughly the same rates over time for home prices to be sustainable. Currently, price-to-rent ratios in most cities are still well above historical norms, and I expect some combination of falling prices and rising rents to continue for many more years.

I finish by providing brief descriptions of two key studies which offer similar analyses of the long-run relationships between prices and rents. My estimates suggest a weaker housing market than either of them, but in the interest of presenting some alternative viewpoints, here they are:

1. **Real estate: Buy, sell or hold?**, Fortunate Magazine, Nov. 7, 2007

   My comment: This data-oriented Fortunate article essentially takes the same viewpoint as mine: that prices will decline substantially in some cities and modestly in most other cities. A summary of their empirical work (including price to rent ratios) can be found **here**. The main difference in our views is that this article creates a price-to-rent ratio baseline using the last 15 years, whereas I think the last 5-10 years should be omitted. As a result, my estimates are for an even weaker housing market than this article predicts.

   Key quote: "So what are rents saying about home values today? To answer that question, Fortune worked with Moody's Economy.com to estimate adjustments needed to get prices and rents back in balance. We'll

go into detail below, but the headline is gloomy: **According to our calculations, prices in most markets will fall by double digits over the next five years."**

2. **Assessing High House Prices: Bubbles, Fundamentals, and Misperceptions**, NBER Working Paper

   My comment: This academic article was written by three economists from Wharton, Columbia, and the Federal Reserve. In it, they argue that most of the price-to-rent ratio increase can be attributed to lower mortgage rates and predictable differences in long-run growth rates across cities. I respectfully disagree with their conclusion that price-to-rent ratios are in line with historical norms after correcting for these factors, but it's a thorough analysis worth considering.

   Key quote: "We construct measures of the annual cost of single-family housing for 46 metropolitan areas in the United States over the last 25 years and compare them with local rents and incomes as a way of judging the level of housing prices. Conventional metrics like the growth rate of house prices, the price-to-rent ratio, and the price-to-income ratio can be misleading because they fail to account both for the time series pattern of real long-term interest rates and predictable differences in the long-run growth rates of house prices across local markets. These factors are especially important in recent years because house prices are theoretically more sensitive to interest rates when rates are already low, and more sensitive still in those cities where the long-run rate of house price growth is high. During the 1980s, our measures show that houses looked most overvalued in many of the same cities that subsequently experienced the largest house price declines. **We find that from the trough of 1995 to 2004, the cost of owning rose somewhat relative to the cost of renting, but not, in most cities, to levels that made houses look overvalued."**

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