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PRINCIPAL

Why are house prices so high in the Portland Metropolitan Area?

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A question that comes up frequently in neighborhood discussions concerns the rapid run up of prices in Portland. Why are prices so high? Why are they changing?

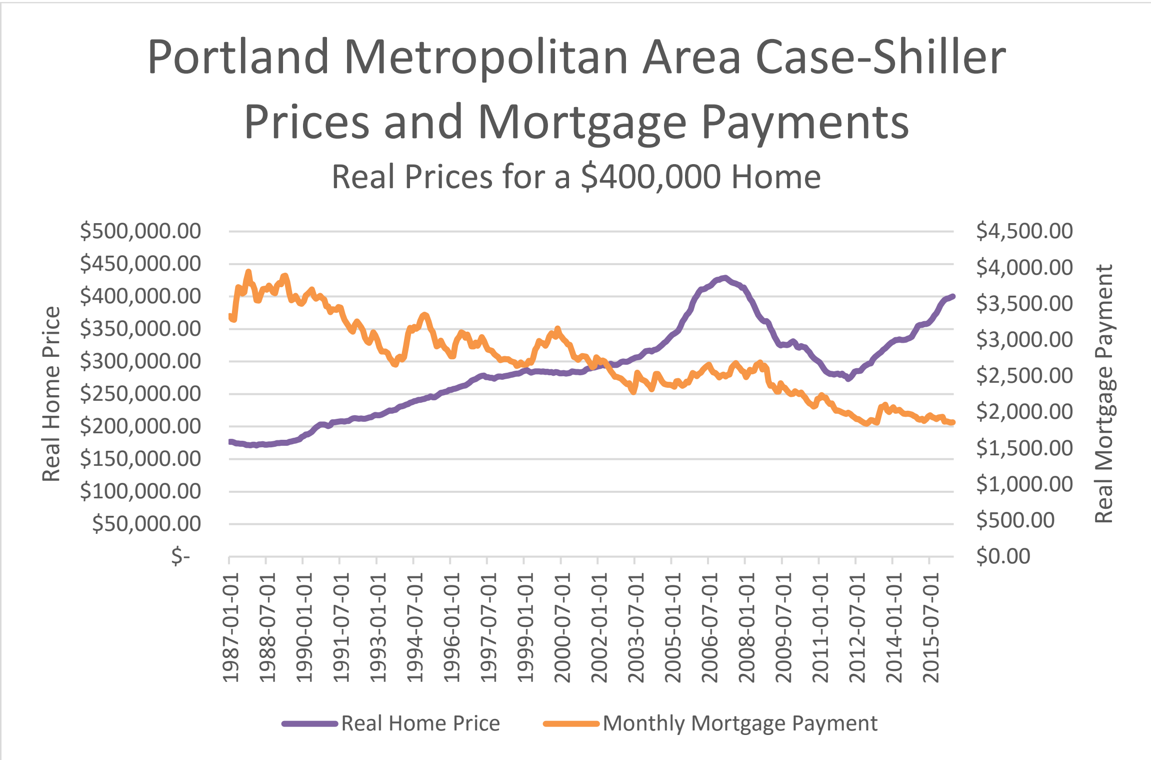
The surprising answer is that federal monetary policy has kept home interest rates low since the Great Recession. The cost of buying a home has fallen dramatically in response to the low interest rates. This is different than most people expect, so it takes some explaining why the average family is more likely to want a larger home and in an advantageous location nearer to the city's urban core.

Nobel Prize winner, Robert Shiller, in a collaboration with Karl Case, developed the Case-Shiller home price index over twenty years ago. The index is used widely in the business and government policy. Unlike a simple index that just reports home prices, the Case-Shiller index tracks price changes by location – matching repeated sales of the same property over time. One of Dr. Shiller's most surprising research findings is that U.S. housing prices have stayed roughly the same in real terms since 1890.[1] A variety of alternative indices are available. One commonly used index that does not use the Case-Shiller methodology is that provided by Zillow.[2]

Although the list prices of homes in the Portland area are at an all-time high, home prices adjusted for inflation are significantly less than they were in 2008 – lower by a bit over 7%. However, this does not tell the whole story. Few of us buy homes for cash. Most of us purchase homes using a home mortgage. The interest rate we pay on the mortgage is as important part of affordability as the house price. The home mortgage interest rate was considerably higher in past years. In 2008, for example, the interest rate was twice

[1] Dr. Shiller's web site at http://www.econ.yale.edu/~shiller/data.htm provides a variety of materials on his research. The indices themselves are available at the St. Louis Federal Reserve at https://fred.stlouisfed.org/series/POXRSA and even more detailed data is available at the Federal Housing Finance Agency at http://www.fhfa.gov/DataTools/Downloads/pages/house-price-index.aspx.
[2] See http://www.zillow.com/research/data/#median-home-value for example.

what it is today. The result is that while the Case-Shiller index today is only 93% of its highest level in 2008, the real cost of buying a house has declined 53% from levels thirty years ago.[3]



We can expect changes in the future as inflation recovers to historical levels as part of the continued recovery from the Great Recession since the relative affordability of housing in the Portland area would change dramatically if interest rates returned to pre-recession levels.

Average prices and mortgages across the Portland metropolitan area do not describe very much of the housing market. The old adage that real estate is location, location, location is now true more than ever.

Alexander Bogin, William Doerner, and William Larson of the Federal Housing Finance Agency's Office of Policy Analysis & Research recently issued a very significant study concluding that property values across the United States increasingly reflect distance

[3] This analysis does not include the varying subsidy that the home owner's deduction for interest confers. Oregon's relatively high income tax rates confer additional benefits for home ownership, depending on Federal tax code and the distribution of income. If the tax benefits of home ownership were included, the cost of home ownership would be lower.

from the city's urban core.[4] The study used Case- Shiller indices across 914 cities, 2,742 counties, 879 3-digit ZIP codes, and 17,936 5-digit ZIP codes.[5] They found:

> We produce stylized facts related to house price appreciation gradients over a broad cross section of cites over a long period of time. Overall, estimates suggest proximity to the center-city is a major factor explaining house price movements in the United States over the sample period, with house price gradients steepening in large cities between 1990 and 2015.[6]

Translated into English, location is increasingly important as a determinant of housing prices – specifically the distance to the city center is a critical component of housing prices. The theory that their research supports is called the "Muth Equation" which argues that distance will have a gradually diminishing impact on housing value.

The quality of their result is quite surprising. Since 2008, energy supplies have increased enormously and as a consequence, energy prices are at all-time lows. While it is logical to consider the time and cost of commuting in one's home buying calculations, the decline in energy prices would normally mean that the commuting costs might be less important today than in earlier years.

Case-Shiller indices are not readily available for specific neighborhoods in Portland, but Zillow does provide monthly price indices for our neighborhoods since April 1996. They identify eighty-two specific neighborhoods. One neighborhood, Hillside, did not start reporting prices until August 2010, so they were not included in the following analysis.

In the most recent data (July 2016), the relationship between distance from the urban core and neighborhood housing prices is significant at the 99.9% level.[7] Interestingly, travel time during the morning commute is not significant – only distance. Of course, many other factors are involved in housing prices such as lot sizes, housing quality, urban tree canopy, pollution, and crime. Distance alone, explains a little over 25% of the variances in property values among Portland neighborhoods.

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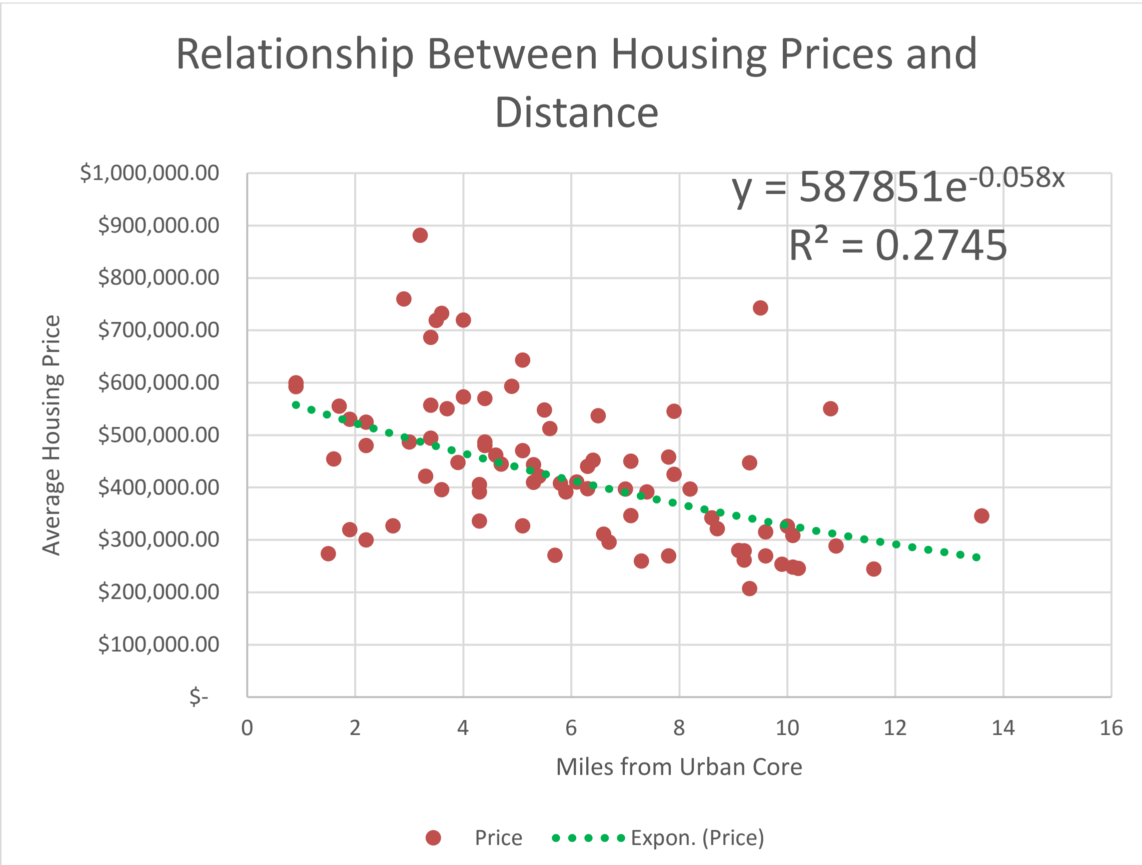
[4] Local House Price Dynamics: New Indices and Stylized Facts, Alexander Bogin, William Doerner, and William Larson, June 2016.
[5] Ibid., page 2.
[6] Ibid., page 13.
[7] Statisticians evaluate the quality of a statistical relationship be checking how likely it is that the result could be a function of pure chance. A 99.9% significance level means that the chance is less than 1 in 1,000 to be pure chance.

The following chart shows the data for July 2016:

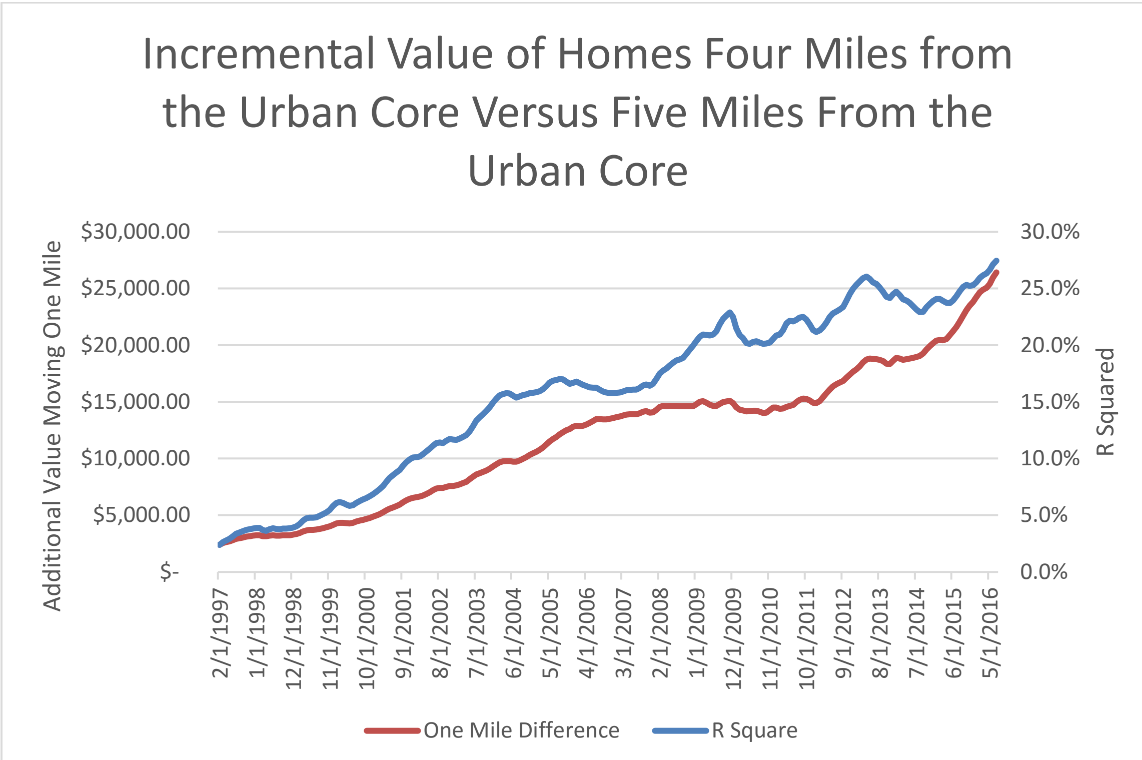


This certainly reflects the same dynamics as the vastly more sophisticated study by the FHFA. However, we can go farther. The relationship between location and housing prices has become more significant over time – continuously more significant.

The significance of the relationship and the value of proximity to the urban core has climbed sharply over the past twenty years. In 1996, we would have rejected the hypothesis that they were related. By 2002 the relationship was significant at the 95% level.

The value of proximity has also climbed sharply. In 2002, the value of moving one mile closer to downtown was only $7,200. Today the value has risen to $26,400.

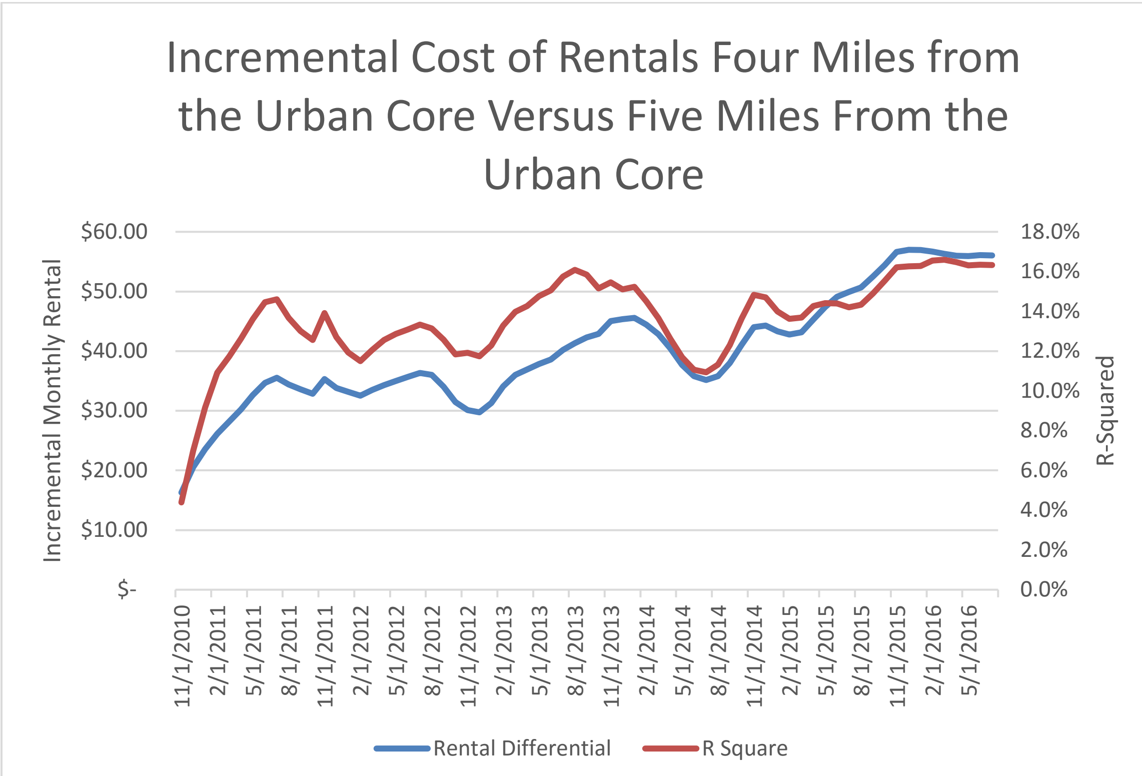
The following chart shows the evolution of the statistical relationship over time as well as the incremental housing price impact of choosing to live four miles from the city center versus five miles.



Zillow also has data on rentals. Sadly, their data set if more limited – 2010 to the present – and far more diverse since rentals can range from individual homes to high rise rental buildings.

The basic relationship described above appears to apply to rentals as well, explaining less of the total variance, but remaining at 99.9% significance. And like the regression for homes, commuting times are not significant.

The pattern over the last six years is very similar to that shown above:



The rental data indicates a strong revealed preference for areas close to Portland's urban core – and also indicates that the preference is increasing.

What are the policy implications of the data?

First, it shows that Portland's residents show little revealed preference for the central themes of the new Comprehensive Plan. They are not "voting with their dollars" for walkable urban spaces with local shops. Instead, they are increasingly willing to spend more to move closer and closer to downtown.

Second, although renters and homeowners share the same preferences, the benefits are skewed towards homeowners. Renters are paying more and since they cannot finance their rents, are being injured by increasing rents.

Third, low interest rates have – so far – offset rising home prices on average. The average cost may be low by historical standards, but the spatial distribution is not. This means that first time homeowners are being displaced away from the urban core.

Finally, Portland's remarkable lack of diversity is likely to increase as minorities with lower income are outbid for favored downtown locations.