

PHILADELPHIA HOUSE PRICE INDICES

October 20, 2015



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Lindy Institute
for Urban Innovation

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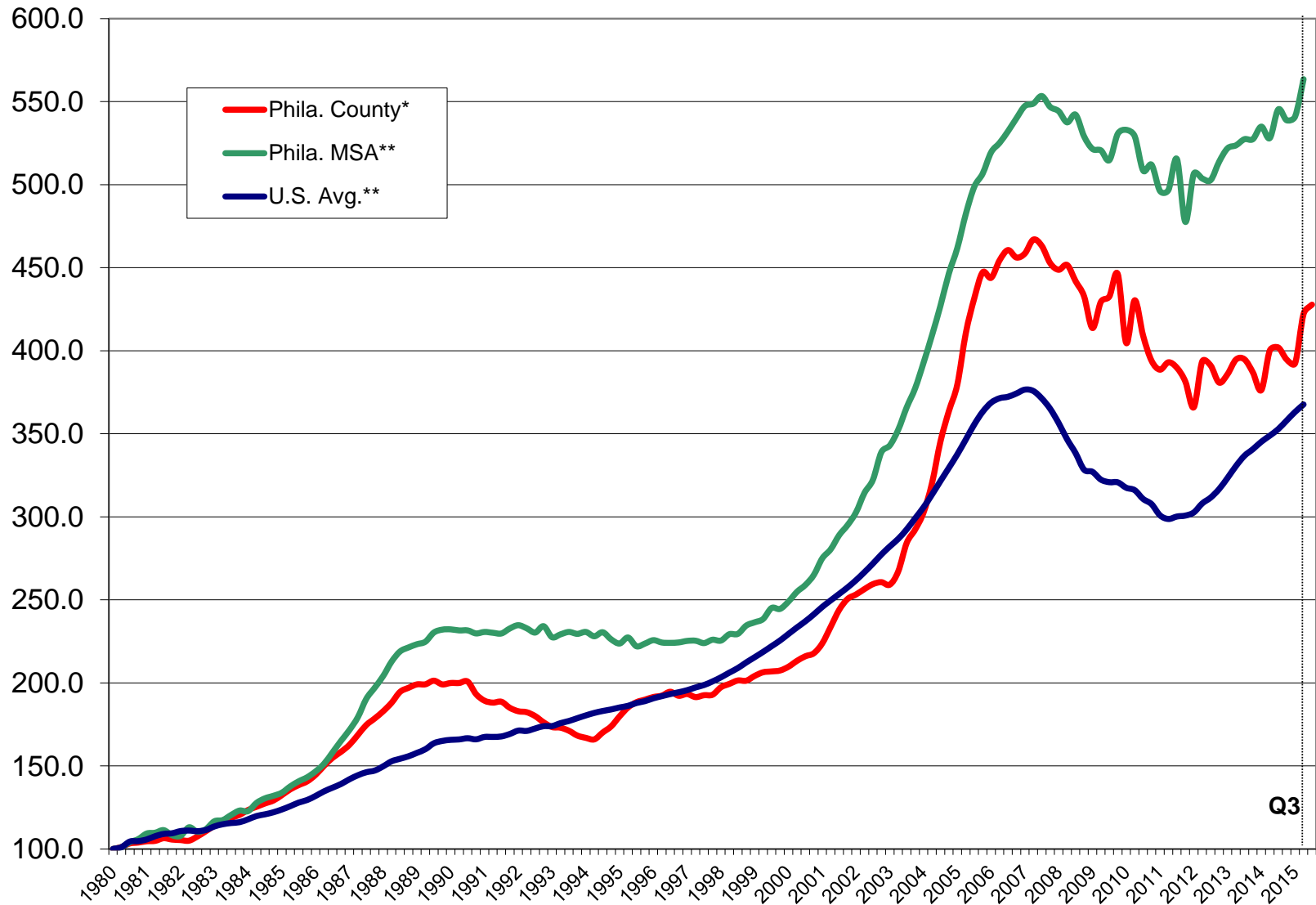
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House Price Indices 1980-2015: 1980Q1=100 Philadelphia County v. Philadelphia MSA and U.S. Average



* Empirically estimated by Kevin C. Gillen, Ph.D.

**Courtesy of the Federal Housing Finance Agency (FHFA).

HPIs are available through 2015Q2 only.

"MSA"=Metropolitan Statistical Area, which is the entire 9-county region

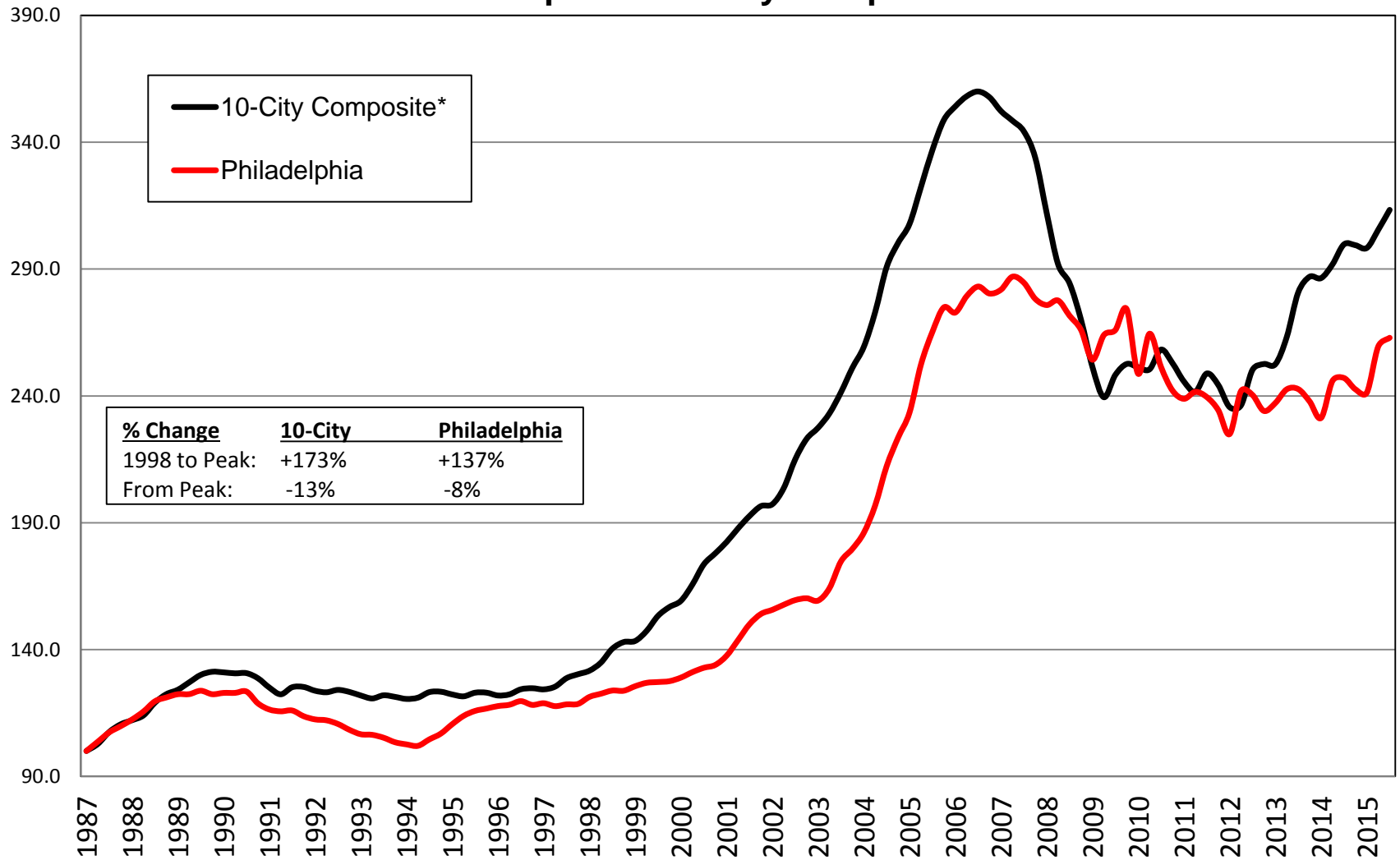
Total House Price Appreciation Rates by Geographic Market

Period	Philadelphia County*	Philadelphia MSA**	U.S.A.**
36-Year	145.3%	172.9%	130.2%
10-Year	-0.9%	15.6%	5.9%
1-Year	6.2%	6.5%	5.2%
1-Quarter	1.3%	4.1%	1.2%

*Empirically estimated by Kevin C. Gillen Ph.D.

**Source: U.S. Federal Housing Finance Agency (FHFA). These numbers are through 2015Q2 only. “MSA”=“Metropolitan Statistical Area”, which is the entire 10-county region.

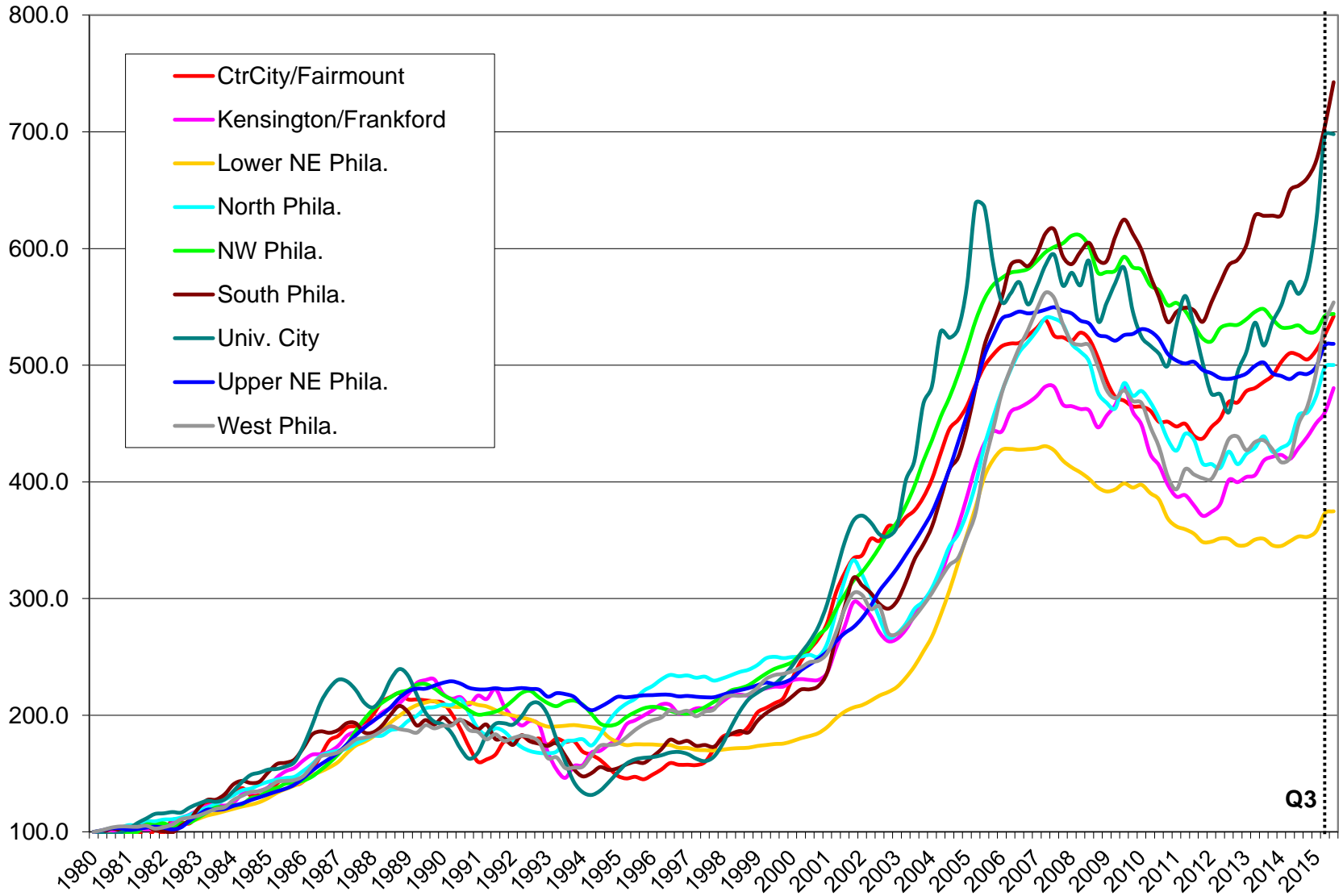
House Price Appreciation 1987-2015: Philadelphia v. 10-City Composite



*Source: S&P/Case-Shiller. The 10-City Composite index includes Boston, Chicago, Denver, Las Vegas, Los Angeles, Miami, New York, San Diego, San Francisco, and Washington, DC. It does not include Philadelphia.

Philadelphia House Price Indices by Neighborhood: 1980-2015

1980Q1=100



* All indices empirically estimated by Kevin C. Gillen, Ph.D.

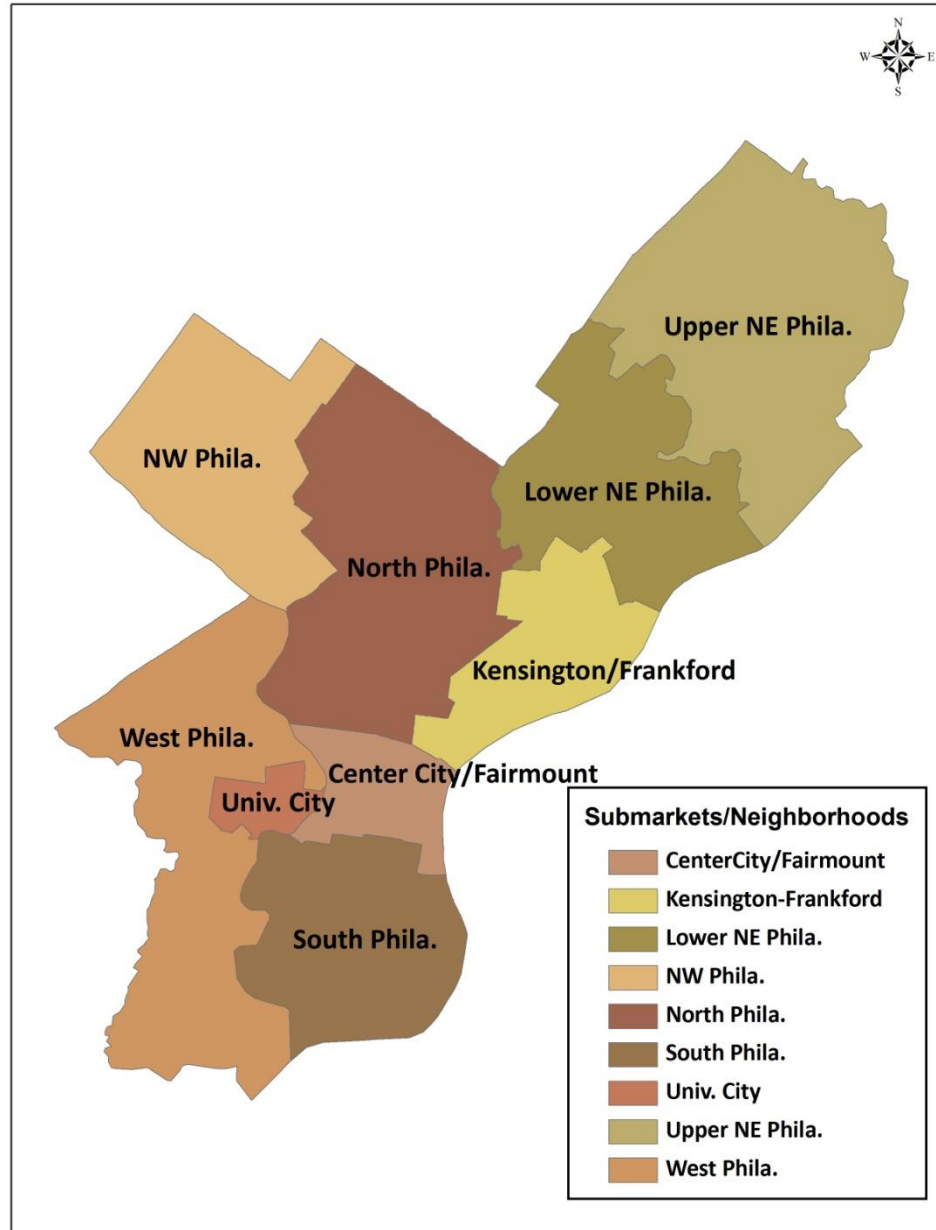
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Philadelphia House Price Appreciation Rates by Neighborhood

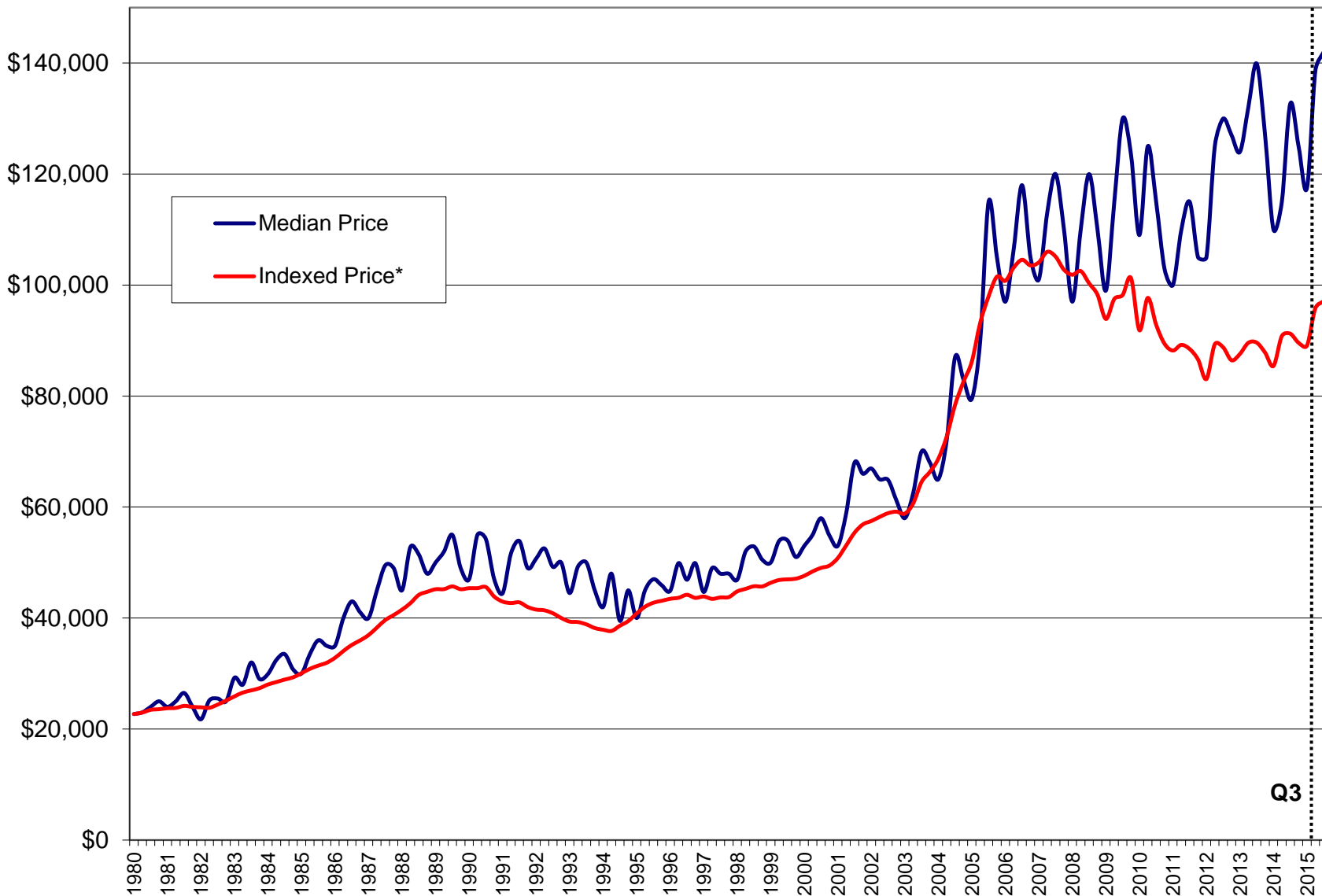
Period	Center City/ Fairmount	Kensington /Frankford	Lower NE Phila.	North Phila.	NW Phila.	South Phila.	Univ. City	Upper NE Phila.	West Phila.
36-year	169.0%	156.9%	132.1%	161.0%	169.4%	200%	194.3%	164.5%	171.2%
10-year	8.2%	10.4%	-7.6%	15.0%	-2.3%	36.3%	9.3%	2.0%	28.9%
1-Year	6.3%	11.2%	5.9%	9.0%	1.8%	12.7%	21.8%	5.0%	20.8%
1-Quarter	3.0%	4.4%	0.5%	0.4%	0.3%	5.2%	0.1%	0.3%	3.3%

This table gives the total % change in average house prices by neighborhood, through 2015 Q3, from different starting points in time.

Philadelphia Submarket Boundaries



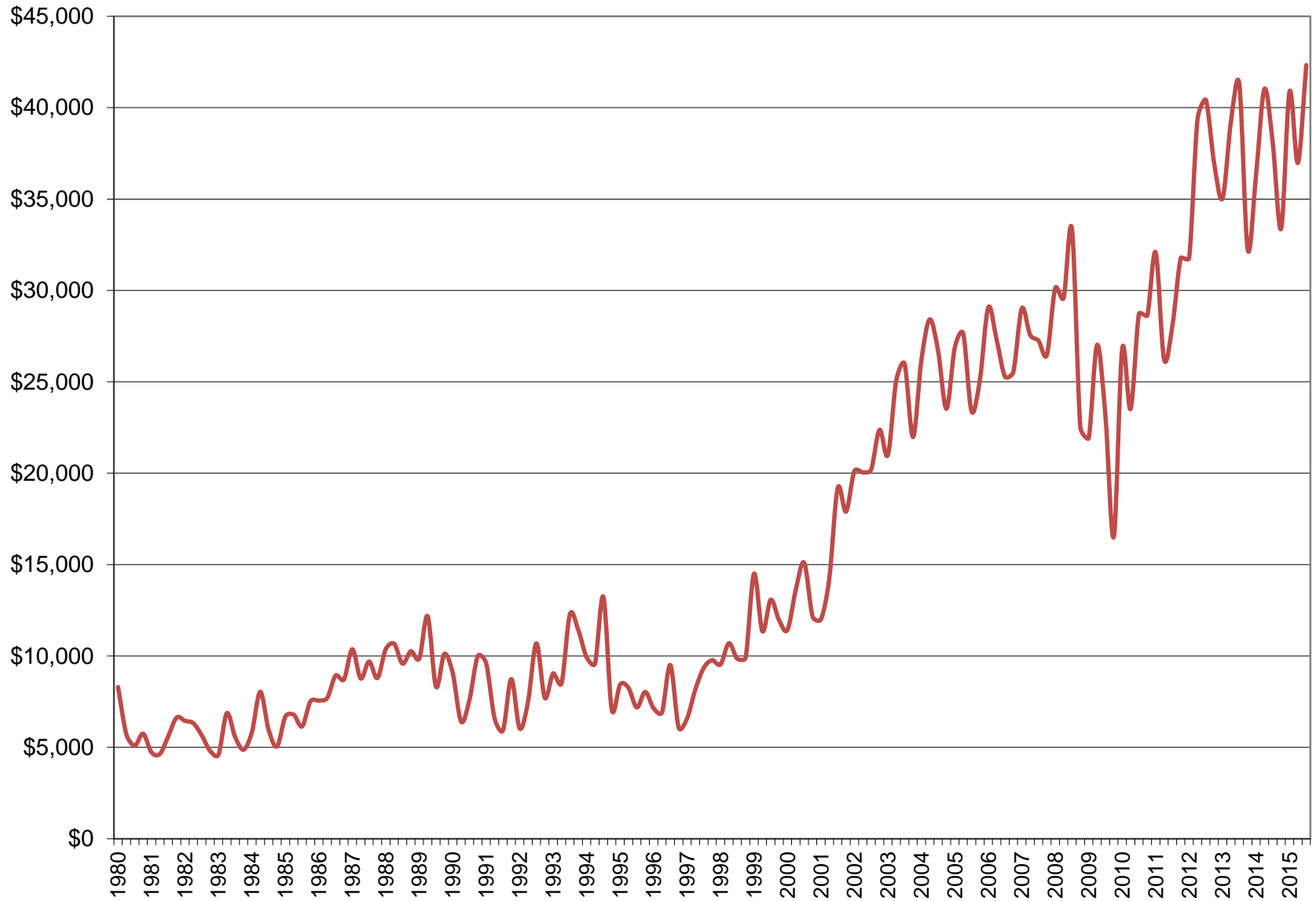
Median Philadelphia House Price v. Indexed Philadelphia House Price 1980-2015



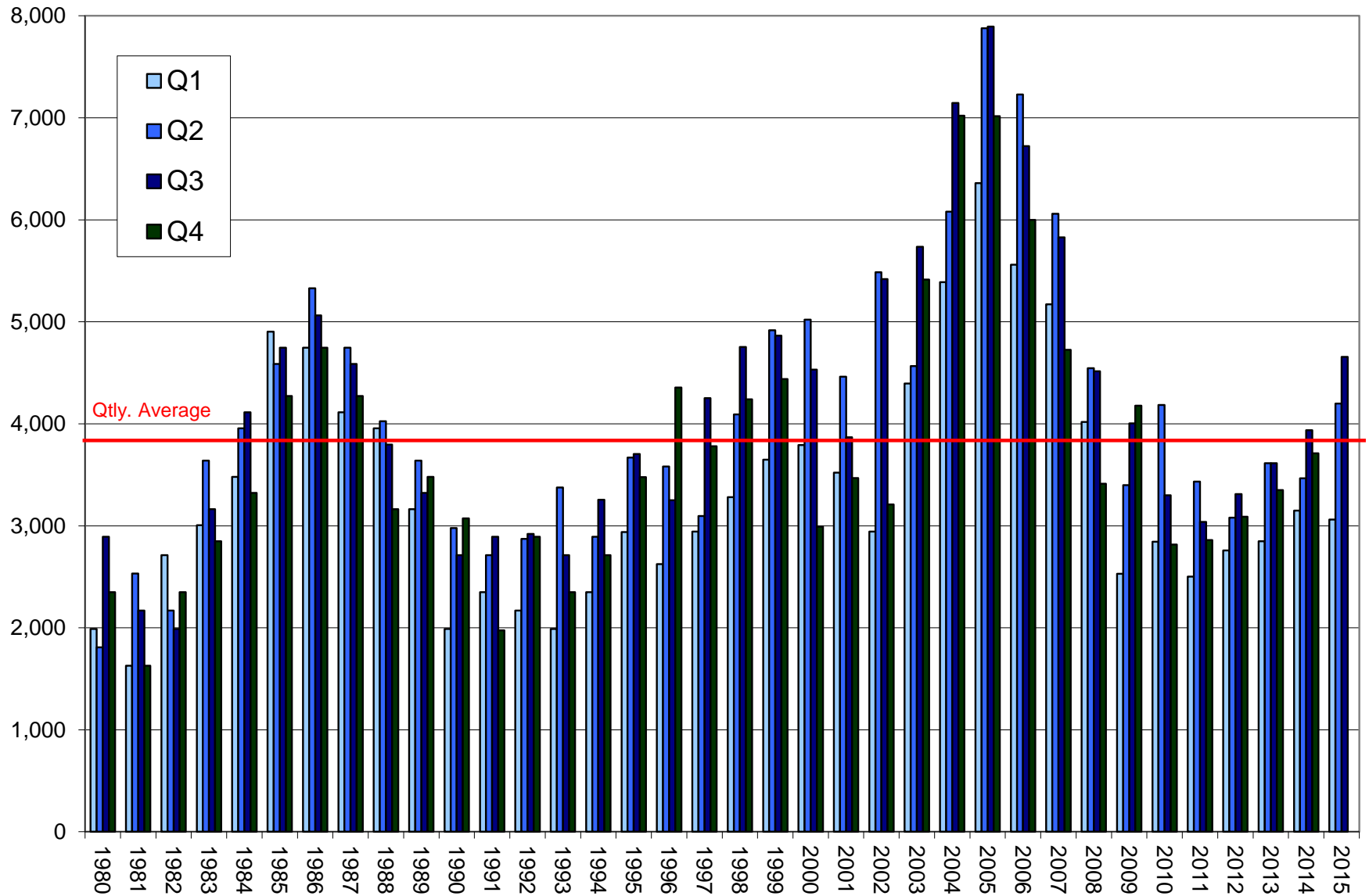
* Empirically estimated by Kevin C. Gillen, PhD

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Average House Price Minus Median House Price: 1980-2015

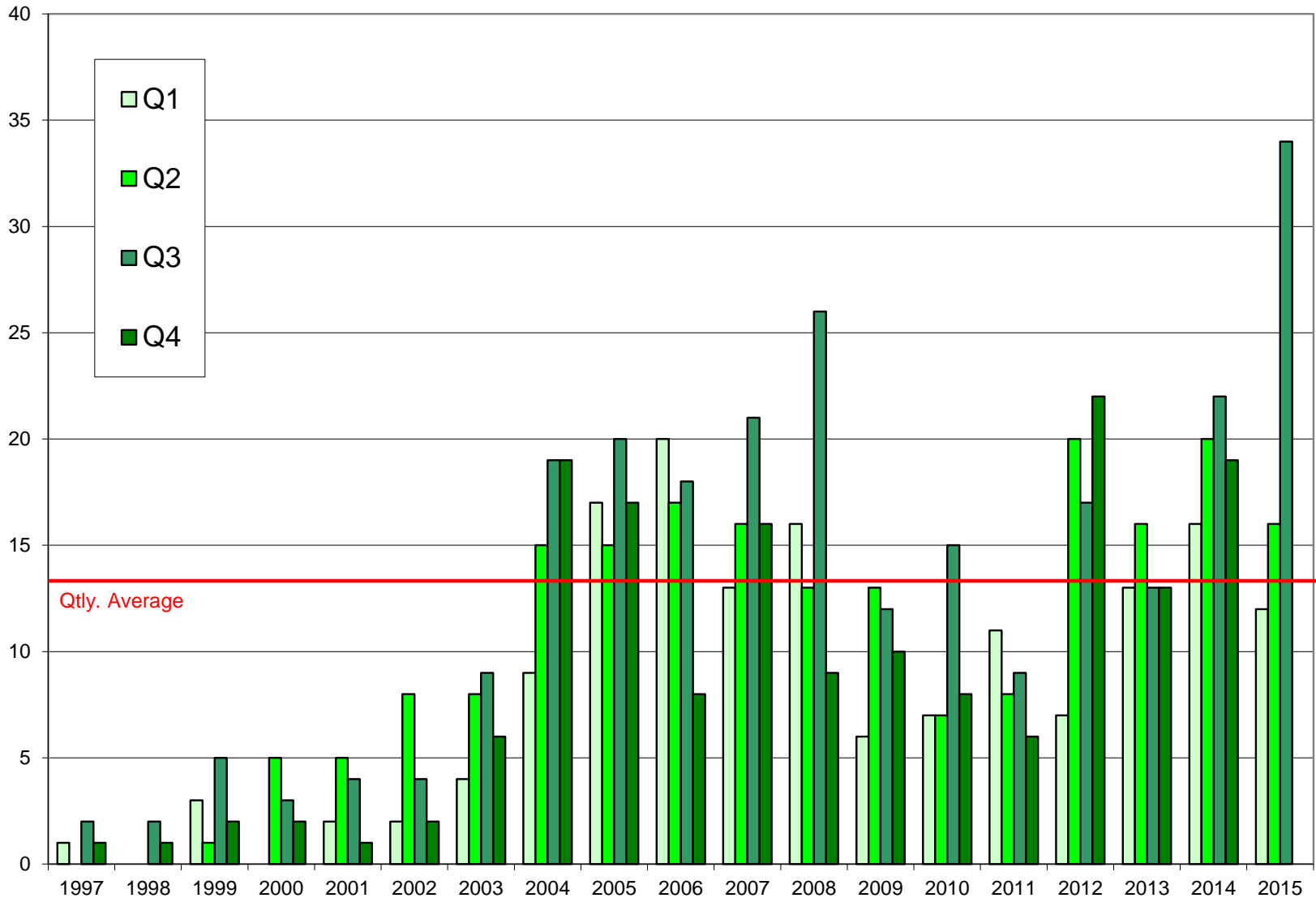


Number of Philadelphia House Sales* per Quarter: 1980-2015



*Only arms-length transactions between private sector entities were included in these numbers.

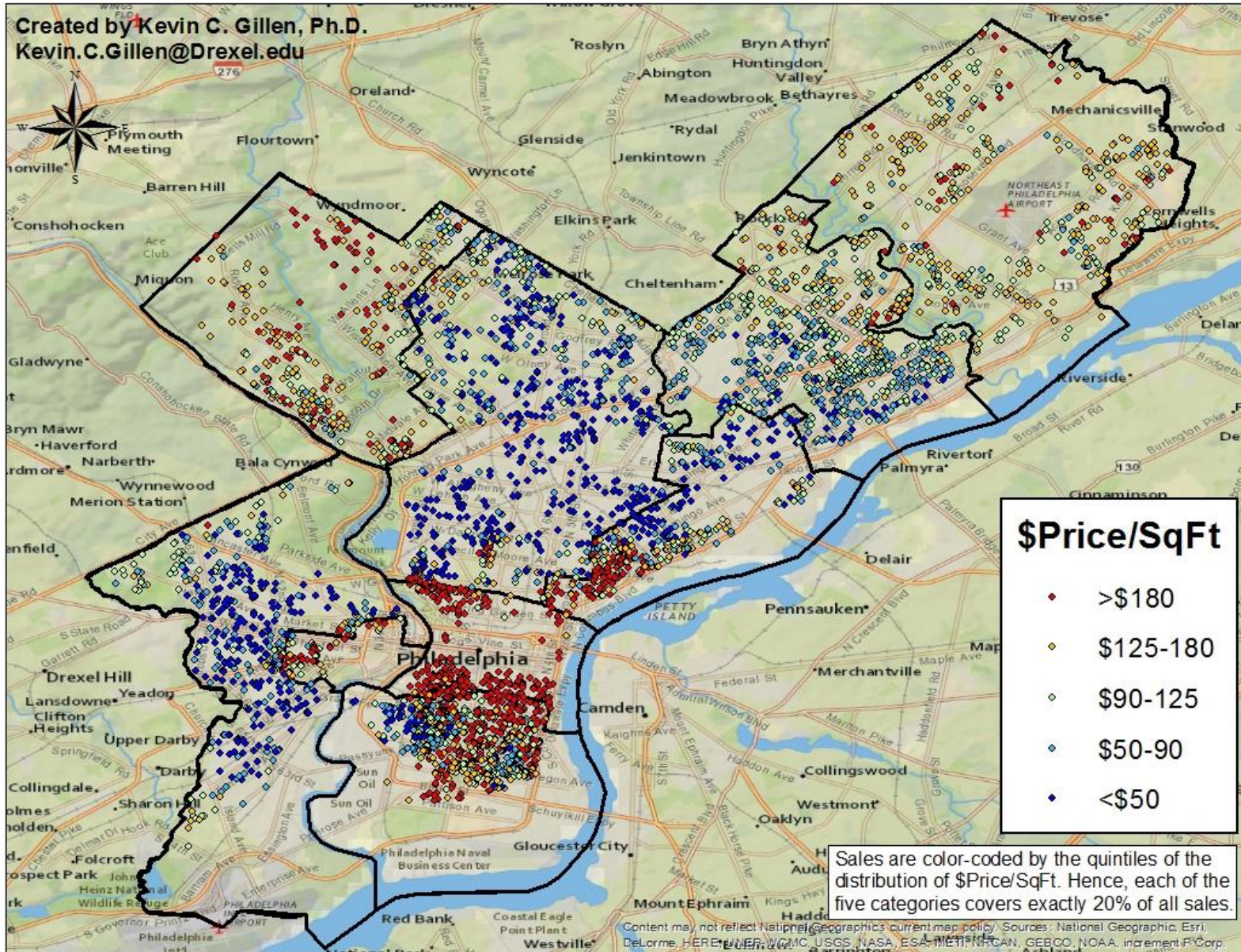
Number of Philadelphia Home Sales* per Quarter with Price >=\$1 Million: 1997-2015



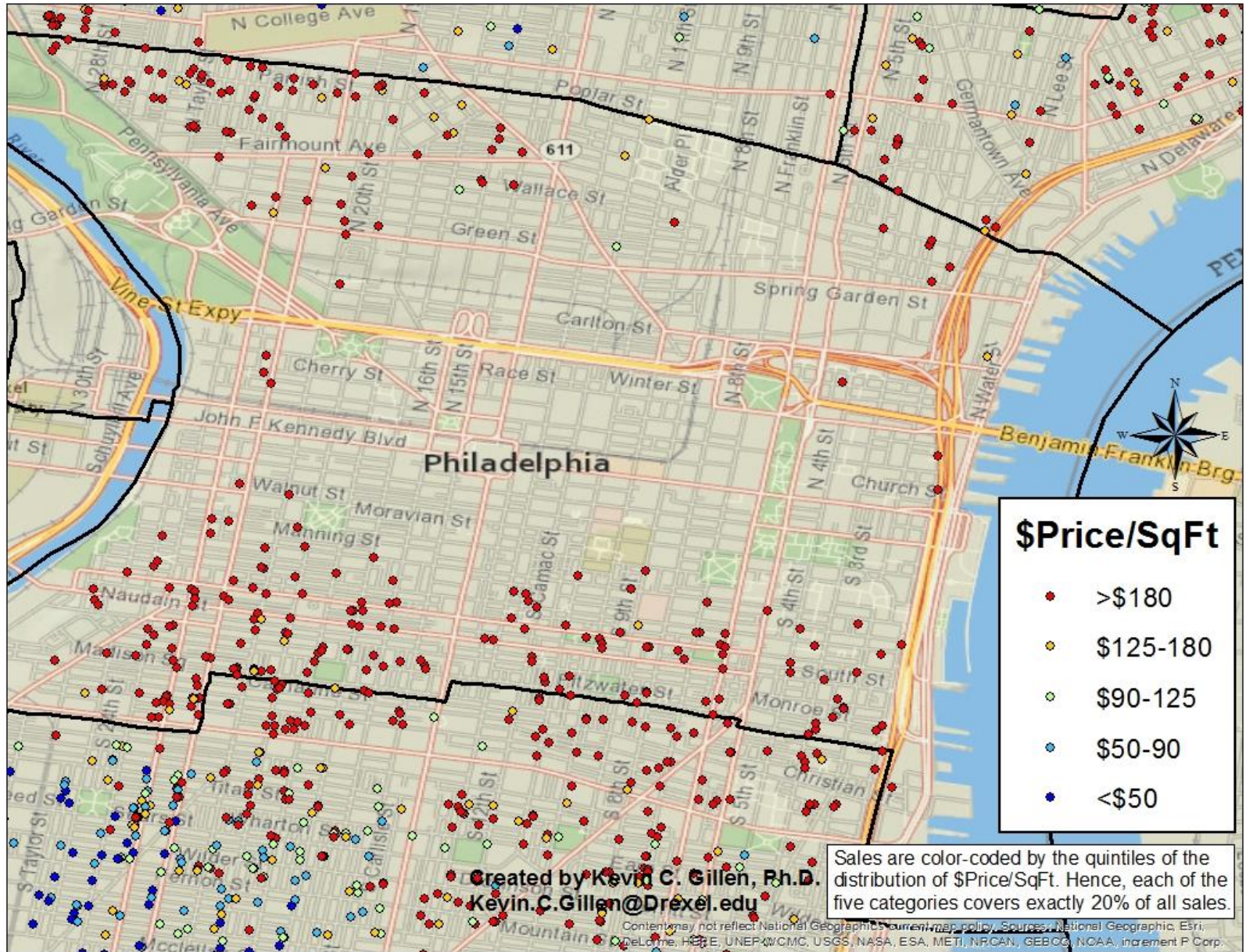
*Only arms-length transactions between private sector entities were included in these numbers.

Philadelphia House Sales in 2015 Q3

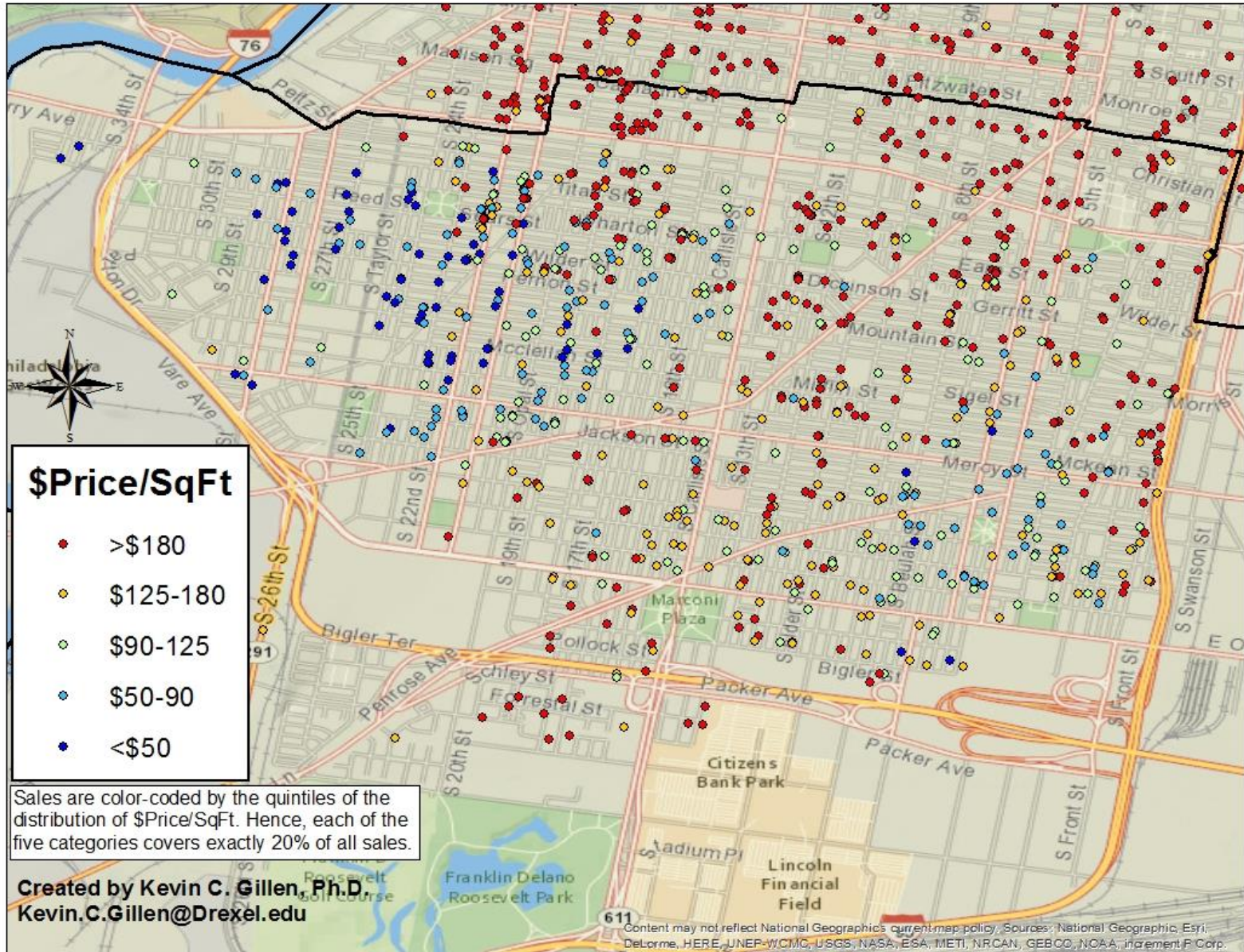
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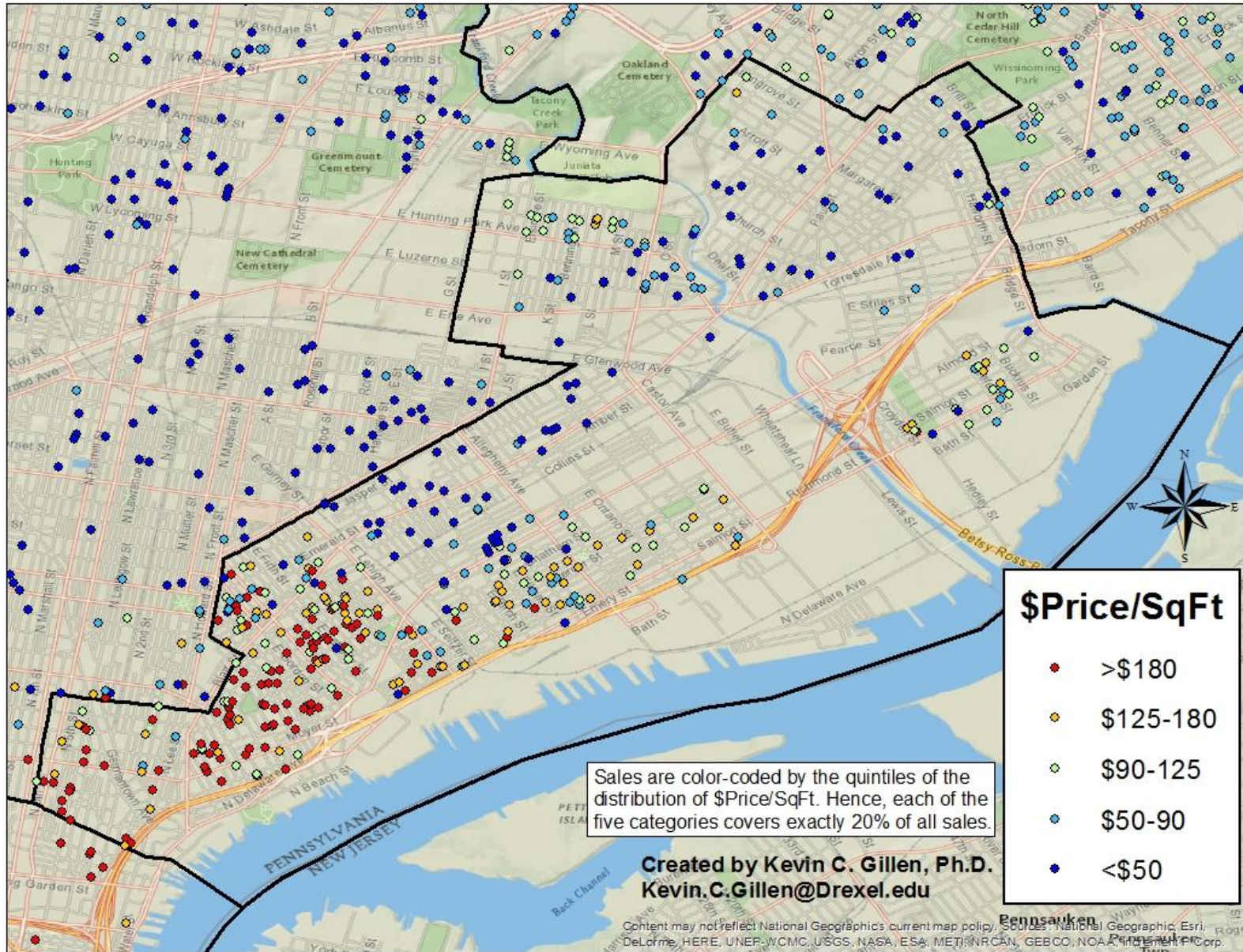
Center City House Sales in 2015 Q3



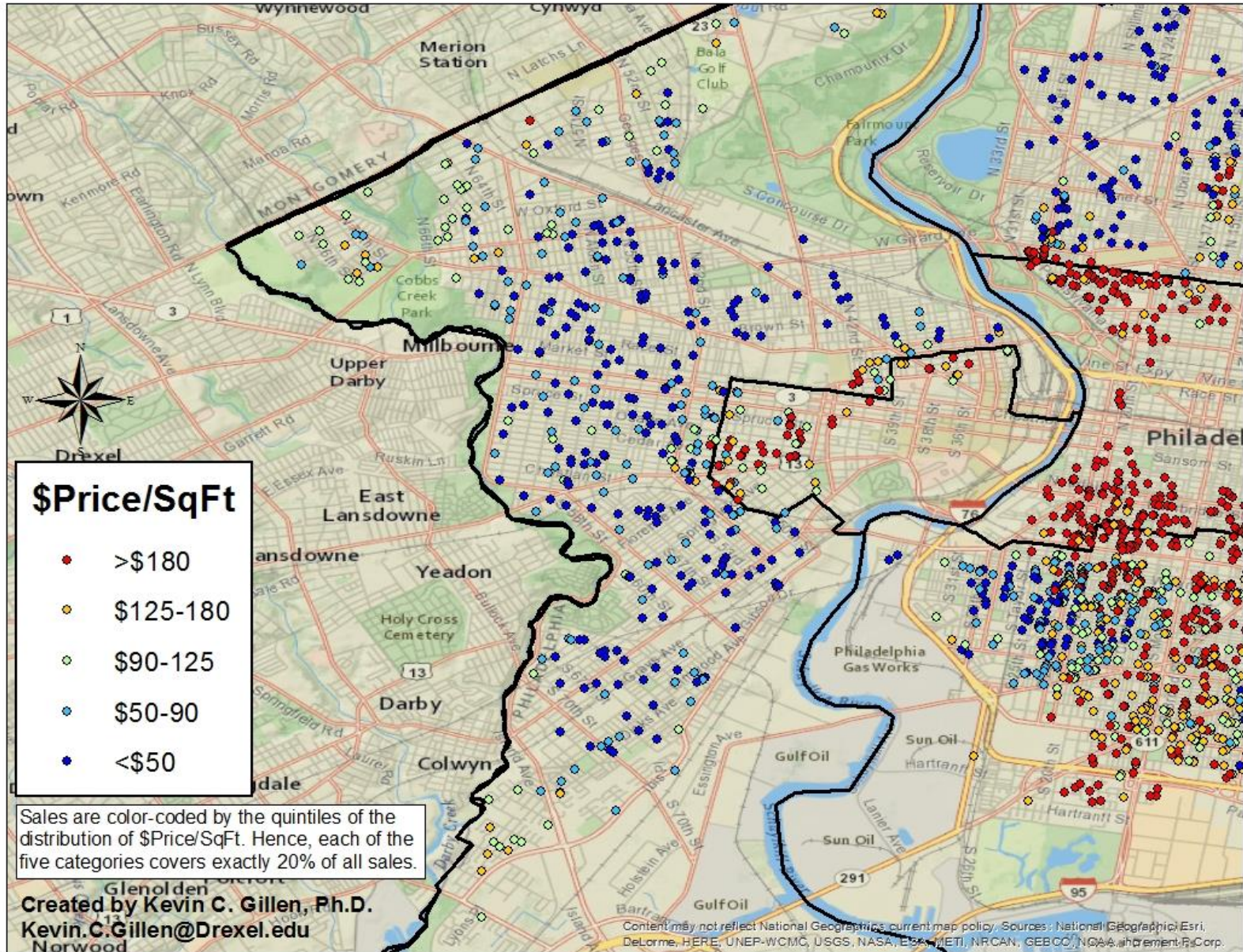
South Philadelphia House Sales in 2015 Q3



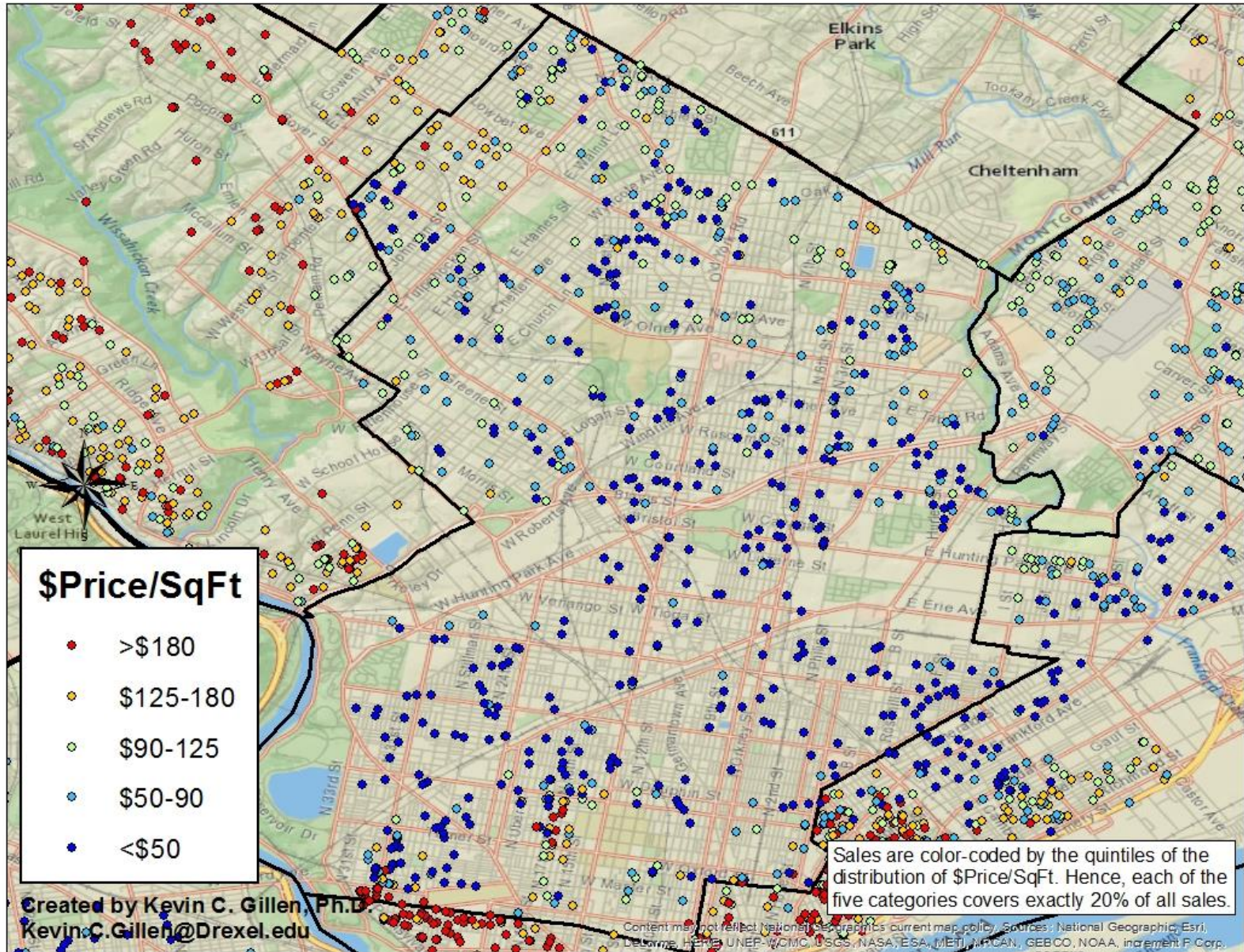
Kensington/Frankford House Sales in 2015 Q3



West Philadelphia House Sales in 2015 Q3

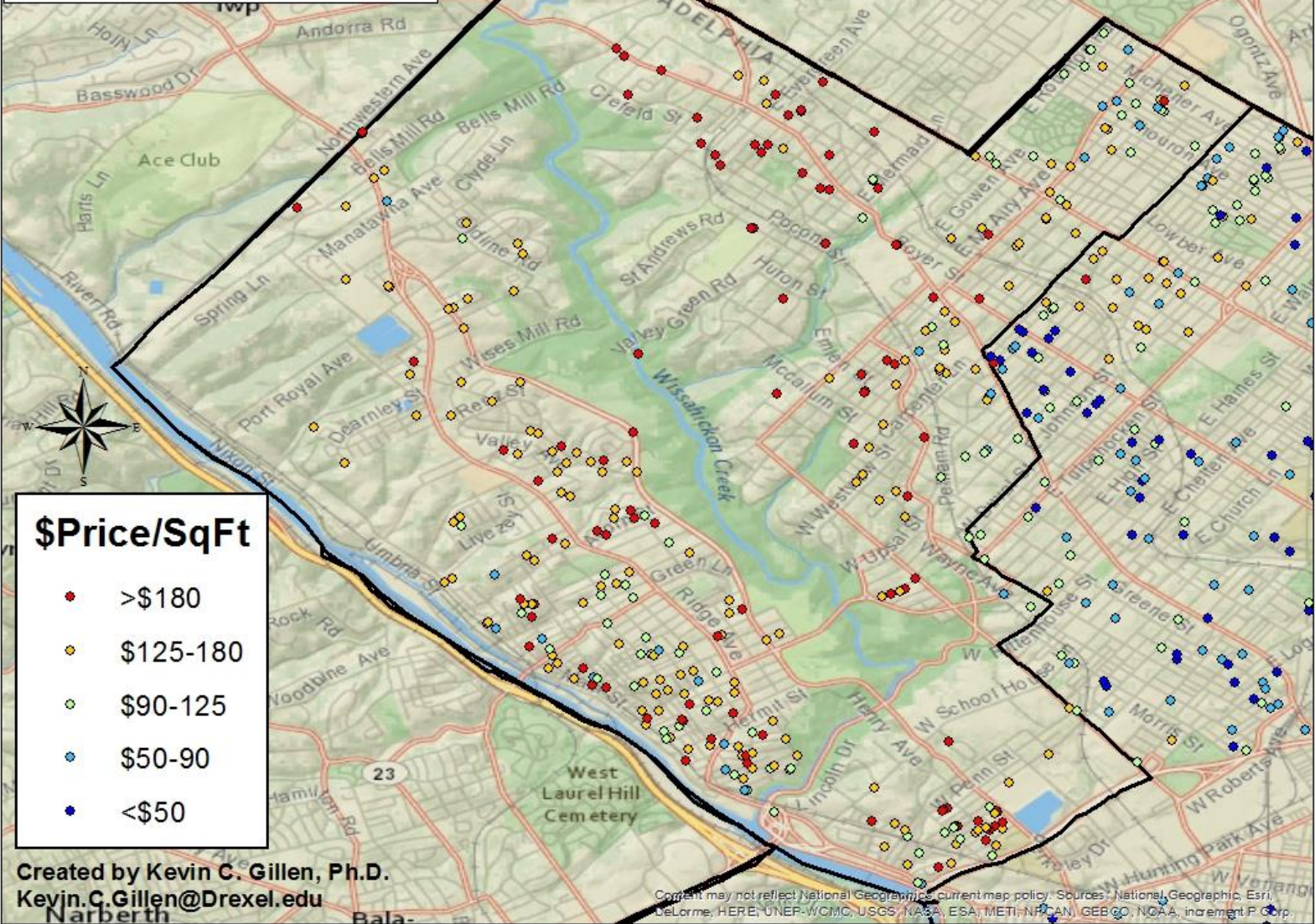


North Philadelphia House Sales in 2015 Q3



Northwest Philadelphia House Sales in 2015 Q3

Sales are color-coded by the quintiles of the distribution of \$Price/SqFt. Hence, each of the five categories covers exactly 20% of all sales.

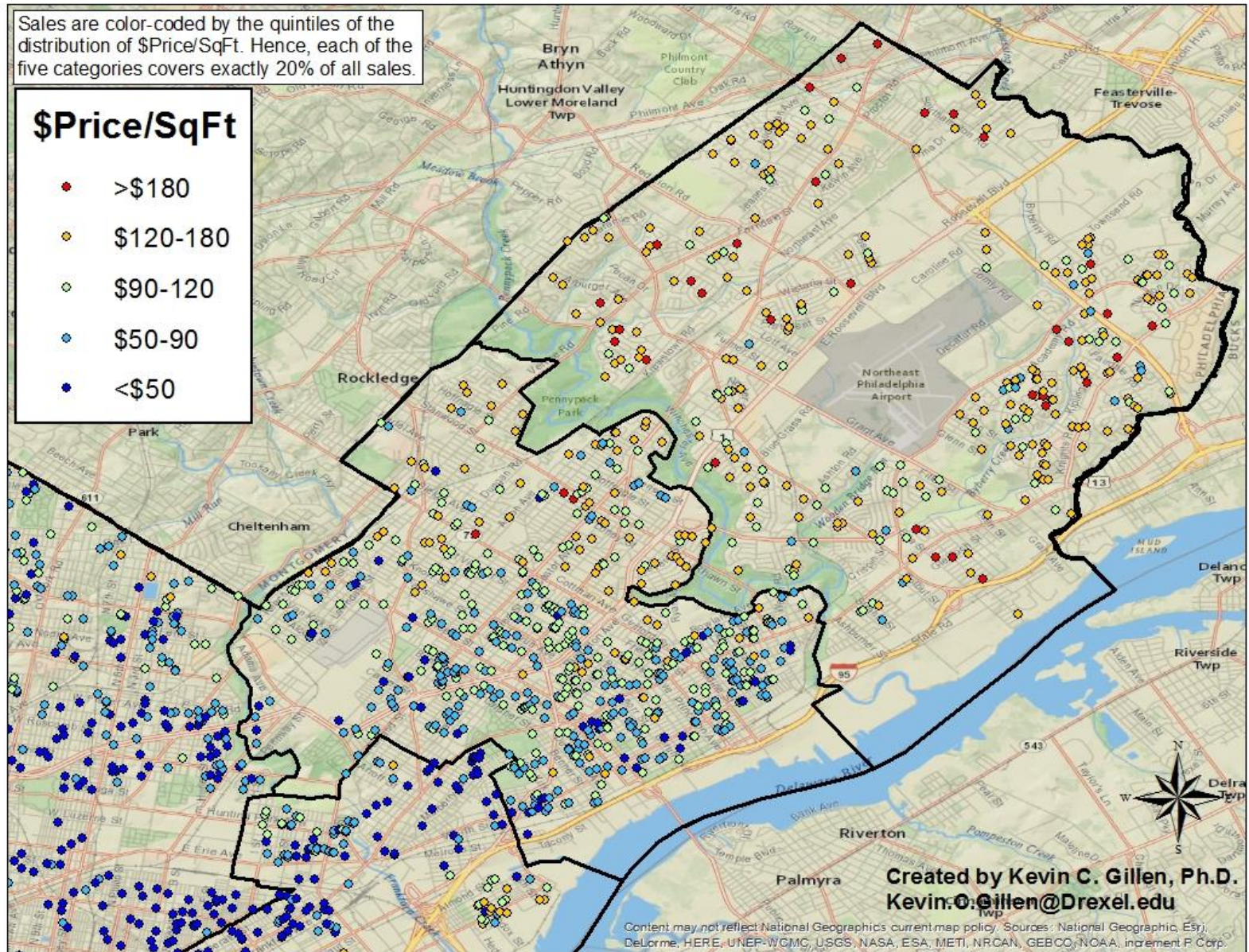


Northeast Philadelphia House Sales in 2015 Q3

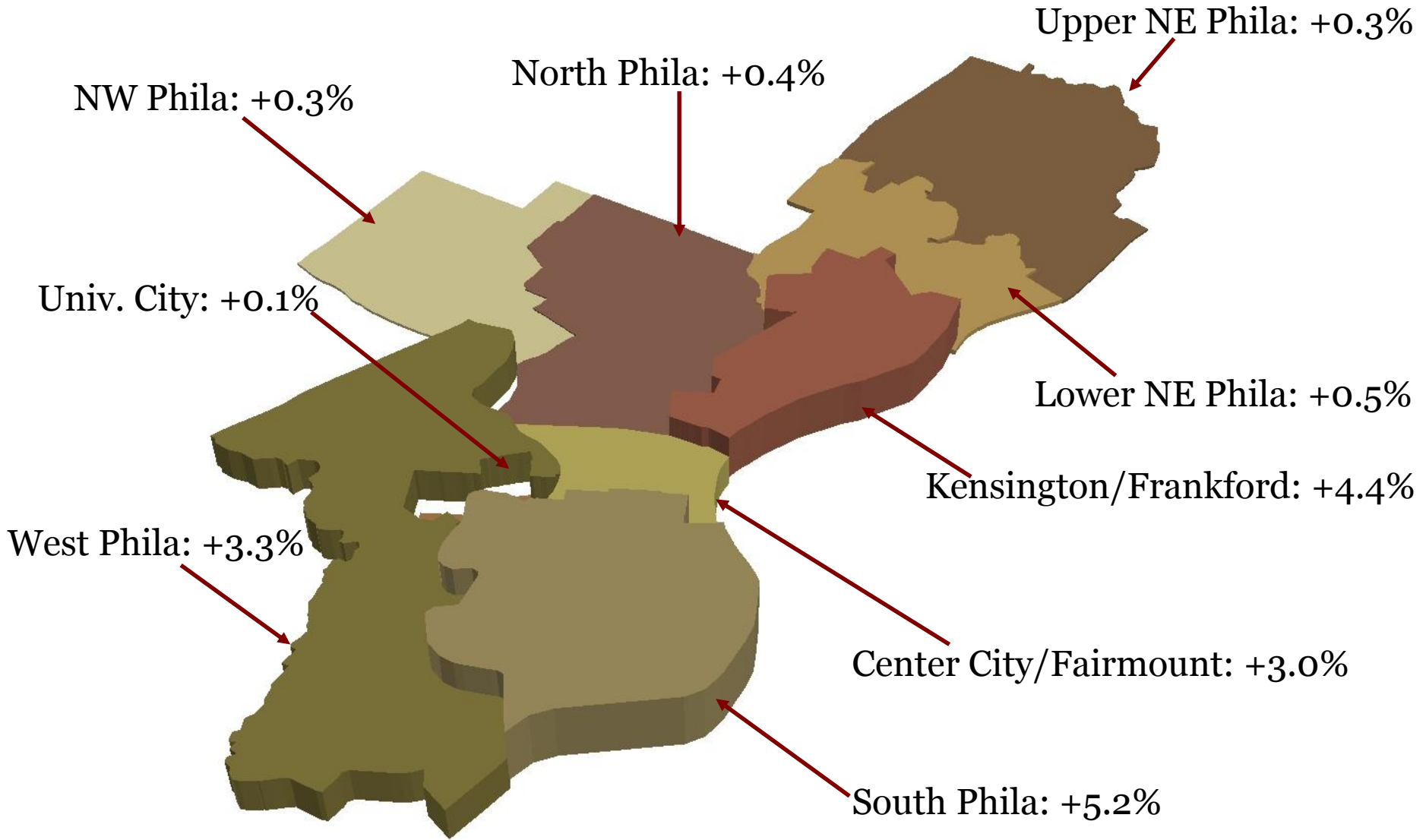
Sales are color-coded by the quintiles of the distribution of \$Price/SqFt. Hence, each of the five categories covers exactly 20% of all sales.

\$Price/SqFt

- >\$180
- \$120-180
- \$90-120
- \$50-90
- <\$50



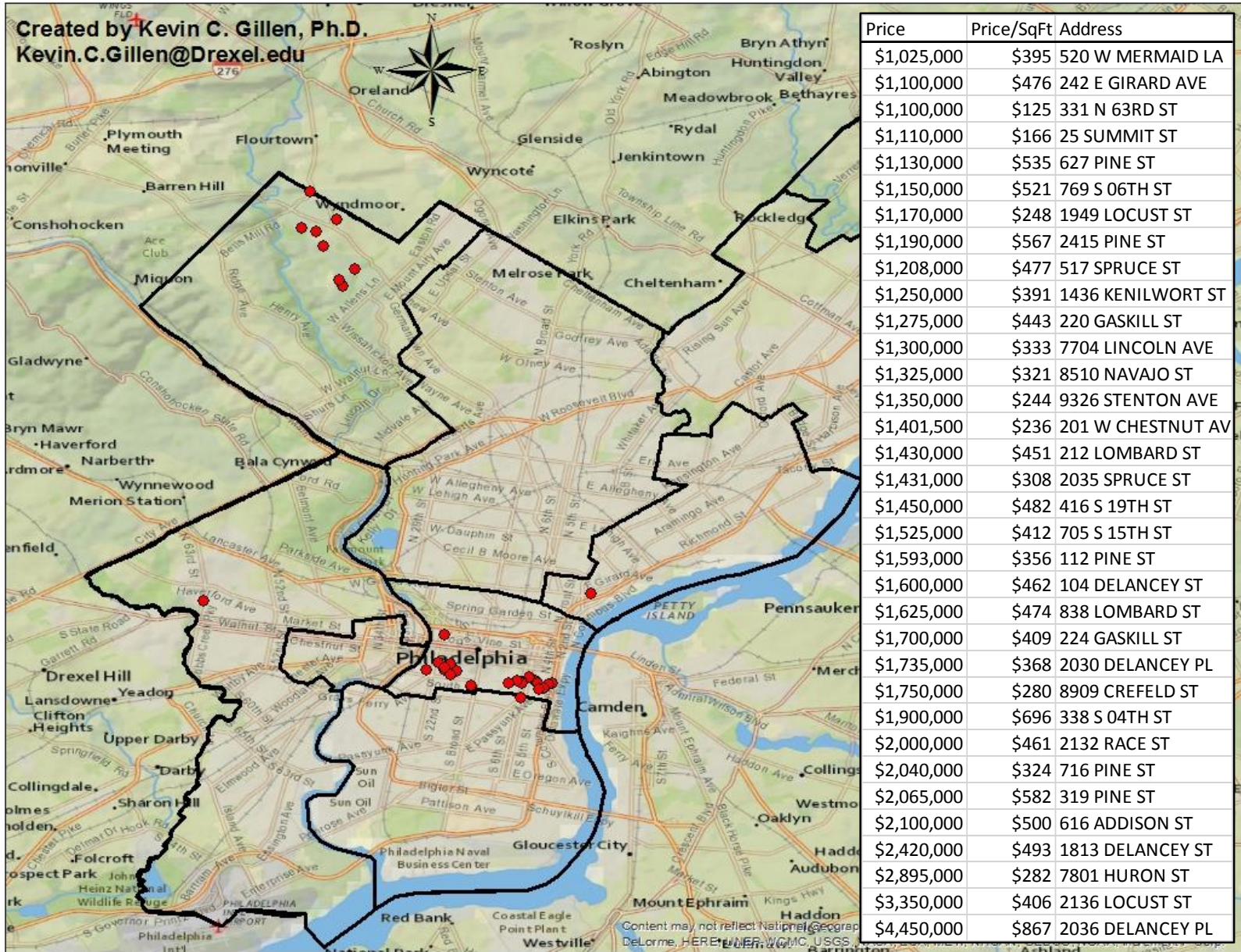
2015 Q3 House Price Rate of Change by Neighborhood



Note: Each neighborhood is extruded by its average change in house values during 2015 Q3 in order to reflect its growth (or depreciation) rate relative to other neighborhoods.

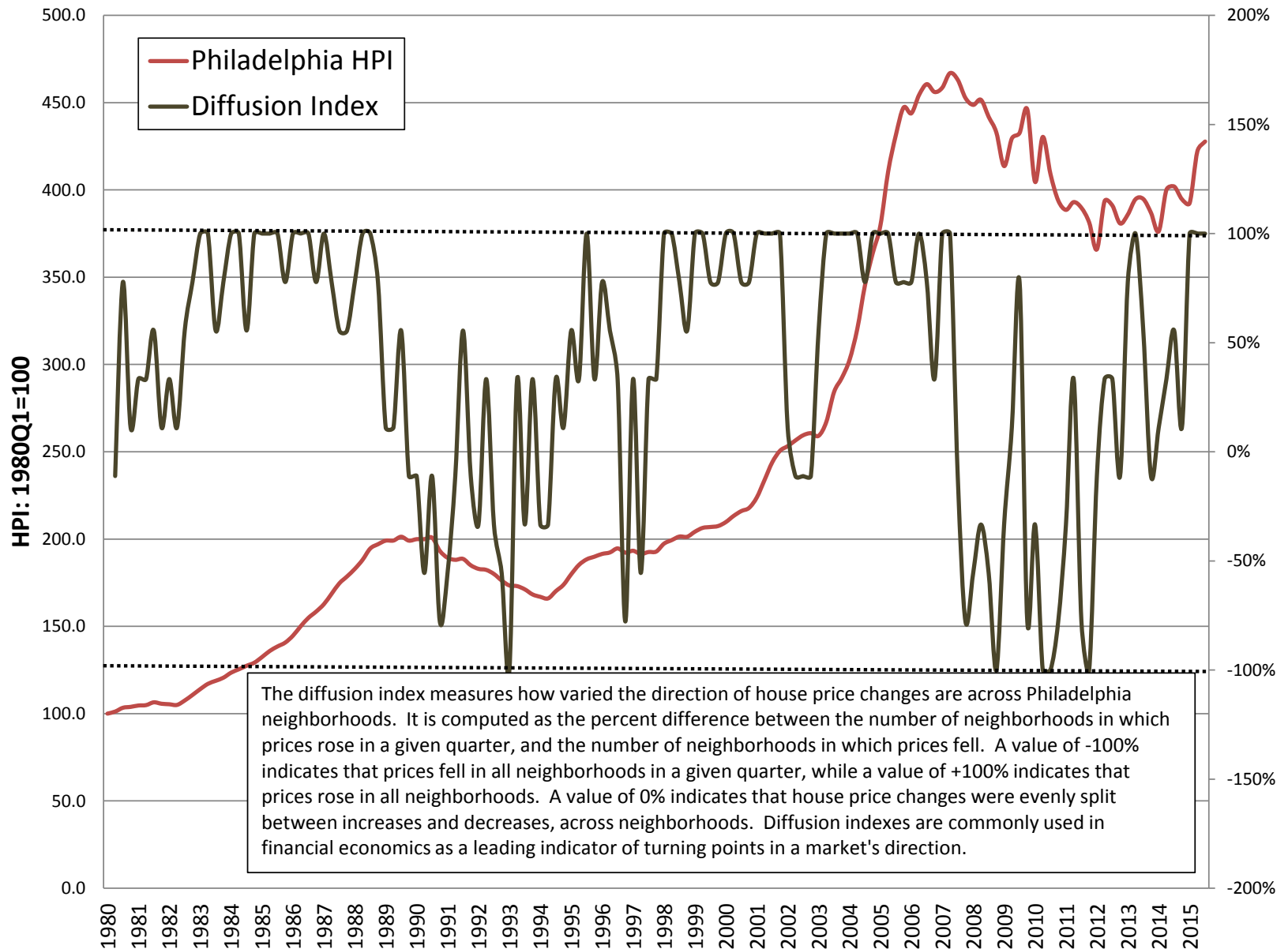
+ \$1 Million Dollar House Sales in 2015 Q3

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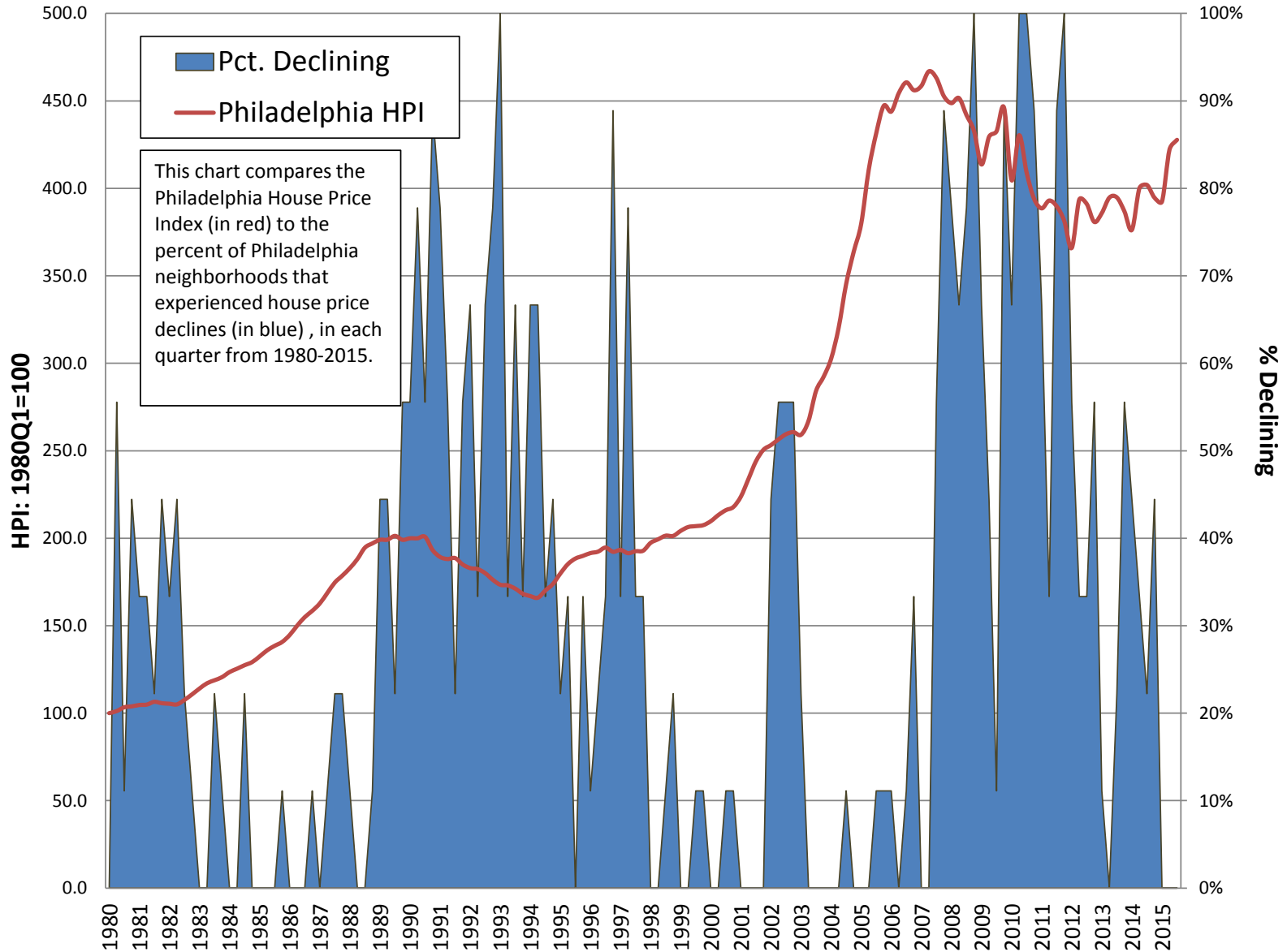
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Philadelphia House Price Diffusion Index

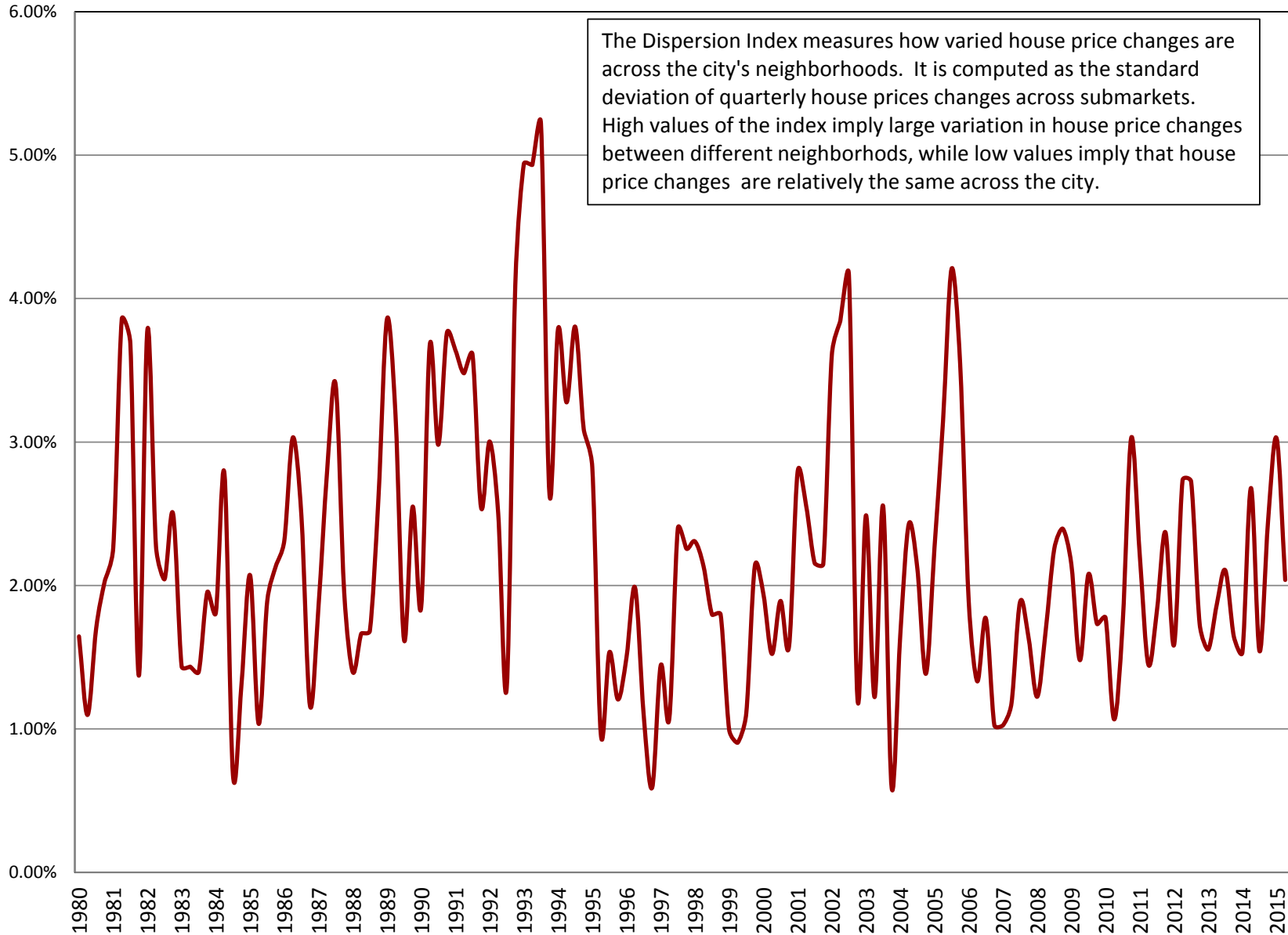


The diffusion index measures how varied the direction of house price changes are across Philadelphia neighborhoods. It is computed as the percent difference between the number of neighborhoods in which prices rose in a given quarter, and the number of neighborhoods in which prices fell. A value of -100% indicates that prices fell in all neighborhoods in a given quarter, while a value of +100% indicates that prices rose in all neighborhoods. A value of 0% indicates that house price changes were evenly split between increases and decreases, across neighborhoods. Diffusion indexes are commonly used in financial economics as a leading indicator of turning points in a market's direction.

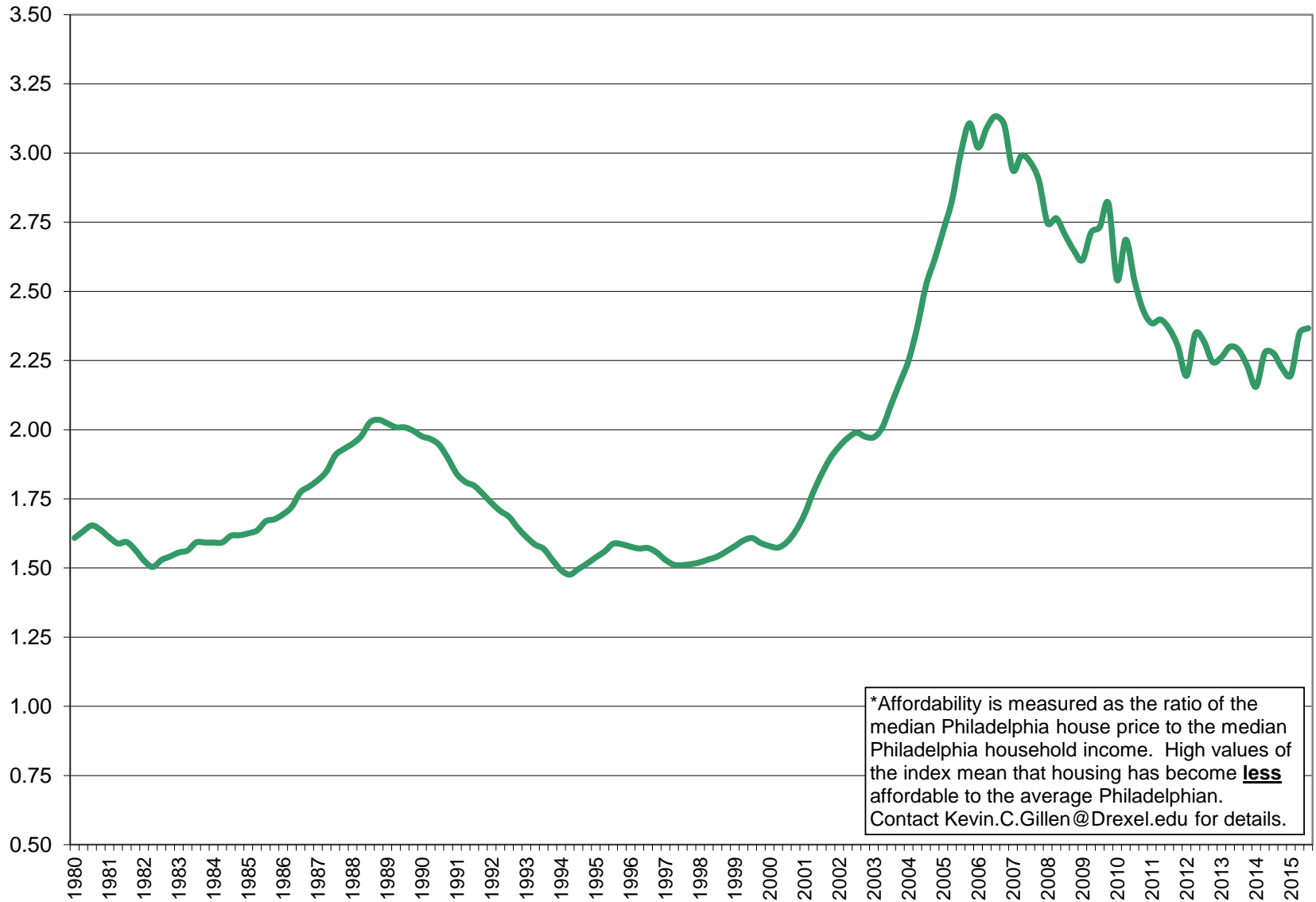
Philadelphia House Prices: Declines v. House Price Index



Dispersion Index of Philadelphia Housing

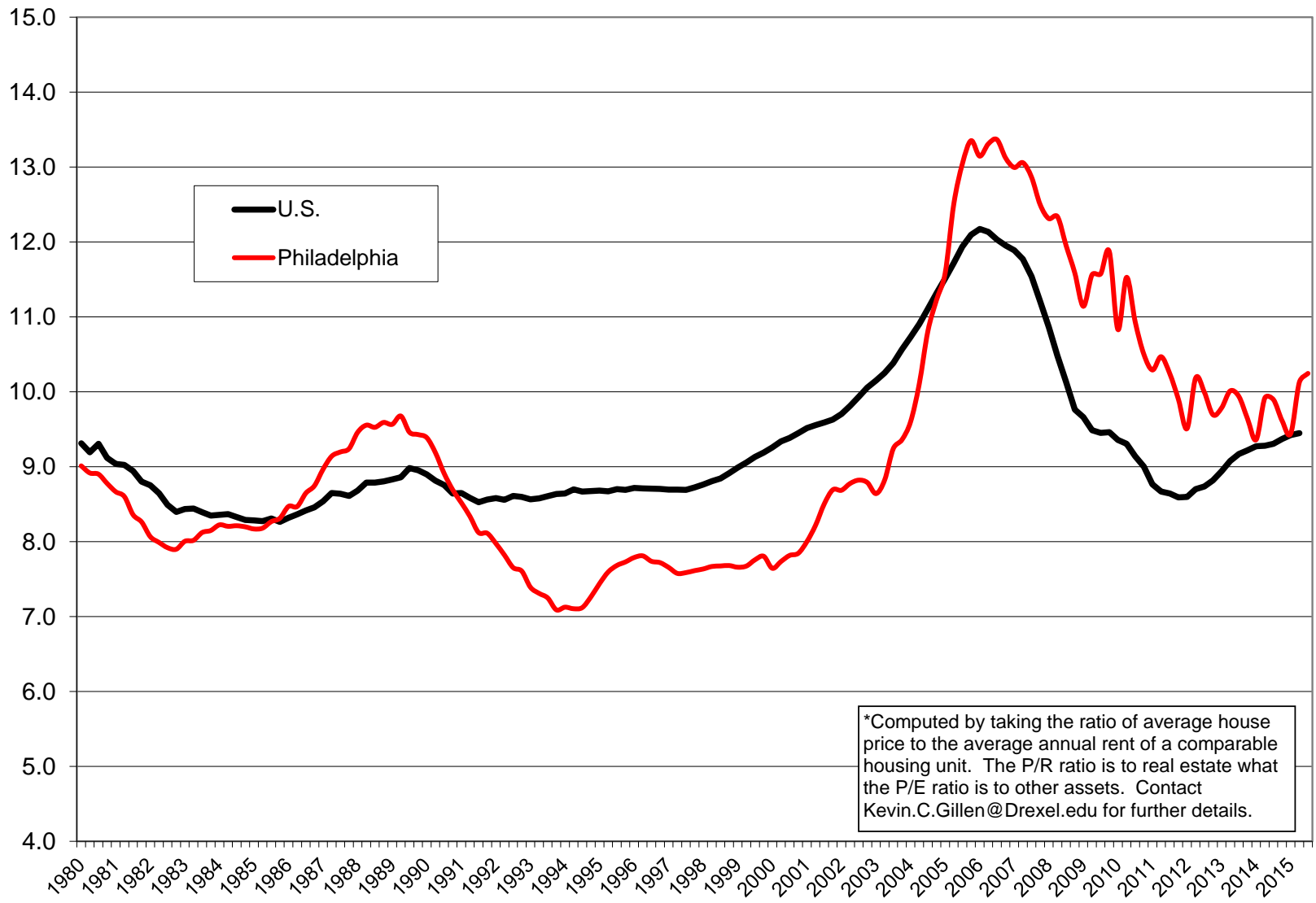


Philadelphia Housing Affordability* Index: 1980-2015



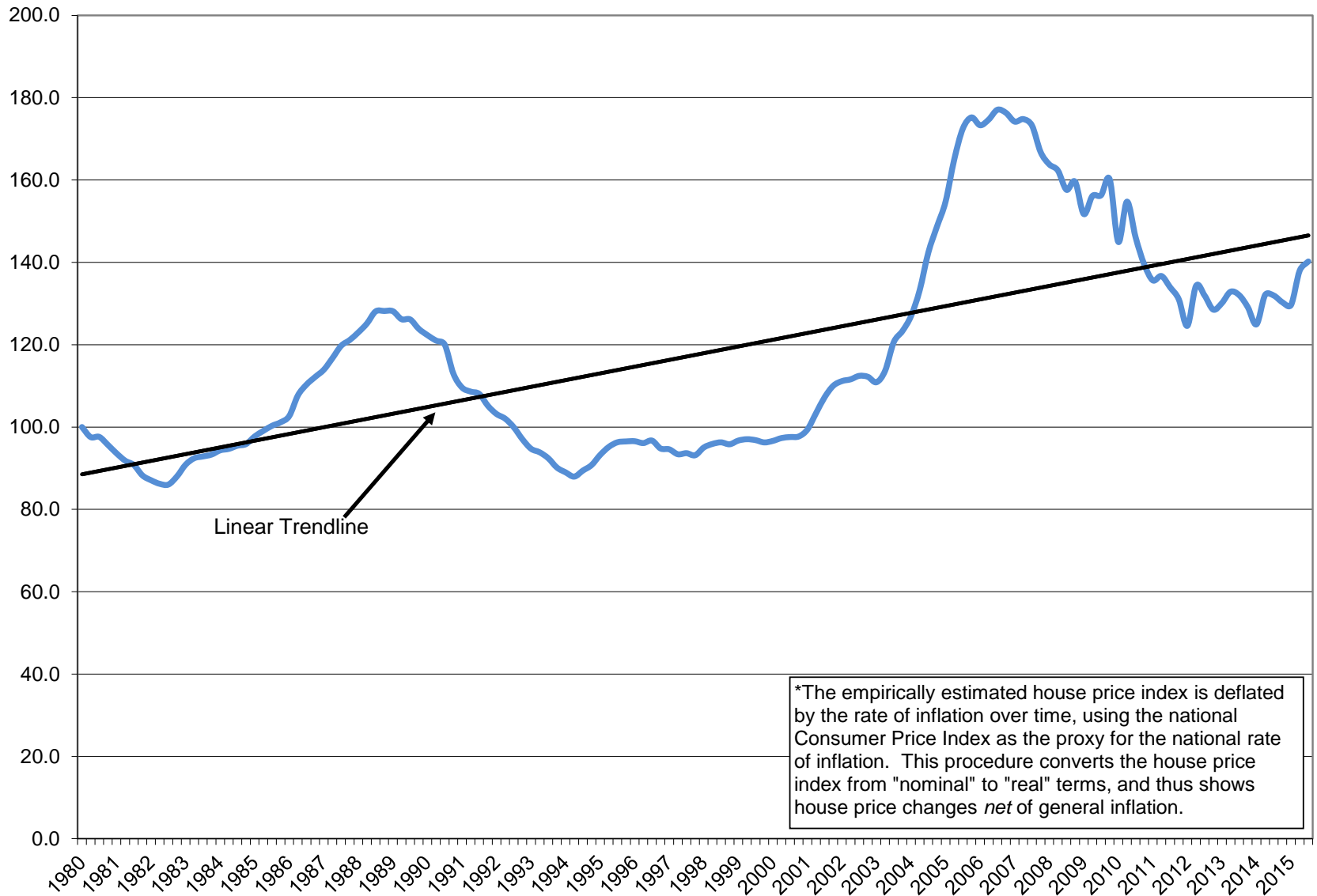
*Affordability is measured as the ratio of the median Philadelphia house price to the median Philadelphia household income. High values of the index mean that housing has become **less** affordable to the average Philadelphian. Contact Kevin.C.Gillen@Drexel.edu for details.

Average House Price-to-Rent Ratios*: 1980-2015 Philadelphia v. U.S.



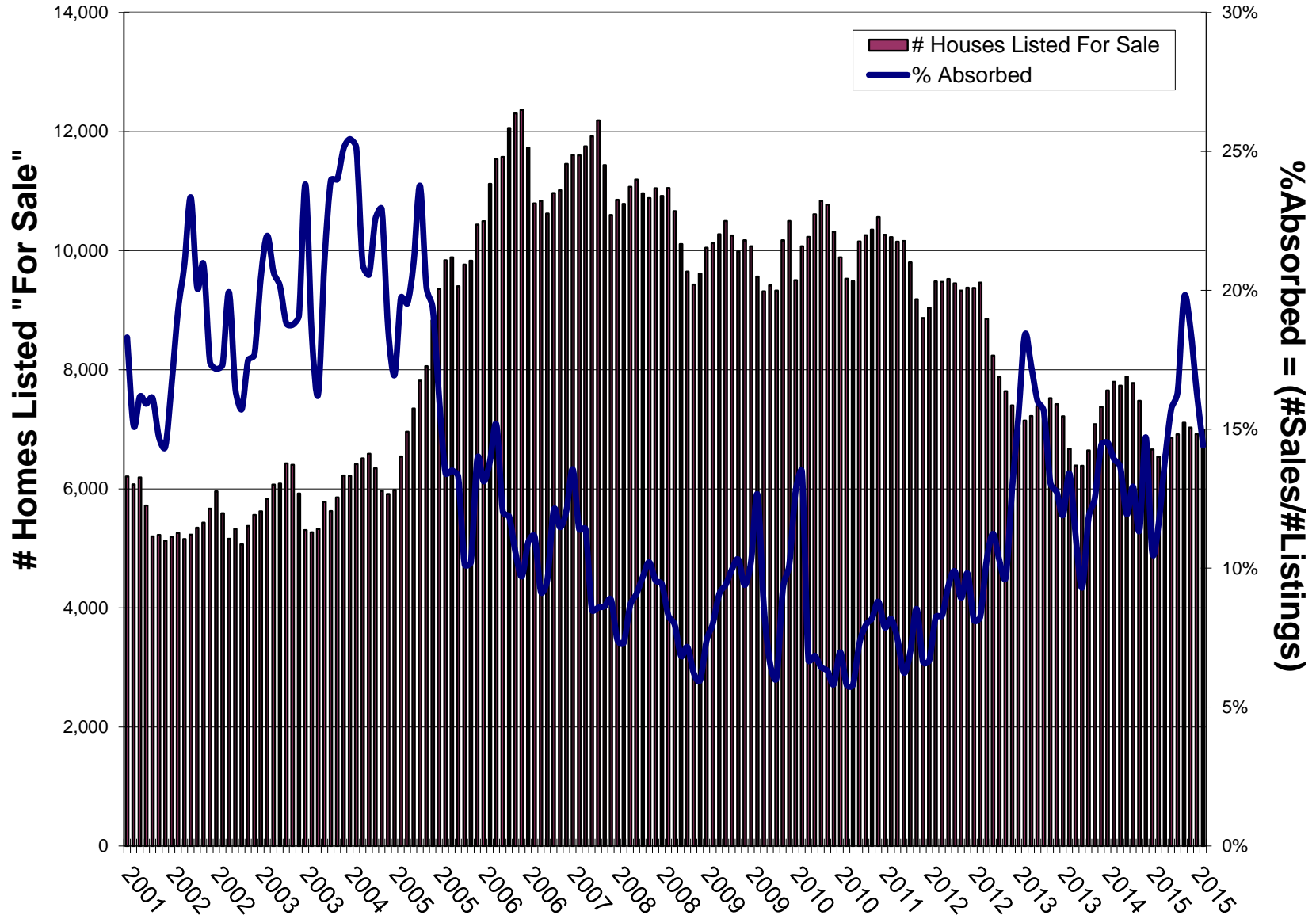
*Computed by taking the ratio of average house price to the average annual rent of a comparable housing unit. The P/R ratio is to real estate what the P/E ratio is to other assets. Contact Kevin.C.Gillen@Drexel.edu for further details.

Inflation-Adjusted* Philadelphia House Price Index 1980-2015 1980Q1=100



Source: US Bureau of Labor Statistics

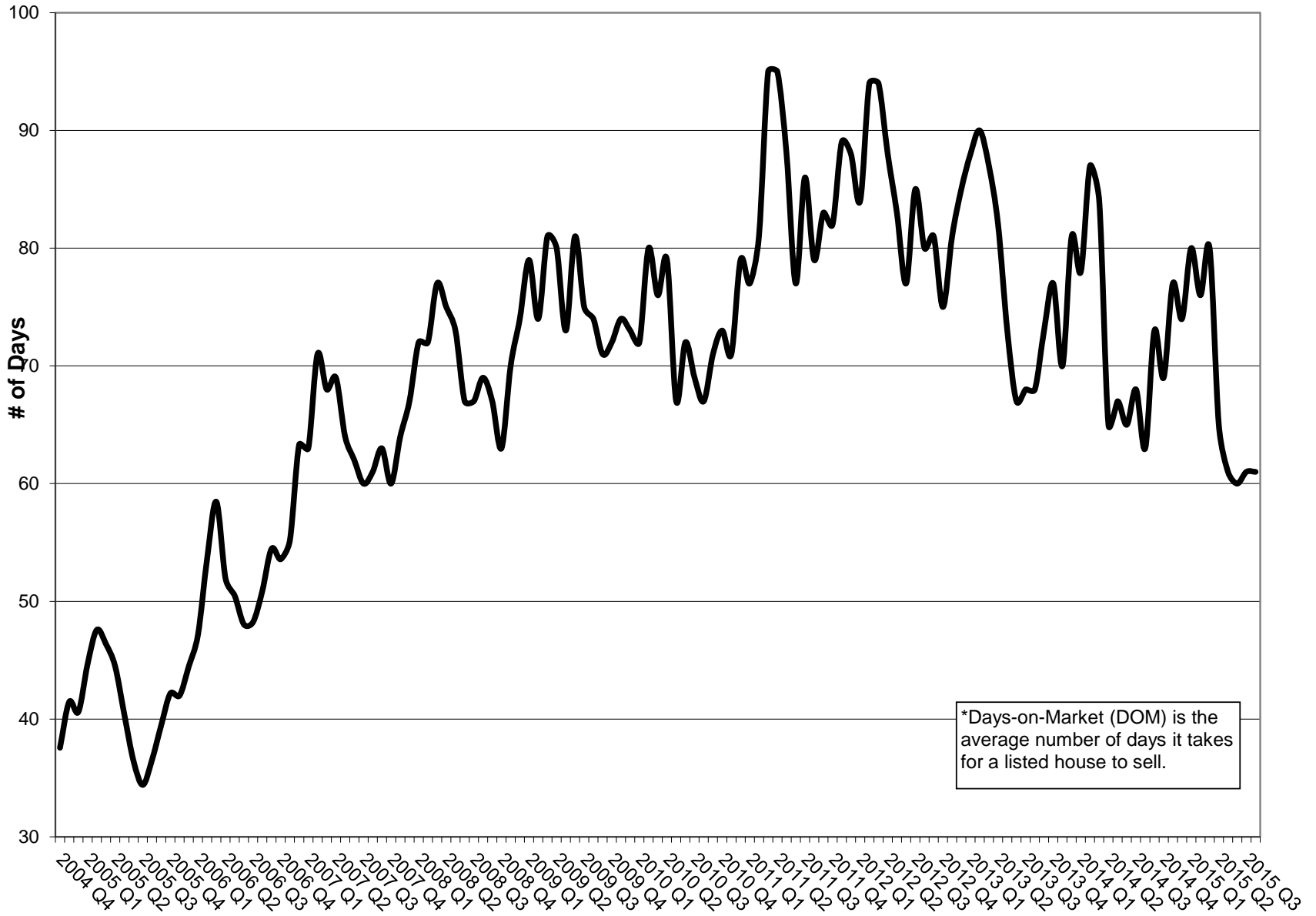
Philadelphia Houses Listed For Sale: Inventory v. Absorption Rate



“%Absorbed” is defined as the percent of homes listed for sale in a given month that also sold in that same month.

Source: Trend MLS

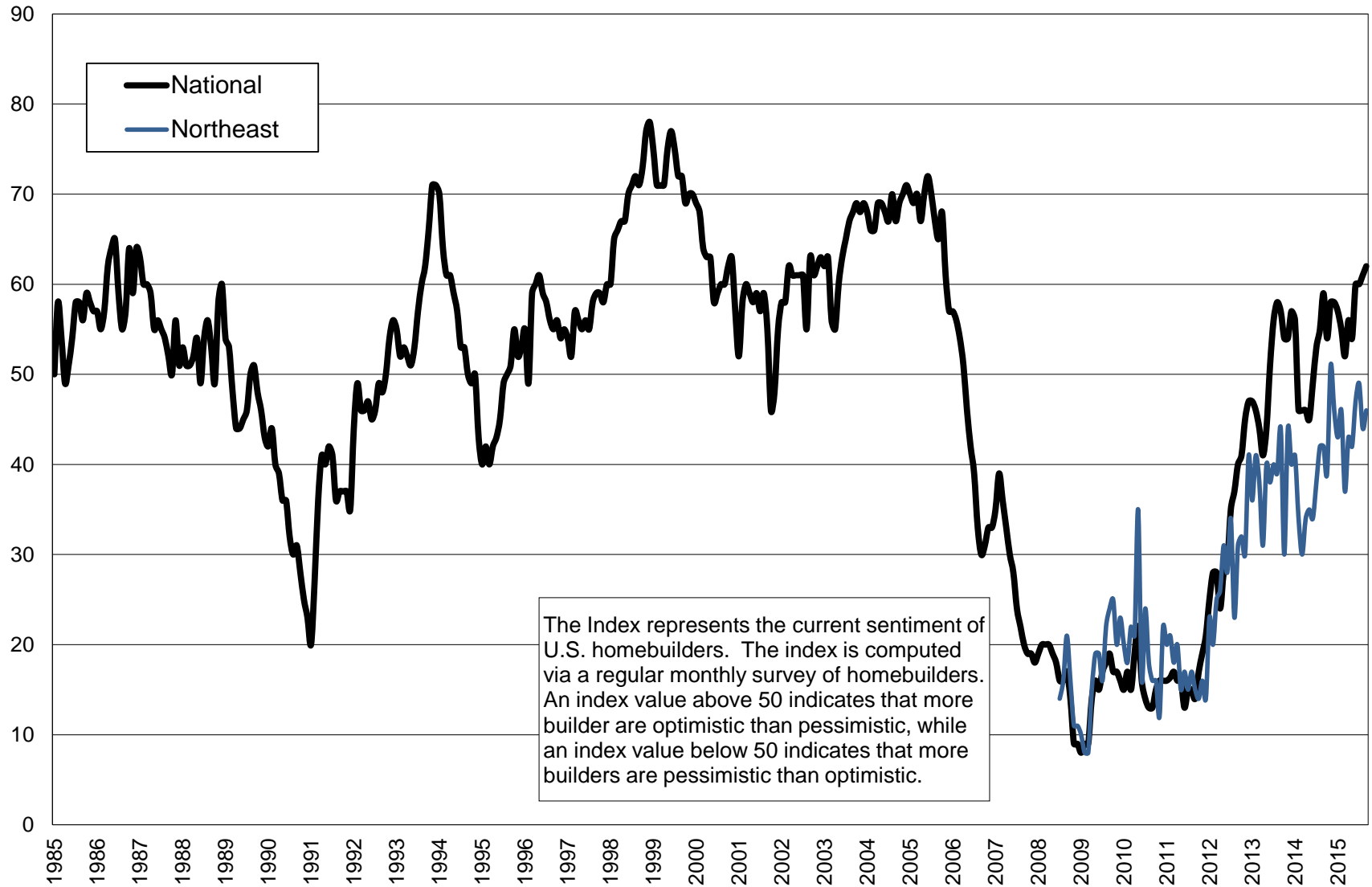
Average Days-on-Market* for Philadelphia Homes



*Days-on-Market (DOM) is the average number of days it takes for a listed house to sell.

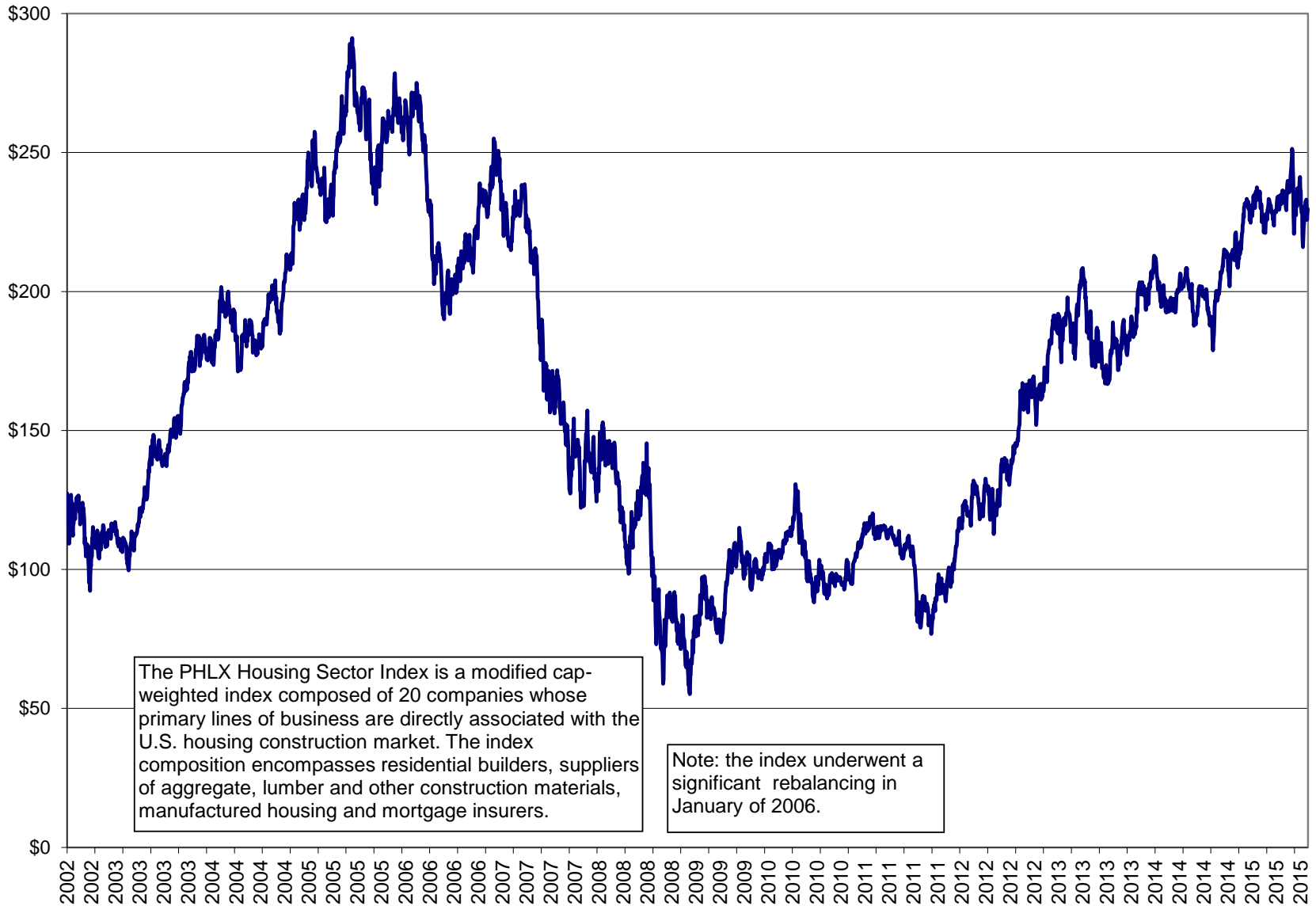
Source: Trend MLS

Index of Homebuilder Sentiment: 1985-2015 (Seasonally Adjusted)



Source: National Assoc. of Homebuilders (NAHB)/Wells Fargo

Philadelphia Stock Exchange Housing Sector Index: 2002-2015

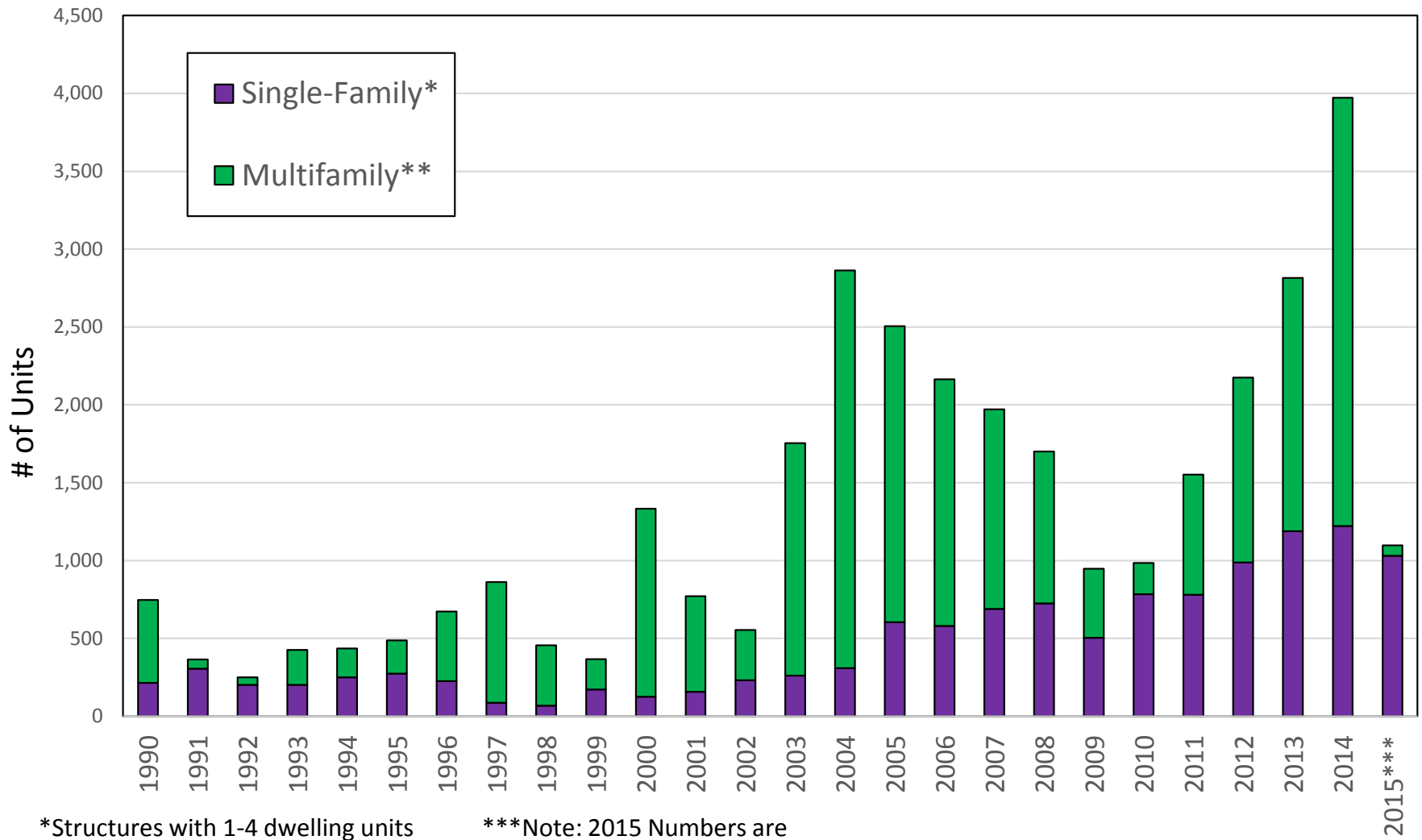


The PHLX Housing Sector Index is a modified cap-weighted index composed of 20 companies whose primary lines of business are directly associated with the U.S. housing construction market. The index composition encompasses residential builders, suppliers of aggregate, lumber and other construction materials, manufactured housing and mortgage insurers.

Note: the index underwent a significant rebalancing in January of 2006.

Source: finance.yahoo.com

Building Permits Issued for Construction of Residential Units: Single-Family v. Multifamily



*Structures with 1-4 dwelling units

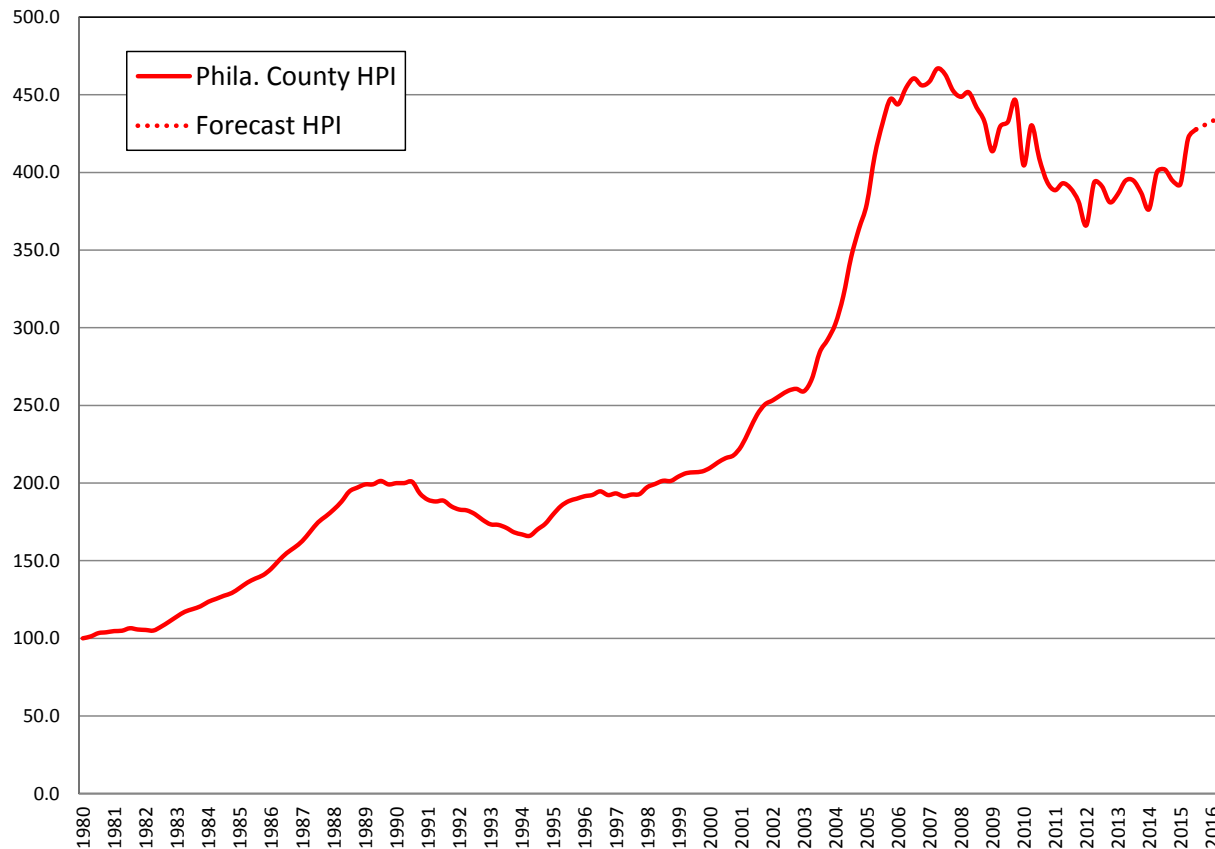
**Structures with >=5 dwelling units

***Note: 2015 Numbers are extrapolated from YTD numbers.

2015***

Philadelphia House Price Index and 1-Year Forecast

Philadelphia House Price Index: Actual v. Forecast



Zillow.com is currently forecasting Philadelphia house prices to rise an average of 2.4% over the next year, which is a slight upgrade from its previous annual forecast of 2.3% made in the previous quarter.

Source: <http://www.zillow.com/philadelphia-pa/home-values/>