

PHILADELPHIA HOUSE PRICE INDICES

May 16, 2016

MEYERS RESEARCH
a Kennedy Wilson Company

KEVIN C. GILLEN, Ph.D.

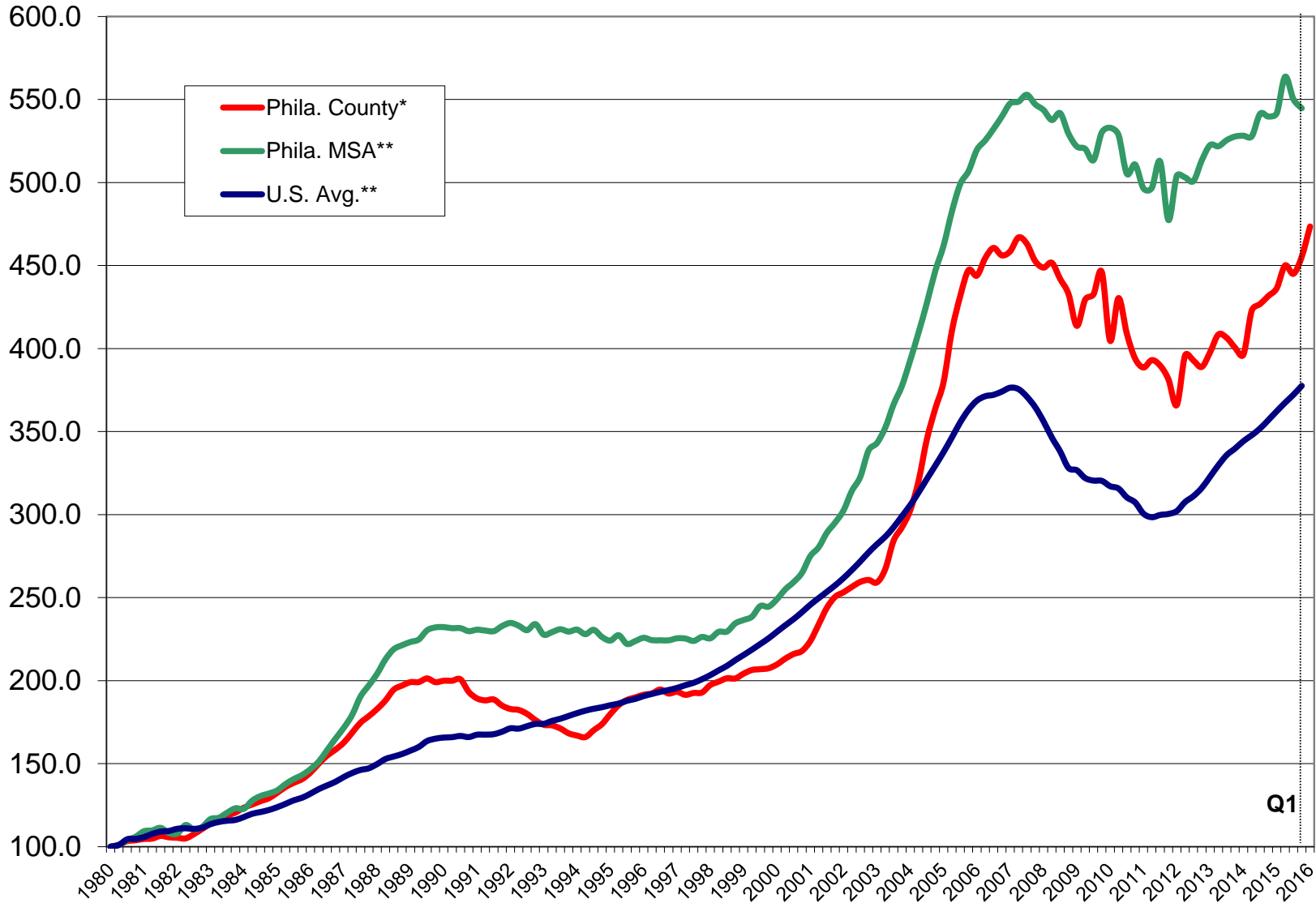
Kevin.C.Gillen@Drexel.edu



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Disclaimers and Acknowledgments: Meyers Research and The Lindy Institute for Urban Innovation at Drexel University provides this report free of charge to the public. The report is produced by Kevin C. Gillen Ph.D.. The author thanks Azavea.com, the Philadelphia Office of Property Assessment, the Federal Housing Finance Agency, Case-Shiller MacroMarkets LLC, RealtyTrac, Zillow.com, Trulia.com and the NAHB for making their data publicly available. © 2016, Meyers Research and Drexel University, All Rights Reserved.

House Price Indices 1980-2016: 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 2015Q4 only.

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

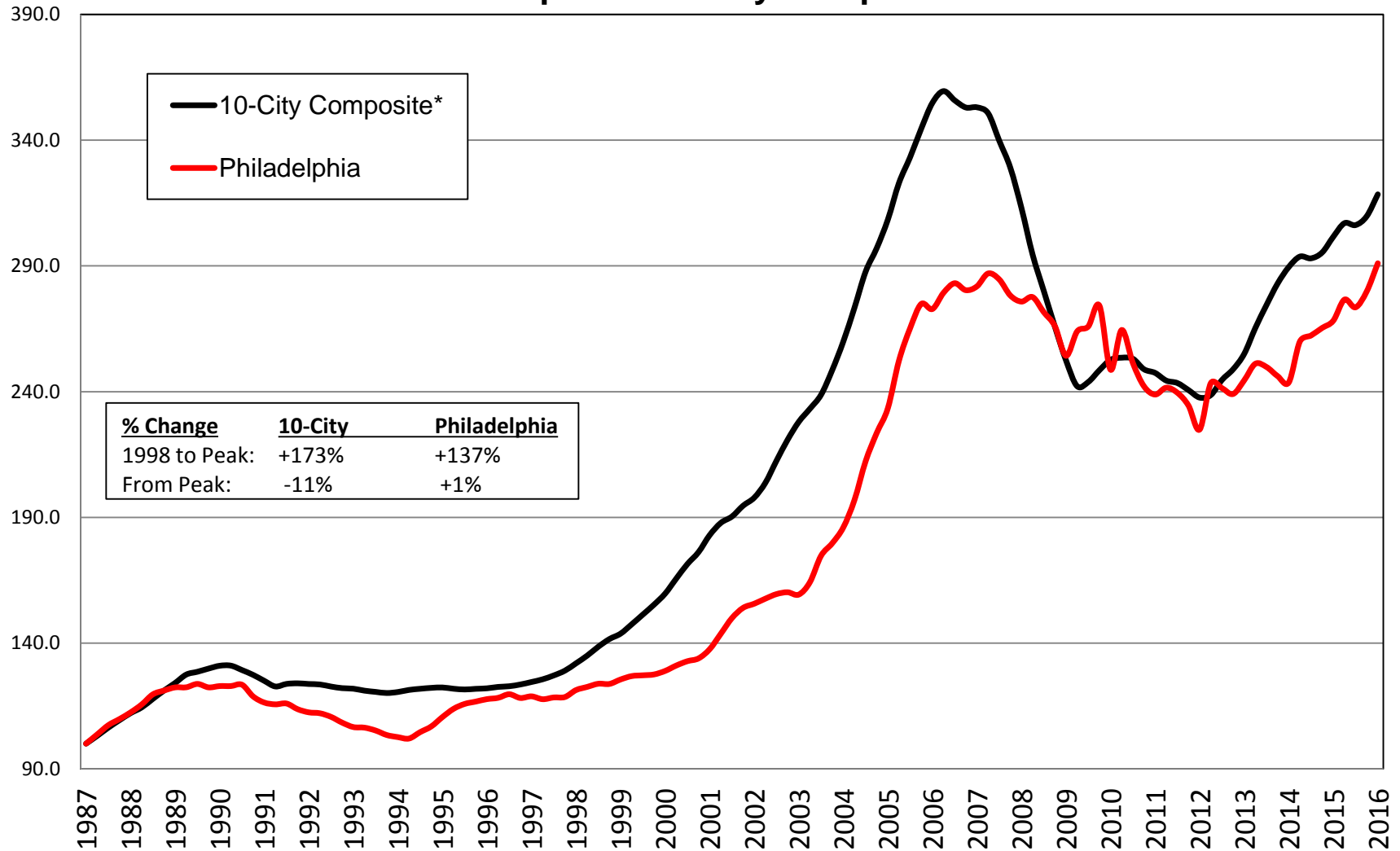
Total House Price Appreciation Rates by Geographic Market

Period	Philadelphia County*	Philadelphia MSA**	U.S.A.**
37-Year	155.5%	172.9%	130.1%
10-Year	6.5%	15.6%	5.9%
1-Year	8.2%	6.6%	5.5%
1-Quarter	3.9%	4.0%	1.4%

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

**Source: U.S. Federal Housing Finance Agency (FHFA). These numbers are through 2015Q4 only. “MSA”=“Metropolitan Statistical Area”, which is the entire 10-county region.

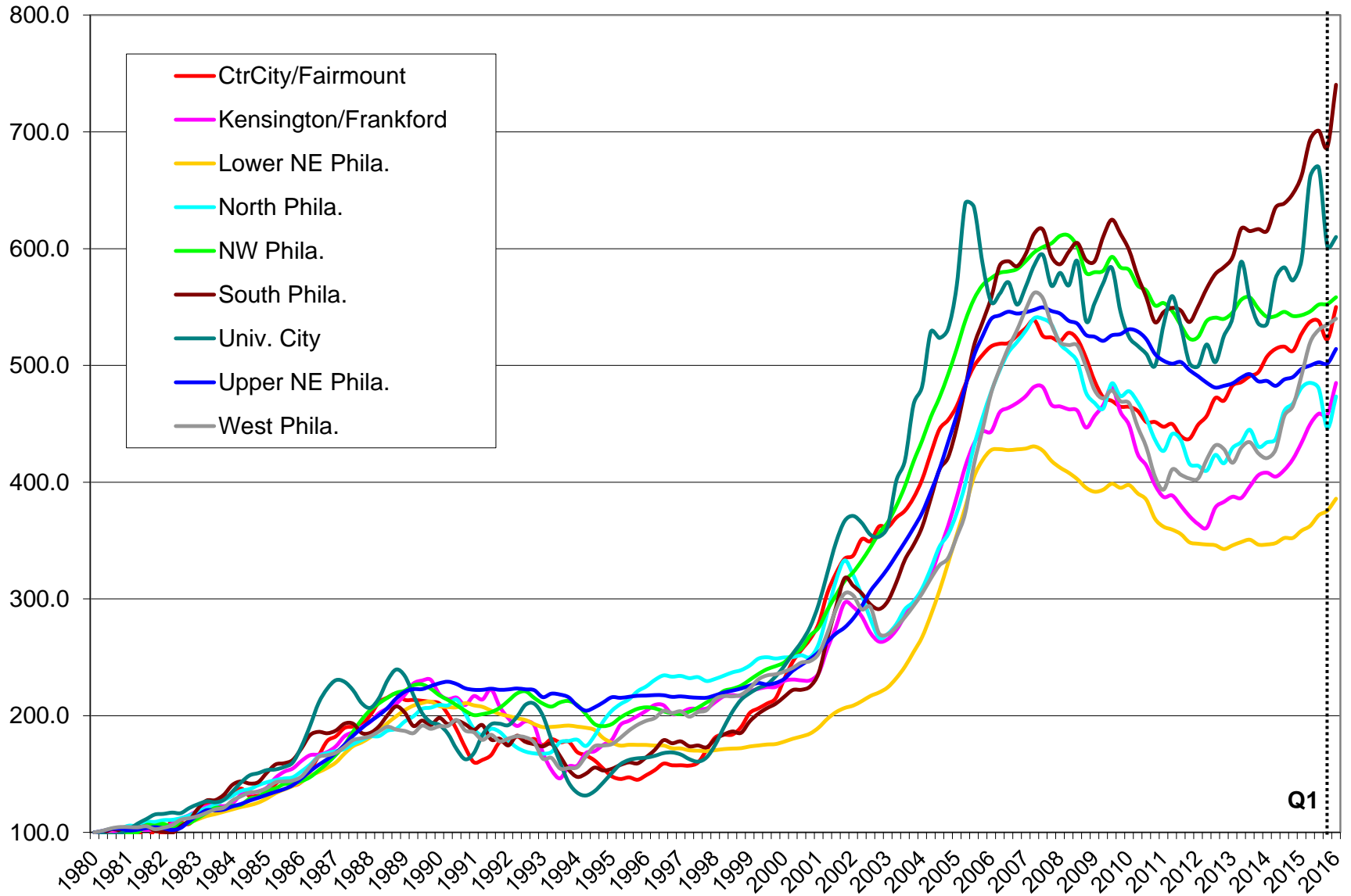
House Price Appreciation 1987-2016: Philadelphia v. 10-City Composite



*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: 1980-2016

1980Q1=100



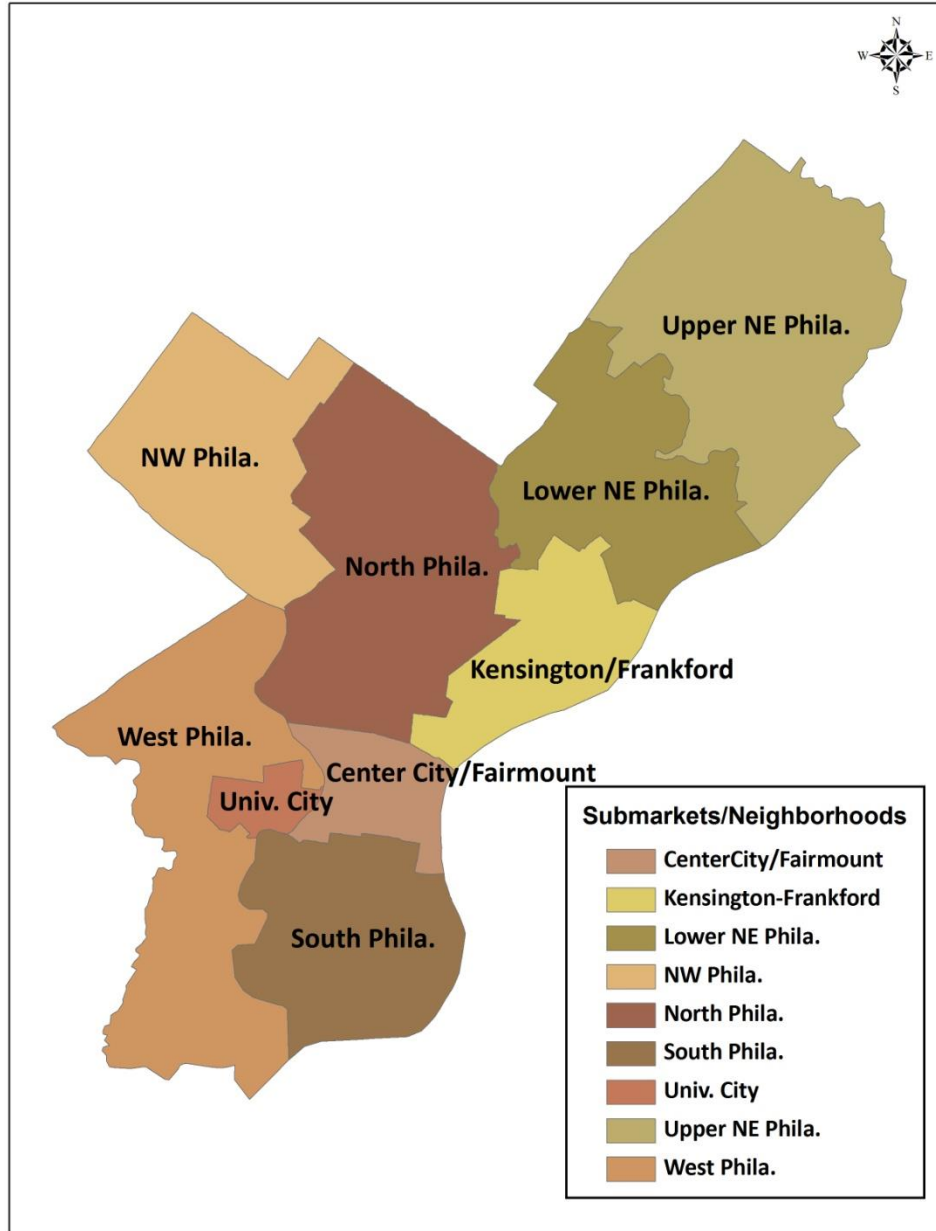
* All indices empirically estimated by Kevin C. Gillen, Ph.D.

Philadelphia House Price Appreciation Rates by Neighborhood

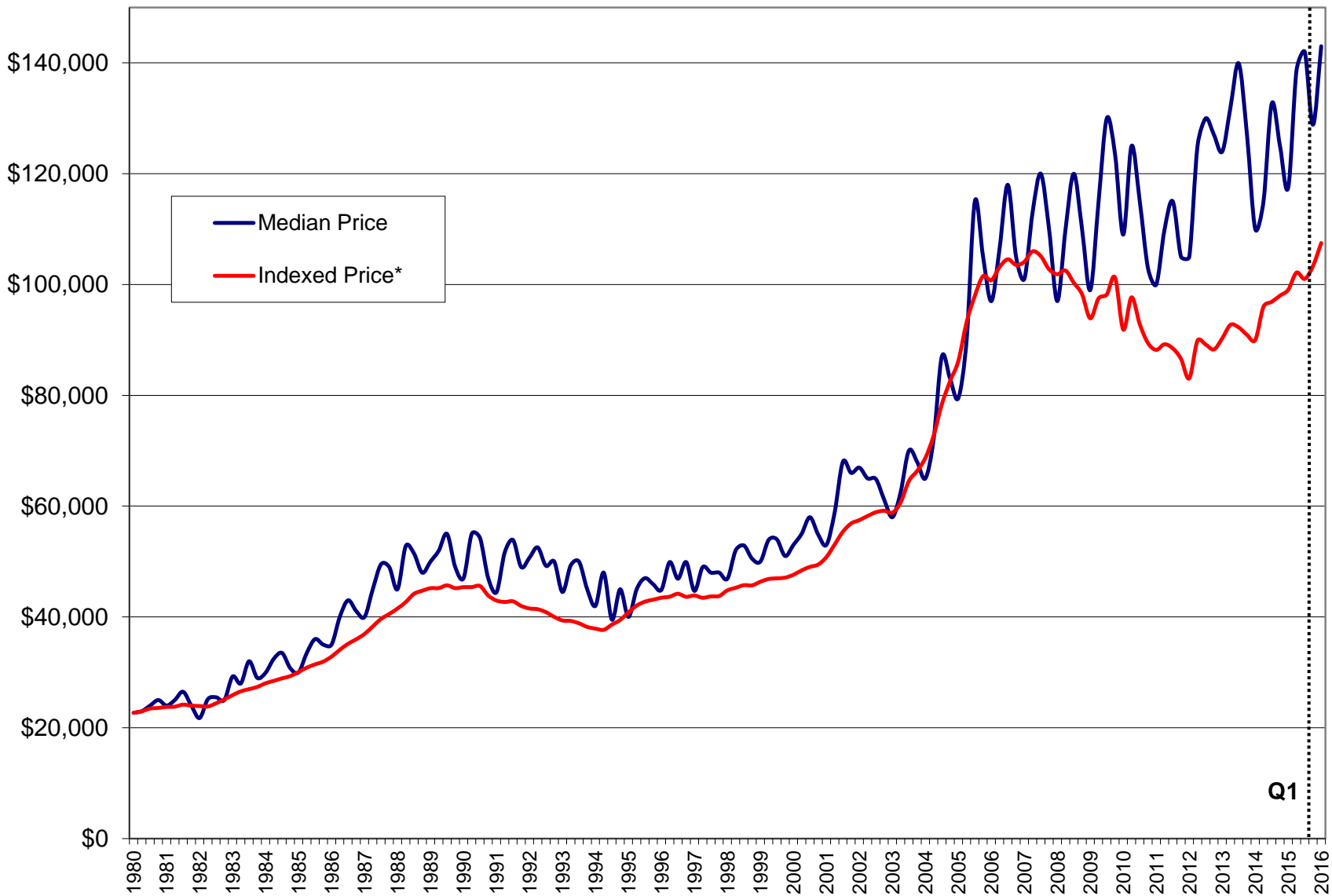
Period	Center City/ Fairmount	Kensington /Frankford	Lower NE Phila.	North Phila.	NW Phila.	South Phila.	Univ. City	Upper NE Phila.	West Phila.
36-year	170.5%	157.9%	135.0%	155.5%	172.0%	200.2%	180.8%	163.7%	168.6%
10-year	6.3%	9.0%	-10.2%	-0.8%	-2.9%	28.3%	9.6%	-4.9%	12.6%
1-Year	4.3%	11.2%	7.4%	-1.6%	2.8%	11.1%	3.3%	3.4%	9.4%
1-Quarter	5.2%	5.8%	2.7%	5.8%	1.0%	7.4%	1.3%	2.4%	0.9%

This table gives the total % change in average house prices by neighborhood, through 2016 Q1, from different starting points in time.

Philadelphia Submarket Boundaries



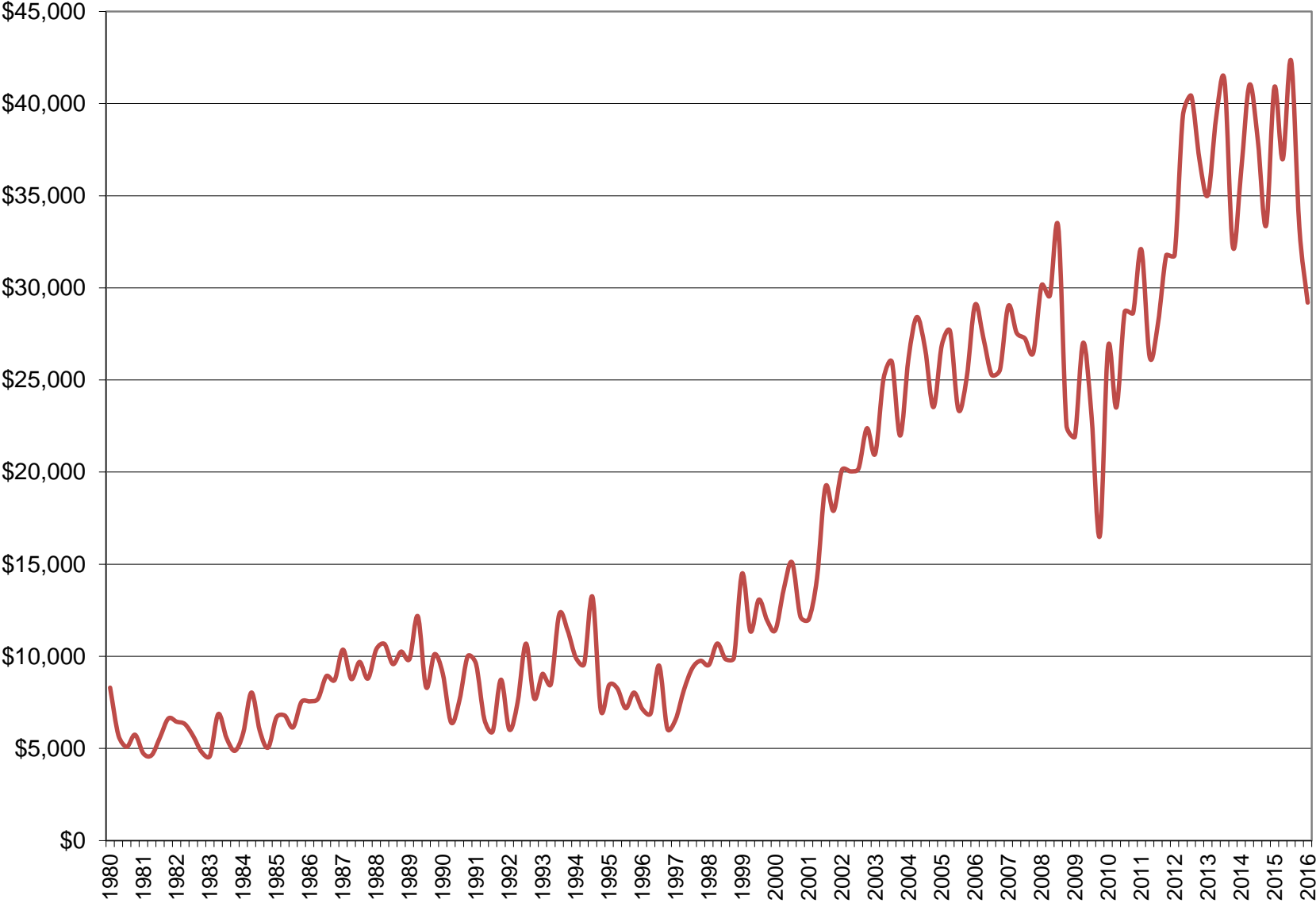
Median Philadelphia House Price v. Indexed Philadelphia House Price 1980-2016



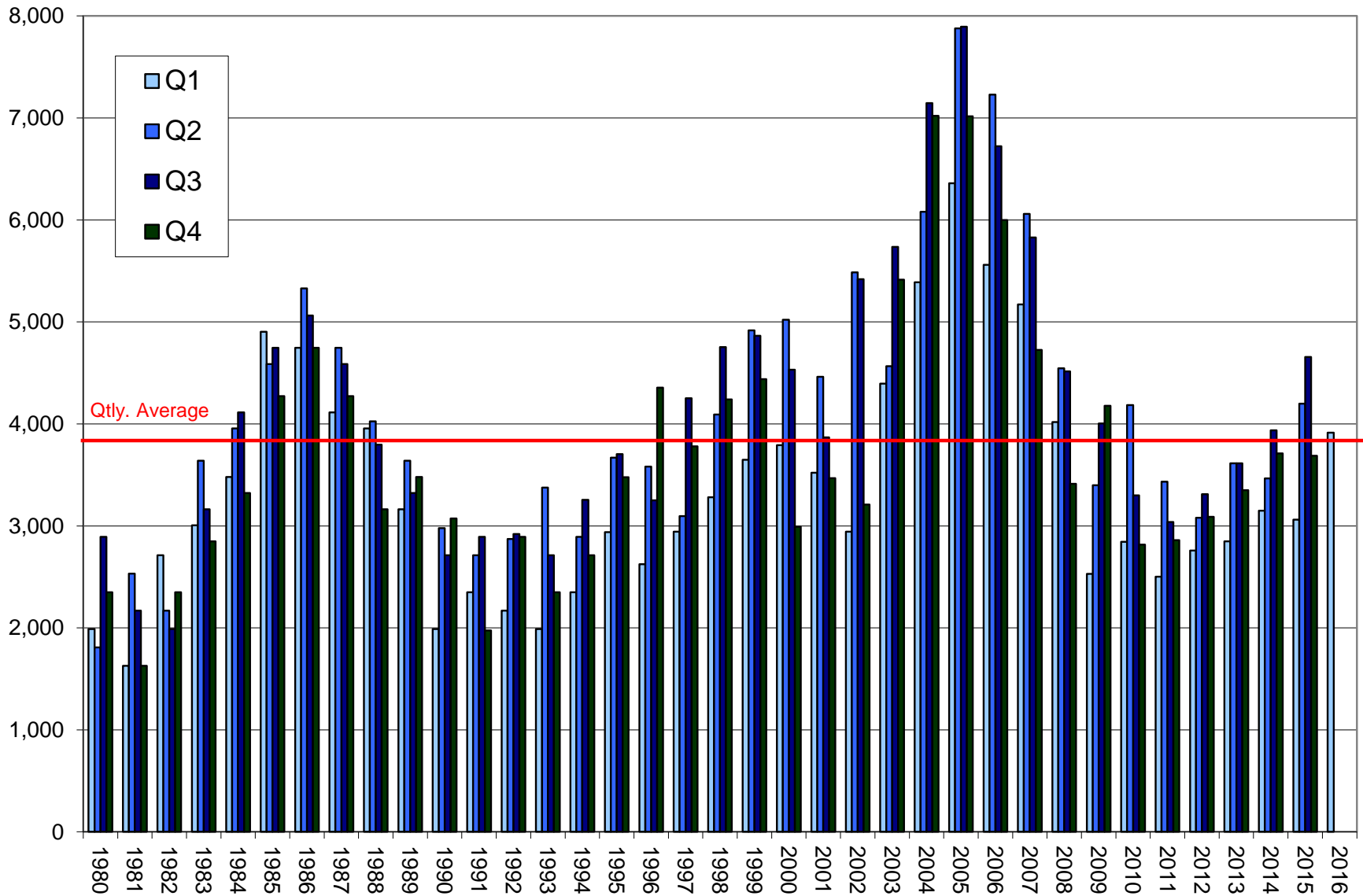
* Empirically estimated by Kevin C. Gillen, PhD

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Average House Price Minus Median House Price: 1980-2016

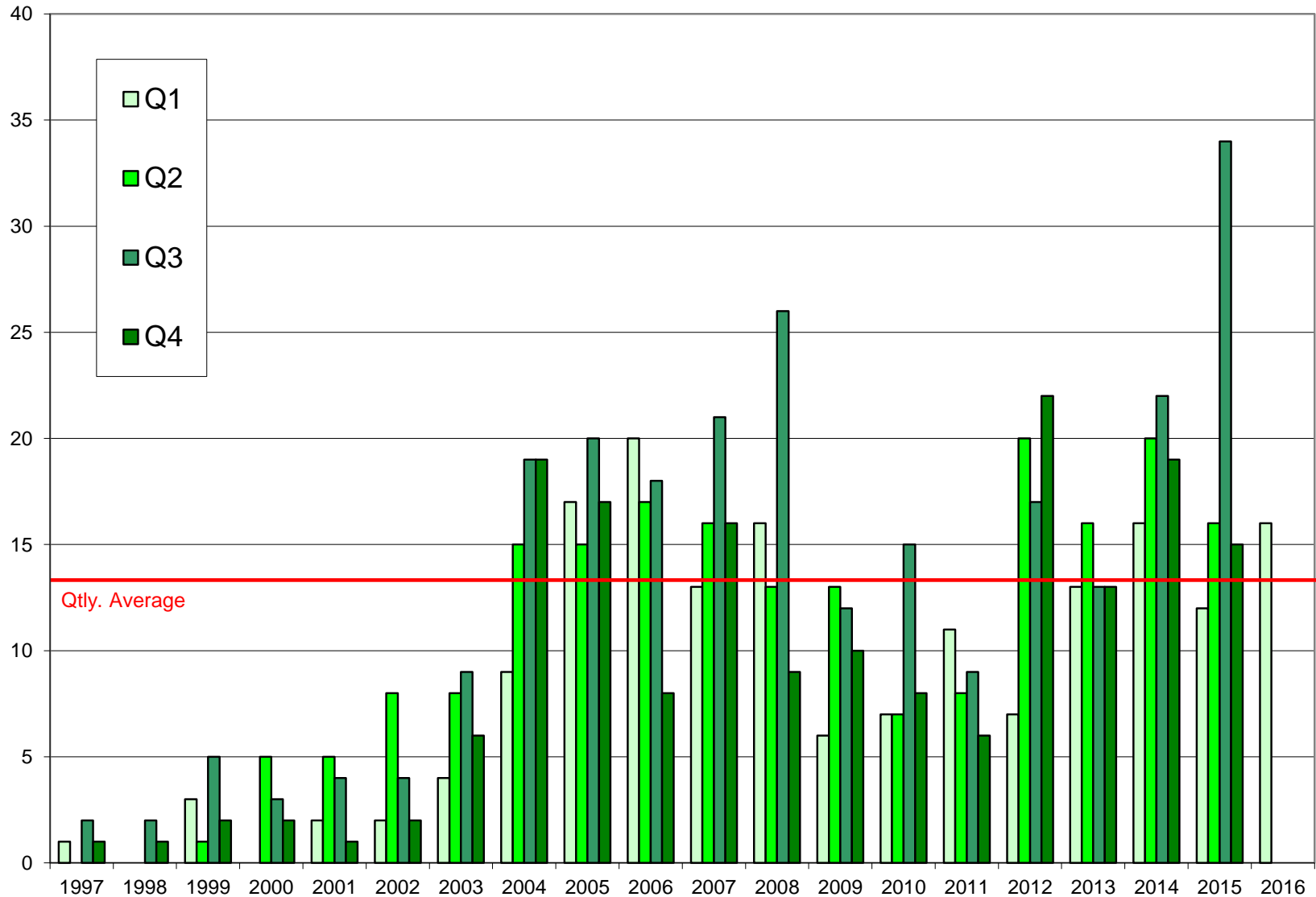


Number of Philadelphia House Sales* per Quarter: 1980-2016



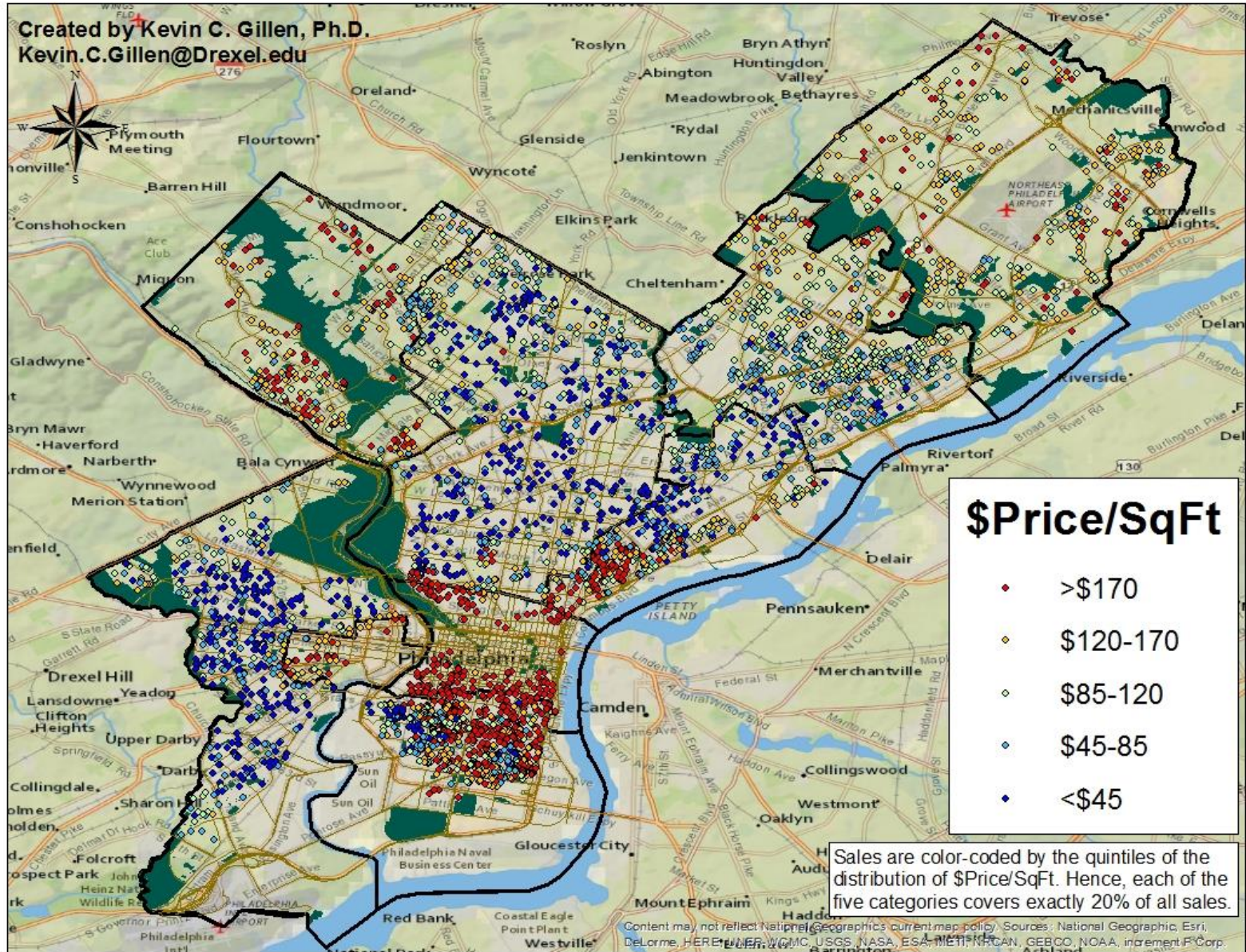
*Only arms-length transactions between private sector entities were included in these numbers.

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

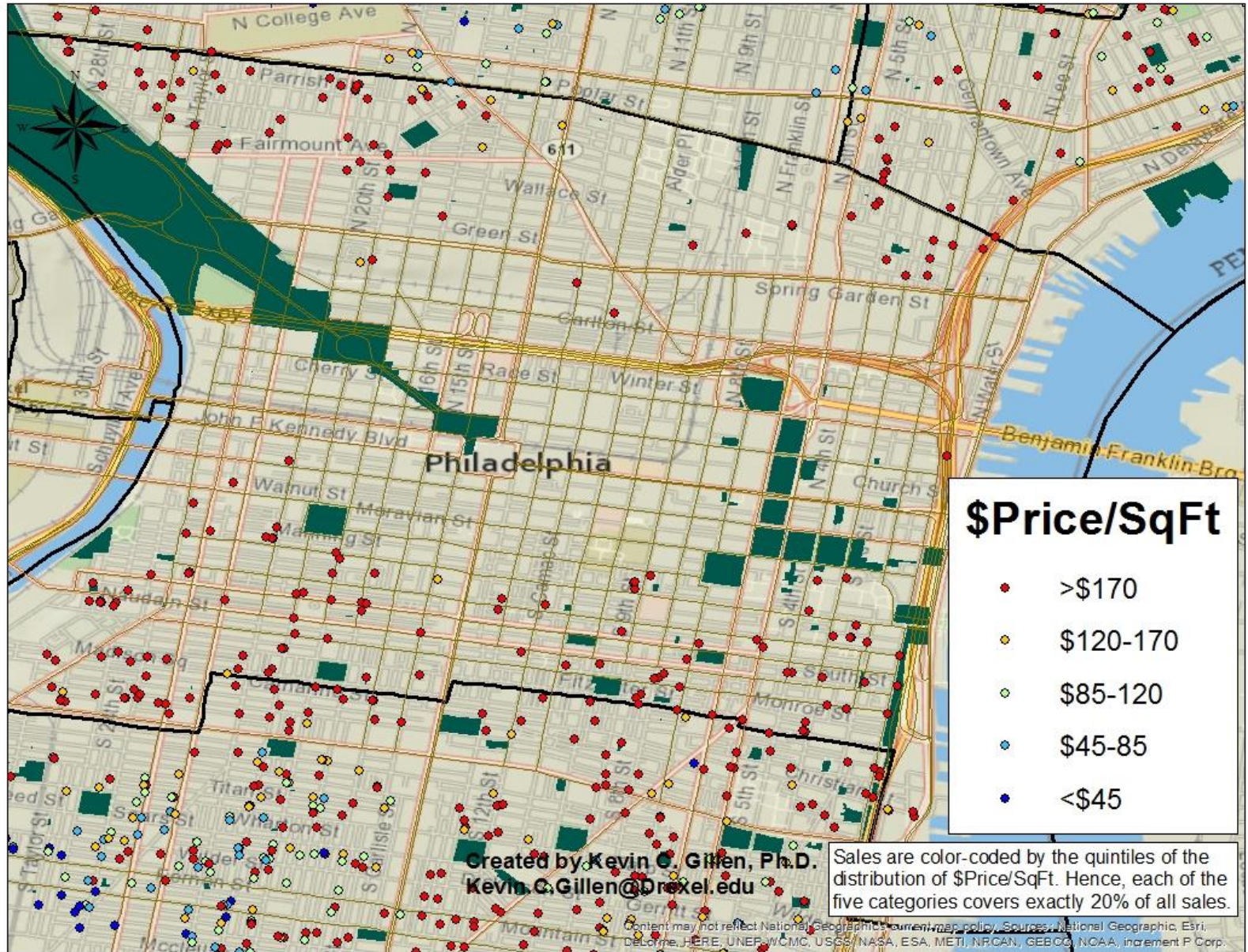


*Only arms-length transactions between private sector entities were included in these numbers.

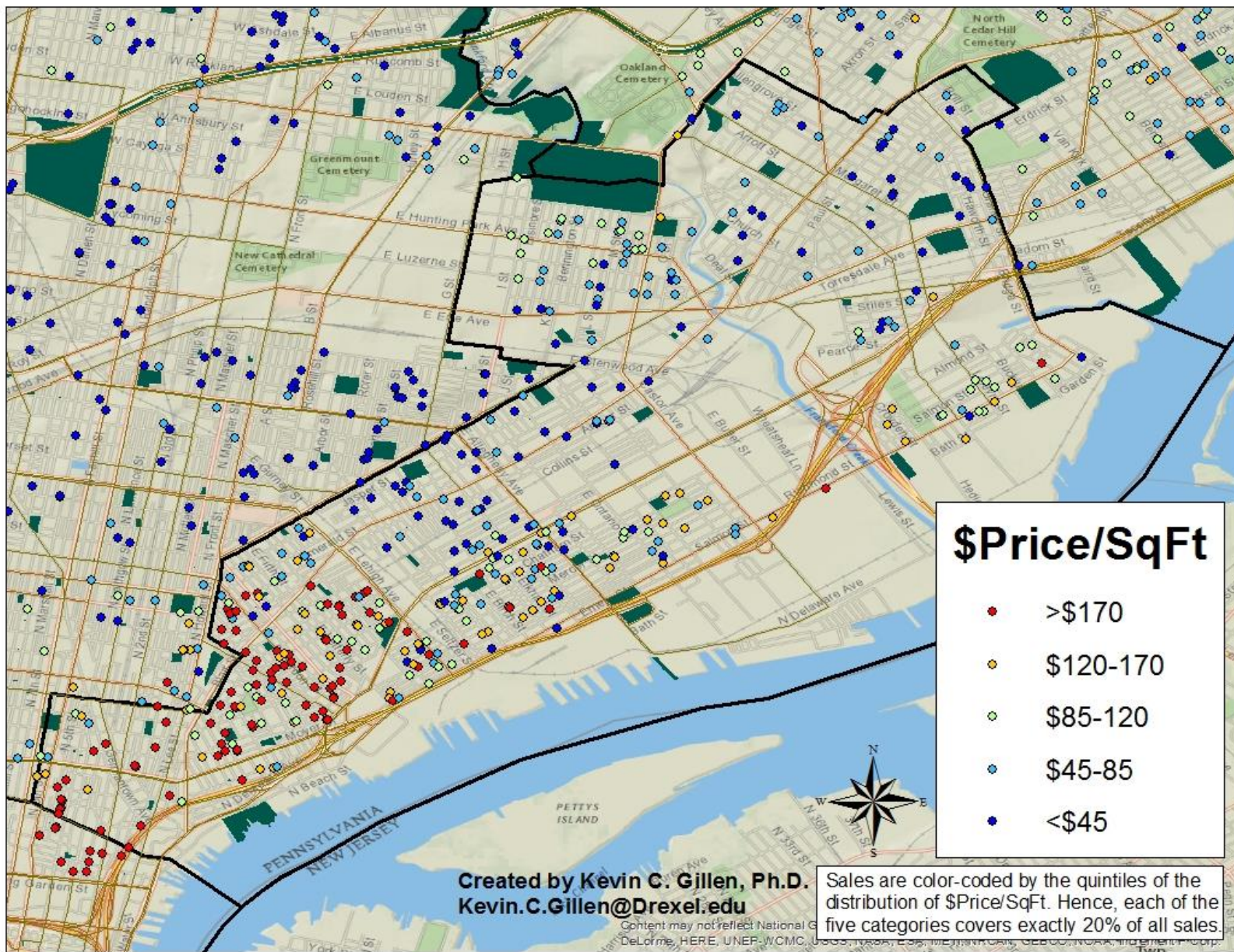
Philadelphia House Sales in 2016 Q1



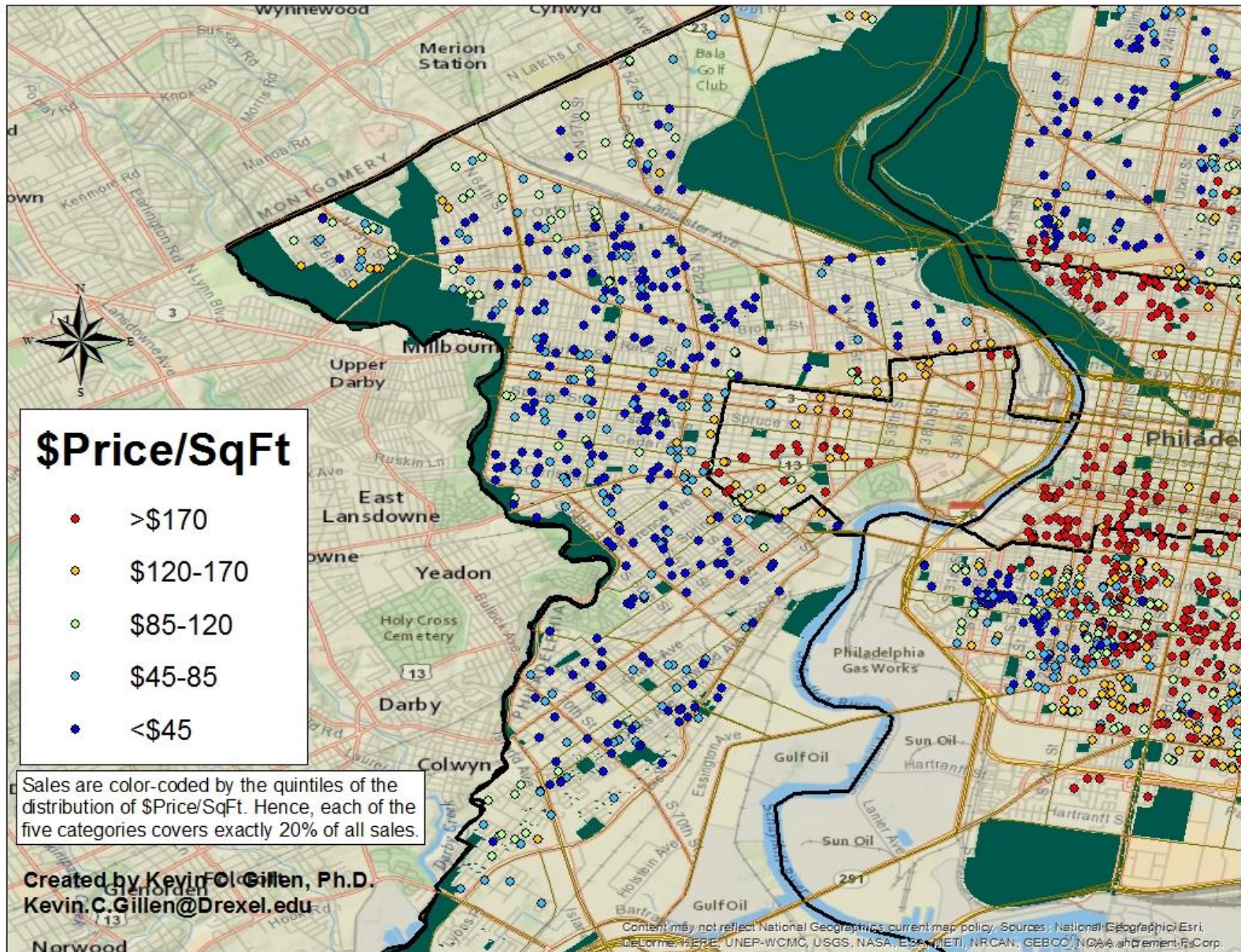
Center City House Sales in 2016 Q1



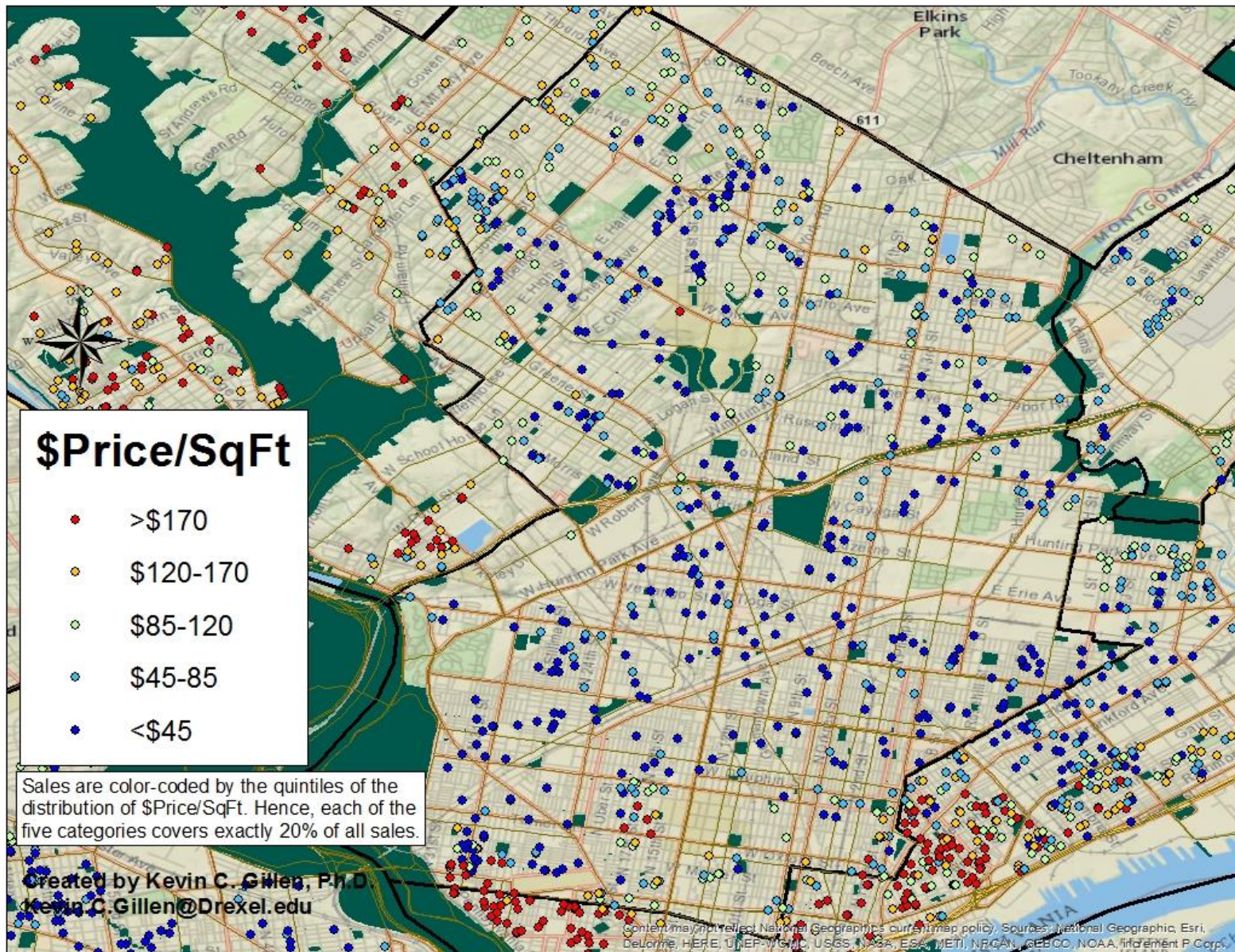
Kensington/Frankford House Sales in 2016 Q1



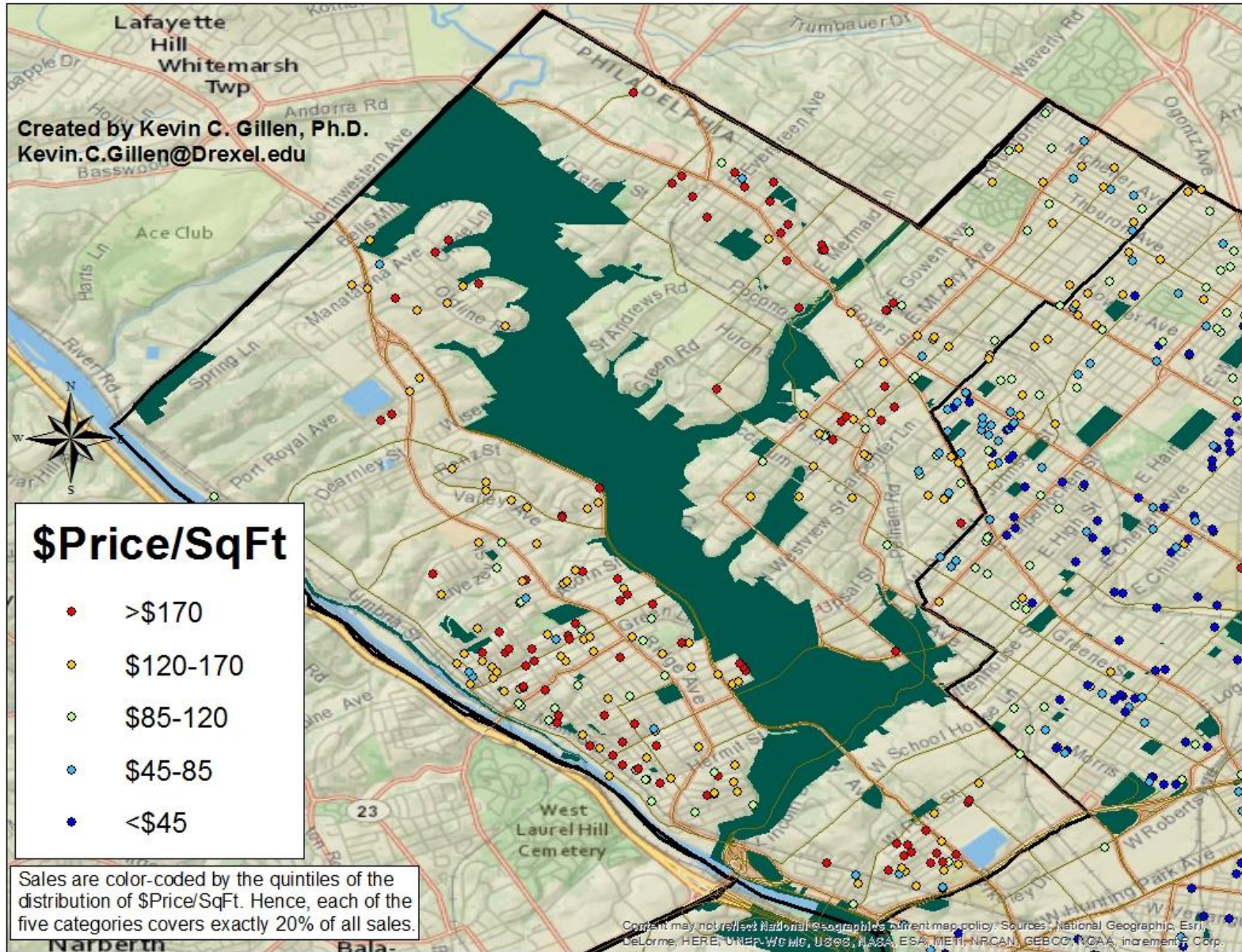
West Philadelphia House Sales in 2016 Q1



North Philadelphia House Sales in 2016 Q1



Northwest Philadelphia House Sales in 2016 Q1

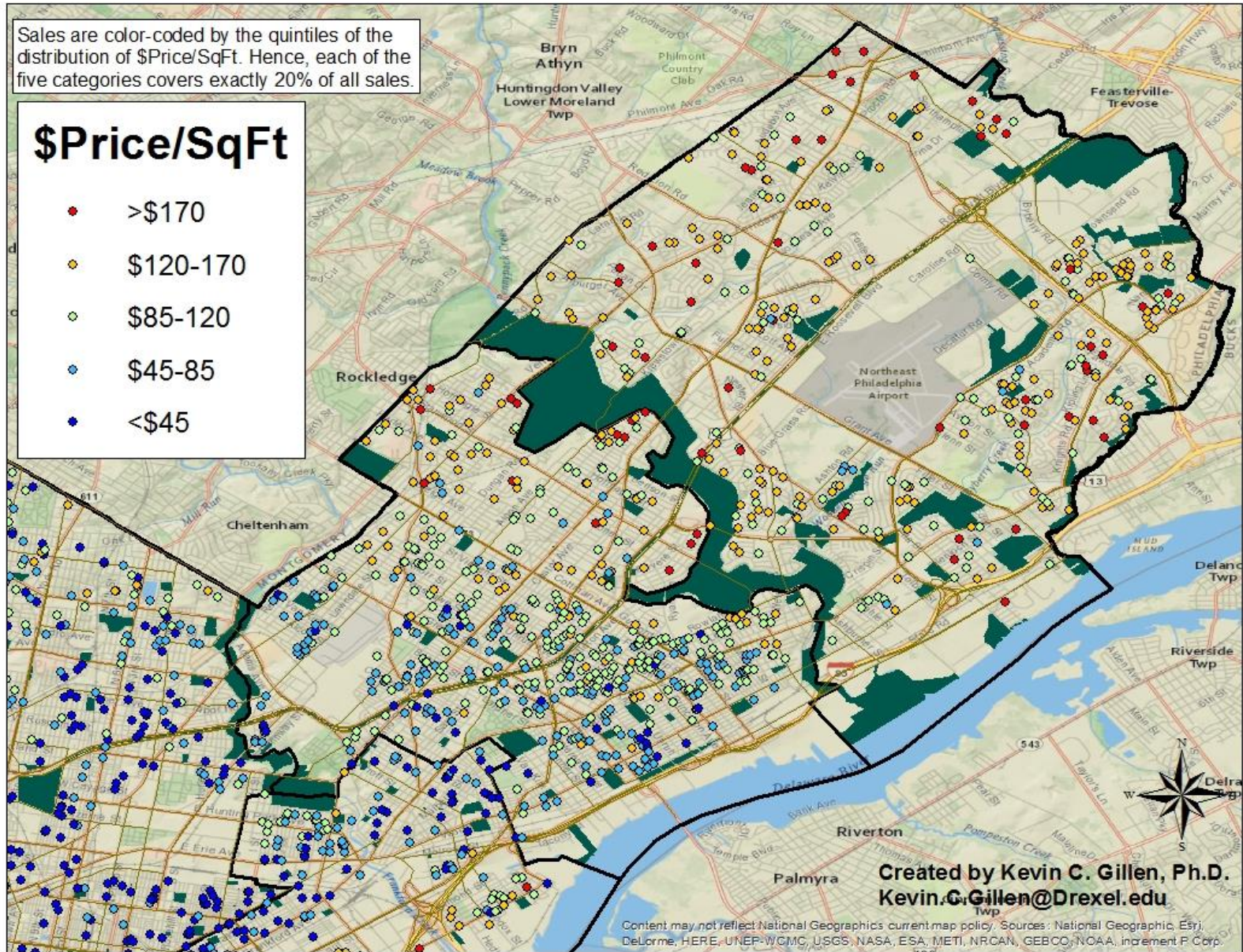


Northeast Philadelphia House Sales in 2016 Q1

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

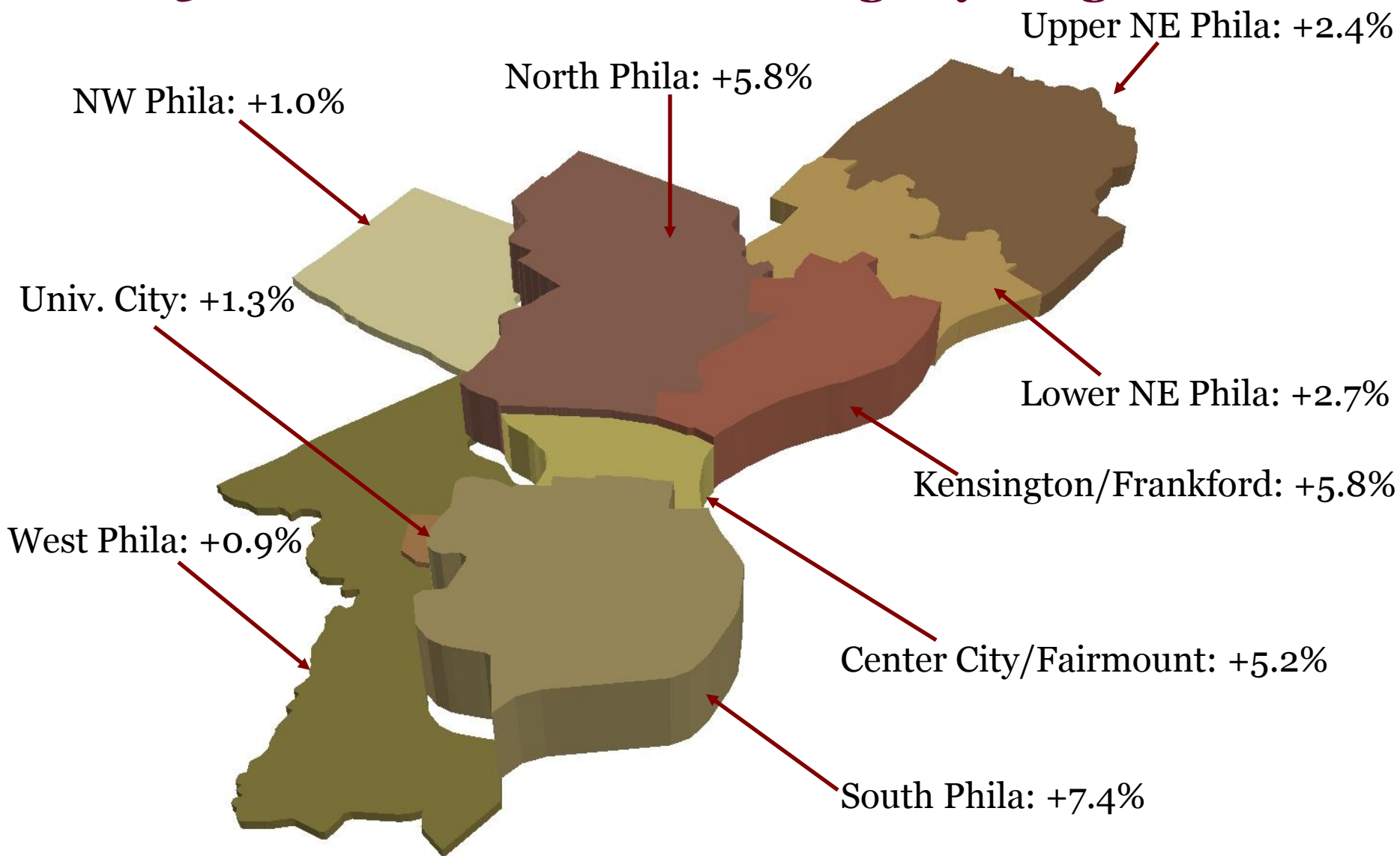
- >\$170
- \$120-170
- \$85-120
- \$45-85
- <\$45



Created by Kevin C. Gillen, Ph.D.
Kevin.C.Gillen@drexel.edu

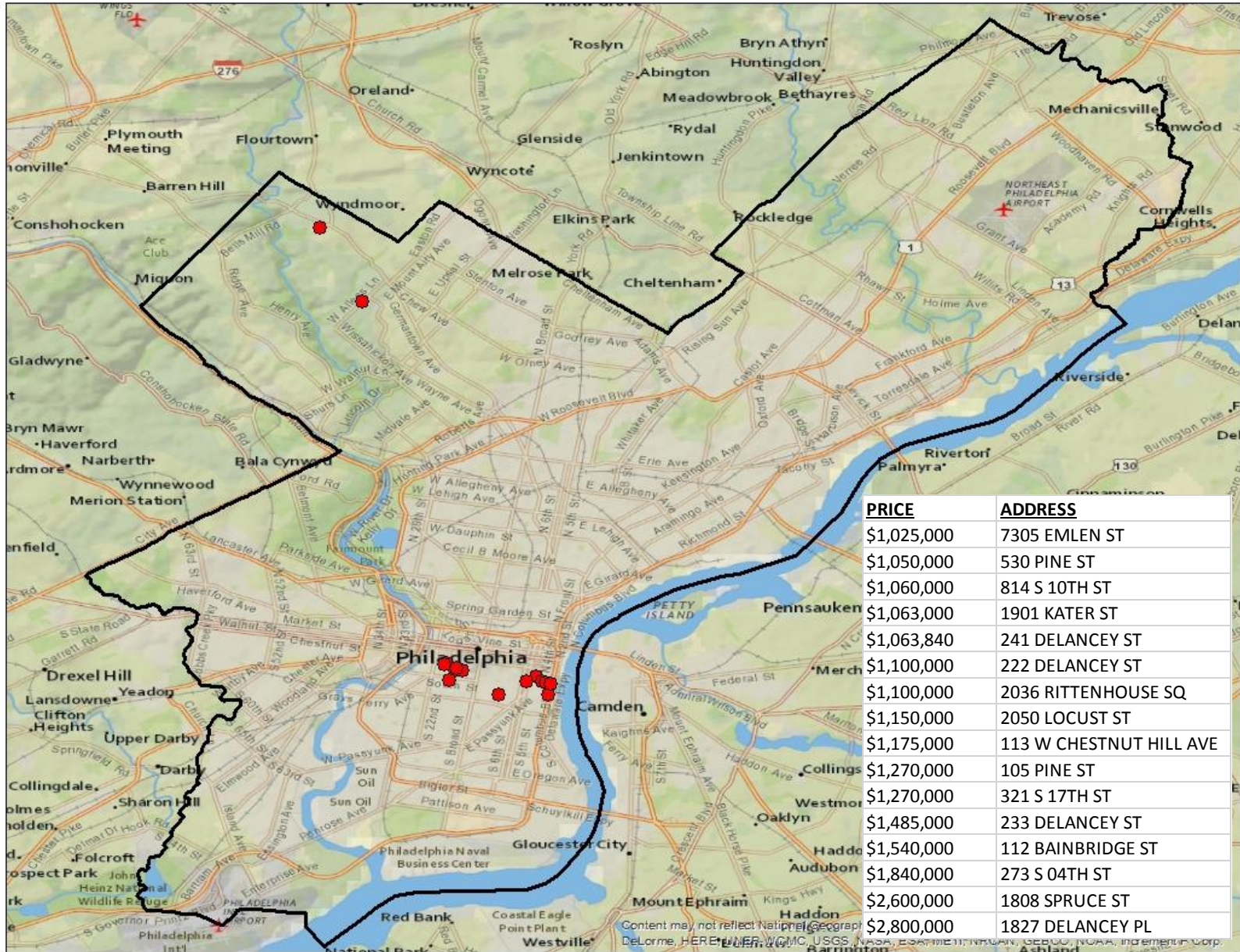
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2016 Q1 House Price Rate of Change by Neighborhood



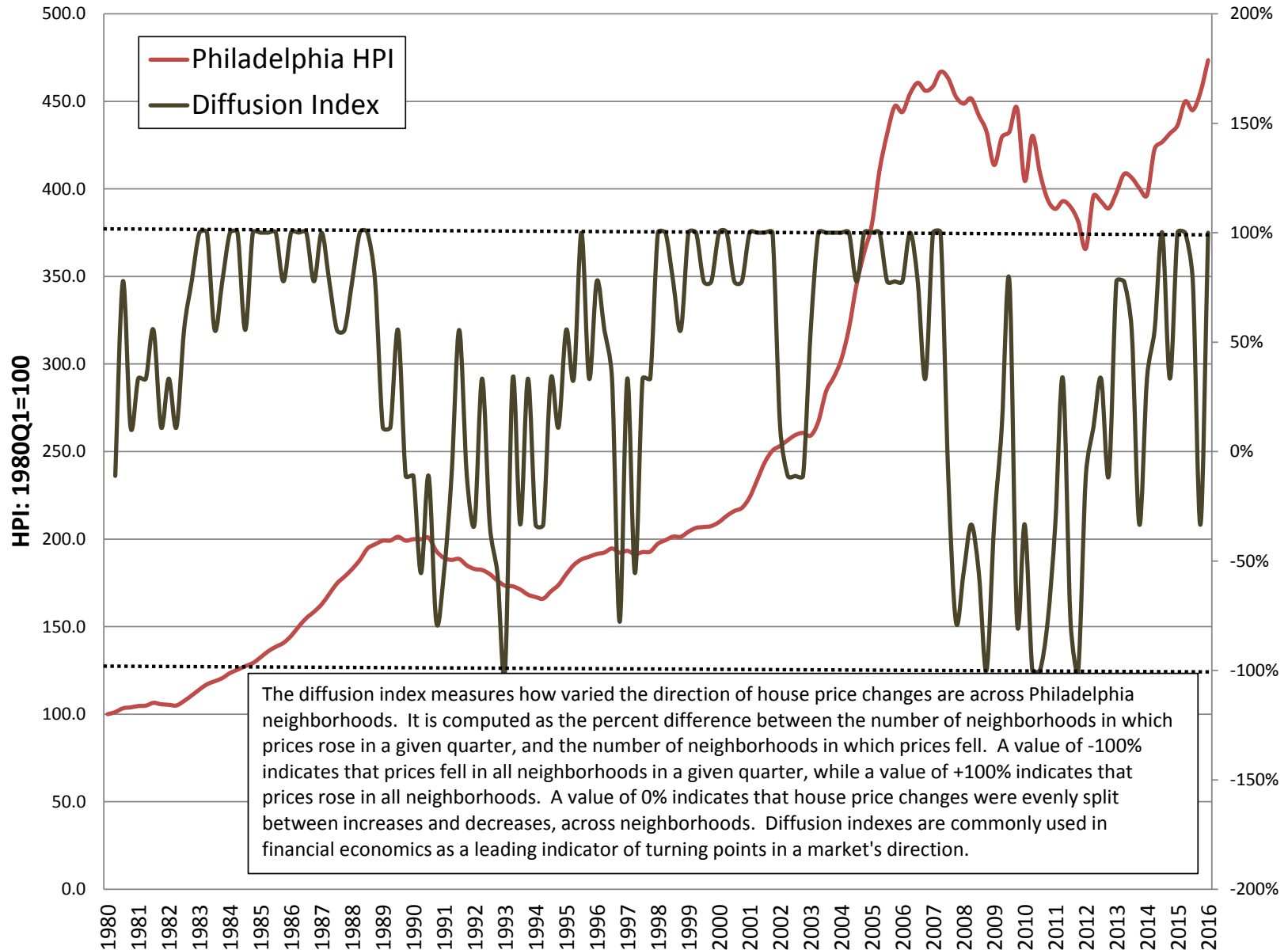
Note: Each neighborhood is extruded by its average change in house values during 2016 Q1 in order to reflect its growth (or depreciation) rate relative to other neighborhoods.

+ \$1 Million Dollar House Sales in 2016 Q1

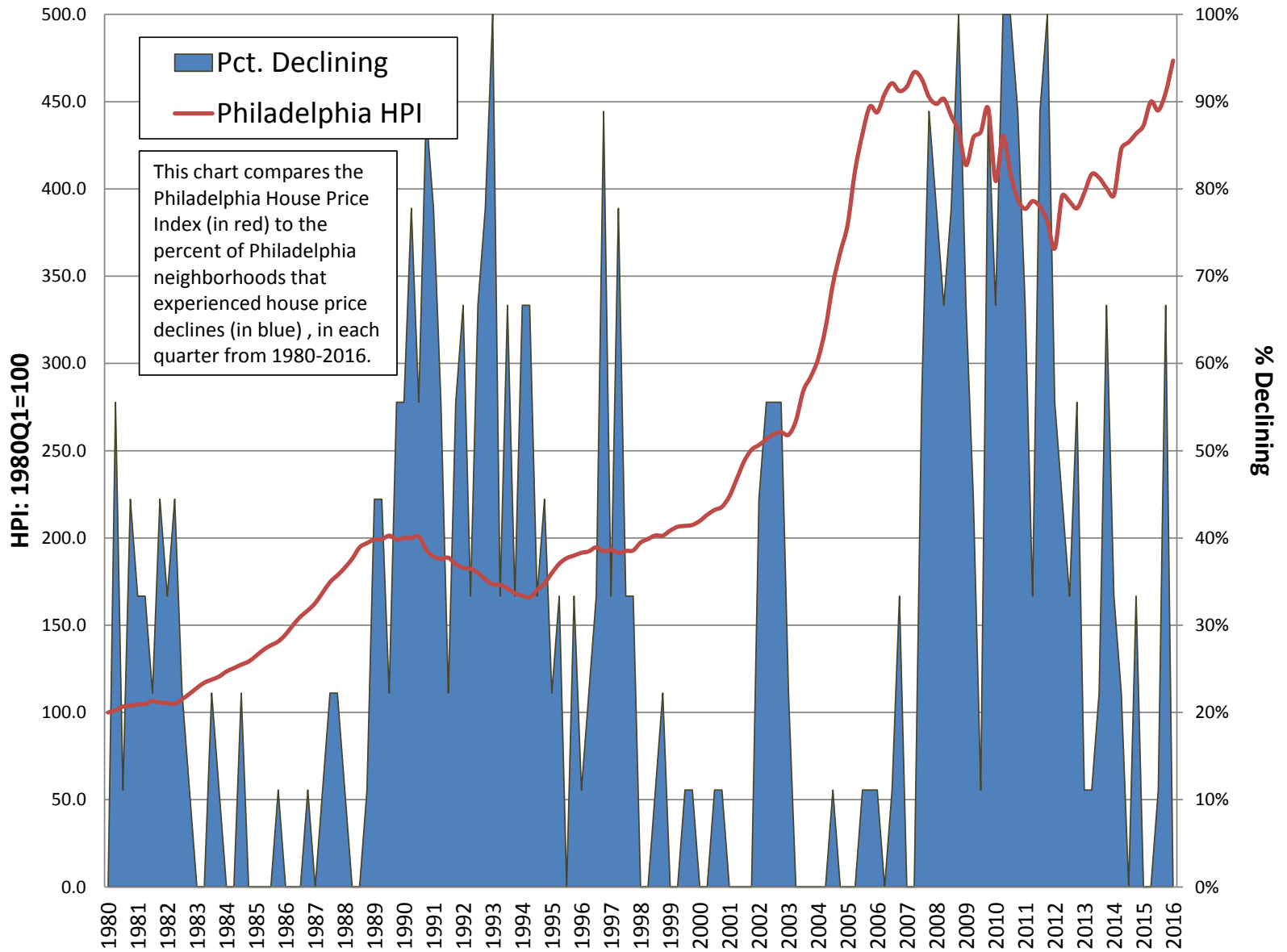


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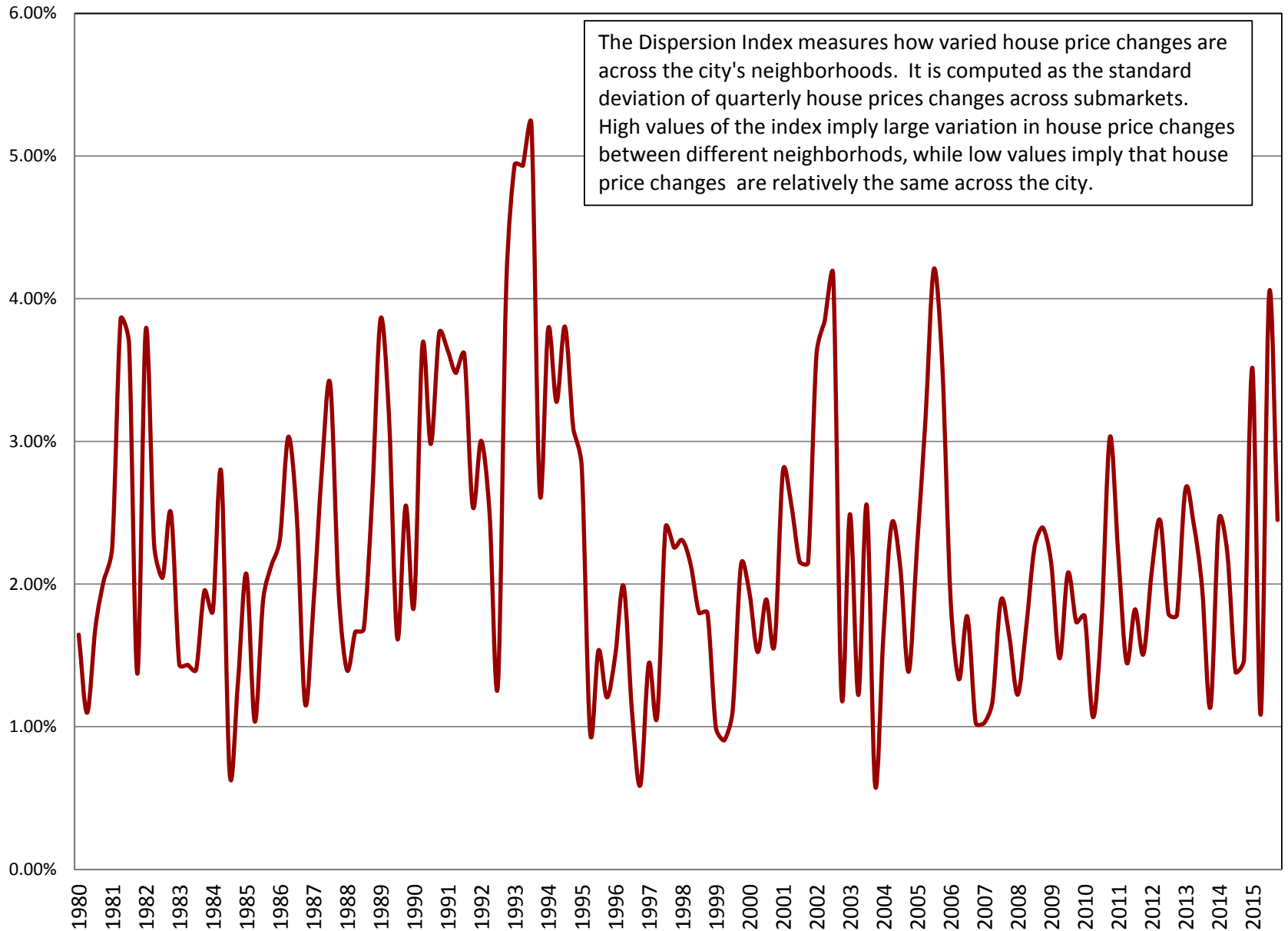
Philadelphia House Price Diffusion Index



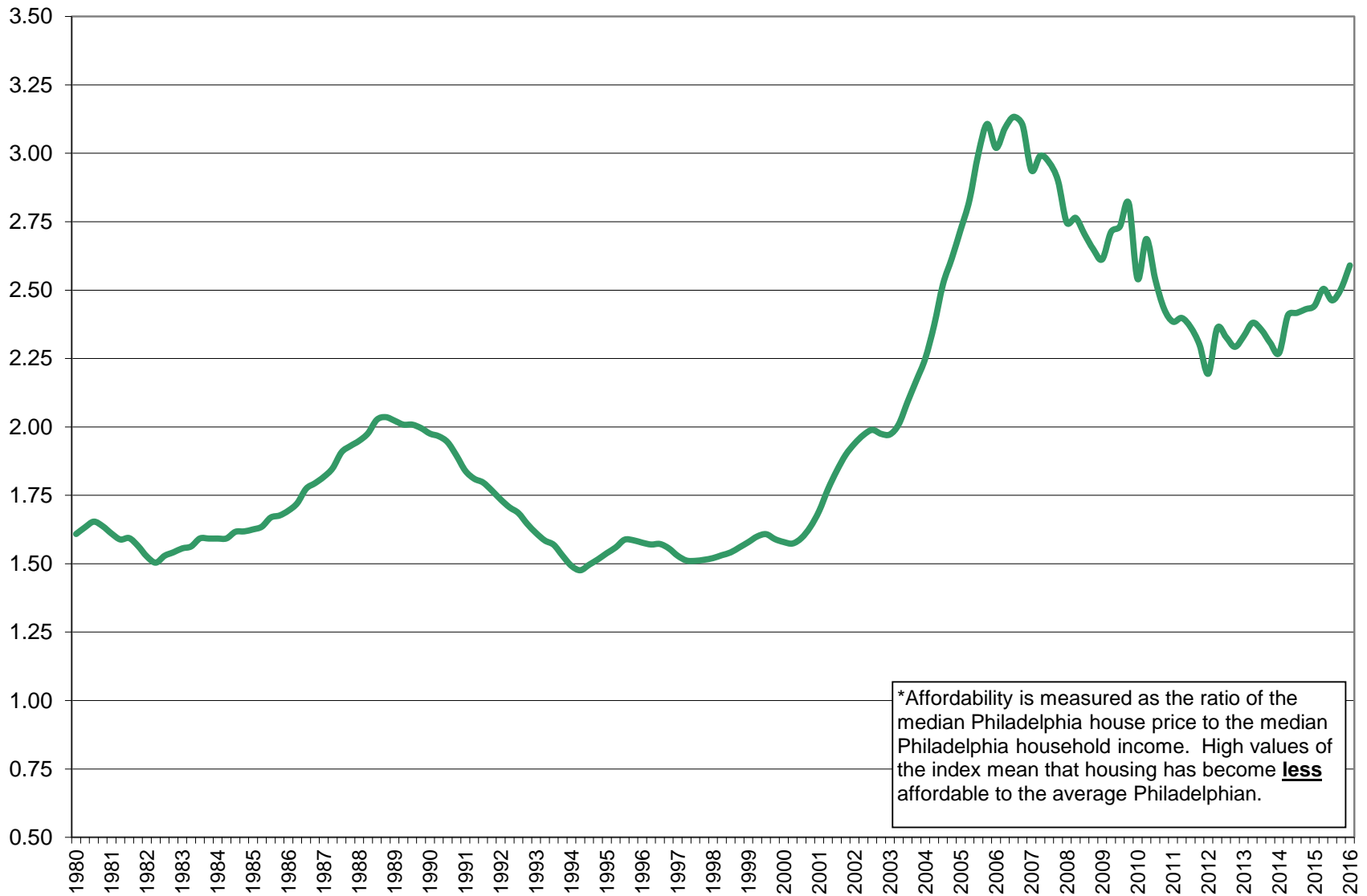
Philadelphia House Prices: Declines v. House Price Index



Dispersion Index of Philadelphia Housing

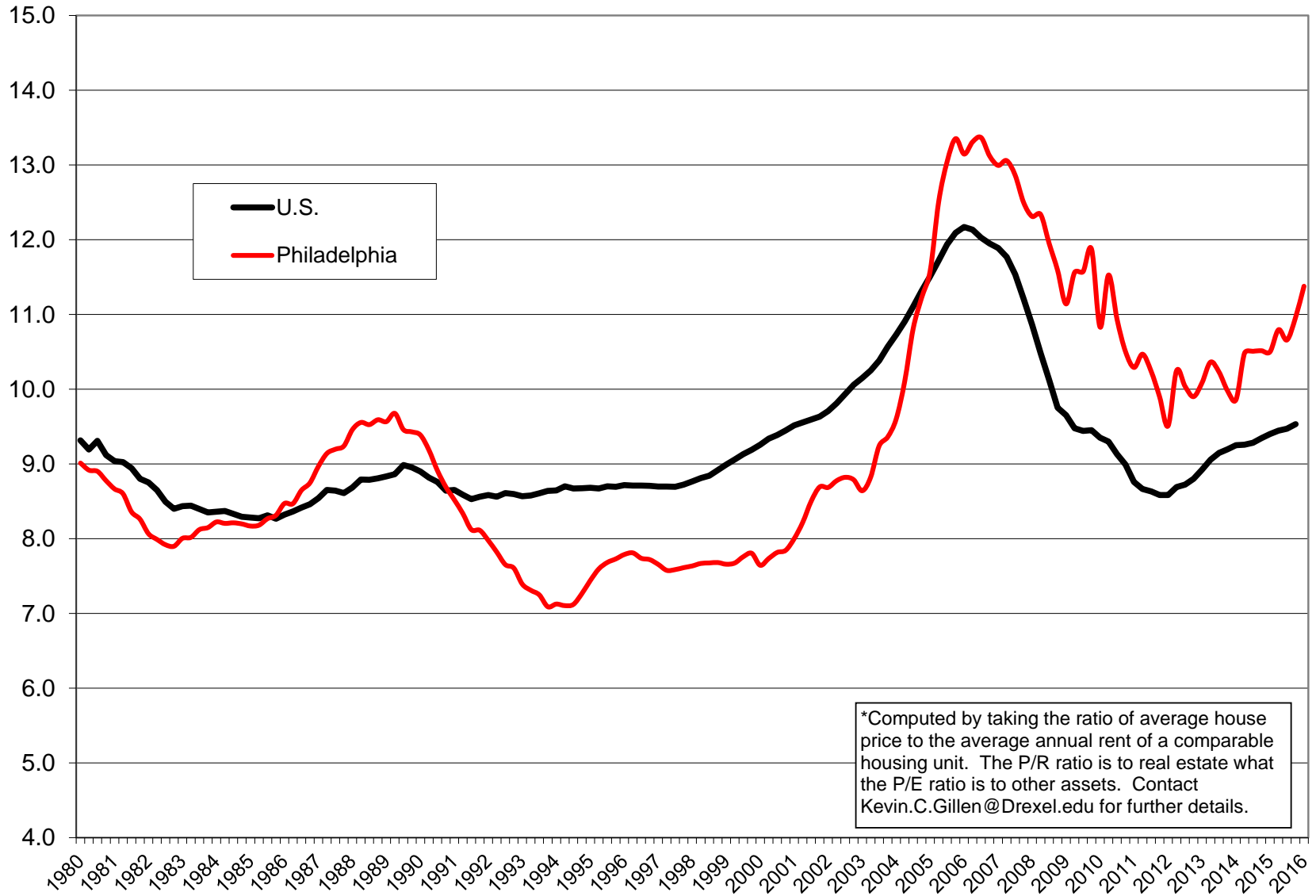


Philadelphia Housing Affordability* Index: 1980-2016



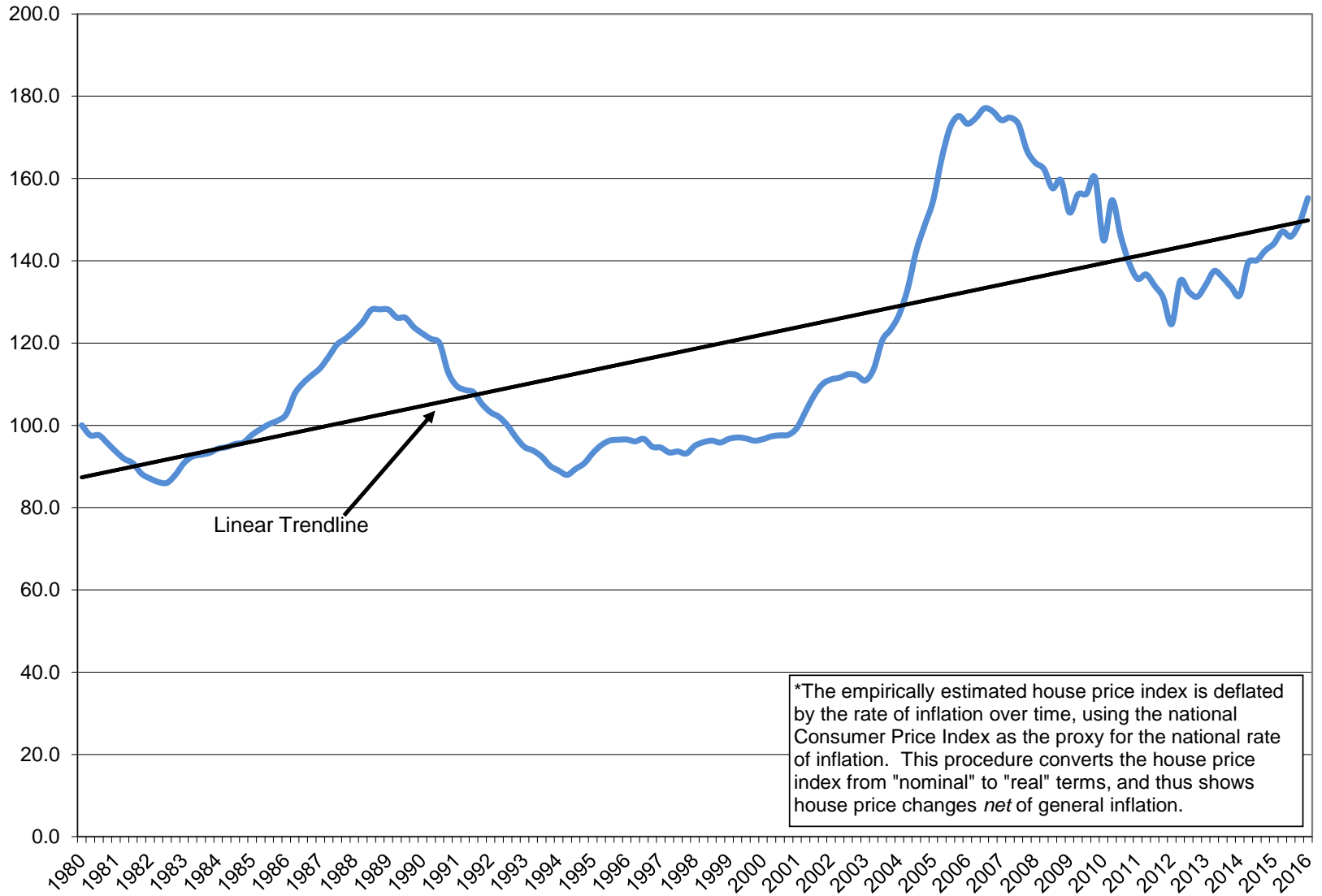
*Affordability is measured as the ratio of the median Philadelphia house price to the median Philadelphia household income. High values of the index mean that housing has become **less** affordable to the average Philadelphian.

Average House Price-to-Rent Ratios*: 1980-2016 Philadelphia v. U.S.



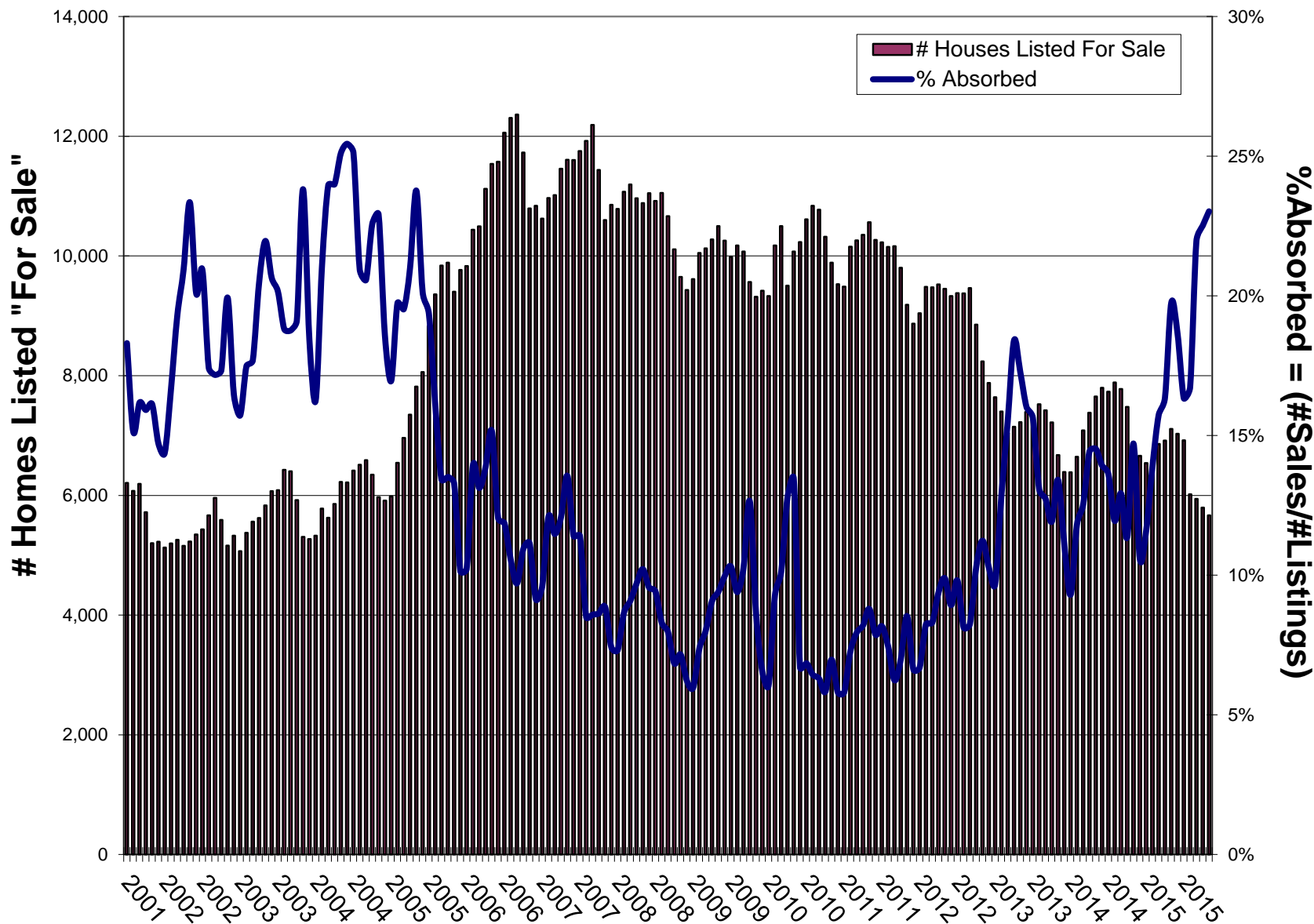
*Computed by taking the ratio of average house price to the average annual rent of a comparable housing unit. The P/R ratio is to real estate what the P/E ratio is to other assets. Contact Kevin.C.Gillen@Drexel.edu for further details.

Inflation-Adjusted* Philadelphia House Price Index 1980-2016 1980Q1=100



Source: US Bureau of Labor Statistics

Philadelphia Houses Listed For Sale: Inventory v. Absorption Rate



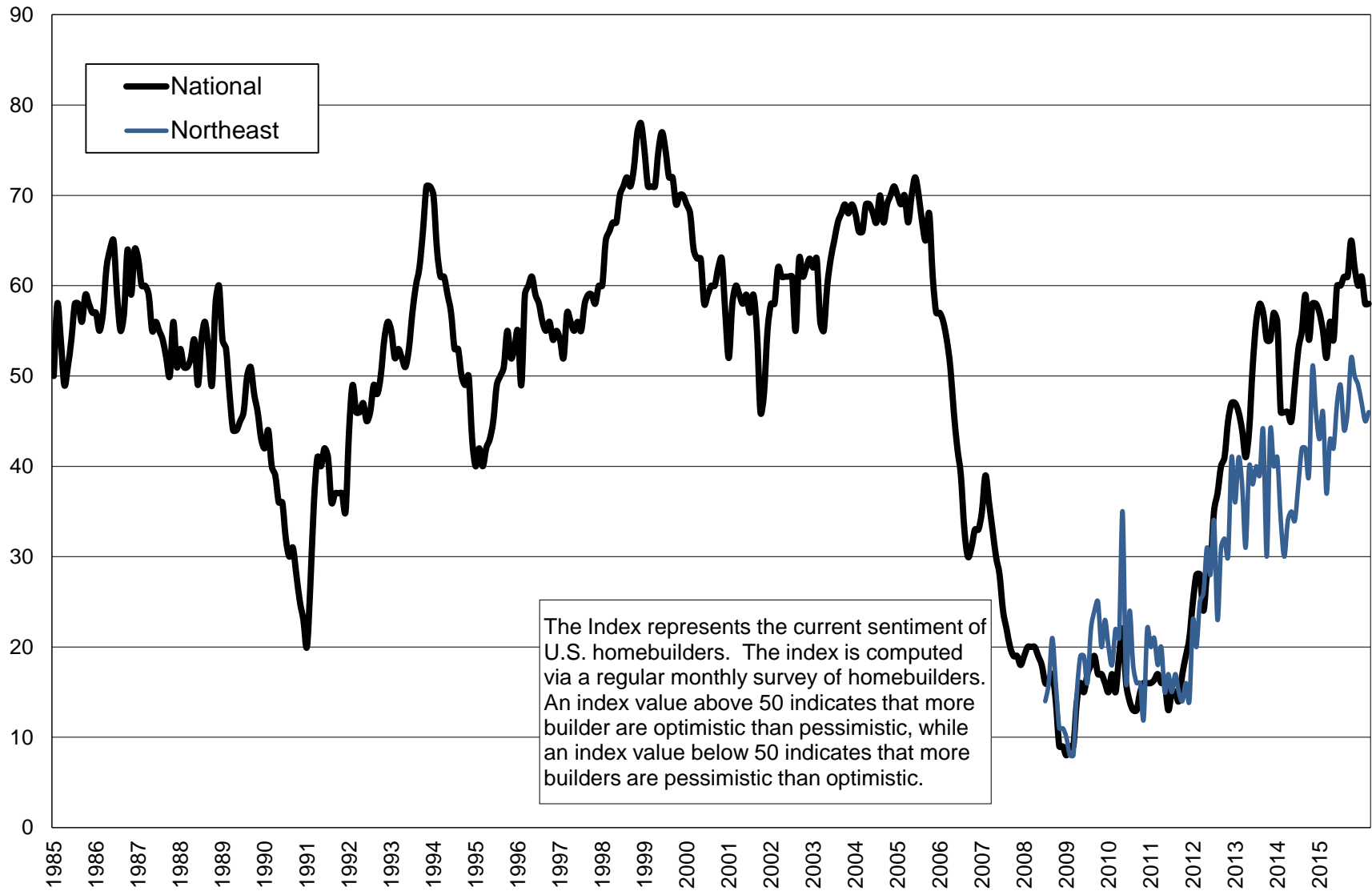
“%Absorbed” is defined as the percent of homes listed for sale in a given month that also sold in that same month.

Source: Trend MLS

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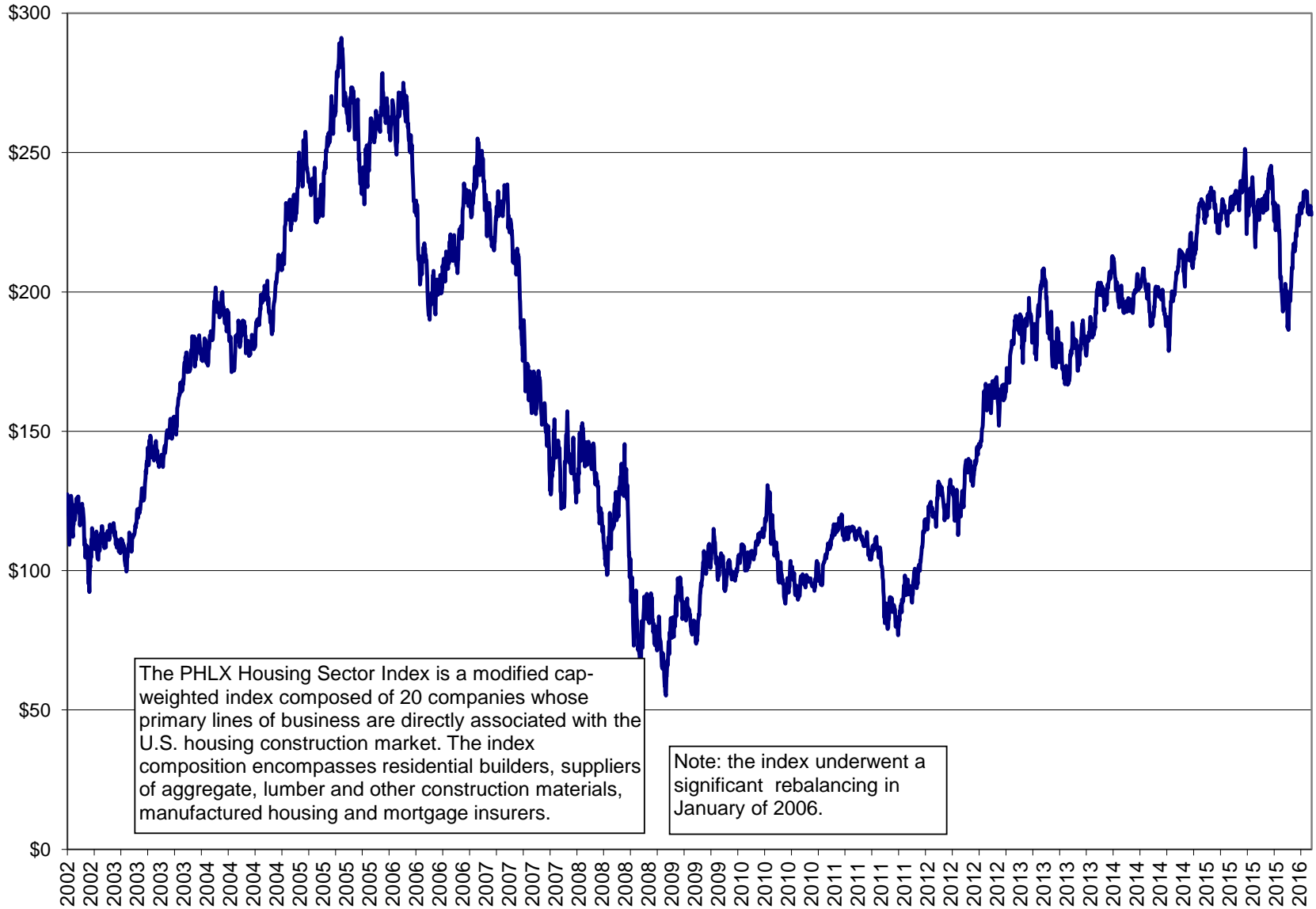


Index of Homebuilder Sentiment: 1985-2016 (Seasonally Adjusted)



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

Philadelphia Stock Exchange Housing Sector Index: 2002-2015

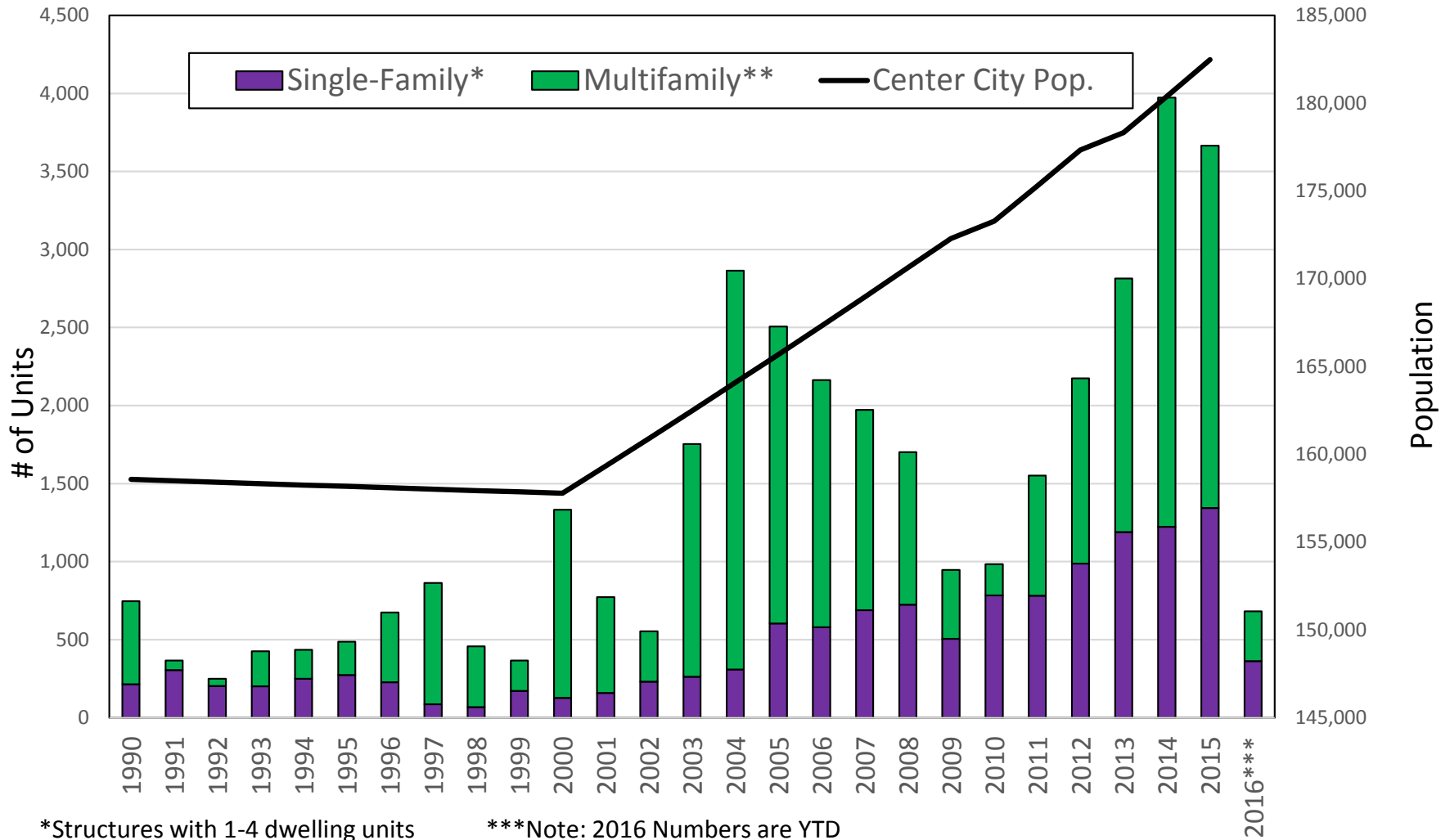


The PHLX Housing Sector Index is a modified cap-weighted index composed of 20 companies whose primary lines of business are directly associated with the U.S. housing construction market. The index composition encompasses residential builders, suppliers of aggregate, lumber and other construction materials,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



*Structures with 1-4 dwelling units

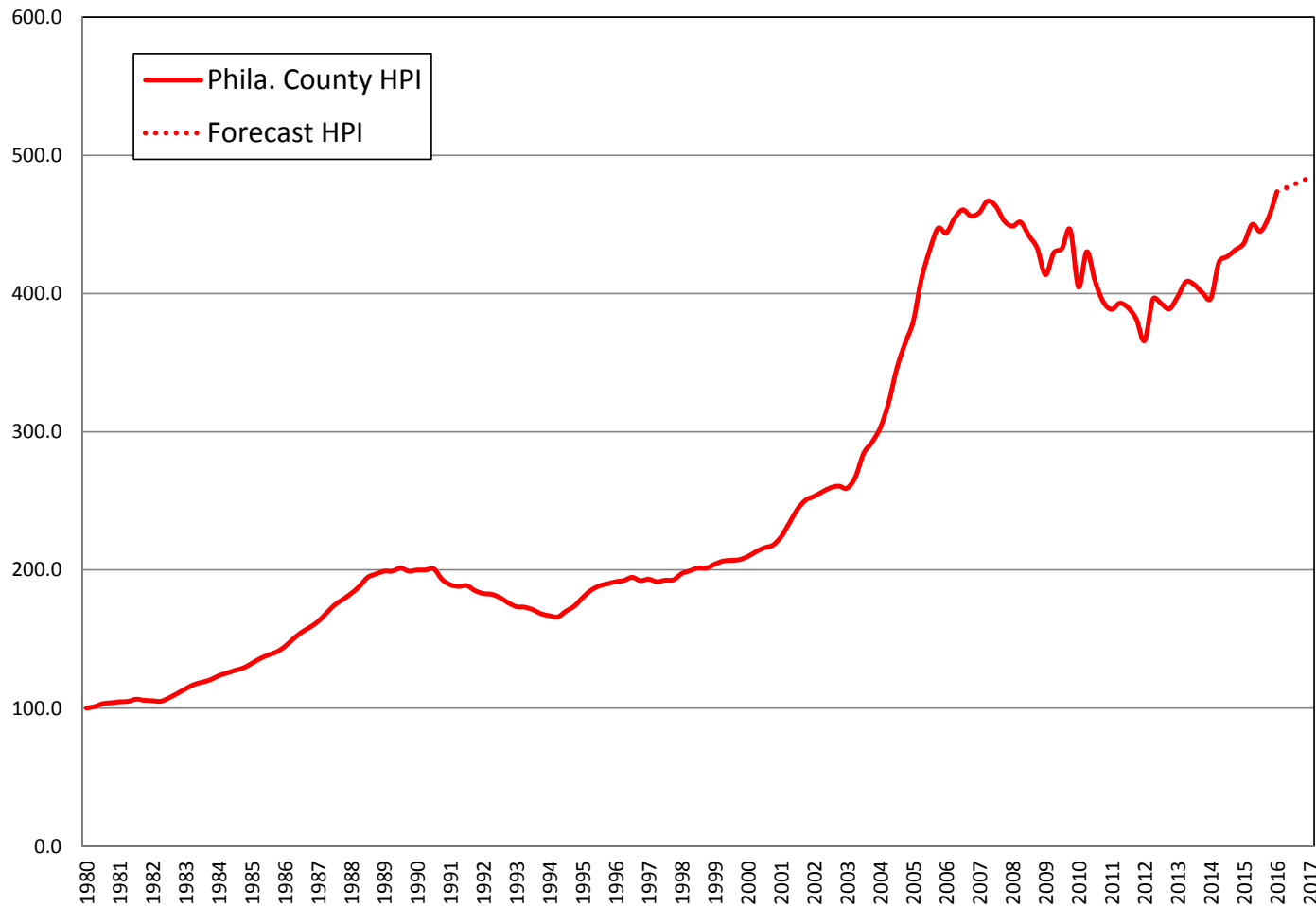
**Structures with >=5 dwelling units

***Note: 2016 Numbers are YTD numbers through March 2016.

Source: U.S. Census

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 2.2% over the next year, which is a slight downgrade from its previous annual forecast of 2.4% made three months ago.

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

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