PHILADELPHIA REGIONAL HOUSE PRICE INDICES

March 3, 2017

Disclaimers and Acknowledgments: The Lindy Institute for Urban Innovation at Drexel University provides this report free of charge to the public. The report is produced by Lindy Senior Research Fellow Kevin Gillen. The author thanks Berkshire Hathaway Home Services, 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 available for this report. © 2017, Drexel University, All Rights Reserved.
Philadelphia Regional House Price Indices 1980-2016
1980Q1=100

*Empirically estimated by Kevin C. Gillen, PhD

**Courtesy Federal Housing Finance Agency (FHFA)
House Price Appreciation 1987-2016: Philadelphia Region v. 10-City U.S. Composite

% Change
1998 to Peak:  +172%  +106%
From Peak:  -8%  -9%

*Source: Case-Shiller MacroMarkets LLC. 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 Regional House Price Indices 1980-2016
by Philadelphia Region and State: 1980Q1=100

*Empirically estimated by Kevin C. Gillen, Ph.D.
**Courtesy Federal Housing Finance Agency (FHFA)
Philadelphia Regional House Price Indices 1980-2016
City v. Suburb v. U.S. Average.: 1980Q1=100

Note: The suburban index includes all counties in the regional index, except for Philadelphia county.

*Empirically estimated by Kevin C. Gillen, PhD  **Courtesy Federal Housing Finance Agency (FHFA)
YoY Change in Average House Prices: 1980-2016
Philadelphia County v. Philadelphia Suburbs v. 10-City Composite

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

*Empirically estimated by Case-Shiller. The 10-City Composite reflects average annual house price changes in ten large US cities, including: Boston, Chicago, Denver, Las Vegas, Los Angeles, Miami, New York, San Diego, San Francisco and Washington DC. It does not include Philadelphia.
## Total House Price Appreciation Rates by Philadelphia Area Submarket and U.S.

<table>
<thead>
<tr>
<th>Period</th>
<th>Philadelphia Region*</th>
<th>Philadelphia County*</th>
<th>Philadelphia Suburbs*</th>
<th>U.S.A.**</th>
</tr>
</thead>
<tbody>
<tr>
<td>37-Year</td>
<td>146.5%</td>
<td>162.5%</td>
<td>140.2%</td>
<td>138.3%</td>
</tr>
<tr>
<td>10-Year</td>
<td>-8.0%</td>
<td>10.7%</td>
<td>-15.3%</td>
<td>6.4%</td>
</tr>
<tr>
<td>1-Year</td>
<td>6.0%</td>
<td>11.6%</td>
<td>3.6%</td>
<td>6.0%</td>
</tr>
<tr>
<td>1-Quarter</td>
<td>-0.8%</td>
<td>-0.8%</td>
<td>-0.8%</td>
<td>1.5%</td>
</tr>
</tbody>
</table>

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

**Source: Federal Housing Finance Agency (FHFA). FHFA numbers are through 2016 Q4.
Median House Price by County: 1980-2016

- New Castle
- Mercer
- Burlington
- Camden
- Gloucester
- Salem
- Bucks
- Chester
- Delaware
- Montgomery
- Philadelphia

© 2017 Kevin.C.Gillen@Drexel.edu
Median House Price by County, Smoothed*: 1980-2016

*The price data was smoothed by applying a 3-period moving average, in order to eliminate seasonal noise.
Philadelphia Region House Price Appreciation Rates by County

<table>
<thead>
<tr>
<th>Period</th>
<th>Philadelphia</th>
<th>Bucks</th>
<th>Chester</th>
<th>Delaware</th>
<th>Montgomery</th>
<th>New Castle</th>
<th>Mercer</th>
<th>Burlington</th>
<th>Camden</th>
<th>Gloucester</th>
<th>Salem</th>
</tr>
</thead>
<tbody>
<tr>
<td>37-Year</td>
<td>162.5%</td>
<td>158.2%</td>
<td>154.8%</td>
<td>134.0%</td>
<td>144.8%</td>
<td>132.6%</td>
<td>156.4%</td>
<td>120.7%</td>
<td>112.1%</td>
<td>133.5%</td>
<td>110.8%</td>
</tr>
<tr>
<td>10-Year</td>
<td>10.7%</td>
<td>-11.4%</td>
<td>-4.2%</td>
<td>-14.7%</td>
<td>-12.0%</td>
<td>-16.7%</td>
<td>-19.3%</td>
<td>-28.7%</td>
<td>-35.7%</td>
<td>-23.6%</td>
<td>-43.5%</td>
</tr>
<tr>
<td>1-Year</td>
<td>11.6%</td>
<td>3.5%</td>
<td>2.4%</td>
<td>8.1%</td>
<td>5.1%</td>
<td>2.7%</td>
<td>-1.1%</td>
<td>8.5%</td>
<td>3.7%</td>
<td>7.7%</td>
<td>0.6%</td>
</tr>
<tr>
<td>1-Quarter</td>
<td>-0.8%</td>
<td>1.3%</td>
<td>-0.4%</td>
<td>1.6%</td>
<td>0.6%</td>
<td>-0.3%</td>
<td>-2.4%</td>
<td>-1.3%</td>
<td>-4.3%</td>
<td>-3.6%</td>
<td>8.3%</td>
</tr>
</tbody>
</table>

All county-level indices and appreciation rates estimated by Kevin C. Gillen, Ph.D.
2016 Q4 House Price Rate of Change by County

- Montgomery: +0.6%
- Bucks: +1.3%
- Philadelphia: -0.8%
- Mercer: -2.4%
- Burlington: -1.3%
- Camden: -4.3%
- Gloucester: -3.6%
- Salem: +8.3%
- Delaware: +1.6%
- Chester: -0.4%
- New Castle: -0.3%

Note: Each county is extruded by its average change in house values during 2016 Q4 in order to reflect its growth (or depreciation) rate relative to other counties.

*Empirically estimated by Kevin C. Gillen, Ph.D.
Median House Price by County: 1980-2016

- New Castle
- Mercer
- Burlington
- Camden
- Gloucester
- Salem
- Bucks
- Chester
- Delaware
- Montgomery
- Philadelphia

© 2017 Kevin.C.Gillen@Drexel.edu
Median House Price by County, Smoothed*: 1980-2016

*The price data was smoothed by applying a 3-period moving average, in order to eliminate seasonal noise.
Number of Regional House Sales per Quarter: 2005-2016

Q1
Q2
Q3
Q4
Qtly. Average

© 2017 Kevin.C.Gillen@Drexel.edu
Number of Regional House Sales 2005-2016
with Price>=$1m

Q1
Q2
Q3
Q4

Qly. Average
Philadelphia Region House Sales in 2016 Q4

$Price/SqFt
- >$170
- $140-170
- $110-140
- $75-110
- <$75
Philadelphia County House Sales in 2016 Q4

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.
Bucks County House Sales in 2016 Q4

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

\$\text{Price/SqFt}
- >\$170
- $140-170
- $110-140
- $75-110
- <\$75
Montgomery County House Sales in 2016 Q4

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
- $140-170
- $110-140
- $75-110
- <$75

© 2017 Kevin.C.Gillen@Drexel.edu
Delaware County House Sales in 2016 Q4

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.
New Castle County House Sales in 2016 Q4

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
- $140-170
- $110-140
- $75-110
- <$75
Mercer County House Sales in 2016 Q4

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
- $140-170
- $110-140
- $75-110
- <$75

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

© 2017 Kevin.C.Gillen@Drexel.edu
Camden County House Sales in 2016 Q4

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.
Gloucester County House Sales in 2016 Q4

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
- $140-170
- $110-140
- $75-110
- <$75
Salem County House Sales in 2016 Q4

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
- $140-170
- $110-140
- $75-110
- <$75

© 2017 Kevin.C.Gillen@Drexel.edu
Philadelphia Region Houses Listed For Sale:
Inventory v. Sales Rate

Source: TrendMLS

# Homes Listed "For Sale"

% Sold = (#Sales/#Listings)
Philadelphia Region Avg. DOM*: Houses v. Condos

DOM is the average "days-on-market": the average number of days it takes for a listed home to sell. In a market that is evenly balanced between buyers and sellers, 40-60 days is considered the typical norm.
1 out of every 860 homes in Philadelphia is currently in the process of foreclosure, which is up from 1 out of every 877 homes in the previous quarter.

In the entire Commonwealth, 1 out of every 1,418 homes in Pennsylvania is in the process of foreclosure, which is down from 1 out of every 1,243 homes in the previous quarter.

Source: http://www.realtytrac.com/statsandtrends/foreclosuretrends/pa
South Jersey’s foreclosure rate continues to remain the highest in the region, and the statewide foreclosure rate trended up in Q3.

Of the top five counties in NJ with the highest foreclosure rate, four of them are located in South Jersey, with an average foreclosure rate of 1 in every 419 homes. This is well above the statewide average of 1 in every 654 homes.

However, the foreclosure rate for South Jersey did trend downward this quarter, from its previous level of 1 in every 339 homes in the previous quarter.

Source: http://www.realtytrac.com/statsandtrends/foreclosuretrends/nj
© 2017 Kevin.C.Gillen@Drexel.edu
Delaware Foreclosure Rates

This quarter, Delaware saw significant improvements in its foreclosure rates:

- 1 out of every 767 homes in New Castle County, down from 1 out of every 551 homes in the previous quarter.
- 1 out of every 599 homes in Kent County, down from 1 out of every 375 homes in the previous quarter.
- 1 out every 994 homes in Sussex County, down from 1 out of every 828 homes in the previous quarter.
- Statewide, the foreclosure rate declined from 1 in every 566 homes to 1 in every 786 homes.

Source: http://www.realtytrac.com/statsandtrends/foreclosuretrends/de
© 2017 Kevin.C.Gillen@Drexel.edu
Delaware Foreclosure Rates

This quarter, Delaware continued to see general improvement in its foreclosure rates:

- 1 out of every 804 homes in New Castle County, down from 1 out of every 767 homes in the previous quarter.
- 1 out of every 523 homes in Kent County, up from 1 out of every 599 homes in the previous quarter.
- 1 out every 1,230 homes in Sussex County, down from 1 out of every 994 homes in the previous quarter.
- Statewide, the foreclosure rate declined from 1 in every 786 homes to 1 in every 819 homes.

Source: http://www.realtytrac.com/statsandtrends/foreclosuretrends/de
© 2017 Kevin.C.Gillen@Drexel.edu
Housing's Road to Recovery: %Lost v. %Recovered by Metro Area

The length of each bar below the horizontal axis represents the total % decline in house prices in each major U.S. metro area from peak to trough. The total rebound (to date) in house prices is represented by the blue component of each bar, with the remainder represented by the red component. A red bar that is above the horizontal axis indicates a metro area which has fully erased its losses and whose house price levels are now above their peak during the bubble. For example, Philadelphia County's house prices fell by an average of 22% from peak to trough. To date, they have rebounded by 31% and are now 9% higher than their previous peak. By contrast, Philadelphia’s suburbs fell by a similar amount, yet have only recovered 8% and thus need to rise another 16% to completely erase their losses.

*Empirically estimated by Kevin C. Gillen, Ph.D.  All other metros courtesy of S&P Case-Shiller.

© 2017 Kevin.C.Gilen@Drexel.edu