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 2014Q4 only.

"MSA"=Metropolitan Statistical Area, which is the entire 9-county region.
# Total House Price Appreciation Rates by Geographic Market

<table>
<thead>
<tr>
<th>Period</th>
<th>Philadelphia County*</th>
<th>Philadelphia MSA**</th>
<th>U.S.A.**</th>
</tr>
</thead>
<tbody>
<tr>
<td>36-Year</td>
<td>137.8%</td>
<td>169.1%</td>
<td>127.6%</td>
</tr>
<tr>
<td>10-Year</td>
<td>4.5%</td>
<td>19.3%</td>
<td>8.4%</td>
</tr>
<tr>
<td>1-Year</td>
<td>4.1%</td>
<td>2.0%</td>
<td>4.8%</td>
</tr>
<tr>
<td>1-Quarter</td>
<td>-0.3%</td>
<td>-1.0%</td>
<td>1.3%</td>
</tr>
</tbody>
</table>

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

**Source: U.S. Federal Housing Finance Agency (FHFA). These numbers are through 2014Q4 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.
1980Q1=100

1980Q1=100

CtrCity/Fairmount
Kensington/Frankford
Lower NE Phila.
North Phila.
NW Phila.
South Phila.
Univ. City
Upper NE Phila.
West Phila.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>36-year</td>
<td>162.0%</td>
<td>150.3%</td>
<td>125.3%</td>
<td>150.9%</td>
<td>163.8%</td>
<td>193.7%</td>
<td>186.1%</td>
<td>161.9%</td>
<td>157.7%</td>
</tr>
<tr>
<td>10-year</td>
<td>7.8%</td>
<td>15.5%</td>
<td>-1.3%</td>
<td>19.2%</td>
<td>0.3%</td>
<td>44.0%</td>
<td>13.6%</td>
<td>9.0%</td>
<td>31.5%</td>
</tr>
<tr>
<td>1-Year</td>
<td>-1.8%</td>
<td>0.0%</td>
<td>1.4%</td>
<td>0.6%</td>
<td>-3.6%</td>
<td>6.3%</td>
<td>10.2%</td>
<td>1.1%</td>
<td>8.9%</td>
</tr>
<tr>
<td>1-Quarter</td>
<td>-1.4%</td>
<td>-1.7%</td>
<td>-0.8%</td>
<td>-4.1%</td>
<td>-2.6%</td>
<td>1.0%</td>
<td>6.9%</td>
<td>0.5%</td>
<td>0.4%</td>
</tr>
</tbody>
</table>

This table gives the total % change in house prices by neighborhood, through 2015 Q1, from different starting points in time.
Philadelphia Submarket Boundaries

Submarkets/Neighborhoods:
- Center City/Fairmount
- Kensington-Frankford
- Lower NE Phila.
- NW Phila.
- North Phila.
- South Phila.
- Univ. City
- Upper NE Phila.
- West Phila.
Median Philadelphia House Price v. Indexed Philadelphia House Price
1980-2015

* Empirically estimated by Kevin C. Gillen, PhD
© 2015 Drexel University | Kevin.C.Gillen@Drexel.edu

Median Price vs Indexed Price

Q1
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 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.
Center City House Sales in 2015 Q1

$Price/SqFt

- >$155
- $105-155
- $75-105
- $40-75
- <$40

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

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.
South Philadelphia House Sales in 2015 Q1

$Price/SqFt
- >$155
- $105-155
- $75-105
- $40-75
- <$40

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

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.
Kensington/Frankford House Sales in 2015 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.
West Philadelphia House Sales in 2015 Q1

$Price/SqFt
- >$155
- $105-155
- $75-105
- $40-75
- <$40

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

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.
North Philadelphia House Sales in 2015 Q1

$Price/SqFt
- >$155
- $105-155
- $75-105
- $40-75
- <$40

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.
Northwest Philadelphia House Sales in 2015 Q1

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

$Price/SqFt

- >$155
- $105-155
- $75-105
- $40-75
- <$40

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 Q1

$Price/SqFt
- $155
- $105-155
- $75-105
- $40-75
- <$40

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.
2015 Q1 House Price Rate of Change by Neighborhood

Upper NE Phila: +0.5%
Lower NE Phila: -0.8%
North Phila: -4.1%
Kensington/Frankford: -1.7%
Center City/Fairmount: -1.4%
South Phila: +1.0%
Univ. City: +6.9%
West Phila: +0.4%
NW Phila: -2.6%

Note: Each neighborhood is extruded by its average change in house values during 2015 Q1 in order to reflect its growth (or depreciation) rate relative to other neighborhoods.
+$1 Million Dollar House Sales in 2015 Q1

<table>
<thead>
<tr>
<th>Price</th>
<th>Price/SqFt</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1,075,000</td>
<td>$347</td>
<td>1424 BAINBRIDGE ST</td>
</tr>
<tr>
<td>$1,120,000</td>
<td>$465</td>
<td>322 S QUINCE ST</td>
</tr>
<tr>
<td>$1,159,500</td>
<td>$403</td>
<td>216 GASKILL ST</td>
</tr>
<tr>
<td>$1,199,000</td>
<td>$361</td>
<td>614 S HANCOCK ST</td>
</tr>
<tr>
<td>$1,200,000</td>
<td>$1,000</td>
<td>2405 PINE ST</td>
</tr>
<tr>
<td>$1,360,000</td>
<td>$282</td>
<td>744 S 10TH ST</td>
</tr>
<tr>
<td>$1,435,000</td>
<td>$297</td>
<td>1710 PINE ST</td>
</tr>
<tr>
<td>$1,685,000</td>
<td>$487</td>
<td>415 PINE ST</td>
</tr>
<tr>
<td>$1,695,000</td>
<td>$646</td>
<td>248 S 03RD ST</td>
</tr>
<tr>
<td>$1,705,000</td>
<td>$410</td>
<td>225 GASKILL ST</td>
</tr>
<tr>
<td>$1,727,000</td>
<td>$432</td>
<td>400 SPRUCE ST</td>
</tr>
<tr>
<td>$1,925,000</td>
<td>$527</td>
<td>2502 DELANCEY PL</td>
</tr>
</tbody>
</table>
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.
This chart compares the Philadelphia House Price Index (in red) to the percent of Philadelphia neighborhoods that experienced house price declines (in blue), in each quarter from 1980-2014.
The Dispersion Index measures how varied house price changes are across the city's neighborhoods. It is computed as the standard deviation of quarterly house price changes across submarkets. High values of the index imply large variation in house price changes between different neighborhoods, while low values imply that house price changes are relatively the same across the city.

*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 gillenk@upenn.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 gillenk@upenn.edu for further details.
1980Q1=100

*The empirically estimated house price index is deflated by the rate of inflation over time, using the national Consumer Price Index as the proxy for the national rate of inflation. This procedure converts the house price index from "nominal" to "real" terms, and thus shows house price changes net of general inflation.

“%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

© 2015 Drexel University | Kevin.C.Gillen@Drexel.edu
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
The Index represents the current sentiment of U.S. homebuilders. The index is computed via a regular monthly survey of homebuilders. An index value above 50 indicates that more builders are optimistic than pessimistic, while an index value below 50 indicates that more builders are pessimistic than optimistic.
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.
Zillow currently rates the Philadelphia housing market as “cold”, which is a downgrade from its previous quarter’s rating of “cool”. However, Zillow is also forecasting Philadelphia house prices to rise an average of 2.3% over the next year, which is an upgrade of its previous quarter’s annual forecast of 0.5%.

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