
The Economics of Homebuilding in Philadelphia

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Presentation to BIA “Going Mod” Event

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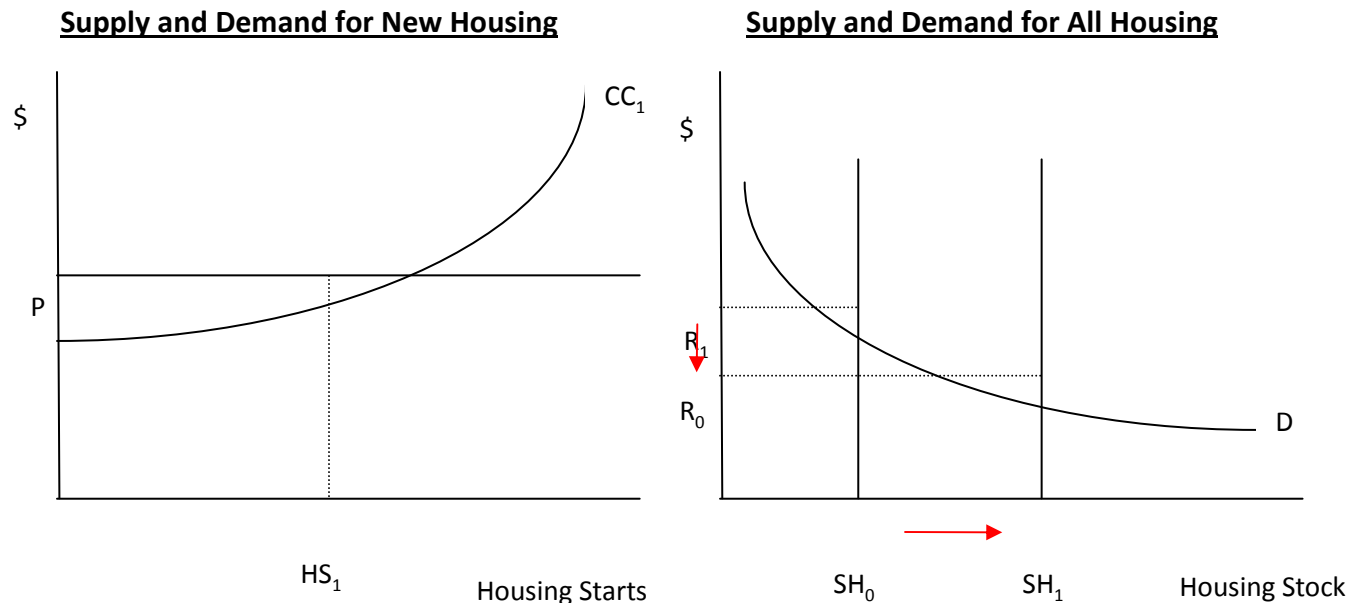
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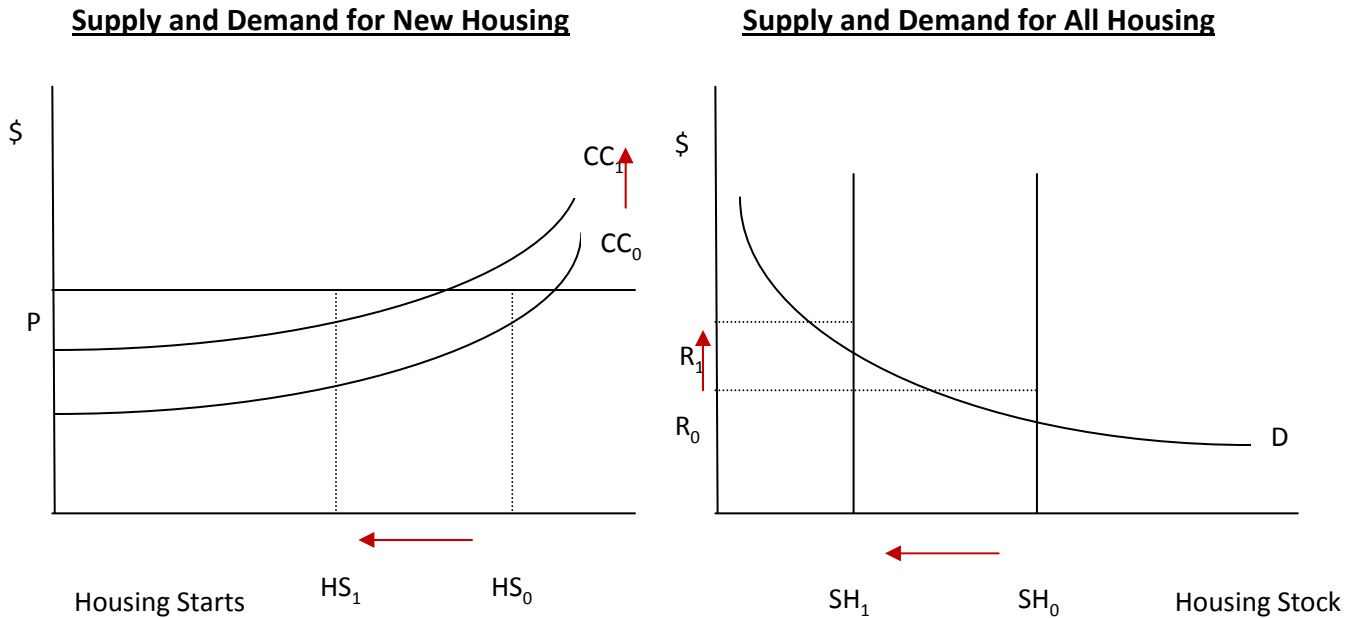
Homebuilding Economics 101:



Conditions:

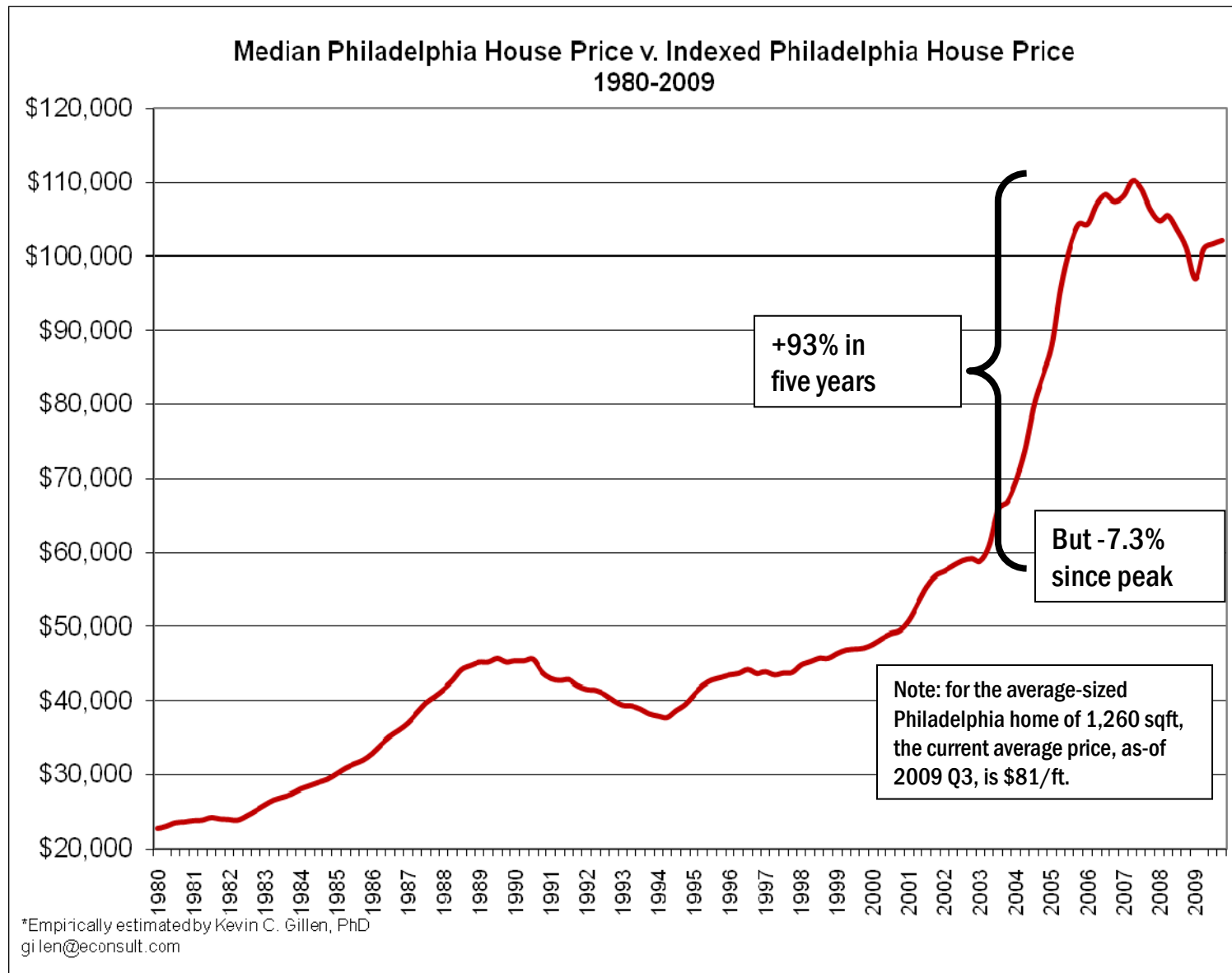
- Price of housing is fixed in the short run: determined by household incomes and ability/willingness-to-pay
- Construction costs are also fixed in the short run: determined by local land availability, materials prices are set in national markets, regulations and taxes
- Construction costs increase as you build more housing: materials and land become more scarce (and hence more expensive), have to build at higher densities (is more expensive)
- Decision Rule: Developers will build homes as long as they can sell/rent them for more than it costs to build them.
 - Mathematical Condition: Developers build until Prices equal Construction Costs ($P=CC$)
 - This determines the number of housing starts, HS
 - Housing supply increases by HS
 - Since housing supply has increased, cost-of-occupancy (rents, mtg. payments) falls
 - General outcomes: housing affordability has increased, average housing quality has increased, tax base is expanded:
GOOD!

Homebuilding Economics 101: What happens if construction costs increase?

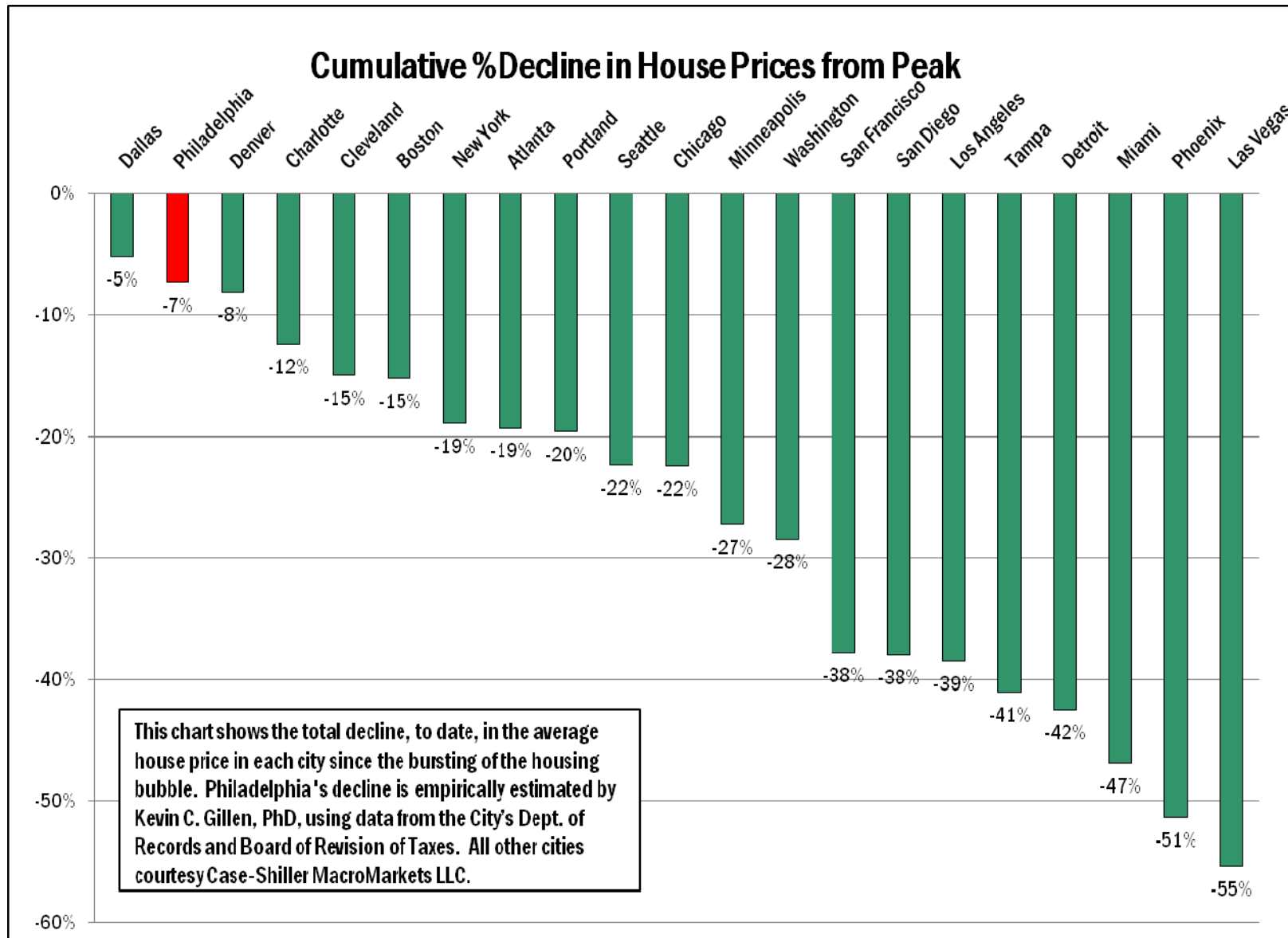


- The general level of construction costs increase from CC_0 to CC_1
- Since it's more expensive to build homes, developers build fewer homes
- Housing starts fall from HS_0 to HS_1
- Over time, the flow of new housing is insufficient to replace existing housing lost due to depreciation
- In the long-run, total stock of housing declines from SH_0 to SH_1
- Since total supply of housing has contracted, cost-of-occupancy is increased from R_0 to R_1
- General outcomes: housing has become less affordable, average housing quality has declined, tax base has contracted and this will disproportionately be borne by low-income households: ***BAD!***
- Bottom line: construction costs matter!!

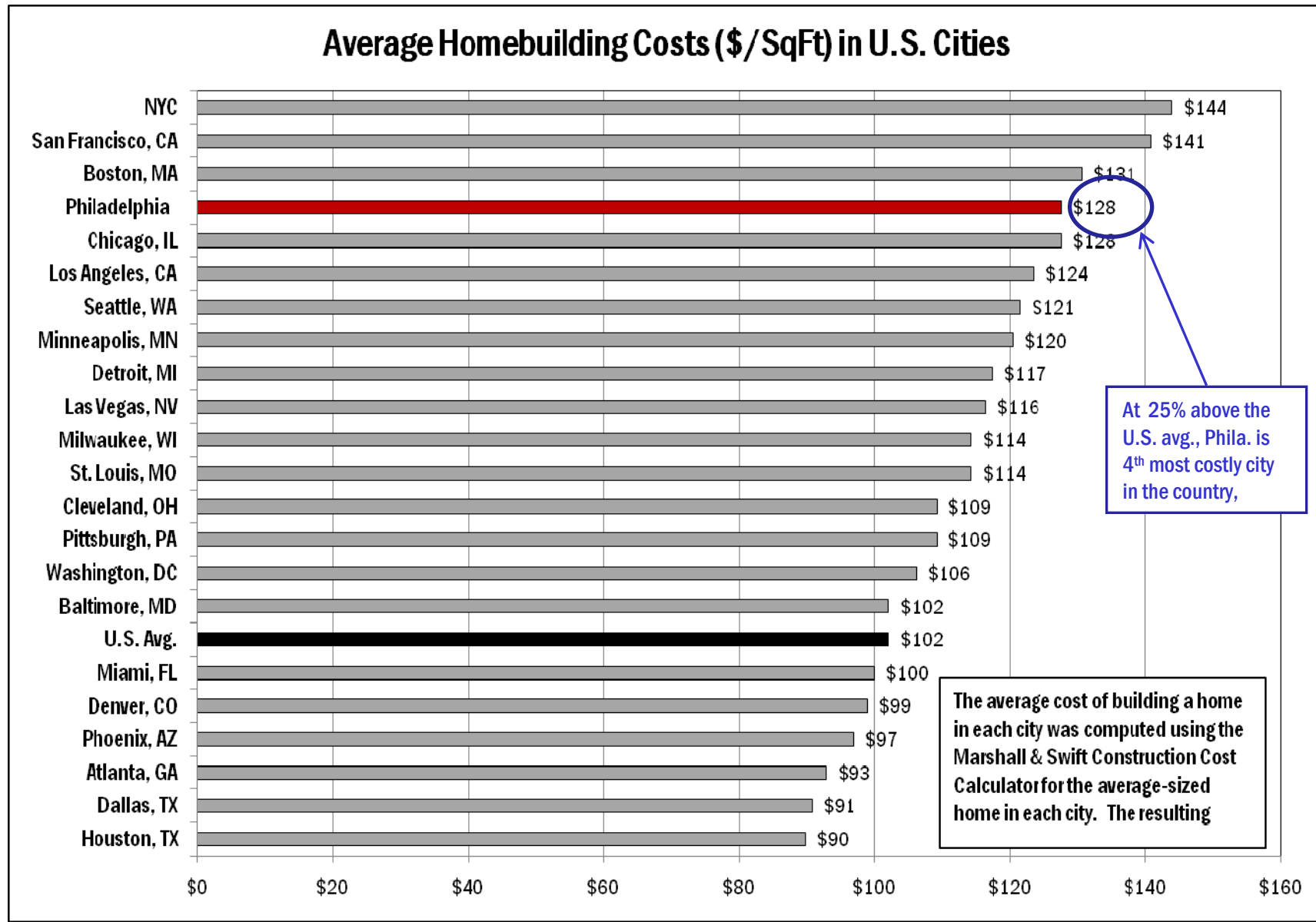
- After an unprecedented increase in house prices, Philadelphia's housing values have only fallen modestly:



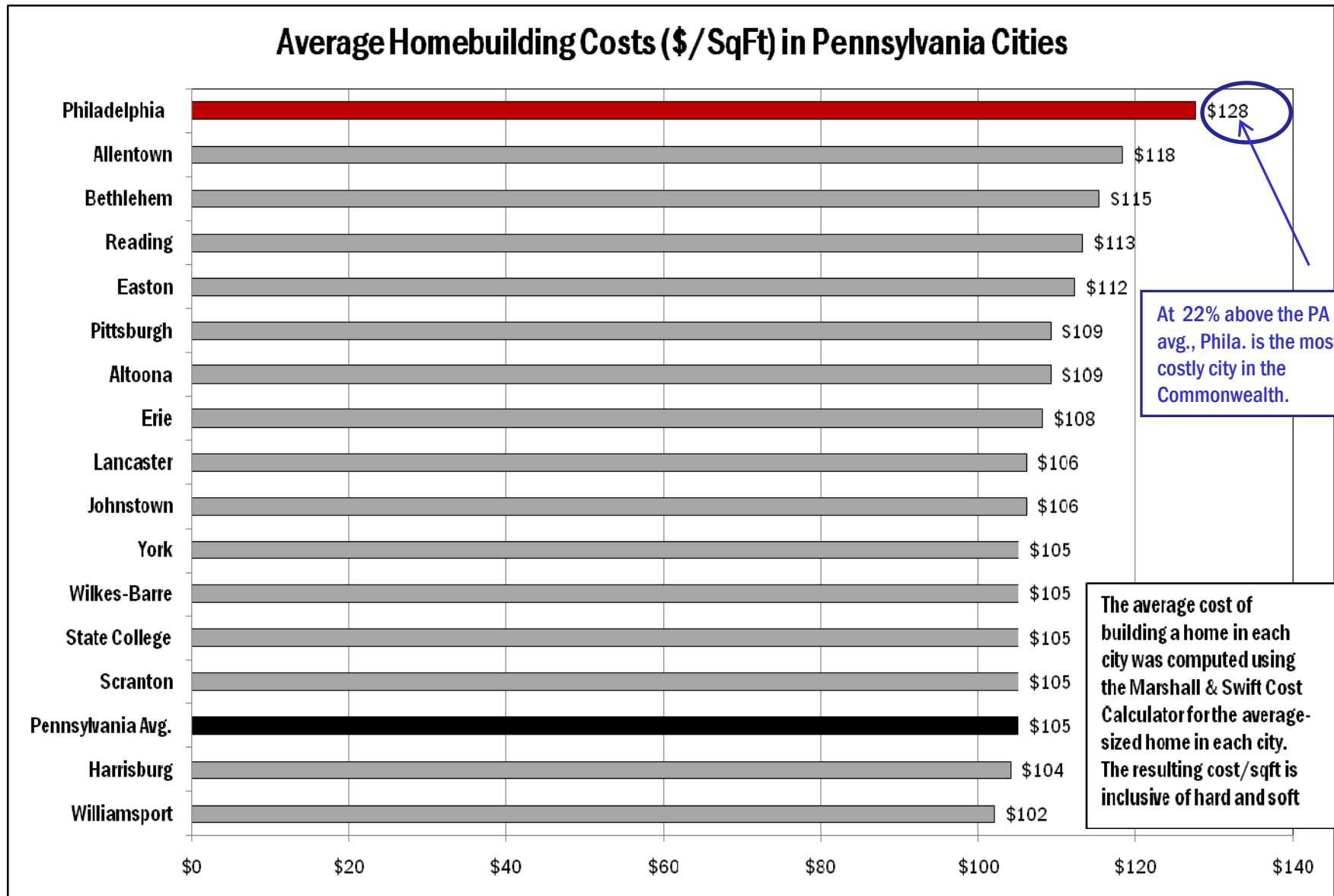
- Moreover, Philadelphia's house price declines have been very modest compared to most other large U.S. cities:



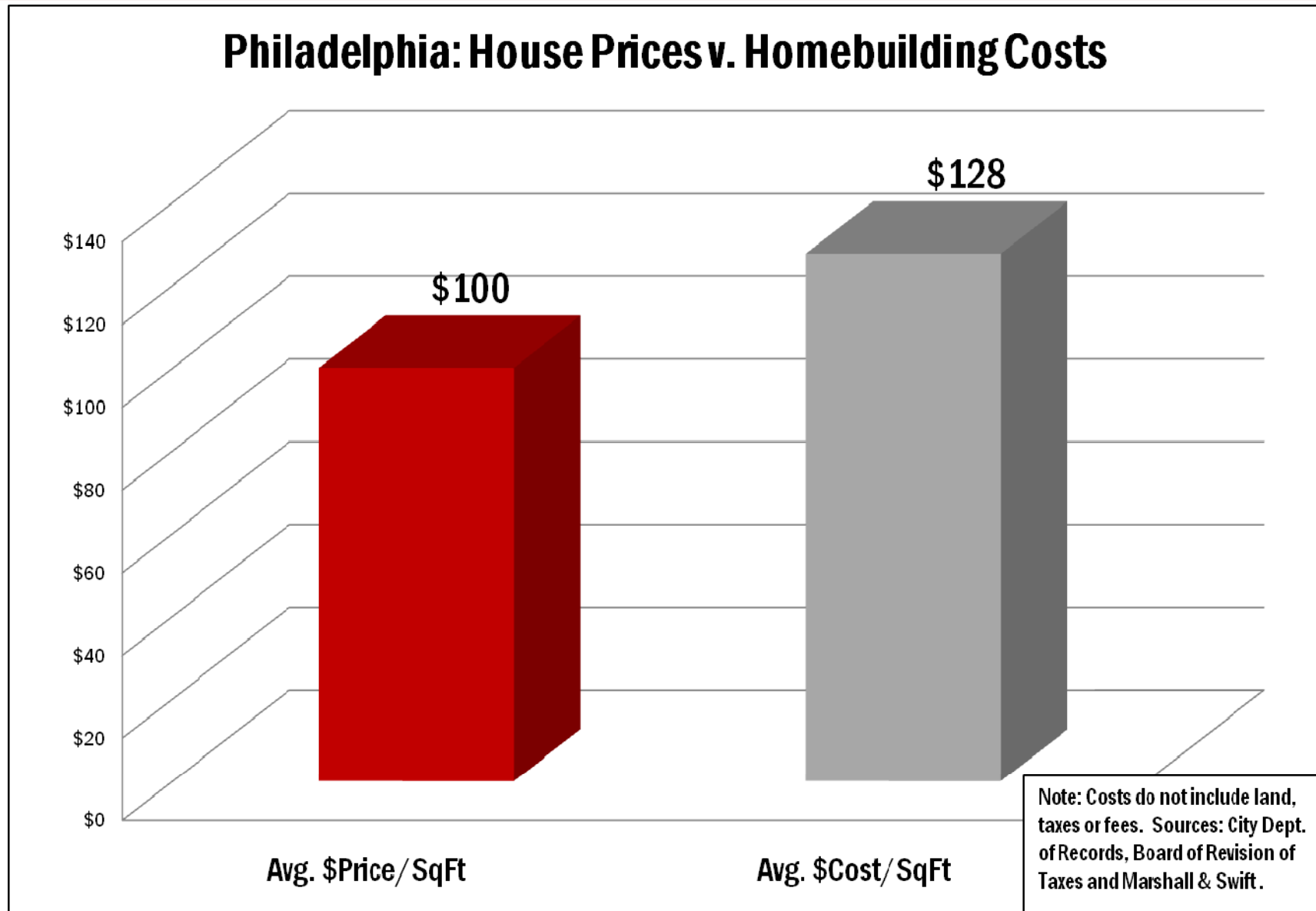
- But, Philadelphia's construction costs are among the highest in the nation:



- And, Philadelphia's construction costs are the highest in the State:



- **Result:** The average cost of building a home in Philadelphia is more than what you can sell or rent it for.

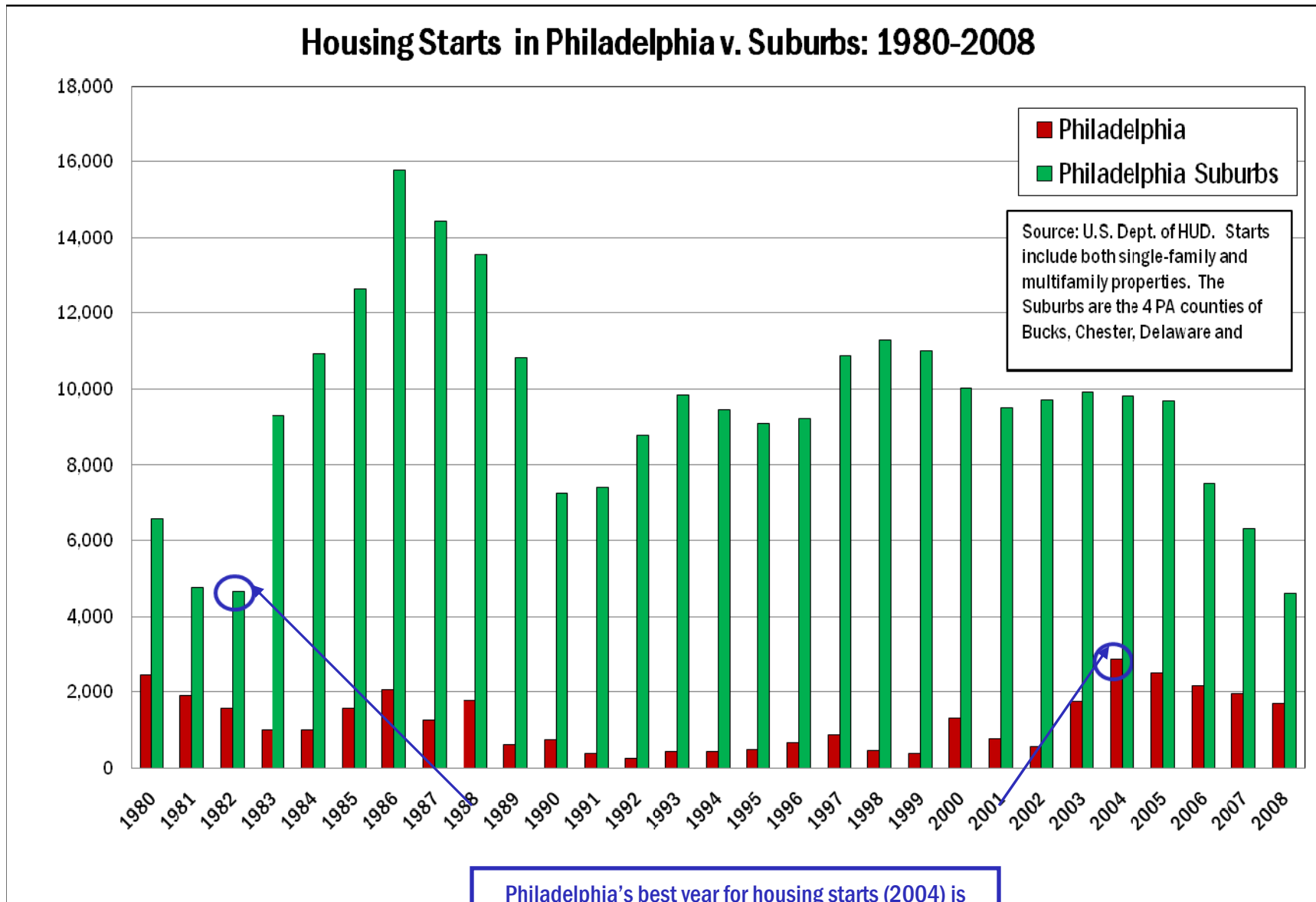


- **What does economics predict the implications of having high construction costs are?**
-

- **The model predicts:**
 - **Homebuilding will be lower than otherwise**
 - **The housing stock will be smaller, older and more depreciated**
 - **Low-income households will disproportionately bear the cost of higher construction costs**
 - **The tax base will be smaller than otherwise**

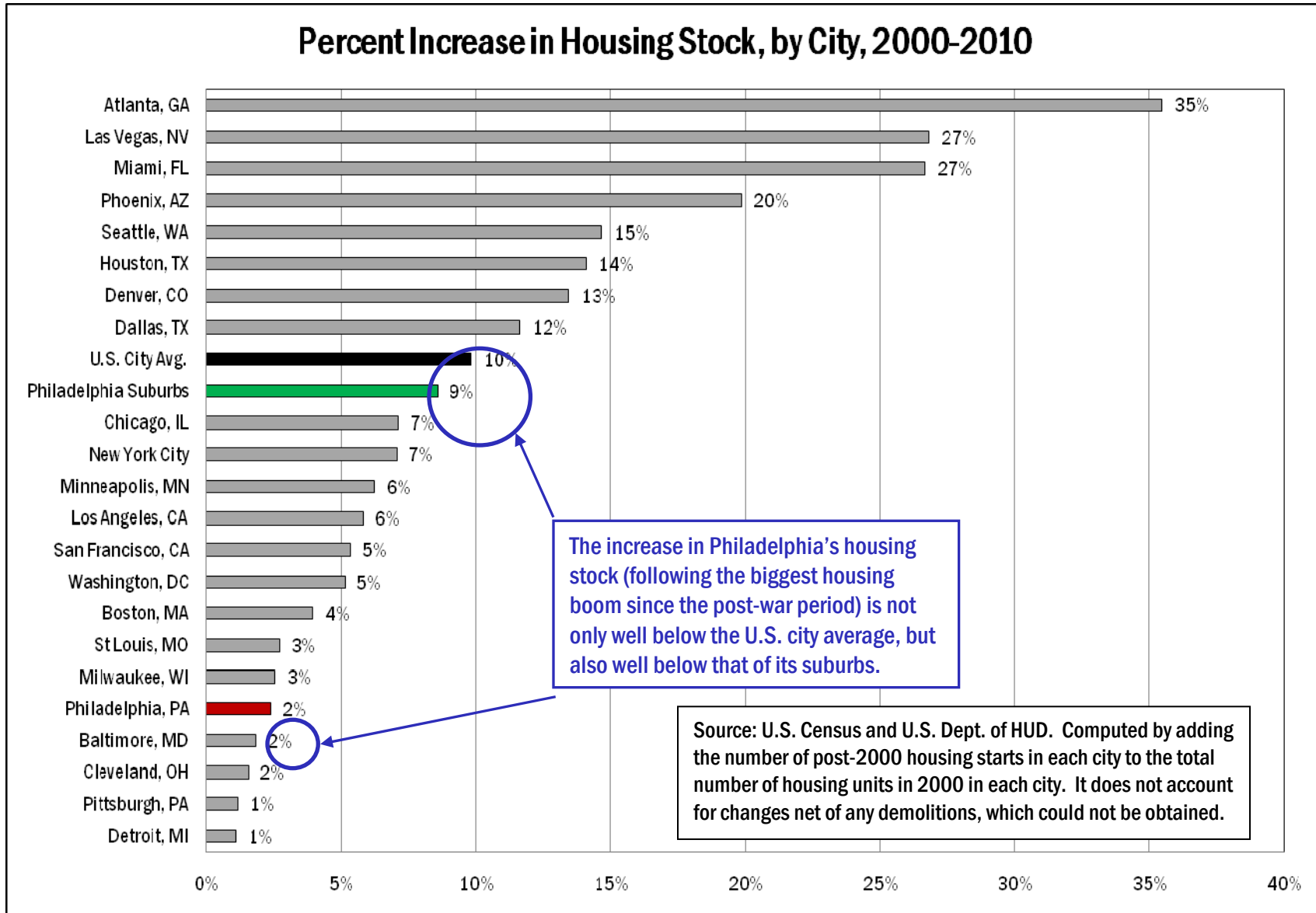
- **Is this true for Philadelphia?**

- Prediction #1: Housing Starts will be lower than otherwise.

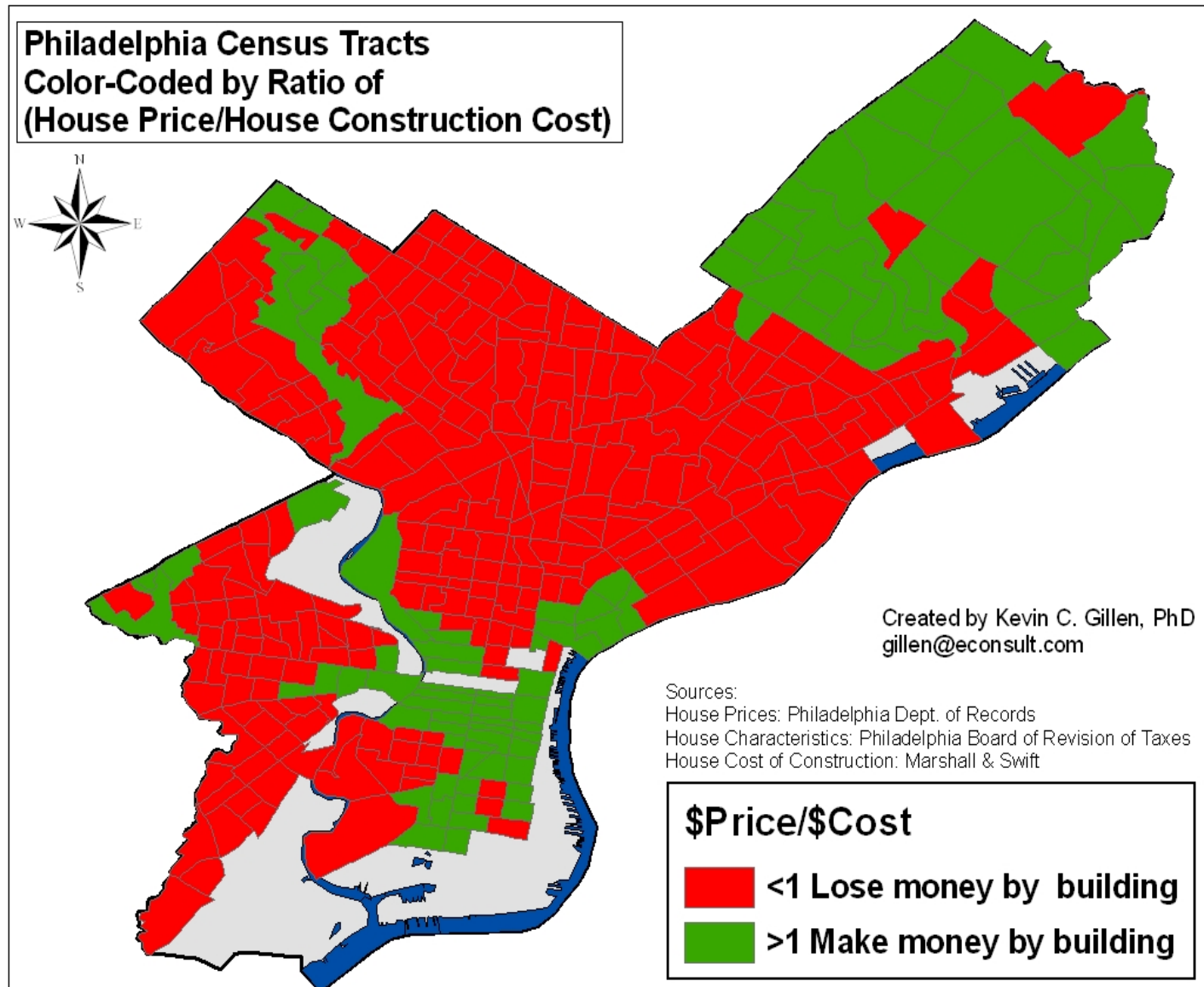


Philadelphia's best year for housing starts (2004) is still below the worst year (1982) for its suburbs!

- Prediction #2: The Housing Stock will be smaller than otherwise.



- Prediction #3: The cost of living on older, more depreciated housing will fall disproportionately on low-income households.



- **Prediction #4: The tax base will be smaller than otherwise.**

Actual Scenario

Phila. Housing Stock in 2010:	677,578
x Avg. Value in 2010	\$102,060
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=Total Taxable Value (\$m)	\$69,154
x Property Tax Rate	1.85%
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=Total Property Tax Revenue (\$m)	\$1,280

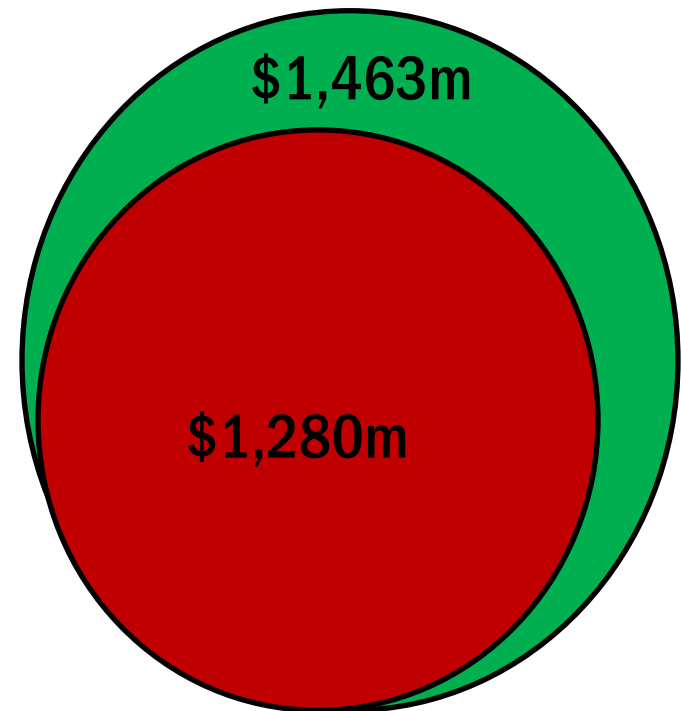
Hypothetical Scenario

Phila. Housing Stock in 2000:	661,958
x (1+Suburban Growth Rate)	1.09
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=Phila. Housing Stock in 2010:	718,620
x Avg. Value in 2010*	\$110,000
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=Total Taxable Value (\$m)	\$79,048
x Property Tax Rate	1.85%
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=Total Property Tax Revenue (\$m)	\$1,463

\$ Increase (\$m) in tax revenues **\$183**

% Increase in tax revenues **14.3%**

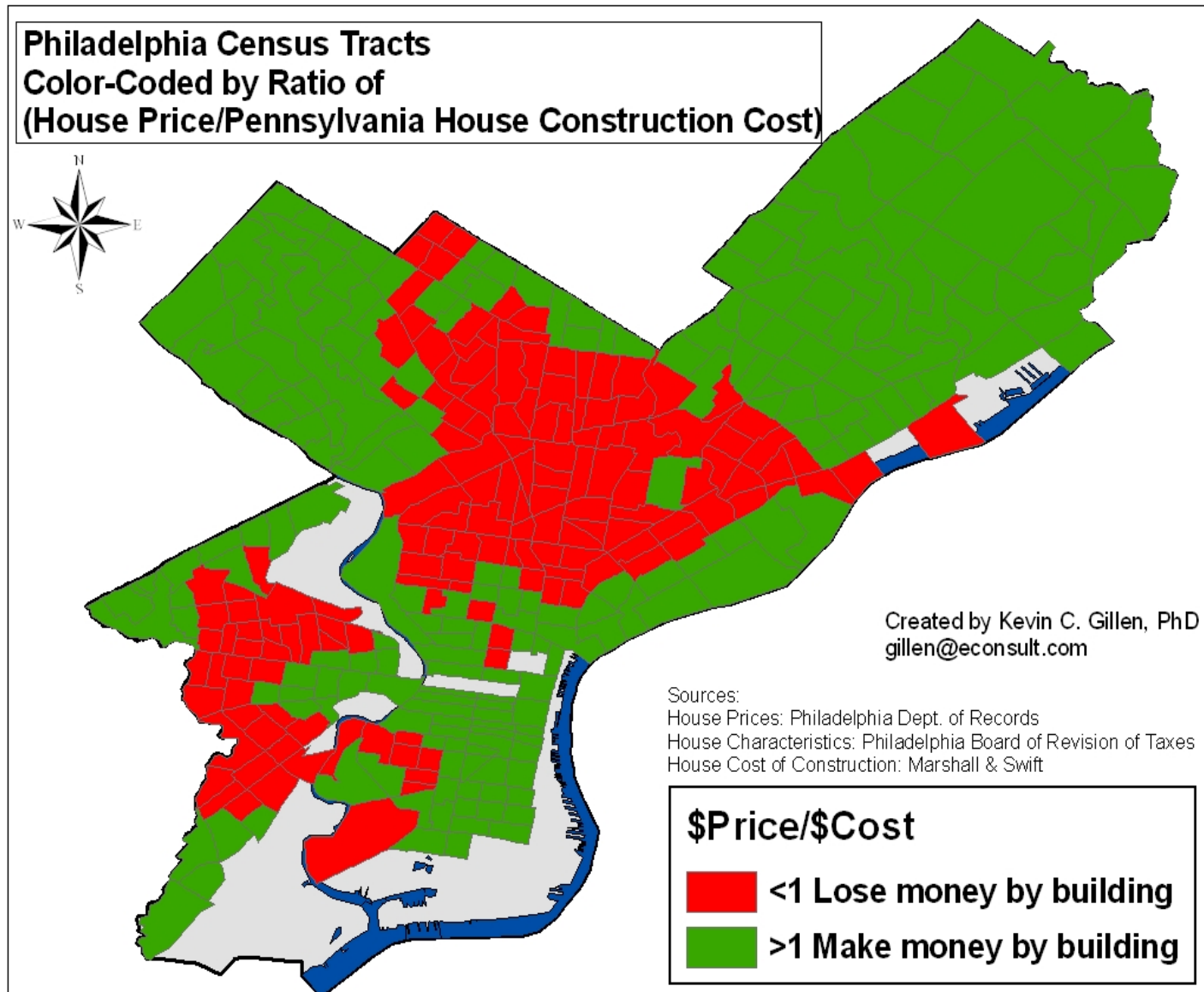
Property Tax Revenues: Actual v. Hypothetical



If Philadelphia's housing stock grew at the same rate as its suburbs from 2000-2010, its property tax revenues would be 14.3% higher.

Note: This simplified analysis assumes accurate and timely assessments, full compliance and no exemptions. Also, the analysis indicated that the increase in the growth of the housing stock in the hypothetical scenario is sufficiently large to increase the city's average house price. However, the % increase in property tax revenues is likely to be the same, even if the \$ increase is less than what is predicted here.

- If Philadelphia had construction costs that were the same as the Pennsylvania average, the picture changes significantly.



Summary

- Most economic models of the homebuilding sector focus on predicting what outcomes will occur, based upon the magnitude and direction of the differential between local house prices and local homebuilding costs.
- Philadelphia price/cost differential is an average of -28%.
- Consequently, the model predicts that:
 - Homebuilding activity will be lower than otherwise: housing starts in Philadelphia are an average of 15% what starts are in Philadelphia's suburbs.
 - The housing stock will be smaller than otherwise: Philadelphia's housing stock grew by only 2% during this decade, compared to an average of 10% in most U.S. cities.
 - It is low-income households who will bear the real burden of high housing construction costs: because they can't afford to buy/rent new homes, they live in older, smaller, more depreciated—and hence, substandard—housing .
 - The tax base will be smaller than otherwise: property taxes generated by residential properties in Philadelphia are 14.3% less than what they would be if construction costs were in line with the national average.
- **Remember:** the fact that house prices *doubled* over the last ten years, but are still well below construction costs, illustrates how high our costs really are!