

The Impact of Building Restrictions on Housing Affordability

What really drives housing

affordability in most markets?

A CHORUS OF VOICES proclaims that the United States is in the middle of an affordable housing crisis. Andrew Cuomo, then-Secretary of Housing and Urban Development, proclaimed such a crisis in his introduction to a March 2000 report, which documented the continuing and growing crisis in housing affordability throughout the nation. Indeed, Secretary Cuomo justified aggressive requests for funding by pointing to this crisis. The advocacy group Housing Assistance Council asserts that “The federal government should commit to a comprehensive strategy for combating the housing affordability crisis in rural America,” while the

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National Association of Home Builders announces, “America is facing a silent housing affordability crisis,” and the National Association of Realtors argues, “There is a continuing, growing crisis in housing affordability and homeownership that is gripping our nation.”

Housing advocates have generally confused the roles of housing prices and poverty. While both housing costs and poverty affect the well-being of Americans, only one of these two factors is a housing issue per se. In economic terms, a housing affordability crisis means only that housing is expensive relative to its cost of production, not that people are poor (this is evidence of a poverty problem). While the United States should pursue sensible anti-poverty policies, if housing is not unusually expensive, then the housing policies noted above are not required as a response to a housing crisis.

Housing affordability advocates often argue that “ability to pay” is the relevant benchmark, but this again confuses housing prices with poverty. We believe that a more sensible benchmark is the physical construction costs of housing, since if there is an affordable housing crisis, the appropriate response is to build more housing. But, for there to be a “social” gain from such construction, housing must be currently priced appreciably above the cost of new construction. This argument is not meant to deny that poor people’s not being

able to afford housing is a significant social problem. However, if housing does not cost appreciably more than the cost of new construction, it is difficult to believe that policies oriented towards housing supply are the right response to the problem.

HOUSING PRICES

The R. S. Means Company (RSM) monitors construction costs per square foot of living area for numerous cities in the United States and Canada. The RSM construction-cost data includes material, labor, and equipment costs for four qualities of single-family residences: economy, average, custom, and luxury. Land costs are not included. To estimate local housing prices, we use the American Housing Survey (AHS). The focus of this paper is on single-family houses that are owner-occupied, excluding condominiums and cooperative units in buildings with multiple units (even if they are owned).

AHS data reveal that at least half of the nation’s housing is no more than 40 percent more expensive than “economy” quality construction costs, or no more than 20 percent more expensive than “average” quality construction costs. Since most of U.S. housing is within 40 percent of the physical construction costs of modest quality houses, this suggests that a large share of the nation’s housing has its price

roughly determined by the physical costs of new construction. (However, land in Western cities appears to be relatively expensive.)

The 2000 Census indicates a median house price of \$120,000, and that 63 percent of all single-family detached houses in the United States are valued at less than \$150,000, while 78 percent are valued at less than \$200,000. The AHS reports that the median size of a detached owned house is 1,704 square feet. Using RMS's data, an "average" quality house will cost \$127,500 to build, while an "economy" quality house will cost \$102,000.

These numbers provide an important insight: the majority of single-family detached homes in the United States are priced, even in the midst of a so-called housing affordability crisis, very close to construction costs (not including land, which is generally 20 percent or less of the value of the house). To us, this suggests that the United States may have a poverty crisis, but its housing prices essentially are being tied down by the cost of new construction. Unless government policy can miraculously produce houses at less-than-conventional construction costs, it will not reduce housing burdens.

If housing prices are in line with housing construction costs, why all the fuss? What about the news stories of tear-downs going for millions in Palo Alto? What about the multi-million-dollar apartments

in Manhattan? Our analysis suggests that, in terms of housing costs, the United States needs to be categorized into three broad areas. First, there are a number of places where housing is priced far below the cost of new construction. These areas, primarily Northeastern and Midwestern no-growth central cities such as Detroit and Philadelphia, had significant housing price appreciation over the 1990s, but prices are still below construction costs. Effectively, land is free in these markets. The second category includes the bulk of the country, where housing costs are close to the cost of new construction. These areas generally have robust growth on the edges of cities where land is quite cheap. Finally, the third category includes cities and suburbs where the prices of homes are substantially higher than the cost of new construction. Manhattan and Palo Alto are prime examples. Indeed, many of these places are in California, but the 1990s saw an increase in the number of such markets in the Northeast and South. These areas are not the norm, but both the poor and non-poor are subjected to higher housing costs in them.

DEMAND FOR LAND VS. ZONING TAXES

Why are house prices high in the areas that are very expensive relative to con-

struction costs? There are two possible explanations. The first is that houses are expensive because land is expensive where there is high demand for housing. An alternative hypothesis is that houses are expensive relative to construction costs because of government regulations such as zoning, impact fees, and other building restrictions. According to this argument, land is not the real constraint, and new construction would push house prices down toward construction costs, absent regulatory barriers that create a wedge between prices and building costs. We refer to this wedge as a “regulatory tax.” The regulatory tax includes the impact of government regulation on the cost of housing construction, as well as excessive building codes, lot size restrictions, various delays, and fees.

If greater demand causes the price of land to rise, then houses with larger lots should cost notably more. Specifically, if you double the lot size, the gap between construction cost and housing price should also double. In contrast, the regulatory tax suggests that the gap should be relatively fixed, irrespective of lot size or housing quality. Thus, to test the importance of the regulatory tax versus land cost hypothesis, we compare the price of comparable homes situated on lots of different sizes, subtract RMS construction cost from the house value, and then divide by the lot size. The first method

can be thought of as giving the *intensive* value of land (that is, how much is land worth on the margin to homeowners), while the second method yields the *extensive* value, or what it is worth to have a plot of land with a house on it.

In a free market, both methods should produce the same value, because if the owner of a large lot did not value his extra land, he would sell it to someone else. But regulations may prohibit subdivision, so the values diverge. Our research finds that the intensive method produces land values that are generally only 10 percent of the values calculated with the extensive method, strongly suggesting the critical role that regulation plays in creating high housing costs.

In addition, if the price of land drives a wedge between prices and building costs, then homebuyers in high housing-cost areas should have small lots. However, a higher regulatory tax does not mean that the price of land is higher, but rather that it is more expensive to build additional houses. Thus, if the regulatory tax is creating high housing prices, there should be little correlation between land costs and lot sizes. Our research finds that there is little connection across areas between high prices and density, which is consistent with the critical role for regulation.

The third implication of the zoning tax view is that the amount of zoning

**INTENSIVE MARGIN AND
EXTENSIVE MARGIN**

should be correlated with land prices, but not lot size. We correlate measures of regulation with the value of housing prices, and find a robust connection between high prices and regulation. This approach is somewhat problematic for our purposes, because very high land values may themselves help create regulation. This caveat aside, we do find a robust connection between high prices and regulation. In fact, almost all high - housing-cost areas are extremely regulated, even though many have modest density levels. Again, we interpret this as evidence for the importance of regulation.

We use data from the 1999 AHS to estimate the value of land, using a standard hedonic price equation methodology, where housing price is regressed on lot size and other control variables such as the age of the home; the number of bedrooms, bathrooms, and other rooms; whether the home has a fireplace, air-conditioning, a basement, a garage; and whether the home is in a central city. We estimated such a regression for each of the 26 metropolitan areas, for which there were 100 observations. These equations provide estimates of land values per square foot of lot size, for otherwise comparable homes, what we have called the intensive land margin.

Table I Land Price on the Extensive and Intensive Margins

City	Hedonic Price of Land/ft ² Log-Log Specification (Intensive Margin)	Imputed Land Cost per ft ² from Means Data (Extensive Margin)	Mean House Price
Anaheim	\$3.55 (1.34)	\$38.99	\$312,312
Atlanta	-\$0.30 (-0.70)	\$3.20	\$150,027
Baltimore	\$5.21 (2.31)	\$4.43	\$152,813
Boston	\$0.55 (0.67)	\$13.16	\$250,897
Chicago	\$0.80 (1.96)	\$14.57	\$184,249
Cincinnati	\$0.50 (1.14)	\$2.71	\$114,083
Cleveland	\$0.24 (0.81)	\$4.13	\$128,127
Dallas	\$0.21 (0.27)	\$5.42	\$117,805
Detroit	\$0.45 (2.31)	\$5.10	\$138,217

(continued)

City	Hedonic Price of Land/ft ² Log-Log Specification (Intensive Margin)	Imputed Land Cost per ft ² from Means Data (Extensive Margin)	Mean House Price
Houston	\$1.62 (2.66)	\$4.37	\$108,463
Kansas City	\$1.65 (2.11)	\$1.92	\$112,700
Los Angeles	\$2.60 (3.53)	\$30.44	\$254,221
Miami	\$0.18 (0.24)	\$10.87	\$153,041
Milwaukee	\$0.95 (1.90)	\$3.04	\$130,451
Minneapolis	\$0.35 (1.09)	\$8.81	\$149,267
New York City	\$1.62 (1.60)	\$32.33	\$252,743
Newark	\$0.10 (0.11)	\$17.70	\$231,312
Philadelphia	\$0.77 (5.28)	\$3.20	\$163,615
Phoenix	\$1.86 (3.26)	\$6.86	\$143,296
Pittsburgh	\$1.71 (4.55)	\$3.08	\$106,747
Riverside	\$1.60 (2.95)	\$7.92	\$149,819
San Diego	\$1.29 (1.33)	\$26.12	\$245,764
San Francisco	\$7.84 (2.42)	\$63.72	\$461,209
Seattle	\$0.48 (0.06)	\$18.91	\$262,676
St. Louis	\$0.07 (1.55)	\$1.74	\$110,335
Tampa	\$0.89	\$6.32	\$101,593

Note: t-statistics in parentheses.

Column 1 in Table I reports the estimated price per square foot for each metropolitan area. A review of these land prices reveals that average land prices are generally between \$1 and \$2 per square foot. This implies an average price per acre of

\$45,000 to \$90,000. The estimated land prices are higher in some cities, primarily in California. For example, in San Francisco we estimate a price of roughly \$320,000 per acre.

To estimate the extensive margin price

DENSITY AND HOUSING COSTS

per square foot of lot, we subtract RMS construction costs from reported home values, and divide by lot size. This generates an estimate of the value of land, including the regulatory tax on new construction. These values for each metropolitan area are in the second column of Table I.

Comparing Column 1 and Column 2 reveals vast differences in the intensive and extensive prices of land. In many cases, our extensive estimate is about ten times larger than the intensive margin price. For example, in Chicago the extensive price of land is \$14.57 per square foot, implying that a house on a one-acre plot will cost more than \$560,000 more than construction costs. In San Diego, this one-acre plot is implicitly priced at nearly \$1.1 million. The analogous figure is even higher in New York City, at just over \$1.4 million, while in San Francisco an acre is worth just under \$2.8 million.

This is the first piece of evidence on the relative importance of high demand alone leading to high land prices, versus zoning and other constraints on building being primarily responsible for higher prices. In areas where the ratio is 10:1, the findings suggest that, for an average lot, only 10 percent of the value of the land comes from an intrinsically high land price as measured by hedonic prices.

Our second test explores the connection between housing prices and density. The free market land value hypothesis suggests that better local amenities lead to higher land prices and lower consumption of land. In contrast, the regulatory tax hypothesis suggests that better amenities lead to a higher implicit regulatory tax; therefore, there should be little connection between the cost of land and housing density.

Our investigation found that there was no significant correlation between high land values and housing density—a result once again consistent with the regulation view of land markets. For example, a simple regression of (logged) land area per household on the fraction of units with high land prices (e.g., those with house values at least 1.4 times construction costs) yielded a negative, but statistically insignificant, coefficient. This relationship is plotted as the solid line in Figure 1, with each city's density and fraction of housing with expensive land plotted individually.

The negative coefficient indicates that, on average, more expensive land is associated with smaller lot size. However, the relationship is not strong and we cannot reject the conclusion that there is no such relationship. In sum, high land prices do not generate appreciably higher densities in most areas of the country. In fact, a closer

look at the data shows that Detroit, Seattle, and Los Angeles have similar land densities per household, but radically different fractions of units sitting on expensive land. Analogously, New York City and San Diego have similarly high fractions of expensive land, but very different residential densities.

In a longer version of our paper (Zell/Lurie Working Paper #395), we estimated other models that controlled for income levels and dealt with various econometric problems (see Table 5 of that paper for the details). However, we never found a really strong relationship between density and the fraction of expensive land and homes. Density is slightly higher in more expensive areas on average, but the relationship is weak as indicated by the plot in

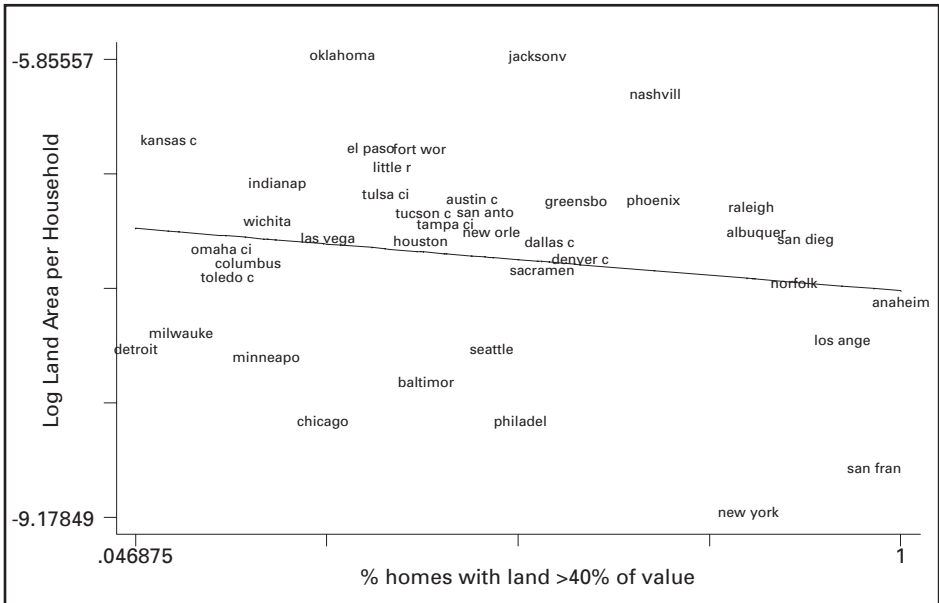
Figure 1. This illustrates that high land prices do not guarantee high densities, an outcome predicted by the regulation view of land markets.

HOUSING COSTS AND ZONING

Our final test of the role of the zoning tax is an examination of the correlation between land prices and measures of local regulations, as measured in the 1989 Wharton Land Use Control Survey of jurisdictions for the 45 AHS metropolitan areas.

The primary variable we use is a measure of the average length of time between

Figure 1 Land Prices and Density in Central Cities, 1990



an application for rezoning and the issuance of a building permit for a modest-size, single-family subdivision of fewer than 50 units. This measure takes on values ranging from one to five, with a value of one indicating the permit issuance lag is less than three months; a value of two indicating the time frame is between three and six months; a value of three indicating a seven-to-12 month lag; a value of four meaning the lag is between one and two years; and a five signaling a very long lag of more than two years. The simple correlation of the permit issuance variable with the fraction of housing stock priced more than 40 percent above the cost of new construction is 0.43. The mean fraction of high-cost housing among the cities with permit waiting-times of at least six months (that is, a value of 3 or more for this variable) is 0.75. Evidently, difficult zoning is ubiquitous in high-cost areas.

We regressed our housing cost measure (again using the share of the city's housing stock priced more than 40 percent above the cost of new construction) on the first zoning measure—time to get a permit issued for a rezoning request. We found a strong positive relationship, so that when the index increases by one, 15 percent more of the housing stock becomes quite expensive. This positive relationship also survives controlling for population growth during the 1980s and median income (see Table 6 of our longer version for the

details). Thus, highly regulated areas are high land-cost areas. While one must keep in mind the possibility that high land prices themselves help create the regulation, taken in conjunction with our other findings, the results are consistent in implying that high house prices are the result of regulation, not just strong demand in areas with limited land supply.

WHAT DOES IT ALL MEAN?

The United States is not facing a widespread crisis in housing affordability. In fact, in most of the country, house prices closely approximate the cost of construction. In some regions, house prices are even far below the physical costs of construction. We identify a limited set of markets, especially in New York City and California, where housing prices diverge substantially from the costs of new construction.

The bulk of the evidence marshaled in this paper suggests that zoning and other land-use controls are responsible for abnormally high prices. While our evidence is not definitive, it is highly suggestive that local government regulations are responsible for housing costs substantially in excess of construction costs.

It is possible that the benefits of local regulations outweigh the costs borne by homebuyers. However, if policy advocates

are interested in reducing housing costs, they would do well to examine local regulations. Building small numbers of subsidized housing units will have a trivial impact on average housing prices, even if well targeted towards deserving poor households. However, reducing the implied zoning tax on new construction could well generate a massive impact on housing prices.

Of course, it may well be that the impact of the regulatory tax on local housing prices is local regulation's strongest political appeal. If weaker rules were imposed, homeowners in these areas would likely see their property values fall substantially. This is hardly the ideal platform for a local political aspirant. Thus, in order to make reform politically feasible, it is crucial that some method be developed to compensate the losers from any reduction of regulatory burdens on housing development.

This article is based on a paper that was given at the conference on "Policies to Promote Affordable Housing," sponsored by the Federal Reserve Bank of New York and the New York University School of Law. The long version will be published in the Bank's Economic Policy Review, and is available as Working Paper #395 from the Zell/Lurie Real Estate Center's website (<http://www.realestate.wharton.upenn.edu>). We are grateful to Albert Saiz, Jesse Shapiro, and our conference discussant, Dan O'Flaherty, for their comments.