



DEMOGRAPHIA RESIDENTIAL LAND & REGULATION COST INDEX: 2010

Annex I: Land Use Regulation: Background

The Rise in Home Ownership

Home ownership increased markedly in the 15 years following World War II, from a pre-war level of 44% in 1940 to 62% in 1960. It reached 65% in the middle 1990s, and rose to 69% at the peak of the housing bubble.¹

Homes became affordable to more US households after World War II because (1) substantial improvements were made in construction productivity² (2) new houses were built on inexpensive land on the urban fringe and (3) programs, such as 30-year fixed rate mortgages and government guaranteed loan programs (such as FHA and VA) that made mortgage finance more readily affordable and available. Nearly all of the new housing in US metropolitan areas continues to be built on the urban fringe, principally because underlying land prices tend to be lower there.

Moreover, during the past six decades, house construction costs have been comparatively inexpensive and risen only modestly. While there have been differences between metropolitan markets, they have been relatively small and the differences have changed little. Between 1970 and 2007, the construction costs in the five more restrictively regulated metropolitan markets have risen 3% more than in the less restrictively regulated markets.³

However, significant restrictions on land have been imposed in some metropolitan markets, which has materially raised the price of new houses and seriously eroded housing affordability.

The Historic Land and Regulation Ratio

For at least five decades, the cost of land and related regulation for new tract houses accounted for 20% or less of the total new house price. This land and regulation ratio is evident in early 1970s United States Bureau of the Census housing data and, according to data from industry sources and interviews with industry experts and remains at this historic norm in many US metropolitan markets. The *Demographia Residential Land & Regulation Cost Index* assumes a 20% land and regulation ratio.

¹ Some analysts have predicted that the home ownership rate will fall back to approximately the more sustainable 65% rate that preceded the housing bubble. See, for example: Ronald D. Utt, *The President's Worrisome Narrative to Discourage Homeownership*, Heritage Foundation, 2010. <http://www.heritage.org/Research/Reports/2010/08/The-Presidents-Worrisome-Narrative-to-Discourage-Homeownership>.

² The early post-World War II advances in home building productivity were referred to as "assembly line" or production (as opposed to custom) building. The most important early example was the pioneering Levittown community on New York's Long Island. See: <http://web1.fandm.edu/levittown/one/e.html>.

³ Estimated from R. S. Means (*Square Foot Costs*) locational factors 1970 to 2007.

More Restrictive Land Use Regulation

However, in the 1970s, house prices in some metropolitan markets began to escalate substantially relative to prices elsewhere. This was not the result of differing house construction cost trends. The principal difference is in the cost of land. In virtually all of these more expensive metropolitan markets, more restrictive land use regulations have been adopted, which [economic research](#) associates with higher house prices.⁴

These more rapidly escalating land costs appeared in California first, as overall house prices rose well above historic price to income standards and above prices in the rest of the nation.

William Fischel of Dartmouth University has associated the larger increase in California housing prices with its stronger land use regulation. Fischel found that the rise in California housing prices after 1970 relative to the nation could not be explained by factors such as higher construction cost increases, population growth, quality of life, amenities, the state's property tax reform initiative (Proposition 13), land supply or water issues.⁵

These higher land and related regulation costs spread to other metropolitan markets where more restrictive land use regulations were adopted, both during the 1990s and the housing bubble that followed.⁶ However, [in many metropolitan markets](#), less restrictive regulation remained in place and the land and regulation ratio has remained at 20% or less. Meanwhile, the similarity of underlying land costs between metropolitan markets with more and less restrictive land use regulation is illustrated by the small variation in agricultural land.⁷

More restrictive land use policies have been adopted principally to limit or stop the expansion (pejoratively called "urban sprawl") of urban areas, which results from population growth and the desire of a more affluent society to live in larger and detached houses on larger lots. The result of more restrictive land use regulation can be to seriously interfere with, or even to eliminate the historic urban fringe market that has accommodated much of that housing and population growth.⁸

⁴ This has been an international trend, with one of the most severe examples being Australia. In the last 10 to 25 years, [house prices have risen at double to triple the rate of household incomes](#) in virtually all areas, as more restrictive land use policies have been adopted throughout the nation. See the *Annual Demographia International Housing Affordability Survey* series (<http://www.demographia.com/dhi.pdf>).

⁵ Fischel, p. 218-252.

⁶ More restrictive land use regulation is not always associated with higher house prices. For example, Portland, Oregon's more restrictive land use regulations appear to have had little, if any impact before 1990, because they did not restrict land supply sufficiently to materially raise its price. That changed in the 1990s, when planning officials declined to expand the urban growth boundary sufficiently to retain housing affordability.

⁷ Between 1969 and 2007 the increase in the metropolitan market with the highest value agricultural land (San Diego) was less than \$1,100 per building lot more than that of the metropolitan market with the lowest value agricultural land (Houston). Calculated from acreage and value data in US Department of Agriculture 1969 and 2007 Census of Agriculture. This figure is less than the \$4,900 difference in expected raw land cost between the two metropolitan regions.

⁸ For an encyclopedic examination of more restrictive land use policies, see Robert W. Burchell, George Lowenstein, William R. Dolphin, Catherine C. Galley, Anthony Downs, Samuel Seskin, and Terry Moore, *Costs of Sprawl—2000*. Washington, DC: Transportation Research Board, 2002. There are numerous additional references favoring more restrictive land use regulation available on the internet, given the near monopoly of such views in the urban planning community. For critiques of more restrictive land use policies see Robert Bruegmann, *Sprawl: A Compact History*, University of Chicago Press, 2005; William T. Bogart, *Don't Call It Sprawl: Metropolitan Structure in the 21st Century*, Cambridge University Press 2006; Randal O'Toole, *The Best-Laid Plans: How Government Planning Harms Your Quality of Life, Your Pocketbook, and Your Future*, Cato Institute 2007; Wendell Cox, *War on the Dream: How Anti-Sprawl Policy Threatens the Quality of Life*, Iuniverse, 2006

The price escalation in the higher priced metropolitan markets has been associated in [economic research](#) with more restrictive land use regulations (non-traditional land use regulation), such as restrictions on where new housing can be built, and substantially higher fees, which ultimately are reflected in the price of the new homes paid by buyers.

How More Restrictive Land Use Regulation Raises House Prices

More restrictive land use regulation can raise the price of housing in a number of ways (Table I-1).

- (1) **Increases Underlying Land Costs:** Regulations such as urban growth boundaries and other smart growth land rationing devices can reduce the land available for building. This reduction in land supply occurs while there is no reduction in demand. All things being equal, where supply of a good or service is constrained, prices are likely to rise. Buyers bid up the price of the more scarce land, which eventually makes the price of houses higher.
- (2) **Increases Planning and Development Costs:** More restrictive land use regulation can increase the costs of obtaining planning permission to develop land and build houses, such as by requiring additional studies, the hiring of expensive consultants and the imposition of expensive development impact fees.⁹
- (3) **Raises Financing Costs:** More restrictive land use regulations can lengthen the time that is required to purchase land, gain planning permission and build houses. This longer time tends to impose higher financing costs on developers and builders, which are inevitably included in house prices.
- (4) **Encourages More Expensive Houses:** As the underlying cost of land (including regulation) increases, the price of the housing built upon it is likely to increase. This is because lending institutions tend to resist financing the construction of less expensive houses on expensive land. Moreover, this tendency to substitute more expensive houses on more expensive land occurs because there is less land on which to build. It is similar to the market behavior that might be expected in the automobile industry if there were severe limits on the number of cars that could be produced. Manufacturers would be inclined to build the most expensive cars and few less expensive cars.
- (5) **Increases Construction Costs:** By making land more scarce, more restrictive land use regulation can make it more difficult to build housing on larger tracts of land, which can make home building less efficient by increasing the cost per square foot of construction. As a result, the home building industry is forced away from high volume building and more toward custom building, which is inherently more costly.
- (6) **Encourages Market Concentration and Land Banking:** The more costly regulatory environment makes it more difficult for smaller developers and home builders to remain in business. This is likely to lead to higher levels of market concentration (fewer companies) and less competition, which, all things being equal, leads to higher prices.

The smaller number of developers are often virtually forced into buying up as much of the limited land supply as possible to ensure that they have future inventories to sell to home builders (out of

⁹ Generally, residential land developers are responsible for installing and financing on-site infrastructure, such as streets, sewers and water mains and storm water systems. The cost of these improvements is included in the lot price paid by home builders and in the ultimate house price paid by buyers.

fear that land regulating agencies will not permit sufficient new land to be opened for development, as has been noted in Australia). This practice, known as "land banking" can lead to even higher prices as the large land holders "drip release" (slow) development of their parcels, seeking to ensure longer term returns on investment. This would not be possible where there is more competition, such as in metropolitan markets with less restrictive land regulation.

(7) Encourages Land & Housing Speculation: These price increasing impacts of more restrictive land use regulation encourage investors to buy houses to make quick profits. This higher extent of speculative activity in more restrictively regulated markets has been identified in the economic literature.¹⁰ Moreover, it was evident during the US housing in some more restrictively regulated markets, where house prices doubled or tripled relative to incomes, which was unprecedented.

The higher costs may not be limited to these items. Smaller builders and developers can be forced out of the market because of their more modest financial resources, which tends to reduce competition and can lead to higher land and housing costs.

Table I-1 More Restrictive Land Use Regulation: Factors that Can Drive House Prices Higher	
1..	Increases underlying land costs
2..	Increases planning and development costs
3..	Raises financing costs
4..	Encourages more expensive houses.
5..	Increases construction costs
6..	Encourages concentration of market power and land banking
7..	Encourages land and housing speculation

Housing Affordability Concerns

There has been increasing concern across the nation about a loss in housing affordability. Even after the bursting of the housing bubble, house prices [remain above pre-housing bubble prices](#) and historic affordability standards in many metropolitan markets, such as in Portland, San Diego, Seattle and Washington, DC in this report.

Differences in housing costs account for most of the cost of living differences among the nation's metropolitan markets. In addition, higher cost metropolitan markets have [generally lost substantial numbers](#) of residents to lower cost areas

In this environment, housing affordability concerns are likely to intensify, as households face potentially higher tax burdens to finance rising federal, state and local expenditures, higher energy and transportation costs due to proposals to reduce greenhouse gas emissions and an economy that may grow less quickly in the future.

<p>For Additional Information See Research Summary: More Restrictive Land Use Regulation and Housing Affordability</p>

¹⁰ Edward L. Glaeser and Joseph Gyourko, *Rethinking Federal Housing Policy: How to Make Housing Plentiful and Affordable* (American Enterprise Institute, 2008), p.78.

Land Use Regulation Categories

The *Demographia Residential Land & Regulation Cost Index* uses two land use categories:

Less Restrictive Land Use Regulation: Less restrictive land use regulation allows new housing to be built in areas where there is sufficient customer demand (as evidenced by the ability of home builders to produce houses that customers buy). Development must comply with fundamental environmental and infrastructure regulation. Less restrictive land use regulation was virtually universal in the United States until the 1970s and remains in place in many metropolitan markets.

More Restrictive Land Use Regulation: More restrictive land use regulation imposes significant barriers to house construction, especially prohibitions on physically developable land, limits on the number of houses allowed to be built (moratoria or ceilings) and high development impact fees. These strategies are referred to by various terms, such as "growth management," "smart growth," "compact cities policies" and "urban containment."

The *Demographia* land use categories are summarized by surveyed metropolitan market in Table I-1. For reference, the table also shows the general land use regulation categories [developed by the Brookings Institution](#). As is noted above, the less restrictive land use regulation (or the Brookings Institution "traditional" and "Texas" land use regulation categories) are associated with lower land costs and thus lower house prices.

Metropolitan Market	Demographia	Brookings
Atlanta	1	1.1
Dallas-Fort Worth	1	1.2
Houston	1	1.2
Indianapolis	1	1.1
Minneapolis-St. Paul	2	1.1 & 2.1
Portland	2	2.2
Raleigh	1	1.1
St. Louis-Durham	1	1.1
San Diego	2	2.2
Seattle	2	2.2
Washington-Baltimore	2	1.1 & 2.2
Land Use Regulation Categories		
Demographia (Metropolitan Market Based)	Brookings Institution (County Based) ¹¹	
1 - Less restrictive	1.1 Traditional 1.2 Texas Category	
2 - More restrictive	2.1 Exclusion 2.2 Reform	

More Restrictive Land Use Regulation Policies

More restrictive land use regulation policies are listed in Table I-2. This list includes policies most likely to raise house prices, such as designating large tracts of developable land as off-limits, limits on home building and high development or impact fees.

¹¹ The Brookings Institution classification also has a another category "high density," which includes counties based upon their openness to higher density housing. This is a dimension not measured by the *Demographia* typology and the Brookings "high density" metropolitan markets are classified as either "less restrictive" or "more restrictive."

There is no dispute about the likelihood of higher house prices where there is more restrictive land use regulation; the only question is *how much* higher. [This point](#) was made by the Hispanic oriented Tomas Rivera Policy Institute:

*While there is little agreement on the magnitude of the effect of growth controls on home prices, an increase is always the result.*¹²

¹² Lopez-Aqueres, Waldo, Joelle Skaga and Tadeusz Kugler (2002). *Housing California's Latino Population in the 21st Century: The Challenge Ahead*. Los Angeles, CA: The Tomas Rivera Policy Institute, http://www.trpi.org/PDFs/housing_ca_latinos.pdf

Table I-2 More Restrictive Land Use Regulation: Policies With Potential to Increase Land Costs and House Prices		
#	Policy	Potential to Increase Housing Prices (and Source)
1	URBAN CONTAINMENT	
1-A	Regional Urban Growth Boundaries	YES per <i>Costs of Sprawl -- 2000</i>
1-B	Local Urban Growth Boundaries	YES per <i>Costs of Sprawl -- 2000</i>
1-C	Regional Urban Service Districts	YES per <i>Costs of Sprawl -- 2000</i>
1-D	Local Urban Service Districts	YES per <i>Costs of Sprawl -- 2000</i>
1-E	Restrictions on Physically Developable Land	YES per <i>Costs of Sprawl -- 2000</i>
1-F	Infill Quotas	YES per <i>Demographia</i> (Note 1)
2	LARGE-LOT ZONING IN URBAN FRINGE & RURAL AREAS	YES per <i>Costs of Sprawl -- 2000</i>
3	GEOGRAPHICAL GROWTH STEERING	YES per <i>Demographia</i> (Note 2)
3-A	State Aid Contingent on Local Growth Zones	YES per <i>Costs of Sprawl -- 2000</i>
3-B	Excessive Public Facility Requirement Ordinances	YES per <i>Demographia</i> (Note 3)
4	HOUSE BUILDING MORATORIA OR LIMITS	YES per <i>Demographia</i> (Note 4)
5	HIGH DEVELOPMENT FEES & EXACTIONS	YES per <i>Costs of Sprawl -- 2000</i>
6	MANDATORY REGIONAL OR COUNTY PLANNING	LIKELY per <i>Demographia</i> (Note 5)
<p>Source: Policies 1, 2, 3, 5 from Table 15.4 Costs of Sprawl--2000</p> <p>Note 1-F: Infill quotas force more development into infill areas, which increases infill land prices, while increasing the price of urban fringe land by rationing new development.</p> <p>Note 2: Policy #2 has the potential to increase housing prices because it would require implementation of policies #1-A, 1-B, 1-C, 1-D, 1-E or 1-F, each of which have the potential to increase housing prices.</p> <p>Note 3: Policy 3-B (sometimes called "adequate public facility ordinances") can be used to force new housing into growth areas or areas that are already developed and can result in the imposition of "virtual" urban growth boundaries by severely limiting the land that can be developed, raising its cost and that of housing.</p> <p>Note 4: Policy #4 increases house prices by rationing new houses.</p> <p>Note 5: Policy #6 is likely to increase house prices because of the propensity of planning professionals to favor more restrictive land use regulations.</p>		

Metropolitan market Land Use Information

The land use regulation categories and principal strategies are summarized in Table I-3. Additional explanatory notes follow the table.

Dallas-Fort Worth: Dallas-Fort Worth is a less restrictively regulated metropolitan market. As a less restrictively regulated market, there continues to be an abundance of comparatively inexpensive detached (tract) housing on the urban fringe.

Houston: Houston is a less restrictively regulated metropolitan market. As a less restrictively regulated market, there continues to be an abundance of comparatively inexpensive detached (tract) housing on the urban fringe.

Indianapolis: Indianapolis is a less restrictively regulated metropolitan market. As a less restrictively regulated market, there continues to be an abundance of comparatively inexpensive detached (tract) housing on the urban fringe.

Metropolitan Market	Regulatory Category	1. Urban Containment	2. Large Lot Zoning	3. Geographical Growth Steering	4. Moratoria or Limits	5. High Impact Fees	6. Mandatory Regional Planning
Atlanta	Less Restrictive						
Dallas-Fort Worth	Less Restrictive						
Houston	Less Restrictive						
Indianapolis	Less Restrictive						
Minneapolis-St. Paul	More Restrictive	•	•			•	•
Portland	More Restrictive	•				•	•
Raleigh-Durham	Less Restrictive						
St. Louis	Less Restrictive						
San Diego	More Restrictive	•				•	
Seattle	More Restrictive	•				•	•
Washington-Baltimore	More Restrictive	•		•	•	•	

Minneapolis-St. Paul: Minneapolis-St. Paul is a more restrictively regulated metropolitan market. However, restrictive land use regulations have been relaxed somewhat in recent years. The metropolitan market's urban growth boundary¹³ has been more liberally administered than in metropolitan markets like Portland and San Diego, especially since the appointment of a metropolitan land use agency board less opposed to lower cost housing on the urban fringe.¹⁴ This appears to have moderated land costs. There is a considerable amount of new tract housing available on the urban fringe, though it is somewhat more expensive than would be expected in less restrictively regulated metropolitan markets.

Portland: Portland is a more restrictively regulated metropolitan market. There is less new tract housing available on the urban fringe in the Oregon portion of the metropolitan area than would be expected in an area of this population. It also tends to be comparatively expensive. Lower cost new tract housing is principally available in the Washington part of the metropolitan area (Clark and Skamania counties), however, it is also more expensive than would be expected in less restrictively regulated markets.

Raleigh-Durham: Raleigh-Durham is a less restrictively regulated metropolitan market. As a less restrictively regulated market, there continues to be an abundance of comparatively inexpensive detached (tract) housing on the urban fringe.

St. Louis: St. Louis is a less restrictively regulated metropolitan market. As a less restrictively regulated market, there continues to be an abundance of comparatively inexpensive detached (tract) housing on the urban fringe.

San Diego: San Diego is a more restrictively regulated metropolitan market. There is virtually no low priced detached tract housing in the San Diego metropolitan market. New housing is considerably more affordable in "southwest California," which is largely delineated by the Temecula urban area in the Riverside-San Bernardino metropolitan area. Thus, affordable new housing has been driven nearly 60 miles from the San Diego downtown area and 25 miles from the northern fringe of the San Diego urban area.

¹³ In Minneapolis-St. Paul, the urban growth boundary is a municipal service boundary.

¹⁴ See <http://www.metrocouncil.org/about/facts/MUSAfacts.pdf>.

The effect of Temecula's more affordable housing (which is still expensive relative to less restrictive markets such as Atlanta, Indianapolis and the other such markets in this *Index*) is not reflected in the *Demographia Residential Land & Regulation Cost Index* for San Diego because it is outside the metropolitan market. This greater dispersion of lower cost housing substantially increases commuting distances and fuel usage. In the longer run, it could weaken the San Diego metropolitan market, as businesses locate closer to growing areas. This phenomenon has occurred with suburban expansion and has been cited as an important factor in keeping traffic congestion manageable in suburban areas.¹⁵ As California's strong new land use regulation act (Senate Bill 375), house price increases could accelerate even more in the San Diego metropolitan market (and across the state).

Seattle: Seattle is a more restrictively regulated metropolitan market. There is less new tract housing available on the urban fringe than would be expected in a metropolitan region of Seattle's size. The lowest priced new tract housing appears to be on the urban fringe in southern Pierce County and the northern fringe in Snohomish County, and tends to be comparatively expensive.

Washington-Baltimore: Washington-Baltimore is the combination of the Washington and Baltimore metropolitan statistical areas.¹⁶ Washington-Baltimore is a more restrictively regulated metropolitan market. There is new tract detached housing on the extreme periphery of this metropolitan region (well beyond the urban fringe), especially in Jefferson County, West Virginia and the counties to the south, such as Stafford and Spotsylvania in Virginia. Overall, however, Washington-Baltimore's new tract housing tends to be more costly than would be expected in a less restrictively regulated metropolitan market.

The land use regulations in the Washington-Baltimore metropolitan market have driven the most affordable new tract housing to well beyond the urban fringe and outside the metropolitan market. This includes counties beyond the metropolitan market in south-central Pennsylvania, Virginia, West Virginia and the Maryland Eastern Shore. The result of the more restrictive land use regulation has thus been to create what is sometimes called "leap frog" development and to cause housing and other development to expand more than would have been the case with less restrictive land use regulation. Because these counties are outside the metropolitan market, their more affordable housing is not reflected in the *Demographia Land & Regulation Cost Index* for Washington-Baltimore.

¹⁵ See, for example, Peter Gordon and Harry W. Richardson, "Are Compact Cities a Desirable Planning Goal?" *APA Journal*, Winter 1997. www-agecon.ag.ohio-state.edu/class/aede680/irwin/pdf/88.pdf.

¹⁶ This is not to be confused with the somewhat larger Washington-Baltimore combined statistical area.