

THE ECONOMIC PROBLEMS OF CONSTRAINED URBAN GROWTH

by Phil Hayward Project Director: Baruch Feigenbaum May 2018





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PART 1

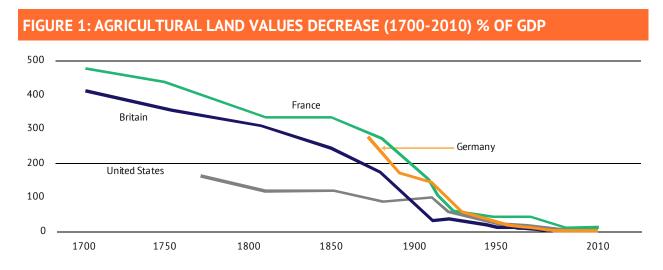
INTRODUCTION

Over the past 30 years, elected officials have enacted policies and regulations that restrict growth of cities and their economies within a confined border, supporting a recent urban planning trend called "urban growth boundaries." In many cases these are not strict boundaries but rather large-lot zoning, agricultural reserves or large amounts of land set aside for park purposes. While proponents cite many assumed benefits of living at higher density, such as a reduction in travel distances, a more active lifestyle, a reduction in greenhouse gases (particularly CO₂ emissions) and the protection of farmland, there is one widely agreed negative of such policies—increased home prices leading to displacement of existing residents.

PART 2

A BRIEF HISTORY OF URBAN DEVELOPMENT

Throughout history, transportation and land values have exerted significant influence upon the economy and urban life. The difficulty of moving people and goods across distance, and the fact that food was perishable, kept cities small and farming communities nearby. The scarcity of land within which sufficient food and other commodities could be produced, transported and stored without perishing raised the land values of population centers. Due to the lack of transport, as cities grew in population, less land was available per capita for crops and housing, and the price increased accordingly. When scarcity drives up the price of necessities such as food and shelter, the people in the lowest tier of the economy are disproportionately affected, since they are less financially able to weather rising costs. Burgeoning populations demanded better forms of transportation, which evolved to add arable and productive land to the economy. As transportation advancements gave access to land faster than the economy actually required it, land values fell. Due to cheaper values, more people could afford land, democratizing land ownership and reducing housing costs. Figure 1 shows the decline in agricultural land value. Note the values are especially steep from 1700 to 1900.



Source: The Economist. "The Paradox of Soil." April 4, 2015.

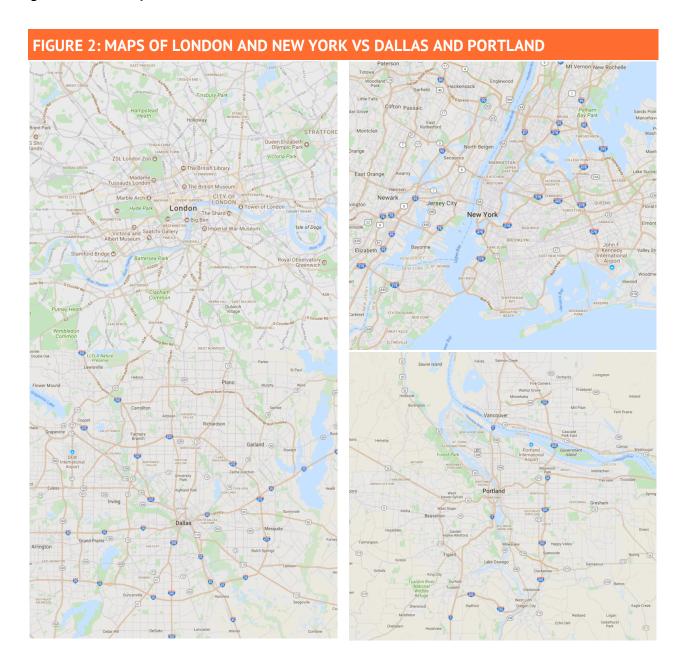
As people no longer had to strain their finances to receive their share of food, clothing and living space, their discretionary income and quality of life improved. More technological advances in transportation allowed for an ever greater movement of people and goods, benefitting producers and consumers by increasing the supply of labor, employment and material wealth for entire cities and societies. When abundance occurs, those occupying the lowest tier of the economy benefit most, as their discretionary income increases proportionally more. Even now, greater efficiency in transportation continues to benefit all participants in the economy.

With industrialization, travel and land accessibility were first served by rail. Rail-based extensions to the supply of land in the urban economy radiated outward from city centers similar to the spokes of a wheel, adding only small amounts of land to the urban economy along rail's ribbon patterns. In early cities, land between the "spokes" of hub-and-spokestyle rail patterns was much less accessible.

Later, development of the automobile and the construction of roads provided access to vast amounts of land immediately beyond the existing perimeter of a city. This comprehensive accessibility to adjacent land fostered a leap-frog-style outward growth of cities. As cities incorporated increasing amounts of surrounding land, knots of development sprang up to serve dispersed residents, leading to the more grid-like, sprawling development seen in modern-era cities. For this reason, older cities developed before the advent of the automobile tend toward their original rail-based (or even port-based) hub-and-spoke patterns (ex. New York, Chicago, Paris, London), while newer cities (ex. Dallas) developed

after the automobile tend to reflect the grid patterns and "splatter development" more organic to roadways and automobiles.

The following figures compare cities developed before the advent of the automobile, London and New York, with cities developed after World War II. Note the difference in urban spatial structure. Portland is particularly noteworthy as the region has a strong urban growth boundary.



Transportation advances have facilitated the continued acquisition of land by urban areas. Adding land to metro areas allows land supply to keep up with demand, keeping land values low and available to more tiers of society. Relatively inexpensive land also decreases the costs of production (less overhead means lower retail prices can be offered to customers) and the cost of living (cheaper housing), providing a lower cost, higher quality of life for all. As long as a city can annex more land, it can continue to increase its supply to meet the needs of more businesses and residents.



Adding land to metro areas allows land supply to keep up with demand, keeping land values low and available to more tiers of society.



Since abundant land is available and accessible—keeping land values low—the cost of developing this newly acquired land at the fringes of a city for housing is also kept low. In such a surplus land supply condition, developers compete with one another to serve residents' demand for housing, driving down prices and keeping the most housing units affordable to the most residents possible. In an undistorted market, the effects of supply and demand combine to serve the most consumers at the lowest price.

PART 3

NATURAL AND MANMADE GROWTH CONSTRAINTS

Distortions in the supply of land occur for two primary reasons: natural and manmade. This section details the similarities and differences of both types.

A natural distortion is a physical boundary that affects land prices, such as an ocean or a mountain. Policies can try to mitigate the effect of natural constraints, but short of bulldozing the mountain or filling in the ocean, actions that are typically frowned upon, physical boundaries will affect land prices. A manmade distortion refers to a set of policies that restrict growth such as an urban growth boundary or some type of containment strategy.

NATURAL DISTORTIONS

Some market distortion occurs due to the geographical properties of cities. For example, the price of a square foot of office space in Manhattan is higher than in Des Moines, Iowa, resulting to some degree from Manhattan's limited geographic boundaries. When natural boundaries such as waterways and mountains curtail a city's ability to annex land, the

resulting land scarcity drives up prices, reflected in the price per square foot of built space. By making less land accessible, supply cannot keep up with demand, which raises the price of land. All else equal, housing and commercial real estate prices on islands, such as Hong Kong and Hawaii, and in mountain cities, such as Santa Fe, New Mexico and Geneva, tend to be higher than in places such as Berlin or Dallas, Texas that have more accessible and usable land. These natural distortions occur due to terrain, and, while mitigated by advances in transportation such as tunnels and bridges, they still have a major effect on land prices.

Other market distortions occur when certain locations hold value for businesses and residents. For example, businesses that place a premium on face-to-face interactions, such as financial institutions and law offices, benefit from being centrally located. Such businesses place a higher value on central city sites or industry areas of concentration, such as an industrial park, where they can easily interact with others in their industries. Such preferences lead to agglomerated areas of cities, such as financial districts. Likewise, trucking and shipping companies benefit from proximity to ports and airports and are likely to be willing to pay a higher price to locate there, raising the value of land near these sites. Some residents prefer to live near public transport, raising the value of that location. Others will choose their residences based on school quality, driving up prices in certain suburbs. These land value distortions reflect preferences or benefits perceived by businesses and residents, and thus spring from consumer demand, signaling providers of commercial or residential space to increase development at those sites to serve this demand.



But aside from these distortions, housing generally tends to be progressively cheaper, and hence within the mortgage servicing capability of buyers, the farther away it is from the established centers of cities.



¹ "Clustering." economist.com. August 24, 2009. Web. http://www.economist.com/node/14292202, 24 October, 2016.

Chiodo, Abbigail, Rubén Hernández-Murillo and Michael Owyang. "Non-linear Effects of School Quality on House Prices." Federal Reserve Bank of St. Louis. nih.gov. 17 June 2013. 24 October 2016.

But aside from these distortions, housing generally tends to be progressively cheaper, and hence within the mortgage servicing capability of buyers, the farther away it is from the established centers of cities. Accordingly, the more expensive that houses are relative to incomes, the more incentive there is for households, especially first-home buyers, to locate farther away from central business districts, because the savings on housing costs are greater than the additional cost of travel. The data consistently establish that prices of similar homes tend to decline an average of about 1.2% to 1.5% for every additional mile from the regional downtown.³ This greater affordability, along with the value that many place on larger homes and lower-density living, explains the rapid suburbanization of the U.S. in the post-automobile era.

ARTIFICIAL GROWTH RESTRICTIONS

For many decades, the public and elected representatives have worried about negative externalities caused by unchecked urban growth, leading to the rise of explicit or virtual urban growth boundaries via regulation.

Policymakers and urban planners impose boundaries on land growth through several different means. One method of limiting growth is by defining urban growth boundaries (UGBs) directly. The majority of lots inside the boundary are typically very small, less than 1/8 of an acre, while lots outside the barrier are typically very large, at least 10 acres. The urban growth boundary encircles the entire metro region. The area inside the UGB is designed to have a 10-30 year supply of developable land. Boundaries can be examined and are typically studied for expansion every 2-10 years. However, politics can prevent the expansion of boundaries even when the amount of developable land decreases.



A second method imposes very large lot zoning on the rural fringe of cities, effectively establishing a defined boundary.



Downs, Anthony. "Still Stuck in Traffic." Washington, D.C.: Brookings Institution Press, 2004. 206-210. Print.

A second method imposes very large lot zoning on the rural fringe of cities, effectively establishing a defined boundary. Residential zoning typically increases from ¼ of an acre to 20 acres or more per parcel. There is very little demand for these 20-acre properties. Unlike urban growth boundaries, large lot zoning allows for only limited development. These development restrictions, combined with the high prices of the land, make it cost-prohibitive to build residential communities.

Another method is to create an adequate public facility ordinance (APFO). APFOs require that infrastructure (typically public schools, roads, sewer and water) can support proposed new development. Typically a moratorium is placed on new development until new infrastructure is constructed. This infrastructure is most often paid for by impact fees, but property taxes, gasoline taxes and other fees may contribute. Since APFOs are applied to urban areas only, they may redirect growth to more rural regions. While APFOs are designed to ensure sufficient infrastructure, many regions use them to prevent any new suburban housing construction.

Growth-restricting policies have gained popularity for a variety of reasons. In California, elected officials believe these restrictions are the best means of addressing climate change. The state has prioritized CO₂ emissions reductions because of CO₂'s role in climate change. In Oregon, officials imposed growth boundaries to protect wilderness, farmland and forests.⁵ Other regions have imposed boundaries to increase density and reduce infrastructure costs.⁶ Still others have enacted urban growth constraints to reduce fossil fuel usage. Some regions have encouraged denser development to make public transit more feasible by making automobile use more challenging, affecting both land use (promoting high density) and transportation (promoting transit use).

⁴ "Urban Growth Control Methods." *smartgrowth.org*. University of Maryland Center for Smart Growth. 24 May 2015. Web. http://www.umdsmartgrowth.org, 28 October 2016.

⁵ "Urban Growth Boundary." *Oregonmetro.gov*. Portland Metro. 26 September 2016. Web. https://www.oregonmetro.gov/urban-growth-boundary, accessed 28 October 2016.

Staley, Sam, Jefferson Edgens and Gerard C. S. Mildner. A Line in the Land: Urban Growth Boundaries, Smart Growth and Housing Affordability. Policy Study No. 263. Los Angeles: Reason Foundation, 1999. 6-10. Print.

PART 4

HOUSING, LAND PRICES AND EXTERNALITIES IN CONSTRAINED AND UNCONSTRAINED METRO AREAS

Significant research shows a correlation between limited land availability and higher housing prices.⁷ And urban growth boundaries do more than increase housing prices; they slow the entire regional economy, often leading to significant net migration from high-cost to low-cost metro areas.⁸ Analyses of contiguous development versus "splatter" or leapfrog development have long concluded that the latter is *more efficient*.

In this way, land use policies have a major impact on housing prices. Leading economists find that the reason "house prices vary among countries from 3 to 15 times the annual incomes of urban residents" depends "mainly on the extent to which governments have permitted conversion of land from rural to urban uses."

⁷ Ibid.

⁸ Ibid.

Cheshire, Paul and Edwin S. Mills. "Chapter 34 Introduction: Applied Urban Economics" in *Handbook of Regional and Urban Economics*. 3, London, England: Elsevier. 1999. 1323–1335. Print.

The next section compares four regions that exemplify the range of regulatory distortion of land prices and their effects on housing affordability. The first region, Portland, Oregon, (with its strict urban growth boundary) has the strongest growth boundary. The second, Washington, D.C., has varying degrees of protection with parts in two Maryland counties and Virginia. Montgomery County, Maryland's very restrictive agricultural preserve and adequate public facility ordinance changes to Loudoun County, Virginia's less restrictive focused-growth land use plans, then to almost no growth restrictions in Prince Georges County, Maryland. Atlanta, the third most restrictive urban area with its Livable Centers Initiative, has relatively weak constraints that try to focus growth in selected areas. Finally, the Dallas region lacks any type of containment strategy.

FOUR CASE STUDY AREAS

Portland, Oregon is the poster child for urban growth boundaries. In order to protect farmland and limit low-density development, in 1973 Portland imposed a 20-year urban growth boundary. Designed to permanently maintain a 20-year supply of buildable land, the boundary has been expanded more than 30 times since its inception, but not since 2012. For housing, the premise was that boundaries constraining growth would force cities to densify, providing inexpensive housing near workplaces.



Portland, Oregon is the poster child for urban growth boundaries.



Concerning the greater **Washington**, **D.C.** area, Maryland's state law limits growth to priority funding areas or bans growth if supporting infrastructure is not sufficient. Many counties within the state have enacted their own growth restrictions. Starting with the State Planning Act of 1959, Maryland has been actively managing growth and development. The 1992 Growth Act established eight visions for how growth should be managed in Maryland and required those visions to be incorporated into community plans.¹¹ The Smart Growth

Urban Growth Boundary." *Oregonmetro.gov.* 2 September 2016. Web. https://www.oregonmetro.gov/urban-growth-boundary, 23 January 2018.

¹¹ Urban Growth Control Methods." *smartgrowth.org.* 2016. Web. http://smartgrowth.org/smart-growth-principle-examples/. 23 January 2018.

Act of 1997 required state spending on infrastructure. Other growth expenditures were restricted to special areas designed for urban growth. These were termed "priority funding areas" (PFAs). The PFAs include all 157 incorporated municipalities and all of the area inside Maryland's portion of the Washington Beltway. Counties may designate other areas as PFAs as long as they meet minimum criteria for density, water and sewer provision and consistency with the county's growth projections.

In addition to the state of Maryland's growth restrictions, all of the Washington, D.C. metropolitan statistical area's (MSA) Maryland counties (Frederick, Montgomery, Prince George) have adopted PFAs. However, the PFAs vary greatly in strength. Montgomery County has adopted some of the strongest rules while Prince Georges and Frederick counties largely ignore the restrictions. Of the 28 defined development areas of Montgomery County, only 10 allow new development. The other 18 have an active moratorium on growth. And Montgomery County is even more constraining because one-third of the total land is in an agricultural preserve where development is forbidden. As a result, more than 80% of the county is off limits to development.

The state of **Virginia's** restrictions are far more limited. However, through their land-use plans, counties are able to institute restrictive zoning practices. Loudoun County's current land use map places 60% of county land in the rural categories. allowing a maximum of 1 unit per 20 acres or 1 unit per 40 acres.¹³ Other suburban counties have much weaker growth constraints. Stafford County has a significant portion of land zoned for farmland, but a significant number of homes exist in this zoning.¹⁴ The county also has rural residential zoning that allows for single-family zones to be constructed in rural areas.

In contrast, metro **Atlanta**'s weak growth law—the Livable Centers Initaitive (LCI)—seeks to direct growth to certain areas. The Atlanta Regional Commission, the federally designated Metropolitan Planning Organization for Atlanta, started the LCI, which on a competitive basis awards planning grants to local governments and nonprofit organizations for developments in existing centers and corridors consistent with development policies. The Atlanta grants provide a fiscal incentive to locate development in certain areas. The Atlanta approach contrasts with policies in Portland and the Washington, D.C. area in two ways. First, the grants encourage but do not mandate development in certain areas. Second, the

¹² Ibid.

[&]quot;Planned Land Use Map." loudoun.gov/compplan. Loudoun County. 6 December 2016. Web. https://www.loudoun.gov/DocumentCenter/View/992. 11 December 2017.

[&]quot;Stafford County Zoning." staffordcountyva.gov. Stafford County, VA. 26 October 2015. Web. https://staffordcountyva.gov/DocumentCenter/View/604. 11 December 2017.

grants apply to locations throughout the 16-county region, allowing development in many different areas.

Finally, the **Dallas-Fort Worth** region has no formal growth laws or incentive programs. Dallas, unlike Houston, has traditional zoning and land use regulations, making it a good example of an unconstrained metro area.



The Dallas-Fort Worth region has no formal growth laws or incentive programs. Dallas has traditional zoning and land use regulations, making it a good example of an unconstrained metro area.



HOUSING AND LAND PRICE DATA

One way of determining the effect of urban growth constraints is to look at housing prices. The *S&P Case-Shiller Home Price Index* assigns housing prices proxy values, allowing for more illustrative comparison across the country. When the *Index* debuted in 2006, the 20-city average of U.S. home prices was 183 while Portland's was 170, Washington, D.C.'s was 249, Atlanta's was 131 and Dallas' was 122.¹⁵ Note the major difference in housing prices between Dallas and Washington, D.C., two similarly sized metro areas.

By 2012, in the aftermath of the recession, Washington, D.C.'s was 176, the 20-city average was 136, Portland's fell to 129 while Dallas' decreased to 114 and Atlanta's fell to 83. By 2016, Portland reached 195 while the 20-city average remained below 180 at 177, D.C.'s increased slightly to 210, Atlanta's reached 128 and Dallas' reached 160. Clearly, urban growth boundaries play a part in housing prices. Between 2000 and 2008, while prices in Oregon grew 56%, prices in Georgia grew only 23%, despite Georgia's population growing at twice the percentage rate of Oregon's.¹⁶

[&]quot;S&P/Case Shiller Home Price Indices." us.spindices.com. 28 May 2016. Web. http://us.spindices.com/index-family/real-estate/sp-corelogic-case-shiller. Accessed 14 June 2016.

¹⁶ O'Toole, Randal. How Urban Planners Caused the Housing Bubble. Policy Analysis 646. Washington, D.C.: Cato Institute. 2009. Print.

TABLE 1: CASE-SHILLER INDEX FOR METRO AREAS								
Metro Area	2006 Value	2008 Value	2010 Value	2012 Value	2014 Value	2016 Value	Overall Change	Urban Growth Boundary Law
20-City Average	182.75	167.93	143.60	135.90	161.28	176.91	-3.1%	N/A
Atlanta	130.62	124.46	103.73	82.54	113.76	127.76	-2.2%	Weak
Portland	169.87	174.39	143.61	129.01	162.65	195.29	15.0%	Strong
Dallas	121.52	119.01	115.82	114.48	134.55	159.67	31.4%	None
Washington, D.C.	248.66	203.39	175.41	176.13	205.53	209.99	-15.6%	Moderate

Source: S&P Case Shiller Home Price Index

Next, let's separate out land prices from housing prices. During the 2000s many markets had increases in home values, but the growth-constrained metros had enormous growth in land values. And the land values, more than the housing values, proved unsustainable.¹⁷

Table 2 shows the differences in land prices in various U.S. cities and the strength of the growth restrictions. Figure 3 compares the price of land in the Atlanta, Dallas, Portland and Washington regions. Overall, the price of land has tended to hold constant or fall in regions without strong growth restrictions, while prices have increased, often substantially, in regions with these restrictions. The price of land makes up about 30% of the total price of a home in Atlanta and Dallas while it makes up 50% of the total price of a home in Portland and Washington D.C. This significant difference severely distorts the market. Note that Portland's land price index of 2.17 is higher than any other region including the much larger Washington, D.C. region. With the exception of a slight decline for the Great Recession, Portland's land prices have continually increased since 1985 as a percentage of home values.

^{*}March data used for all years

^{**} Urban Growth Boundary strength determined by looking at Metropolitan Planning Organization's growth policies.

Hsieh, Chang-Tai and Enrico Moretti. "Housing Constraints and Spatial Misallocation." *Facultychicagobooth.edu*, 18 May, 2017. Web. http://faculty.chicagobooth.edu/chang-tai.hsieh/research/growth.pdf. 22 February 2018.

Davis, Morris A. and Michael G. Palumbo. "The Price of Residential Land in Large US Cities." *Journal of Urban Economics.* 2008. 63 (1). 352–384. Web. https://econpapers.repec.org/article/eeejuecon/v_3a63_3ay_3a2008_3ai_3a1_3ap_3a352-384.htm, 14 November 2007.

Nichols, Joseph Olinder, Stephen and Mulhall, Michael, Finance and Economics Discussion Series, Federal Reserve, *fedealreserve.gov*, 2010. https://www.federalreserve.gov/pubs/feds/2010/201016/201016pap.pdf, 22 February 2018.

2000 Q1 \$168,676

Index

0.946

TABLE 2: ATLANTA HOUSING PRICES 1985-2016					
Date	Home Value (Structure & Land)	Land Value per Acre	Land Share of Total Price	Land Price I	
1985 Q1	\$93,044	\$25,218	27.1%	0.327	
1990 Q1	\$117,110	\$35,379	30.2%	0.517	
1995 Q1	\$130,865	\$34,109	26.1%	0.551	

 2005 Q1
 \$209,234
 \$56,524
 27.0%
 1.126

 2010 Q1
 \$180,754
 \$15,339
 8.5%
 No data

 2016 Q1
 \$216,880
 \$61,923
 28.6%
 No data

30.7%

\$51,763

Source: Davis, Morris A. and Michael G. Palumbo. 2007. "The Price of Residential Land in Large US Cities."

TABLE 3: PORTLAND HOUSING PRICES 1985-2016					
Date	Home Value (Structure & Land)	Land Value per Acre	Total Share of Total Price	Land Price Index	
1985 Q1	\$87,806	\$30,773	35.0%	0.215	
1990 Q1	\$104,061	\$38,700	37.2%	0.294	
1995 Q1	\$160,657	\$79,966	49.8%	0.659	
2000 Q1	\$209,100	\$110,887	53.0%	0.988	
2005 Q1	\$286,186	\$159,357	55.7%	1.503	
2010 Q1	\$305,628	\$145,699	47.4%	1.439	
2016 Q1	\$406,822	\$207,529	51.0%	2.168	

Source: Davis, Morris A. and Michael G. Palumbo. 2007. "The Price of Residential Land in Large US Cities."

TABLE 4: DALLAS HOUSING PRICES 1985-2016					
Date	Home Value (Structure and Land)	Land Value per Acre	Total Share of Total Price	Land Price Index	
1985 Q1	\$138,186	\$85,955	62.2%	0.832	
1990 Q1	\$125,068	\$64,679	48.3%	0.641	
1995 Q1	\$132,835	\$58,406	44.0%	0.665	
2000 Q1	\$167,186	\$76,827	46.0%	0.973	
2005 Q1	\$193,541	\$75,137	38.8%	1.031	
2010 Q1	\$194,196	\$43,434	22.4%	0.640	
2016 Q1	\$262,912	\$77,240	29.4%	1.230	

Source: Davis, Morris A. and Michael G. Palumbo. 2007. "The Price of Residential Land in Large US Cities."

TABLE 5: WASHINGTON, D.C. HOUSING PRICES 1985–2016					
Date	Home Value (Structure and Land)	Land Value per Acre	Total Share of Total Price	Land Price Index	
1985 Q1	\$141,057	\$73,459	52.1%	0.427	
1990 Q1	\$237,634	\$149,988	63.1%	0.953	
1995 Q1	\$227,506	\$122,804	54.0%	0.811	
2000 Q1	\$258,659	\$134,984	52.2%	0.949	
2005 Q1	\$547,862	\$373,332	68.1%	2.808	
2010 Q1	\$457,713	\$230,414	50.3%	1.802	
2016 Q1	\$541,935	\$252,038	46.5%	2.114	

Source: Davis, Morris A. and Michael G. Palumbo. 2007. "The Price of Residential Land in Large US Cities."

The following graph, Figure 3, compares the four metro areas' land prices. Note the relatively low prices in Atlanta and Dallas compared to the growing prices in Portland and Washington, D.C.

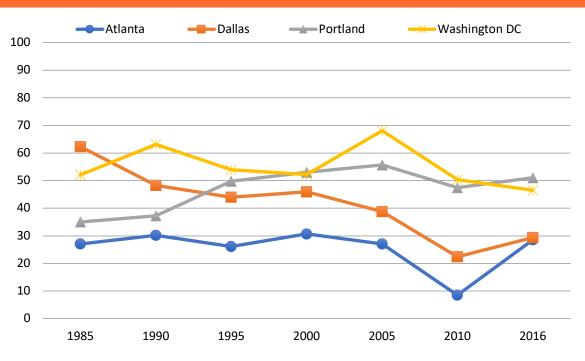


FIGURE 3: LAND PRICE AS A PERCENTAGE OF TOTAL ASSESSED VALUE

Source: Davis, Morris A. and Michael G. Palumbo. 2007. "The Price of Residential Land in Large US Cities." *Journal of Urban Economics*. 63 (1). 352–384; data located at Land and Property Values in the U.S., Lincoln Institute of Land Policy.

The following subsection takes a closer look at Portland and Atlanta.

PORTLAND: A SPECIAL CASE

Portland's growth boundary shows the strongest link between limiting the development of land and increasing housing costs. Portland's land prices began inflating just four years after the imposition of the 1973 boundary.²⁰ Prices have continued to increase every year except for during the depths of the Great Recession.

Portland State University examined housing prices between 1994 and 2005 in the Portland region, which comprises three counties in Oregon with an urban growth boundary and one in Washington State without such a growth restriction.²¹ Not surprisingly, the Oregon counties had larger price spikes and more volatility than Clark County, Washington. Figure

Staley, Samuel and Gerard Mildner. *Urban Growth Boundaries and Housing Affordability: Lessons from Portland.* Reason Foundation, 1999. Web. 22 June 2016.

Hall, John and Gerard Mildner. "Trends in Vacant Single Family Land Portland Oregon 1990-2005." pdxscholar.edu. May 2006. Web. https://pdxscholar.library.pdx.edu/cus_pubs/21/, 28 October 2016.

4 below shows the differences. These data tie disproportionate land price inflation and concomitant home price inflation to the imposition of UGBs.

Portland Average Oregon Counties Washington Counties

700

600

400

300

200

FIGURE 4: PORTLAND'S AVERAGE LAND PRICES PER ACRE: 1990-2005

Source: John Hall and Gerard Mildner. "Trends in Vacant Single Family Land Portland Oregon 1990-2005." Portland State University. May 2006.

1998

2000

2002

2004

2005

Increase in land prices uses 100 as a base.

1990

100

0

ATLANTA: A MOSTLY UNREGULATED LAND MARKET

1994

1996

In contrast, cities such as Atlanta, which have weak land use regulations and low land cost curves, avoid these problems. While the region's metropolitan planning organization (MPO)—the Atlanta Regional Commission—has a program that encourages development in town centers, the program is voluntary and the high number of town centers (100) helps encourage competition.²² Markets allow for the development of various high-, middle- and low-income neighborhoods throughout the city, giving residents choices and promoting economic diversity. Urban planning doesn't create future problems through failure to

[&]quot;Livable Centers Initiative." atlantaregional.com. Atlanta Regional Commission." 8 July 2016. Web. https://atlantaregional.org/community-development/livable-centers-initiative, 28, October 2016.

anticipate housing demand because land is always available in the region and markets allow for supply and demand to determine the evolution of the city. When prescriptive planning is held to a minimum, the dire consequences of failure are minimized as well. The constant availability of land for development assures the greatest chance that housing supply will match demand, as developers build only the amount they can sell profitably. Developers seeking a return on their capital can better do so by supplying floor space than by holding development sites fallow, avoiding the land speculation that artificially inflates land and housing prices. Indeed, the data bear this out.



Urban planning doesn't create future problems through failure to anticipate housing demand because land is always available in the region and markets allow for supply and demand to determine the evolution of the city.



URBAN GROWTH BOUNDARY'S EFFECTS ON DEVELOPERS

In regions without urban growth restrictions, developers seeking land at minimal prices look for rural land for sale within driving distance of a city, provided there are no regulatory prohibitions on development, such as a UGB or large-lot rural zoning. Owners selling rural land near developed areas expect a premium to be paid for their land, reflecting the proximity of urban amenities, but the ongoing unregulated competition from other rural land sellers near the city keeps the land price curve lower and flatter than if there are constraints.

The long-view nature of land development requires builders to secure sites for future construction while they are still in the process of working on existing ones, which may occupy them for years. This means that land "under development" and "acquired for development" already tends to be around five to 10 years of the builders' supply.

So when a 20-year growth boundary is imposed, the volume of rural land coming on the market within that boundary is much less than the quantity required for developers to continue acquiring it at modest cost. It will be much less than the quantity required to keep

up with the city's growth. This regulation-driven scarcity artificially increases the price of land, which is then reflected in the affordability of housing. As such, the urban growth boundary effectively creates the land-scarcity repercussions of an island.



As such, the urban growth boundary effectively creates the landscarcity repercussions of an island.



Some UGB cities have anticipated this effect, seeking to remedy it through more regulation. Many San Francisco Bay communities such as Berkeley charge developers a \$20,000 per unit fee on all new development to fund affordable housing. The city also stipulates "inclusionary housing" regulations, requiring developers to assign a certain percentage of their new housing to low-income families at below market rate in order to receive permits to build. By fixing a percentage of a developer's house prices under market, these well-intentioned measures merely transfer the costs to the remaining houses in the development, as the builder's cost for the development remains fixed. Some may argue that the lowest tier can live in the fixed-price homes, which is technically true. But all that does is transfer the pain to those slightly above the fixed-price income requirement, who are now priced out of the market.

In October 2015, the Portland City Council declared a state of emergency in affordable housing.²⁴ Rather than addressing a regulation-induced land-scarcity crisis by annexing more land, it sought to add even more regulation, by taxing developers:

The City of Portland's number one legislative priority for the 2016 short session was to lift the statewide ban on Inclusionary housing. Inclusionary housing is an affordable housing tool that links the production of affordable housing to the production of market-rate housing. Inclusionary housing policies produce affordable housing by requiring new

[&]quot;Berkeley considers ways to build more affordable housing." berkeleyside.com. 17 February 2016. Web. http://www.berkeleyside.com/2016/02/17/berkeley-considers-ways-to-build-more-affordable-housing/. 30 June 2016. Developers must currently make around 10% of the apartments in their projects affordable or instead can pay a \$20,000 per unit in lieu fee to the Housing Trust Fund. Other monies in the fund come from the Inclusionary Housing Ordinance, the Condo Conversion Ordinance, and the housing mitigation fee on commercial development..."

Shaw, Pete. "Housing State of Emergency Formalized in Portland." portlandoccupier.com. October 9, 2015. Web. http://www.portlandoccupier.org/2015/10/09/housing-state-of-emergency-formalized-in-portland-renters-insist-urgency-of-problem-demands-greater-action/. 23 January 2018.

residential developments to include a certain percentage of affordable housing units. SB 1533-B also gives local governments the ability to establish a construction excise tax on development to increase ongoing funding for affordable housing.²⁵



Portland's urban growth boundary effects, combined with taxing developers and the introduction of inclusionary housing, can only spiral prices upward.



Portland's urban growth boundary effects, combined with taxing developers and the introduction of inclusionary housing, can only spiral prices upward. In a study of California metro areas, inclusionary zoning was found to increase prices by \$22,000–\$44,000.²⁶ In this way, Portland's actions exemplify typical legislative response. Yet urban containment policies typically raise the price of homes and push development to the boundary or beyond it. Regulatory bodies have one big tool in their toolbox: regulation. As a result, legislation is more likely to be augmented than abandoned, no matter how problematic it is.

URBAN GROWTH CONSTRAINTS LEAD TO SPECULATION

Since land within a growth boundary continually increases in value, there is no incentive for land owners to sell it; economically, they have every reason to hold onto land as long as possible. When the price of a good skyrockets, and its value is expected to remain high, (example: land subject to city planning regulations) that good becomes a precious commodity. In this case, Portland's urban growth boundary has made its land extremely valuable. Under these conditions, the owners of developable land do not behave rationally as in economic theory. Instead, these land owners behave as do holders of a speculative commodity such as gold. Manufacturers needing significant quantities are willing to pay inflated gold prices and pass costs to their constituents. That same behavior occurs when land becomes scarce for developers.

Saltzman, Dan. "Affordable Housing Updates." portlandoregon.gov. June 2016. Web. https://www.portlandoregon.gov/PHB/article/510852, 23 January 2018.

²⁶ Padilla, Laura. "Reflections on Inclusionary Housing and a Renewed Look at its Viability." Hofstra Law Review. 23. 1995. 576. Print.

When a basic necessity like housing is commoditized via regulation, low-income earners find themselves priced out of the market. A study of Ventura County, California found that, despite having the approval to build 17,500 housing units, developers built fewer than 12,000 units.²⁷ When developers build less than the maximum amount of housing allowed by law, and government cannot anticipate builders' efficiency, urban growth laws result in less housing than intended. A study of Portland, Oregon found that homeowners earning salaries equivalent to those 20 years ago (adjusted for inflation) are living in inferior homes (smaller and on less land) due primarily to the urban growth boundary.²⁸

Unsurprisingly, research has shown that UGBs lead to a reduction in housing supply.²⁹ Since higher-priced homes offer builders higher profit margins, this reduction in supply hurts low income residents the most. An 18-year old estimate from Metro predicted Portland would have a 40,000 unit housing deficit as soon as 2017.³⁰ That prediction came true before 2017; in October 2015 the Portland City Council declared a housing affordability crisis.³¹ As described in the following sections of this paper, the region is now considering allowing development of affordable housing outside the urban growth boundary.



History shows that once a government has regulated a sector of the economy, it is unlikely to retract that regulation, even in the face of failure.



History shows that once a government has regulated a sector of the economy, it is unlikely to retract that regulation, even in the face of failure.³² Regulatory "solutions" would include

Fulton, William et. al. Smart Growth in Action: Housing Capacity and Development in Ventura County. Policy Study # 288. Los Angeles: Reason Foundation, December 2001. Web. http://reason.org/files/7896cdcef3f7e933eb4478ca29c834bd.pdf. 23 January 2018.

Staley, Samuel, Jefferson Edgens and Gerard C. S. Mildner. A Line in the Land: Urban Growth Boundaries, Smart Growth, and Housing Affordability. Policy Study # 263. Los Angeles: Reason Foundation, 2002. Web, http://reason.org/files/c5ba9be86e1bda65352dcf0e87a46c5a.pdf, 19. 23 January 2018.

Fulton, William et. al, Smart Growth in Action. 12-14.

³⁰ Staley and Mildner. Urban Growth Boundaries and Housing Affordability.

Housing Affordability." pdxcityclub.org. 2006. Web. http://www.pdxcityclub.org/Files/Reports/Housing%20Affordability%20in%20Portland%20-%20CCOP.pdf, 23 January 2018.

³² Crews, Clyde Wayne. "Sunsetting Federal Regulations." cei.org. 15 July 2015. Web. https://cei.org/blog/sunsetting-federal-regulations. 8 May 2016.

forcing developers sitting on artificially inflated land to develop land or pay taxes on the unimproved land. While some affordable housing might be built, such regulations complicate a situation that would not have existed absent urban growth restraints. Accordingly, Portland has kept its UGB, but, in response to the harsh consequences of its imposed land scarcity, has qualified and mitigated some of its rigid land-use policies.



Urban growth boundaries may severely limit affordable housing.



OREGON'S ATTEMPT TO UNDO THE DAMAGE CAUSED BY URBAN GROWTH BOUNDARIES

Urban growth boundaries may severely limit affordable housing. Therefore, several communities have introduced geographical carve-outs of annexed land beyond the UGB to solve the problem. While well-intentioned, these carve-outs create additional problems.

For example, early in 2016, the Oregon House passed HB 4079. While the bill lifted the ban on inclusionary zoning and provided greater protections to renters, the most noteworthy action was to identify two pilot 50-acre sites for housing outside the urban growth boundaries.³³ Each site would be required to have affordable housing for 50 years. This bill supplemented the existing safety valve that required cities to have a 20-year supply of land.

This change introduces all sorts of problems. First, it creates a spatial mismatch between housing and jobs. Unless most of the employment is near the urban growth boundary, many residents are going to have long commutes for work—just what the urban growth boundary sought to prevent.

Exacerbating the commute issue, the two lower income housing sites are likely to include transit-dependent households. Transit service outside the UGB is likely to be far worse than inside the UGB, both in service frequency and number of lines. And any transit service that operates will be more expensive given the longer distance it has to travel.

Oregonian Editorial Board. "Affordable Housing Bill Acknowledges Oregon's Buildable Land Supply Problem." *oregonlive.com*. March 9, 2016. Web. http://www.oregonlive.com/opinion/index.ssf/2016/03/affordable-housing_bill_acknow.html, 23 January 2018.

Second, planners cannot possibly forecast the perfect amount of acreage needed to stabilize the housing market. If one exemption to urban growth boundary policy is adopted, why not adopt others? Are 100, 200 or 300 acres of affordable housing a solution to Portland's housing affordability problems? Over the long-term, it is impossible to determine. Economists and planners have a poor track record of predicting the future in 10 years, not to mention 20 or 50.



Economists and planners have a poor track record of predicting the future in 10 years, not to mention 20 or 50.



Finally—but perhaps most importantly—such carve-outs create discrete pockets of lower income housing, sequestering the lowest tier of the housing market to an area outside the city boundary, literally putting low-income residents, with a larger cohort of minorities, on the fringes of society. This income-specific planning segregates the city by wealth, and does not allow markets to disperse higher and lower income neighborhoods throughout the city. Only upper income residents are allowed to live within the city boundary. In modern American society, such segregated urban planning is backward, at best.

One additional note: A significant level of spillover from the counties in Oregon to Clark County, Washington took place during the 1990s, indicating that the UGB diverted population growth into Clark County.³⁴ As a result housing prices in the Oregon counties of the Portland metro area are lower than they would be without the nearby relief valve of low-restricted Clark County, Washington.

Jun, Myung-Jin. "The Effects of Portland's Urban Growth Boundary on Urban Development Patterns and Commuting." *Urban Studies*. Vol. 41. Issue 7. 1333-1348. *Sage Journals*. Web. http://journals.sagepub.com/doi/pdf/10.1080/0042098042000214824. 27 February 2018.

PART 5

HOUSING AFFORDABILITY'S EFFECTS ON LOW INCOME EARNERS

The "median multiple" (the median house price divided by median annual household income) is a good way to determine a region's housing affordability. A higher median multiple indicates that households are being forced to stretch to pay higher prices. Cities with the lowest median multiple are the most affordable. Cities with median multiples of three or lower, such as Dallas, tend to have much larger, newer houses with more land per household than cities with higher median multiples, such as London or New York City. A median multiple of around three represents attributes of housing for a price most households are comfortable paying.³⁵ In these markets, such as San Francisco, households pay more for each square foot of land, sacrificing not just land consumption but other attributes of housing, such as size and quality of home.

[&]quot;High Home Price-to-Income Ratios Hiding Behind Low Mortgage Rates." forbes.com. 16 Apr. 2013, Web. https://www.forbes.com/sites/zillow/2013/04/16/high-home-price-to-income-ratios-hiding-behind-low-mortgage-rates/#7b2bdd543a59. 23 January 2018.

TABLE 6: MEDIAN MULTIPLES OF HOUSING BY CITY				
City	Housing Multiple	Growth Restrictions		
New York City	21.6	Strong (Geographic)		
San Francisco	13.7	Strong		
Los Angeles	9.0	Strong		
Boston	7.6	Medium		
San Diego	7.0	Strong		
Washington, D.C.	6.1	Medium		
Miami	6.0	Medium		
Seattle	5.9	Strong		
Portland	4.7	Strong		
Atlanta	3.4	Weak		
Houston	3.3	Weak		
Minneapolis	3.1	Weak		
Charlotte	2.6	None		
Dallas	2.4	None		
Cincinnati	2.2	None		

Source: Numbeo Property Investment Grade Rankings

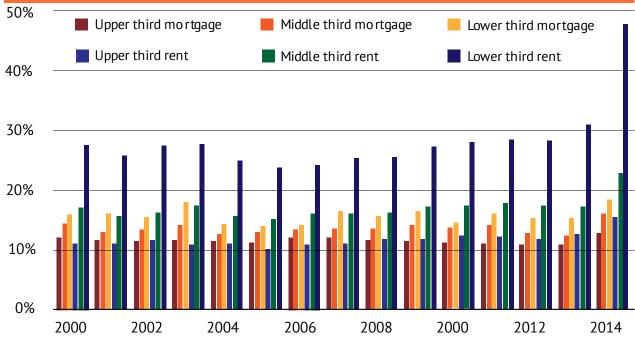
There is no middle-ground, modest price appreciation in any market with effective growth containment policies, in comparison to unconstrained ones. Housing median multiples settle out at around three for the unconstrained cities, regardless of how large the average lots and houses are, while the median multiples tend to average six and over, and with much greater price volatility, in the growth-contained cities.³⁶

How does this affect low income residents? The single biggest cost for a city's residents is housing, with the lower income earners paying proportionally more for their housing (as a share of income) than the upper or middle class. In a March 2016 report, The Pew

O'Toole, Randal. *The Planning Tax: The Case Against Regional-Growth Management Planning.* Policy Analysis No. 606. Washington D.C: Cato Institute. Dec. 2007. Web. https://object.cato.org/sites/cato.org/files/pubs/pdf/pa-606.pdf. 23 January 2018.

Charitable Trusts found that among the American working public (ages 20-60), low income families spent a far greater share of their income on housing than did upper-income families, as shown in Figure 5.





Notes: Data are adjusted for inflation using the Bureau of Economic Analysis' Personal Consumption Expenditure Price Index; population is limited to households in which the respondent or spouse is between the ages of 20 and 60. For homeowners, housing costs include mortgage principal and interest and property taxes; for renters, they include rent. Sources: Pew analysis of Bureau of Labor Statistics Consumer Expenditure Survey Public-Use Microdata, 2000 to 2014 ©2016 The Pew Charitable Trusts.

Constrained cities proponents often cite "livability" as a goal of growth boundaries. As far as housing affordability goes, urban growth constraint makes life *less* livable for those at the bottom of the socio-economic ladder.

LAND SCARCITY POLICIES' COST OF LIVING EFFECTS

Not only do these land scarcity regulations raise the cost of housing, they raise the costs of all property-related government infrastructure activity in the city, such as roadways, train stations, bike paths, sidewalks, parks, etc. Every time governments buy land for

infrastructure, taxpayers get less bang for their buck, engendering higher taxes for residents.

These higher costs extend to the simple daily cost of living. When commercial enterprises such as grocery stores and restaurants have to spend more money on their square footage, those costs filter down to the consumer level in terms of higher prices. Workplaces with such increases in overhead have less available money to spend on hiring workers.



But the most disturbing aspect of regulatory land scarcity is that the lowest economic tier residents, who spend a higher fraction of their income on food, utilities and shelter than upper and middle classes do, bear the greatest brunt of it.



But the most disturbing aspect of regulatory land scarcity is that the lowest economic tier residents, who spend a higher fraction of their income on food, utilities and shelter than upper and middle classes do, bear the greatest brunt of it. Thus, urban growth boundaries effectively exert an extremely regressive tax upon cities, imposing far greater everyday costs on young or low-income residents, and first-time home buyers.

DEMAND VS RATIONING

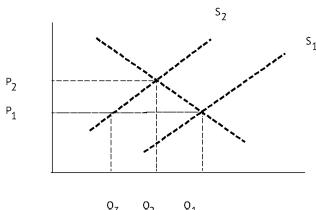
Again, these higher urban land prices are forged by land rationing, shifting the supply curve rather than the demand curve. As such, the new equilibrium point between supply and demand will actually be at a much lower quantity than if the base urban land price was lower. Premium locations are actually being rationed rather than demanded. In contrast, unregulated Houston, for example, results in extremely affordable floor space being built, pricing "in" the most possible participants.

Figure 6 shows that as the price of land increases, the quantity demanded of that land decreases. Urban growth boundaries, by limiting the supply of land, increase the prices for that land, harming low-income residents the most.

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FIGURE 6: EFFECT OF HIGH LAND PRICES ON DEMAND

Price



Quantity



Studies confirm that the overall effect of urban land price inflation is disproportionately burdensome to lower income earners.



LAND SCARCITY POLICIES' EFFECTS ON LOW INCOME EARNERS

Studies confirm that the overall effect of urban land price inflation is disproportionately burdensome to lower income earners.³⁷ And members of this group are unable to afford these increases since they already pay 40% or more of their total income to housing.

In part due to this pricing out, the well-intentioned but counterproductive goal of densifying cities to force residents to live closer to their workplaces has failed.³⁸ As one study finds, "...failure of the Urban Growth Boundary to appreciably raise densities near employment centers is the main reason for its poor performance, and this failure will persist regardless of whether the city has one or many such centers..." City dwellers use

³⁷ Casselman, Ben. "Inflation May Hit the Poor Hardest." *Fivethirtyeight.com.* 7 April 2014. Web. https://fivethirtyeight.com/features/inflation-may-hit-the-poor-hardest/. 22 February 2018.

³⁸ "American Fact Finder, Journey to Work—Table S0802." https://factfinder.census.gov/ May 2016. Web. https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml. 23 January 2018.

Breuckner, Jan. "Urban Growth Boundaries: An Effective Second-Best Remedy For Unpriced Traffic Congestion?" www.economics.uci.edu. August 2006. Web. https://www.economics.uci.edu/files/docs/workingpapers/2005-06/Brueckner-10.pdf. 12 May 2016.

many criteria in deciding where to live, only one of which is workplace location. For many, the typically suburban benefits of housing affordability, larger and newer homes with outdoor space for children and pets, proximity to good schools, proximity to work places of more than one family member, and many other reasons outweigh the commuting costs that urban growth boundaries seek to diminish.

New urban planning models that locate housing close to employment seem to disregard the complex housing considerations for dual-income households in which both workers seek easy commutes. Dual-income households with children also need to consider schooling, resulting in compromise of location that cannot be anticipated by urban planners. Cities that do not take such factors into consideration risk losing both skilled workers and employers to less-regulated cities. Currently the U.S.'s lower density, less restricted cities tend to have more households with children in them (see Table 7 below), suggesting that such cities may be more family-friendly.

TABLE 7: METRO AREA HOUSEHOLDS WITH CHILDREN				
Metro Area	Percentage Households w/Children	UGB Level		
Houston	39.3%	Weak		
Dallas	38.8%	None		
Atlanta	36.6%	Weak		
Los Angeles	35.8%	Medium		
Phoenix	33.4%	None		
New York City	33.1%	Strong		
Portland	31.3%	Strong		
San Francisco	30.9%	Strong		
Seattle	30.8%	Strong		
Boston	30.7%	Medium		
U.S. Average	32.2%			

Source: U.S. Census Bureau, Table S1101 and Regional Development Plans and Zoning Laws, UGB Level Metropolitan Planning Organization Land Use Plans

PART 6

CONCLUSION

If real estate markets dictated that moving to more central locations saved money on housing and transport costs, urban centralization would be a stronger natural trend relative to the dispersion that has dominated. Presumably we could all end up living in a huge monolithic cube a mile high, wide, and deep—the stuff of sci-fi movies. Of course there might be lower housing plus transport costs in the case of very much smaller homes near a city's central business district. The simple reason that households are not flocking to smaller and smaller homes in more and more central locations is that these homes simply do not meet their requirements for other attributes in a home, particularly space. A balance has to exist; it is simply not worth it for most people to move closer to the center, especially given the wide variety of people's wants in their homes.

There is no single path to productivity, income and economic growth in a city. The United States has a multitude of different types of cities, and this is an advantage to its national economy. If anything, artificial distortions slow this process. The U.S. economy succeeds at least in part due to the regulatory flexibility that allows different city types to evolve and proliferate. The alternative is forgoing growth altogether in particular industries, and in employment for particular skill sets.

We need to understand that turning the clock back to dense city centers of the past, such as in the historic cities of Europe, will require considerable socio-economic sacrifices in the very areas where the public is least willing to sacrifice. Examples include the

democratization of home ownership, social mobility, reduced inequality, housing affordability, discretionary incomes, demographics, family formation, child welfare, government services of commensurate value to taxation burdens, income growth, and business start-up opportunity. If high-density living options were preferred and they were not available, that would be a problem. However, forcing Americans to live in high density developments they don't like is not the solution.

ABOUT THE AUTHOR

Phil Hayward is an independent writer and researcher in the fields of transportation and land use.

A native of New Zealand, Hayward has been published by the New Zealand Productivity Commission, the *New Zealand National Business Review*, *Quadrant* Magazine and *Investigate* Magazine.

