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HOUSING AFFORDABILITY:

THE SAINT LOUIS COMPETITIVE ADVANTAGE

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HOUSING AFFORDABILITY:

The Saint Louis Competitive Advantage

By Wendell Cox

EXECUTIVE SUMMARY

The decade of 2000 to 2009 saw changes in domestic migration trends in America. These changes saw an increase in domestic migration away from the coasts and to the interior, or heartland, of America. The well-documented increase in housing costs was one of the primary drivers of that change. While housing costs increased everywhere, they increased much more substantially along the coasts, especially the West Coast. The Saint Louis metropolitan area was one of the beneficiaries of this new migration trend.

Saint Louis, Mo., has one of the United States' most affordable housing markets. One of the reasons for the affordable housing in Saint Louis is the lack of centralized planning by governments in the area. The greater Saint Louis metropolitan area should position itself to continue to benefit from these domestic migration trends by limiting the planning requirements it imposes on homebuilders and developers.

That lack of government regulation and planning and the resulting lower housing costs leads to a lower overall cost of living for residents of the Saint Louis area. There is evidence that the more affordable cost of living is making Saint Louis more attractive to outsiders and resulting in growth for the entire region.

Wendell Cox

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Saint Louis, Mo., has one of the United States' most affordable housing markets.

PREFACE

In 2009, Los Angeles-based attorney Eric Peterson and his wife, Renu Peterson, M.D., decided it was time to leave California. They considered many parts of the country for relocation. They wanted what parents everywhere want for their families: a lower cost of living, more affordable housing, better schools, a safer environment. Deciding to leave Los Angeles was one choice with many factors; deciding where to move posed numerous choices with even more factors.

The Peterson family considered cities around the United States before settling on the Saint Louis area. They found everything they were looking for in a suburb of Saint Louis County. They traded their home in Los Angeles for a slightly smaller home in Saint Louis, but at half the price. With that lower price came lower taxes. However, they feel the public services in their community, especially the schools, are far superior to Los Angeles. A few friends back in Los Angeles liked what they heard so much that they followed the Petersons here.

The Petersons and their friends are not alone. This past decade has seen a substantial change in domestic migration trends in America. People living on the coasts are finding benefits to moving to mid-America, with its lower costs of living and more affordable housing.

Analyzing those changes, the reasons behind them, and the ways to capitalize upon them for Saint Louis are the purposes of this paper.

1. INTRODUCTION

Since World War II, Saint Louis has been among the more slow-growing metropolitan regions of the United States. Since 1950, the city of Saint Louis alone has lost nearly 60 percent of its population. This is a greater loss than any other municipality in the modern Western world that achieved 500,000 residents at some point in its history.[1] Despite this loss, the 16-county [2] metropolitan region added nearly 1 million new residents over the same period (Table A-1 and Figure 10 in Annex).

The demographic and economic performance of the Saint Louis region has principally reflected the overwhelming regional trends of the Midwest and Northeast (an area also called the Frost Belt). Since World War II, the majority of population growth and employment growth has occurred in the South and the West. Much of the population growth was in coastal counties, rather than interior counties.[3]

Domestic migration[4] trends during the last decade, however, have changed. In contrast to trends earlier in the 20th century, between the 2000 and 2010 censuses, nearly 60 percent of the nation's growth was in interior, rather than coastal counties.[5]

There has been net domestic migration from California to Missouri in the 2000s.[6] Moreover, the Saint Louis metropolitan region, which has long suffered significant domestic migration losses, experienced only modest losses between 2000 and 2009. By comparison, the domestic migration loss over the same period in the Los Angeles, San Francisco, and New York metropolitan areas was much greater than in Saint Louis (both in numeric and percentage terms). Expanding differences in the cost of living, principally driven by more expensive housing, appears to be a major factor in this development.

This paper will describe housing affordability in the Saint Louis metropolitan region and related domestic migration trends. It will also demonstrate the importance of housing affordability (and the cost of living) as a competitive advantage (or disadvantage) among metropolitan areas. The perspective is that a more competitive metropolitan area facilitates greater economic growth, job creation, and poverty alleviation. Because of these associations, it is important for public policies to generally avoid raising the cost of living.

The analysis will focus on the "urban organism" or "urban form" of Saint Louis, which can be defined as either the metropolitan area or the urban area,[7] both of which are principally in Missouri and stretch into Illinois (Figure 1).

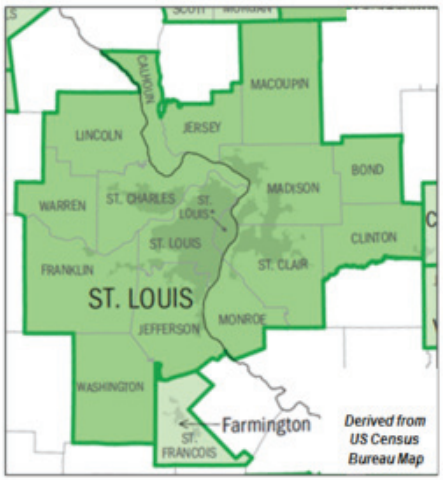
2. HOUSING AFFORDABILITY IN AMERICA

House prices have retained a generally constant relationship to household incomes in the United States since World War II. The measure used for evaluating housing affordability[8] in this paper is the Median Multiple (median house price divided by median household income[9]), which is among the most utilized measures of housing affordability,[10] both in the United States and internationally, as well as by the United Nations and the World Bank.[11] The Median Multiple incorporates the demand factor of income; however, it does not incorporate other demand factors such as population increase, population density, and superior amenities (quality of life).

A typology of housing affordability categories based upon the Median Multiple is illustrated in Table 1.[12]

Between 1950 and 1970, the Median Multiple among the nation's current largest metropolitan areas[13] averaged 2.4.[14] Only one metropolitan area, New York, had a Median Multiple above 3.0, at 3.2. From 1970 to 2000, the Median Multiple averaged 2.8. Between 1970 and 2000, most metropolitan areas maintained a Median Multiple of 3.0 or below, with only six metropolitan areas higher (New York and five in California). The 1970 to 2000 period was notable for the loss of housing affordability in the largest California metropolitan areas compared to the rest of the nation. For example, between 1970 and 2000, the Median Multiple rose 50 percent or more in Los Angeles, San Francisco, San Diego, and San Jose, all of which became seriously unaffordable (Median Multiple above 4.0).

Figure 1 - Saint Louis Metropolitan Region
(As Defined 2003 & Later)



LEGEND

St. Louis Metropolitan Region Includes the Following:

Dark Green Areas: St. Louis Metropolitan Area (MSA)

Light Green Areas:
(St. Francois County) Farmington Micropolitan Area
Part of the St. Louis Combined Statistical Area (CSA)

Grey Areas: Urban Areas (Areas of Continuous Urban Development: All Other Areas are Rural)

Table 1 - Housing Affordability Categories
Housing Affordability Categories

Rating	Median Multiple
Severely Unaffordable	5.1 & Over
Seriously Unaffordable	4.1 to 5.0
Moderately Unaffordable	3.1 to 4.0
Affordable	3.0 or Less

Median Multiple: Median House Price Divided by Median Household Income
Source: Demographia International Housing Affordability Survey

The fairly constant relationship of house prices to income changed radically during the decade of the 2000s. The shift occurred with the housing bubble, as more liberal mortgage lending practices increased housing demand. In some markets, the supply of new housing was sufficient to accommodate the higher demand, and the Median Multiple rose very little. Many metropolitan areas remained affordable, with a Median Multiple of 3.0 or less.

In a number of other metropolitan areas, however, the supply of housing was insufficient to meet the demand. Housing prices escalated in a manner not experienced

People living on the coasts are finding benefits to moving to mid-America, with its lower costs of living and more affordable housing.

Table 2 - Housing Affordability: 1950-2010
Using Median Multiple (Median House Price* Divided by Median Household Income)
With Housing Affordability Rating in 2010

Metropolitan Area	1950-1969	1970-1999	2000-2009	2000-2009 Peak	2010 Rank	2010
AFFORDABLE (2010)						
Atlanta, GA	2.4	2.4	2.6	3.1	2.3	1
Indianapolis, IN	1.9	2.1	2.3	2.4	2.4	2
Rochester, NY	2.3	2.2	2.2	2.4	2.4	2
Cincinnati, OH-KY-IN	2.8	2.4	2.6	2.8	2.5	4
Cleveland, OH	2.8	2.3	2.6	2.8	2.5	4
Detroit, MI	2.1	2.1	2.7	3.2	2.5	4
Buffalo, NY	2.4	1.9	2.1	2.5	2.6	7
Saint Louis, MO-IL	**2.3**	**2.2**	**2.7**	**3.0**	**2.6**	**7**
Las Vegas, NV	2.5	3.4	4.1	5.9	2.6	7
Dallas-Fort Worth, TX	2.0	2.7	2.7	2.9	2.7	10
Kansas City, MO-KS	**2.0**	**2.5**	**2.7**	**3.1**	**2.7**	**10**
Pittsburgh, PA	2.2	2.1	2.4	2.8	2.7	10
Phoenix, AZ	2.3	2.8	3.4	4.7	2.7	10
Columbus, OH	2.3	2.4	2.7	2.9	2.8	14
Houston, TX	1.9	2.5	2.8	3.0	2.9	15
Louisville, KY-IN	2.1	2.3	2.8	3.1	2.9	15
Jacksonville, FL	2.1	2.3	2.9	3.6	2.9	15
Memphis, TN-AR	2.4	2.9	3.0	3.3	2.9	15
Minneapolis-St. Paul, MN-WI	2.5	2.4	3.1	3.7	2.9	15
Nashville, TN	2.2	2.6	3.2	3.6	2.9	15
MODERATELY UNAFFORDABLE (2010)						
Riverside-San Bernardino, CA	2.3	3.5	4.9	7.6	3.1	21
Tampa-St. Petersburg, FL	2.6	2.8	3.6	4.8	3.1	21
Oklahoma City, OK	2.0	2.7	2.6	2.9	3.2	23
San Antonio, TX	2.3	2.9	3.0	3.3	3.2	23
Sacramento, CA	2.4	3.3	4.7	6.6	3.2	23
Austin, TX	2.4	2.8	3.2	3.6	3.3	26
Richmond, VA	2.2	2.7	3.3	4.2	3.3	26
Orlando, FL	2.7	2.8	3.8	5.2	3.3	26
Birmingham, AL	2.0	2.9	3.4	4.0	3.4	29
Raleigh, NC	2.5	3.1	3.6	4.2	3.5	30
New Orleans, LA	3.2	3.2	3.5	4.3	3.5	30
Chicago, IL-IN-WI	2.8	2.8	4.2	4.9	3.6	32
Hartford, CT	2.8	2.9	3.6	4.2	3.6	32
Philadelphia, PA-NJ-DE-MD	1.9	2.2	3.2	4.2	3.8	34
Salt Lake City, UT	2.3	2.6	3.2	4.3	3.8	34
Milwaukee, WI	2.6	2.7	4.0	4.8	3.8	34
Washington, DC-VA-MD-WV	2.8	2.9	4.1	5.7	3.8	34
Charlotte, NC-SC	2.2	2.9	3.5	4.1	3.9	38
Denver, CO	2.4	2.9	4.1	4.5	3.9	38
Virginia Beach-Norfolk, VA-NC	2.3	2.6	3.5	4.7	3.9	38
Baltimore, MD	1.9	2.4	3.7	4.6	4.0	41
SERIOUSLY UNAFFORDABLE (2010)						
Providence, RI-MA	2.6	2.9	4.4	5.4	4.2	42
Portland, OR-WA	2.1	2.6	4.3	5.4	4.4	43
Miami-West Palm Beach, FL	2.9	3.3	5.1	7.2	4.7	44
Boston, MA-NH	2.8	3.2	5.1	6.1	5.0	45
Seattle, WA	2.3	3.1	5.1	6.2	5.0	45
SEVERELY UNAFFORDABLE (2010)						
Los Angeles, CA	2.8	4.2	7.1	10.1	5.9	47
New York, NY-NJ-PA	3.2	3.7	6.1	7.7	6.1	48
San Diego, CA	2.8	4.6	7.4	9.7	6.2	49
San Jose, CA	2.7	4.1	7.3	10.2	6.7	50
San Francisco-Oakland, CA	2.9	4.6	7.9	11.2	7.2	51
Average	2.4	2.8	3.8	4.7	3.6	

Sources: Calculated from U.S. Census Bureau data (1950-1970), Harvard Joint Center on Housing (1980-2009), Demographia International Housing Affordability Survey (2010).

*1950-1970 data: Median house value divided by median household income.

at any point since World War II. The Median Multiple rose to severely unaffordable (above 5.0) in some metropolitan areas. For example, in Los Angeles, San Francisco, San Diego, and San Jose, the Median Multiple peaked at more than 10.0. In a number of other markets, the Median Multiple rose above 5.0, reflecting severely unaffordable housing. House prices increased relative to household incomes in nearly all major metropolitan markets. However, the increase in the Median Multiple was far more pronounced in some markets.

After the burst of the housing bubble, house prices dropped substantially relative to incomes, especially in the metropolitan areas that had reached the highest Median Multiples. However, the 2010 Median Multiple remained higher in all of the major metropolitan areas with seriously unaffordable or severely unaffordable housing. Table 2 summarizes housing affordability by metropolitan area since 1950.

Amenities and Higher House Prices: Part of the difference in housing affordability between metropolitan areas appears to be a result of amenities and the quality of life. Research indicates that house prices tend to be higher where there is a better perceived quality of life, such as less severe weather and more moderate temperatures.[15] It can be expected that demand for housing will be greater in such areas, which is likely to be associated with higher house prices. For example, between World War II and 1970, house prices in the major metropolitan areas of coastal California (adjusted for incomes by the Median Multiple) averaged 22 percent higher than prices in other major metropolitan areas.

More recently, house prices in California have escalated substantially above national prices, reaching 63 percent between 1970 and 2000 and 114 percent in the 2000s (Figure 2). Dartmouth economist William Fischel has suggested that the extent of this divergence in price between California and the rest of the nation is not likely due to amenity differences. Fischel's analysis is outlined further in section five.

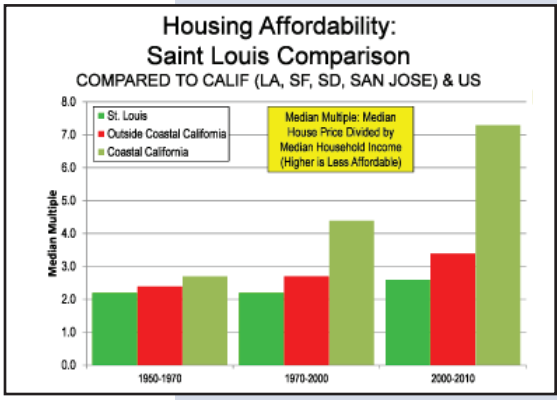
3. HOUSING AFFORDABILITY IN SAINT LOUIS

Housing has been comparatively affordable in the Saint Louis metropolitan area since World War II.

- From 1950 to 1970, the Median Multiple averaged 2.3, which is 15 percent below the 2.7 average of the 51 metropolitan areas.
- Between 1970 and 2000, the Median Multiple averaged 2.2, which is 21 percent below the major metropolitan area average of 2.8.
- During the bubble decade of 2000-09, Saint Louis had an average 2.7 Median Multiple, which is 29 percent below the major metropolitan area average of 3.8.
- At the peak of the housing bubble, the Median Multiple in Saint Louis was 3.0, which was 36 percent below the 4.7 metropolitan average at that time.

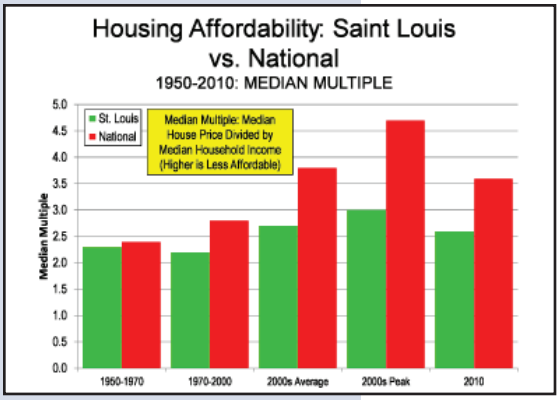
As of the third quarter of 2010, Saint Louis had a Median Multiple of 2.6 and was tied as the seventh most affordable major metropolitan area. By comparison, the average Median Multiple 2010 at the national level was 3.6. Saint Louis was also tied as the seventh most affordable out of 82 major markets in the *7th Annual Demographia International Housing Affordability Survey*, which covered seven nations (the United States, United Kingdom, Canada, Australia, Ireland, New Zealand, and Hong Kong, in China).[16]

Figure 2



Since 1950, the city of Saint Louis alone has lost nearly 60 percent of its population. This is a greater loss than any other municipality in the modern Western world that achieved 500,000 residents at some point in its history.

Figure 3



Between 1950 and 1970, the Median Multiple among the nation's current largest metropolitan areas averaged 2.4.

During the last decade, Saint Louis has experienced improvement of its housing affordability advantage relative to other metropolitan areas. Between 1950 and 1970, the Saint Louis advantage was approximately 0.1 (2.4 minus 2.3), that is to say that the median price of a house in Saint Louis was 0.1 less in median household income than the national average. Between 1970 and 2000, the Saint Louis advantage expanded to an average of 0.6 (2.8 minus 2.2). During the 2000s, the Saint Louis advantage grew to 1.1 (3.8 minus 2.7) and then declined to 1.0 in 2010 (3.6 minus 2.6). These numbers represent lower housing prices equal to a full year's average household income. These trends are indicated in Figure 3.

Thus, the historic competitive advantage in Saint Louis in housing affordability has been strengthened over the past decade. The current housing affordability situation by county within the Saint Louis metropolitan region is shown in Table A-3 (Annex).

4. THE COST OF LIVING IN SAINT LOUIS

Housing accounts for the largest share of household expenditures, and, as a result, affordable housing tends to lead to a lower cost of living. According to the Bureau of Labor Statistics, approximately 30 percent of household expenditures are the payments (such as rent) for housing.[17] Moreover, housing prices are the most variable between metropolitan areas of the major household expenditure categories. For example, in 2008, the maximum variation in housing costs between more than 320 areas in the ACCRA Cost of Living Index[18] was as little as four times the variation in utility costs, five times the variation in grocery and food costs, and 10 times the variation in transportation costs. Among the metropolitan areas with a cost-of-living index of 110 or more, housing contributed 70 percent of the excess above the national average (a score of 100). It is not surprising, therefore, that lower housing costs are strongly associated with a lower cost of living.[19]

Saint Louis has the lowest cost of living among the 28 major metropolitan areas covered by metropolitan area Consumer Price Indexes, based upon a U.S. Department of Commerce study of 2006 metropolitan price levels (regional price parities), adjusted for the change in metropolitan consumer price indexes to 2009.[20] In Saint Louis, 89 cents purchases $1 in goods and services relative to the national average. In comparison to Saint Louis:

- The cost of living in New York is estimated at 44 percent higher.
- The cost of living in San Jose is estimated at 51 percent higher.
- The cost of living in San Diego is estimated at 29 percent higher.
- The cost of living in Seattle is estimated at 26 percent higher.
- The cost of living in Portland, Ore., is estimated at 16 percent higher.

Further, Saint Louis ranks sixth in purchasing power adjusted income per capita among these 28 metropolitan areas (Table 3), with higher incomes than metropolitan areas such as New York, Los Angeles, Chicago, Portland, and Seattle. The data is not adjusted for differences in taxation.[21]

Table 3

Cost of Living and Purchasing Power Adjusted Income Per Capita Metropolitan Areas with More Than 1 Million in Population, Covered by BLS Metropolitan Consumer Price Indexes

Metropolitan Area	Amount Needed to Purchase $1 in Goods and Services (National)	Compared to Saint Louis (Cost of Living)	Rank (Lower Cost of Living)	Per Capita Income 2009: Unadjusted	Per Capita Income 2009: Adjusted for Cost of Living	Rank (Higher Cost of Living Adjusted Income)
Saint Louis, MO-IL	**$0.891**	**0%**	**1**	**$40,342**	**$45,288**	**6**
Kansas City, MO-KS	**$0.903**	**1%**	**2**	**$39,619**	**$43,862**	**9**
Cleveland, OH	$0.921	3%	3	$39,348	$42,734	14
Pittsburgh. PA	$0.941	6%	4	$42,216	$44,848	8
Cincinnati, OH-KY-IN	$0.944	6%	5	$38,168	$40,437	19
Atlanta. GA	$0.958	8%	6	$36,482	$38,081	23
Detroit. MI	$0.959	8%	7	$37,541	$39,147	21
Milwaukee. WI	$0.959	8%	8	$41,696	$43,477	12
Dallas-Fort Worth, TX	$0.976	10%	9	$39,514	$40,494	18
Denver, CO	$0.996	12%	10	$45,982	$46,172	3
Minneapolis-St. Paul, MN-WI	$1.000	12%	11	$45,750	$45,772	4
Houston, TX	$1.000	12%	12	$43,568	$43,581	11
Tampa-St. Petersburg, FL	$1.006	13%	13	$36,780	$36,561	25
Phoenix, AZ	$1.011	14%	14	$34,282	$33,897	27
Portland, OR-WA	$1.034	16%	15	$38,728	$37,446	24
Chicago, IL-IN-WI	$1.041	17%	16	$43,727	$41,990	15
Philadelphia, PA-NJ-DE-MD	$1.054	18%	17	$45,565	$43,247	13
Baltimore, MD	$1.068	20%	18	$47,962	$44,908	7
Riverside-San Bernardino, CA	$1.078	21%	19	$29,930	$27,767	28
Miami-West Palm Beach, FL	$1.085	22%	20	$41,352	$38,124	22
Seattle, WA	$1.120	26%	21	$48,976	$43,730	10
San Diego, CA	$1.151	29%	22	$45,630	$39,647	20
Boston, MA	$1.175	32%	23	$53,713	$45,707	5
Washington, DC-VA-MD-WV	$1.181	33%	24	$56,442	$47,780	1
Los Angeles, CA	$1.222	37%	25	$42,818	$35,045	26
San Francisco-Oakland, CA	$1.258	41%	26	$59,696	$47,462	2
New York, NY-NJ-PA	$1.281	44%	27	$52,375	$40,893	17
San Jose, CA	$1.343	51%	28	$55,404	$41,255	16

Derived from Aten and D'Souza,[22] adjusted for change in the cost of living from 2006 to 2009 from metropolitan Consumer Price Indexes.

No adjustment made for differences in taxation.

5. LAND-USE REGULATION AND HOUSING AFFORDABILITY

In recent decades, more restrictive land-use regulation has spread to a number of metropolitan areas in the United States and elsewhere. The newer regulatory regime principally relies on wholesale prohibitions on development of "greenfield" land, through the use of urban growth boundaries and related devices. The typical model is for new development to be allowed only within or immediately adjacent to the existing urban footprint. Additionally, more restrictive regulations may require large infrastructure payments, which developers of the new development initially fund and occupants ultimately pay. Generally, this more restrictive regulation can be

More restrictive regulation has been associated with nearly 87 percent of house price increases.

As of the third quarter of 2010, Saint Louis had a Median Multiple of 2.6 and was tied as the seventh most affordable major metropolitan area.

traced to the United Kingdom Town and Country Planning Act of 1947, with similar regulations that spread to Australia, New Zealand, some metropolitan areas of Canada and the United States, and elsewhere

The preponderance of econometric and other empirical research on more restrictive land-use regulation finds an association with higher house prices. The conclusions of Richard C. Green and Stephen Malpezzi, who have conducted substantial research on the subject, are typical:

> When the supply of any commodity is restricted, the commodity's price rises. To the extent that land-use, building codes, housing finance, or any other type of regulation is binding, it will worsen housing affordability. However, the size of the effect is an empirical matter.[23]

Various attempts have been made to establish indexes of land-use regulatory restrictiveness. However, no broadly-accepted index has yet been developed that effectively quantifies the gross impact of the widely differing regulatory regimes that exist in U.S. metropolitan areas.

In reviewing research in which economists have attempted to establish indexes of regulatory restrictiveness, Green and Malpezzi say that *regardless of the index used, increased levels of regulations bring about higher house prices*.[24] Their own model indicates a strong association between more restrictive land-use regulations, higher house prices, higher rents, and diminished home building.[25] Finally, Green and Malpezzi indicate that more restrictive regulations "increase costs, often without corresponding benefits."[26]

The extent to which house price increases are associated with land-use regulation thus varies. However, the research on the issue overwhelmingly implies an association between more restrictive land-use regulations and higher house prices as well as higher house price increases. For example, one literature review lists more than 25 studies over a period of 30 years, all of which indicate a potential for association between more restrictive land use regulations and higher house prices.[27] More restrictive regulation has been associated with nearly 87 percent of house price increases,[28] up to 54 percent higher overall house prices and 61 percent higher new house prices.[29]

This analysis reviews the research on regulation and housing affordability. While the preponderance of the economic research supports an association between more restrictive land-use regulation and higher house prices, no specific quantitative formula is proposed to estimate or predict the extent of the association. The focus is simply on the fact that a higher house price index association emerges generally from the economic literature, the extent of which may vary substantially.

Additional research is summarized in *The Association between Prescriptive Land Use Regulation and Higher House Prices: Literature Review on Smart Growth, Growth Management, Livability, Urban Containment and Compact City Policy ("Literature Review")*.[30] The research includes reports from analysts at national central banks, international economic organizations *(Literature Review,* Section 1*)*, and universities *(Literature Review,* Section 2*)*.

Urban Growth Boundaries and Competitive Land Supply: Economist Anthony Downs, of the Brookings Institution in Washington. D.C., has indicated the importance of maintaining the "principle of competitive land supply" (*Literature Review*, Section 5).[31] This is particularly important because perhaps the most favored more restrictive land use policy is the "urban growth boundary," which prohibits development on considerable amounts of land that would otherwise be developable.

If the supply of developable land is restricted, such as with an effective urban growth boundary that restricts the competitive

supply of land, land prices can be expected to rise throughout the area. This results in an increase in the market clearing price of most land, which likely would increase the price of housing.

Downs describes the process, noting that more urban growth boundaries can convey monopolistic pricing power on sellers of land if sufficient supply is not available, which, all things being equal, is likely to raise the price of land and housing that is built on it. "If a locality limits to certain sites the land that can be developed within a given period, it confers a preferred market position on those sites. . . . If the limitation is stringent enough, it may also confirm a monopolistic power on the owners of those sites, permitting them to raising land prices substantially," Downs writes.

The loss of a competitive land supply may be indicated in the research about Portland, Ore.; Auckland, New Zealand; and elsewhere. In Portland's Washington County (the western portion of the urban area), indicated land values are approximately 11 times higher per hectare on one side of the urban growth boundary compared to the other.[32] Land values across Auckland's urban growth boundary averaged 10 times the prices per hectare of comparable land inside the urban growth boundary compared to just outside, according to the research of the chairman of the board of the Reserve Bank of New Zealand.[33] Even larger differences have been documented by former Bank of England Monetary Policy Committee member Kate Barker for the United Kingdom government and researchers at the London School of Economics (*Literature Review*, Section 5).

Authors largely sympathetic to more restrictive land use regulation conclude in a widely-cited literature review that (emphasis in original) "...**the housing price effects of growth management policies depend heavily on how they are designed and implemented**. If the policies tend to restrict land supplies, then housing price increases are expected."[34]

Other More Restrictive Land-Use Strategies: Strategies other than urban growth boundaries are also associated with higher house prices. Expensive development impact fees can add to the price of land and housing. More intense and bureaucratic development approval processes can add time to the development process, which can lead to higher financing charges, which are likely to be reflected in higher house prices. More intensive approval processes can also require developers to increase employment of land-use consultants and other professionals, which tends to increase the cost of production and can lead to higher house prices.

Sources of More Restrictive Land-Use Regulation: More restrictive land-use regulation may be the result of state laws, the actions of regional or local governmental bodies, or arise from voter initiatives or referenda. The strongest regulations were first implemented in high amenity areas, especially in coastal California. However, more restrictive land-use regulation is not limited to high amenity areas. For example, the state of Tennessee requires restrictive land-use regulations in nearly all counties. By comparison, 84 of Missouri's 114 counties do not even have basic zoning, much less more restrictive regulations.[35]

Further, there is a strong campaign to expand restrictive land-use regulation to virtually all of the nation's metropolitan areas and without regard to superior amenities. This is evident as a dominant theme in the urban planning literature and in a number of national initiatives, both legislative and administrative from the federal government in recent years and especially during the time of the Obama administration (at the federal levels, these have been called "livability" programs).

Saint Louis has the lowest cost of living among the 28 major metropolitan areas covered by metropolitan area Consumer Price Indexes.

Generally, more restrictive regulation can be traced to the United Kingdom Town and Country Planning Act of 1947.

Further Associations: More restrictive land-use regulation (see Table 5) has also been associated with greater speculative activity, more volatile prices (*Literature Review*, Section 3), and higher rents (*Literature Review*, Section 2). Finally, research also identifies an association between more restrictive land-use regulation and employment growth that is less modest than would otherwise be expected (*Literature Review,* Section 7).

A categorization of land-use regulation by major metropolitan markets (a population of more than 1 million) is described in the box below.

The Spread of More Restrictive Land-Use Regulation in the U.S.: As was noted above, house prices rose strongly in California relative to the rest of the nation beginning in the early 1970s. William Fischel, of Dartmouth University, examined issues relating to this divergence and associated the higher prices with the imposition and expansion of more restrictive land-use regulation. Fischel dismisses alternative explanations for the post-1970 house price increases, including income growth, population growth, higher construction costs, the state's property tax reform initiative (Proposition 13), overall land supply, and water issues. Moreover, Fischel rejected the idea that the rapidly-escalating prices were the result of superior amenities (quality of life).

In the middle 1970s, Oregon enacted a law requiring imposition of urban growth boundaries around all urban areas and placed severe restrictions on building outside of these boundaries. Other states followed with more restrictive land-use regulations, such as Florida[36] and Washington, which also implemented variations of urban growth

LAND-USE REGULATION CATEGORIES: METROPOLITAN AREA MARKETS

The land use market categories used in this report are as follows:

More Restrictive Land-Use Regulation exists in markets with stronger land-use controls, which tend to prohibit development in major geographical areas or establish limits on the number of houses that can be built or add substantial costs to development (such as expensive development impact fees). The classification in this report largely relies on a Brookings Institution typology (*From Traditional to Reformed: A Review of the Land Use Regulations in the Nation's 50 largest Metropolitan Areas*, 2006). More restrictive markets include those that Brookings classifies as "growth management," "growth control," "containment" and "containment-light." The Brookings typology is supplemented to include other markets as "more restrictive," due to significant rural zoning (large lot zoning) or significant restrictions on urban fringe development (New York, Chicago, Milwaukee, Minneapolis-St. Paul, Virginia Beach, and Washington). More restrictive regulation can also be called smart growth, compact development, growth management, or urban consolidation.

Less Restrictive Land-Use Regulation (or "responsive markets") are all others. In these markets, residential development is allowed to occur based largely upon market preferences and fundamental environmental regulation. Less restrictive regulation was the norm in the United States during the post-World War II era to the early 1970s, and remains in place in much of the nation.

boundaries. As Portland's land-use agency (Metro) declined to expand the urban growth boundary to meet demand, house prices began to rise substantially. Portland experienced the greatest loss in housing affordability among major metropolitan areas in the nation during the 1990s.[37]

Other metropolitan areas adopted compact development policies later. In the 2000s, housing affordability, as measured by the Median Multiple, deteriorated markedly in many more restrictively-regulated markets, while generally remaining within the historic affordability norm of 3.0 in the less restrictively-regulated metropolitan areas.

With the demand increases of the 2000s, housing affordability declined to unprecedented levels in some metropolitan areas. Housing became severely unaffordable (Median Multiple exceeding 5.0) in a number of metropolitan areas, such as Los Angeles, San Francisco, San Diego, San Jose, Miami, Sacramento, Riverside-San Bernardino, Seattle, Portland, Las Vegas, Orlando, Washington, Boston, Providence, and New York (Table 2).

At the same time, some of the metropolitan areas with the largest house price increases (and all in coastal California) were experiencing substantial net domestic out-migration. This declining underlying demand would seem to suggest that prices had risen far beyond any amenity premium, as Fischel suggested. This declining underlying demand would have been expected to be associated with lower or more modestly rising prices. Yet prices rose as demand was declining, rather than falling, as would be expected. It is possible that widely-reported speculation and "flipping" in these high-priced markets compensated for the lost demand and even increased it. The Organization for Economic Cooperation and Development had indicated during the housing bubble that constraints on new house construction were "making price more volatile" in various markets, and specifically cited Boston, San Francisco, and Los Angeles.[38]

Meanwhile, the Median Multiple remained within the 3.0 affordability in some markets with the highest demand. This includes Atlanta, Dallas-Fort Worth, and Houston, which are three of the four fastest growing metropolitan areas in the high-income world with more than 5 million in population.[39] Housing remained affordable in a number of other metropolitan areas, such as Indianapolis,[40] Cincinnati, Columbus, Louisville, Saint Louis, and others (Table 2 and Figure 4[41]).

Research Sympathetic to More Restrictive Regulation

The Costs of Sprawl-2000, published by the Transportation Research Board (within The National Academies), which is generally supportive of more restrictive land-use regulation, notes the association of more restrictive policies with higher house prices (Table 4).[42]

Domestic Migration and Housing Affordability

As noted previously, population growth is an important demand factor in the housing market. Perhaps the most important measure of population growth for housing markets is net domestic migration, or the moving of households from one part of the nation to another. Where domestic migration is greater, it is to be expected (all things being equal) that demand for owned housing will be greater. On the other hand, where domestic migration is less or negative, it is to be expected that the demand for owned housing will be less.

Domestic Migration and Housing Affordability in the 2000s – Overall: Since World War II, domestic migration in the United States has tended to be from the Northeast and Midwest to the South and West (the "Frost Belt" to the "Sun Belt").

The state of Tennessee requires restrictive land-use regulations in nearly all counties. By comparison, 84 of Missouri's 114 counties do not even have basic zoning.

The domestic migration to the Pacific Coast has declined substantially.

Figure 4

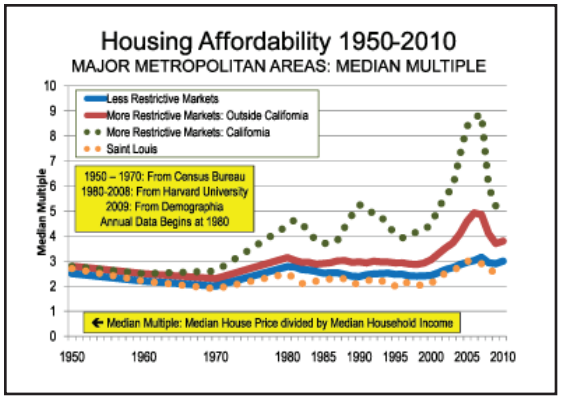


Table 4
More Restrictive Land-Use Regulation
Potential Association of Policies with Higher House Prices

#	Policy	Potential for Association with Higher Housing Prices or More Restricted Housing Supply (and Source)
1	**URBAN CONTAINMENT**	
1-A	Regional Urban Growth Boundaries	YES per Costs of Sprawl -- 2000
1-B	Local Urban Growth Boundaries	YES per Costs of Sprawl -- 2000
1-C	Regional Urban Service Districts	YES per Costs of Sprawl -- 2000
1-D	Local Urban Service Districts	YES per Costs of Sprawl -- 2000
1-E	Restrictions on Physically Developable Land	YES per Costs of Sprawl -- 2000
1-F	Infill Quotas	YES: Note 1
2	**LARGE-LOT ZONING IN URBAN FRINGE & RURAL AREAS**	YES per Costs of Sprawl -- 2000
3	**GEOGRAPHICAL GROWTH STEERING**	YES: Note 2
3-A	State Aid Contingent on Local Growth Zones	YES per Costs of Sprawl -- 2000
3-B	Excessive Public Facility Requirement Ordinances	YES: (Note 3)
4	**HOUSE BUILDING MORATORIA OR QUOTAS**	YES (Note 4)
5	**EXCESSIVE IMPACT FEES**	YES per Costs of Sprawl -- 2000
6	**STRONG REGIONAL OR SUBREGIONAL PLANNING**	LIKELY: Note 5

Source: Policies 1, 2, 3, 5 from Table 15.4 Costs of Sprawl – 2000

NOTES (by line):

1-F: Infill quotas force more development into infill areas, which is associated with higher infill land prices.

2: Policy 2 has a potential for association because it would require implementation of policies 1-A, 1-B, 1-C, 1-D, I-E or I-F, each of which have the potential to increase housing prices.

3: Policy 3-B (sometimes called "adequate public facility ordinances") can be used to force new housing into designated 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, resulting in an association.

4: Policy 4: *See Literature Review.*

6: Policy 6 may be associated with higher house prices and more restricted supply because it is often accompanied by the some or all of the more restrictive land use policies above (1-5).

However, over the last decade there has been a substantial change in this pattern. There is still strong domestic migration to the South and to the Mountain West. However, the domestic migration to the Pacific Coast has declined substantially and indeed, huge domestic migration losses have been sustained in the markets of coastal California, which had been the fastest growing in the nation since World War II.

There is strong evidence from the last decade that expanding differences in housing affordability between metropolitan areas have been associated with domestic migration trends. An analysis of domestic migration to and from the more than 500 metropolitan areas[43] for which data is available from the 2009 American Community Survey (conducted by the Census Bureau) provides proof of this trend.

Among metropolitan areas with a Median Multiple of 3.3 or below in 2009, net domestic migration was similar at a net gain of approximately 240,000 residents (each). These gains came from people moving to these areas from areas outside metropolitan areas (480,000).[44]

The balance, however, is lost as the Median Multiple rises, with substantially higher net out-migration in the more expensive metropolitan areas (Figures 5 and 6).

- Metropolitan areas with a Median Multiple of 3.5 or more lost a net 1.4 million domestic migrants between 2000 and 2009 (a loss of 1.0 percent relative to 2000 population). This compares to a gain of 1.9 million in the metropolitan areas with Median Multiples below 3.5 (a gain of 1.9 percent relative to 2000 population).
- The disparity in net domestic migration peaked at a Median Multiple of 6.5. Metropolitan areas with a Median Multiple of less than 6.5 gained more than 4.7 million domestic migrants (a gain of 2.4 percent relative to 2000 population). Metropolitan areas with a Median Multiple of 6.5 or above lost nearly 4.3 million domestic migrants (a loss of 8.3 percent relative to 2000 population).
- The disparity in net domestic migration peaked at a Median Multiple of 6.5. Metropolitan areas with a Median Multiple of 6.5 or more lost 4.3 million domestic migrants (a loss of 2.4 percent relative to 2000 population). Metropolitan areas with a Median Multiple of below 6.5 gained 4.7 million domestic migrants (a gain of 2.4 percent relative to 2000 population).

Census Bureau data indicates a strong association between housing affordability and net domestic migration, which is a principal issue in metropolitan competitiveness.

Domestic Migration and Housing Affordability in the 2000s–Major Metropolitan Areas: Among major metropolitan areas, the largest net domestic migration outflows have been from the most expensive metropolitan areas. For example, all of the California metropolitan areas that approached or exceeded Median Multiple of 10.0 during the housing bubble have had substantial net out-migration.

- 1.37 million people moved from Los Angeles between 2000 and 2009, or 11 percent of the 2000 population (peak Median Multiple 10.2).[45] This is more people than live in the Memphis metropolitan area.
- 350,000 people moved from San Francisco (peak Median Multiple 11.2), or 8 percent of the 2000 population.
- 125,000 people moved from San Diego (peak Median Multiple 9.7), or 5 percent of the 2000 population.

In the middle 1970s, Oregon enacted a law requiring imposition of urban growth boundaries around all urban areas and placed severe restrictions on building outside of these boundaries.

Figure 5

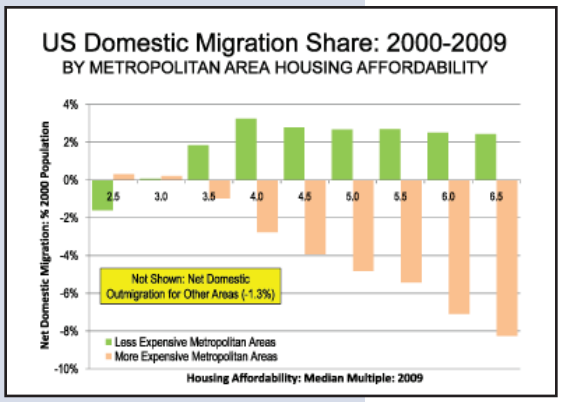
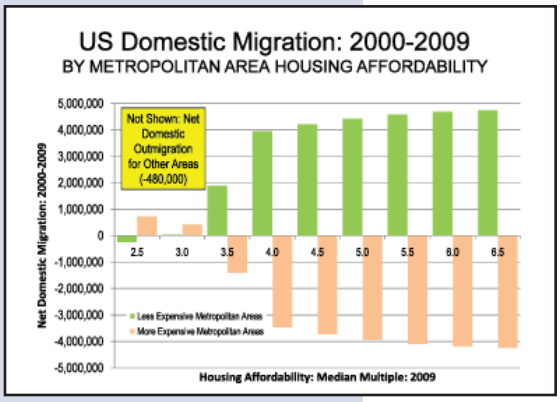


Figure 6



The lack of planning — not its imposition — has served Saint Louis well and should be continued and celebrated.

- 14 percent of the people, or one out of seven, left San Jose (240,000), which had the highest Median Multiple peak in the nation at 11.2.

Other severely unaffordable metropolitan areas also experienced huge losses:

- Nearly 2 million people moved from New York (which had a Median Multiple peak of 7.7), or nearly 11 percent of the 2000 population. This is nearly as many people as those who live in the Kansas City metropolitan area.
- Miami (with a Median Multiple peak of 7.2), which lost 290,000, or 6 percent, of its population.
- Boston (with a Median Multiple peak of 6.1), which lost 235,000, or 5 percent, of its population.

Some of the metropolitan areas with strong immigration trends exhibited severely unaffordable housing at the peak of the bubble, such as Las Vegas, Sacramento, Riverside-San Bernardino, and Orlando. However, the dominant source of their domestic migration was from even more unaffordable markets, such as Los Angeles, San Francisco, San Diego, San Jose, New York, Boston, and Miami, which is a further indicator of the household migration from less affordable to more affordable metropolitan areas.

The domestic migration loss of the Rust Belt metropolitan area of Pittsburgh was far less than in San Diego, Los Angeles, San Jose, San Francisco, Miami, New York, and Boston. The same is true of Saint Louis. Further, the domestic out-migration share (of 2000 population) in severely distressed Detroit and Cleveland was less than in New York, Los Angeles, San Francisco, and San Jose (Insert on page 12).[46]

Domestic Migration and the Severity of the Housing Bubble: Between 2000 and 2009, the major metropolitan markets that experienced more severe housing bubbles (a peak Median Multiple of 4.5 or more), lost 3.2 million domestic migrants. The major metropolitan markets that experienced peak Median Multiples below 4.5 gained 1.5 million domestic migrants, while 1.7 million moved to areas outside the major metropolitan areas (Table 5).

Among the 28 major metropolitan areas with peak Median Multiples below 4.5, 24 are classified as having less restrictive land-use regulation, while four are classified as having more restrictive land-use regulation.[47] All of the major metropolitan markets that experienced more severe housing bubbles are classified as having more restrictive land-use regulation (Table 6).

Domestic Migration and Saint Louis

Saint Louis ranked 34th in net domestic migration between 2000 and 2009 out of the nation's 51 metropolitan areas with more than 1 million in population. The metropolitan area lost 44,000 domestic migrants, or 1.6 percent, of its 2000 population. The larger Saint Louis metropolitan region (Combined Statistical Area), which includes Saint Francois County, had even smaller net out-migration, at 35,000, or a loss of 1.3 percent, relative to the 2000 population.

Overall, compared to the metropolitan areas losing domestic migrants noted above, Saint Louis has done very well. Similar-sized San Diego lost nearly three times as many domestic migrants as Saint Louis. The

Table 5 - Net Domestic Migration & Land Regulation by Severity of the Housing Bubble
Metropolitan Areas with more than 1 Million in Population
Summary 2000-2009

Metropolitan Area	Net Domestic Migration: 2000-2009			Maximum Median Multiple: 2000-2009	More Prescriptive Land Use Regulation?
	Less Severe Housing Bubble (Maximum Median Multiple Under 4.5)	More Severe Housing Bubble (Maximum Median Multiple 4.5 & Over)	Share of 2000 Population		
Atlanta, GA	428,620		10.0%	3.1	NO
Austin, TX	234,239		18.5%	3.6	NO
Baltimore, MD		(36,407)	-1.4%	4.6	YES
Birmingham, AL	26,934		2.6%	4.0	NO
Boston, MA-NH		(235,915)	-5.4%	6.1	YES
Buffalo, NY	(55,162)		-4.7%	2.5	NO
Charlotte, NC-SC	248,379		18.5%	4.1	NO
Chicago, IL-IN-WI		(561,670)	-6.2%	4.9	YES
Cincinnati, OH-KY-IN	(17,648)		-0.9%	2.8	NO
Cleveland, OH	(136,943)		-6.4%	2.8	NO
Columbus, OH	34,204		2.1%	2.9	NO
Dallas-Fort Worth, TX	317,062		6.1%	2.9	NO
Denver, CO		66,269	3.0%	4.5	YES
Detroit, MI	(366,790)		-8.2%	3.2	NO
Hartford, CT	(9,349)		-0.8%	4.2	YES
Houston, TX	243,567		5.1%	3.0	NO
Indianapolis. IN	72,517		4.7%	2.4	NO
Jacksonville, FL	126,766		11.3%	3.6	YES
Kansas City, MO-KS	**31,747**		**1.7%**	**3.1**	**NO**
Las Vegas, NV		311,463	22.4%	5.9	YES
Los Angeles, CA		(1,365,120)	-11.0%	10.1	YES
Louisville, KY-IN	34,381		3.0%	3.1	NO
Memphis, TN-MS-AR	(8,583)		-0.7%	3.3	YES
Miami, FL		(287,135)	-5.7%	7.2	YES
Milwaukee,WI		(74,453)	-5.0%	4.8	YES
Minneapolis-St. Paul, MN-WI	(19,731)		-0.7%	3.7	YES
Nashville, TN	123,199		9.4%	3.6	NO
New York, NY-NJ-PA		(1,962,055)	-10.7%	7.7	YES
Oklahoma City, OK	41,082		3.7%	2.9	NO
Orlando, FL		225,259	13.6%	5.2	YES
Philadelphia, PA-NJ-DE-MD	(115,890)		-2.0%	4.2	NO
Phoenix, AZ		543,409	16.6%	4.7	YES
Pittsburgh, PA	(52,028)		-2.1%	2.8	NO
Portland, OR-WA		121,957	6.3%	5.4	YES
Providence, RI-MA		(49,168)	-3.1%	5.4	YES
Raleigh, NC	194,361		24.2%	4.2	NO
Richmond, VA	75,886		6.9%	4.2	NO
Riverside-San Bernardino, CA		469,093	14.3%	7.6	YES
Rochester, NY	(40,219)		-3.9%	2.4	NO
Sacramento, CA		141,117	7.8%	6.6	YES
Salt Lake City, UT	(34,428)		-3.5%	4.3	NO
San Antonio, TX	177,447		10.3%	3.3	NO
San Diego, CA		(126,860)	-4.5%	9.7	YES
San Francisco-Oakland, CA		(347,375)	-8.4%	11.2	YES
San Jose, CA		(240,012)	-13.8%	10.2	YES
Seattle, WA		40,741	1.3%	6.2	YES
Saint Louis, MO-IL	**(43,750)**		**-1.6%**	**3.0**	**NO**
Tampa-St. Petersburg, FL		260,333	10.8%	4.8	YES
Virginia Beach-Norfolk, VA-NC		(20,005)	-1.3%	4.7	YES
Washington, DC-VA-MD-WV		(107,305)	-2.2%	5.7	YES
Total	1,509,870	(3,233,839)			
Other Locations	1,723,969				

NOTES

Data from US Bureau of the Census: Latest data available is August 15, 2011.

Domestic migration: Moving within the United States.

New Orleans excluded due to effects of Hurricane Katrina.

Table 6 - Net Domestic Migration & Land Regulation by Severity of the Housing Bubble
Metropolitan Areas with more than 1 Million in Population
Summary 2000-2009

	Net Domestic Migration: 2000-2009		Land Use Regulation Classification		
Metropolitan Area	2000-2009	% of 2000 Population	More Prescriptive Markets	More Responsive Markets	% More Prescriptive Markets
With Less Severe Housing Bubbles	1,509,870	2.6%	4	24	14.3%
With More Severe Housing Bubbles	(3,233,839)	-3.6%	22	0	100.0%
Outside Largest Metropolitan Areas	1,723,969	1.3%			
Total	0	0.0%	26	24	52.0%

NOTES
Median Multiple: Median House Price/Median Household Income.
Data from US Bureau of the Census: Latest data available is August 15, 2011.

Fourteen percent of the people, or one out of seven, left San Jose (240,000), which had the highest Median Multiple peak in the nation at 11.2.

percentage loss in New York and Los Angeles was nearly seven times that of Saint Louis. Indeed, New York lost more than 1.9 million more domestic migrants than Saint Louis, while Los Angeles lost more than 1.3 million *more* domestic migrants than Saint Louis. The domestic migration loss in San Jose was nearly nine times as great on a percentage basis as Saint Louis. Much smaller San Jose lost 200,000 more domestic migrants than Saint Louis between 2000 and 2009. More recent evidence indicates that Saint Louis is attracting a net gain in people from 25 to 34 years of age, a cohort that consists of many first-time home buyers.[48]

Within the Saint Louis metropolitan area, the more than 100-year trend of migration from the core to the suburbs continued between 2000 and 2010 (See Annex).[49] The Saint Louis metropolitan area reflects both the United States [50] and international trend,[51] as suburban areas generally continue to increase more in population, while central municipalities experience losses or more modest gains.

Land-Use Regulation and Housing Affordability in Saint Louis

As previously noted, the Saint Louis metropolitan area is rated as having an affordable housing market and also has less restrictive land-use regulations. This is despite the fact that there is comparatively little difference in house construction costs between Saint Louis and more restrictively-regulated markets.[52] These higher land costs raise the price of housing and the cost for households, as is indicated in mortgage payments (see insert on page 19).

The Saint Louis region has very little land-use regulation beyond basic local planning and zoning. There are no urban growth boundaries or urban service districts. Regional planning commissions exist in Missouri and in Saint Louis, but while they have the authority to create plans, they do not have the legal authority to implement comprehensive plans.[53] There is a state law banning the use of taxpayer subsidies for developments in the floodplain of Saint Charles County (RSMo 99.847). While that is a strict regulation (and a perfectly legitimate one) for this state, it places no limits on developments in the floodplain that do not use taxpayer subsidies, such as Tax Increment Financing.

Developers do pay impact fees in some parts of the Saint Louis area, but the fees are low by national standards. The primary impact

LAND COSTS, CONSTRUCTION COSTS, AND MORTGAGE PAYMENTS: SAINT LOUIS, SAN DIEGO, AND PORTLAND

Despite its lower house prices, Saint Louis has construction costs that are similar to those in more restrictively-regulated metropolitan areas. This is evident in Figure 7, which shows the construction cost for a 2,150-square-foot new house in less restrictively-regulated Saint Louis, compared to more restrictively-regulated Portland and San Diego. Much of the difference in new house costs between the three metropolitan areas is attributable to land costs.

In Portland, land costs have been estimated at four-and-one-half times that of Saint Louis, while in San Diego, land costs are 13 times that of Saint Louis. Before the enforcement of more restrictive land-use regulations (the 1970s in San Diego and 1990s in Portland), land represented approximately the same share of the cost of new housing in Saint Louis, Portland, and San Diego.[54]

The result is that households in the Saint Louis metropolitan area pay a far smaller share of their incomes for mortgages than in Portland and San Diego (and in other more restrictively-regulated metropolitan areas).

- In Portland, mortgage payments on the median-priced house would be $7,000 more annually than in Saint Louis. The median income household would pay 15 percent of its gross annual income for such a mortgage in Saint Louis. In Portland, the median income household would pay 25 percent of its annual income for a mortgage on the median-priced house, 60 percent more than in Saint Louis.
- In San Diego, mortgage payments on the median-priced house would be $14,000 more per year than in Saint Louis. The median income household would pay 15 percent of its gross annual income for such a mortgage in Saint Louis. In San Diego the median income household would pay 36 percent of its annual income for a mortgage on the median-priced house, 140 percent more than in Saint Louis (Figure 8).

Saint Louis has done very well. Similar-sized San Diego lost nearly three times as many domestic migrants as Saint Louis.

fee is the "traffic generation assessment and trust fund" impact fee that Saint Louis County imposes in both incorporated and unincorporated parts of the county. The fee within the Clayton Road/Highway 141 trust fund area for a single house is $3,375.19. The fee within the nearby Ladue Road/Highway 141 trust fund area is even lower, at $1,234.80. This compares to a national average impact fee per house of $11,796. The 2010 national study of local development impact fees, which gave us the prior number, unfortunately did not include any localities in the Saint Louis area. It did, however, include two municipalities from the Kansas City area. According to that study, Missouri had the lowest average residential impact fees in the country. [55]

A 2006 report on land use regulations from the Brookings Institution described the situation in the Saint Louis area thus:

> Other land use mechanisms are uncommon in metropolitan Saint Louis and … those that do exist are confined mainly to infrastructure measures.

The fact is that the Saint Louis area, on both the dominant Missouri side of the river and Illinois, has less planning, less draconian zoning, and fewer land-use regulations than many other large metropolitan areas. Whatever the reason — and the generally higher amount of local governments in the metropolitan region is an important explanation[56] — that lack of planning has played a role in the low housing costs within the region.

Figure 7

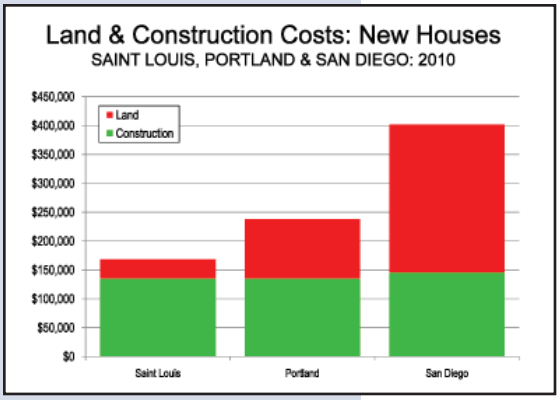


Figure 8

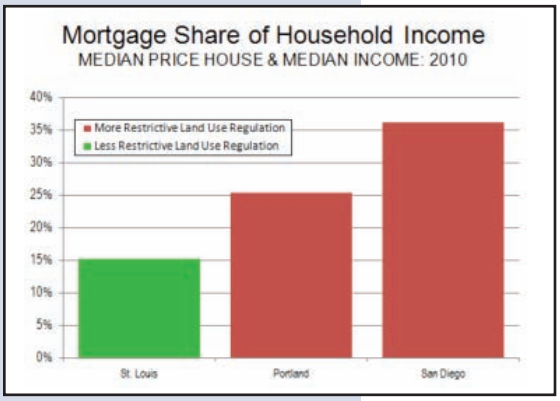
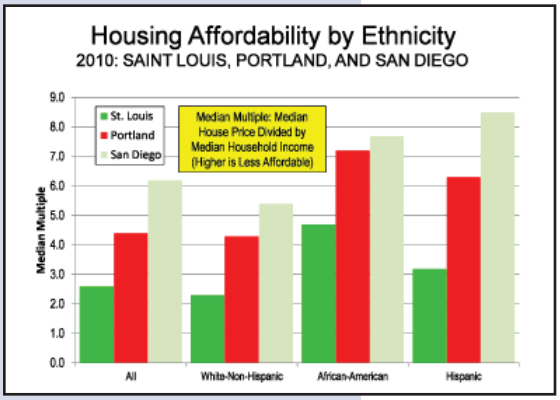


Figure 9



Impact on Minority Households: Not surprisingly, minority households, because of their generally lower incomes, face greater barriers to home ownership. For example, while the Median Multiple in Saint Louis was 2.6 in 2010, the Median Multiple for African American households was 4.7 and 3.2 for Hispanic households. This means that for African American households, the median house price relative to income was double that of white non-Hispanic households (Median Multiple 2.3). The median house price relative to incomes for Hispanic households was 40 percent higher than for white non-Hispanic households.

Even so, these economic disadvantages for minority households were even greater in more restrictively-regulated Portland and San Diego (Figure 9).

- In Portland, the Median Multiple for African American households was 50 percent greater than in Saint Louis. The Median Multiple for Hispanic households was nearly double that of Saint Louis.
- In San Diego, the Median Multiple for African American households was approximately 65 percent higher than in Saint Louis. The Median Multiple for Hispanic households was 165 percent higher than in Saint Louis.

Thus, the evidence is strong that more restrictive land-use regulation is associated with higher house prices; the only question is how much higher. California's Hispanic-oriented Tomas Rivera Policy Institute made this point:

> While there is little agreement on the magnitude of the effect of growth controls on home prices, an increase is always the result.[57]

Even comparatively-modest house price differentials can have a significant effect on a community and its inhabitants. Anthony Downs, a Brookings Institution economist, notes that even a modest 10 percent increase in house prices makes it impossible for 4 percent of households to purchase a home, and concludes such an effect to be "socially significant."[58] Moreover, as noted earlier, higher rents are also associated with more restrictive land-use regulation.

6. ADDITIONAL COMPETITIVENESS FACTORS

There are, of course, issues other than the cost of living that contribute to or detract from the competitiveness of metropolitan areas. For example, the strong migration toward the South and West during at least the last 60 years has been associated with more favorable weather,[59] the spread of air conditioning, lower labor costs, less unionization, and lower taxes. All have pointed to a better climate, be that weather or business.

Another emerging quality-of-life issue is the ease of commuting and the intensity of traffic congestion, which is another area in which Saint Louis has an advantage. The latest data indicates that Saint Louis, which is rated 18th in population, ranks 45th in traffic congestion out of the nation's 100 largest metropolitan areas. For example, smaller Portland had a traffic congestion severity rating more than double that of

Saint Louis, as was that of San Diego.[60] Saint Louis also has an average work trip travel time that is 24.8 minutes one way, slightly less than the national average of 25.1 minutes (which includes smaller metropolitan areas and rural areas).

However, the unprecedented divergence between metropolitan areas in the cost of living may have been the principal factor driving migration between metropolitan areas during the 2000s.

7. MAINTAINING THE COMPETITIVE COST-OF-LIVING ADVANTAGE

Saint Louis and other affordable metropolitan areas around the nation could face a serious risk as the campaign to expand more restrictive land-use regulation continues.

Already, more restrictive land-use regulation has been associated with severely retarding housing affordability across all the markets of the United Kingdom, Australia, and New Zealand, where the cost of housing relative to incomes has doubled or even tripled in the last two decades.

Given the serious fiscal difficulties that taxpayers face, and especially government employee pension obligations — the depth of which may not yet be comprehended — land-use strategies that are associated with higher housing costs could make it more difficult for the nation to solve its daunting financial difficulties and could lead to a lower standard of living. In this regard, land-use regulation may emerge as a principal public policy issue in the future.

Because of its low cost of living, driven by improved housing affordability advantage relative to more expensive markets, Saint Louis faces perhaps the most advantageous competitive position since Chicago replaced it as the largest city in the Midwest in the 1870s. Taking advantage of this opportunity would seem to be a principal policy objective for the Saint Louis area. Not only is the continuation of such policies likely to have beneficial domestic migration results, but they would also help to maintain a lower cost of living, which is to the advantage of virtually all households in every income classification.

Harvard economist Edward Glaeser noted the importance of housing affordability in writing on the early 2010 United States Census results (in *The New York Times*). He noted that:

> The future shape of America is being driven not by quality of life or economic success but by the obscure rules regulating local land use.[61]

No matter how glamorous the Trojan horse of planning may be when left at Saint Louis' floodgates, and no matter how elegant a name it may be proposed under (be it "regional," "comprehensive," "smart," or what-not), the residents of the Saint Louis area should be extremely cautious before allowing these types of government plans to be imposed upon them. The end results of planning are higher costs of land and housing, more regulation of personal lives and property rights, and greater government control over individual pursuits of happiness. The lack of planning — not its imposition — has served Saint Louis well and should be continued and celebrated.

ANNEX: SAINT LOUIS SUB-REGIONAL POPULATION DATA

This Annex provides information on population trends, domestic migration, and housing affordability within the Saint Louis metropolitan region.

The primary impact fee is the "traffic generation assessment and trust fund" impact fee that Saint Louis County imposes.

Missouri had the lowest average residential impact fees in the country.

Population

The continuing dominance of suburban population growth in the Saint Louis metropolitan region mirrors the experience in other major metropolitan areas across the nation. Between 2000 and 2010, 123 percent of the metropolitan region's growth was in the suburbs (the city of Saint Louis continued to lose population and reached its lowest level since the 1870 census). Suburban growth remains dominant around the nation and the often referenced "return to the city" has not occurred.[62] Moreover, the trend is consistent with that of virtually all metropolitan areas in the high-income world, with the suburbs having captured nearly all population growth between 1965 and the early 2000s.[63] For example, in Western Europe, suburbs captured more than 110 percent of population growth over the period.

During the last decade, nearly all of the growth in the Saint Louis metropolitan region occurred outside the city and the first suburban ring between 2000 and 2010. The city of Saint Louis accounted for minus 23 percent of the region's growth. The inner ring counties accounted for 6 percent of the metropolitan region's growth.[64] The second ring counties were 90 percent of the growth while the third ring counties were 27 percent of the growth.

Table A-1 and Figure 10 provide data on sub-regional population trends since 1900 in the Saint Louis metropolitan region (as currently defined).

Domestic Migration

The migration trends within the Saint Louis region continue to reflect the national trend of growth in suburban areas and slower growth, or even decline, in inner areas. According to U.S. Census Bureau estimates, the 35,000 loss from 2000 to 2009 in domestic migration in the Saint Louis metropolitan region was distributed as follows (Table A-2):[65]

- The city of Saint Louis lost a net 63,000 domestic migrants.
- The first ring counties lost a net 59,000 domestic migrants, 57,000 of which were lost in Saint Louis County.
- The second ring counties gained a net 64,000 domestic migrants with a gain of 45,000 in Saint Charles County.
- The third ring counties gained a net 24,000 domestic migrants with nearly one half (11,000) in Lincoln County.

Housing Affordability by County Equivalent: Saint Louis Metropolitan Region

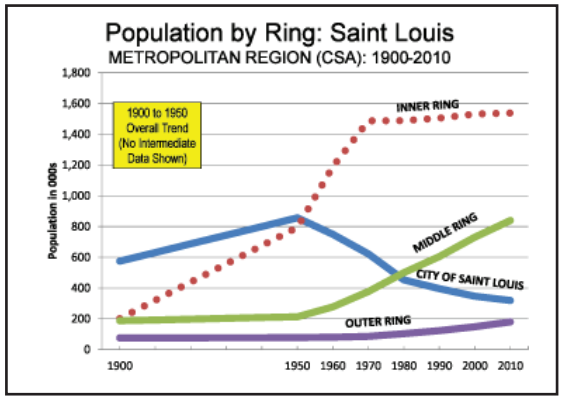
Table A-3 provides housing affordability data for county equivalent jurisdictions in the Saint Louis metropolitan region. The Median Multiples in this chart are calculated using median house values because the source data does not provide transaction sales prices.

Table A-1
Saint Louis Metropolitan Region: Population Trend 1900-2010

Sector	1900	1950	2000	2010
METROPOLITAN REGION (Combined Statistical Area)	**1,039,543**	**1,942,848**	**2,757,377**	**2,892,874**
HISTORIC CORE	**575,238**	**856,796**	**346,904**	**319,294**
City of Saint Louis	575,238	856,796	346,904	319,294
INNER RING	**201,419**	**794,651**	**1,531,692**	**1,538,292**
Saint Louis Co.	50,040	406,349	1,016,364	998,954
Madison Co. (IL)	64,694	182,307	259,120	269,282
Saint Clair Co. (IL)	86,685	205,995	256,208	270,056
MIDDLE RING	**187,384**	**213,394**	**730,563**	**839,947**
Franklin Co. (MO)	30,581	36,046	94,059	101,492
Jefferson Co. (MO)	25,712	38,007	198,740	218,733
Saint Charles Co. (MO)	24,474	29,834	286,171	360,485
Bond Co. (IL)	16,078	14,157	17,650	17,768
Clinton Co. (IL)	19,824	22,594	35,536	37,762
Jersey Co. (IL)	14,612	15,264	21,655	22,985
Macoupin Co. (IL)	42,256	44,210	48,989	47,765
Monroe Co. (IL)	13,847	13,282	27,763	32,957
OUTER RING	**75,502**	**78,007**	**148,218**	**180,722**
Lincoln Co. (MO)	18,352	13,478	39,254	52,566
Saint Francois Co. (MO)	24,051	35,276	55,743	65,359
Warren Co. (MO)	9,919	7,666	24,721	32,513
Washington Co. (MO)	14,263	14,689	23,410	25,195
Calhoun Co. (IL)	8,917	6,898	5,090	5,089

Source: Metropolitan Region: Combined Statistical Area (2010 Definition)

Figure 10



[A] lack of planning has played a role in the low housing costs within the region.

Table A-2
Saint Louis Metropolitan Region: Migration Trend
2000-2009

Sector	Domestic Migration	% of 2000 Population	International Migration	International Migration
METROPOLITAN REGION (Combined Statistical Area)	**(34,526)**	**-1.3%**	**29,959**	**1.1%**
HISTORIC CORE	**(62,990)**	**-18.2%**	**11,794**	**3.4%**
City of Saint Louis	(62,990)	-18.2%	11,794	3.4%
INNER RING	**(59,376)**	**-3.9%**	**14,756**	**1.0%**
Saint Louis Co.	(56,525)	-5.6%	13,577	1.3%
Madison Co. (IL)	1,560	0.6%	833	0.3%
Saint Clair Co. (IL)	(4,411)	-1.7%	346	0.1%
MIDDLE RING	**63,559**	**8.7%**	**2,980**	**0.4%**
Franklin Co. (MO)	3,895	4.1%	119	0.1%
Jefferson Co. (MO)	9,900	5.0%	673	0.3%
Saint Charles Co. (MO)	45,024	15.7%	2,012	0.7%
Bond Co. (IL)	296	1.7%	8	0.0%
Clinton Co. (IL)	213	0.6%	48	0.1%
Jersey Co. (IL)	875	4.0%	30	0.1%
Macoupin Co. (IL)	(751)	-1.5%	26	0.1%
Monroe Co. (IL)	4,107	14.8%	64	0.2%
OUTER RING	**24,281**	**16.4%**	**429**	**0.3%**
Lincoln Co. (MO)	11,100	28.3%	83	0.2%
Saint Francois Co. (MO)	7,625	13.7%	177	0.3%
Warren Co. (MO)	5,215	21.1%	110	0.4%
Washington Co. (MO)	305	1.3%	53	0.2%
Calhoun Co. (IL)	36	0.7%	6	0.1%

Source: Metropolitan Region: Combined Statistical Area (2009 Definition)

Table A-3
Housing Affordability by County Equivalent: Saint Louis Metropolitan Region 2009

	Median House Value	Median Household Income	Median Multiple
United States	$185,400	$51,425	3.6
Saint Louis Metropolitan Region	$159,700	$51,445	3.1
Franklin County, Mo.	$143,100	$49,860	2.9
Jefferson County, Mo.	$150,900	$56,815	2.7
Lincoln County, Mo.	$150,400	$53,295	2.8
Saint Charles County, Mo.	$193,500	$70,077	2.8
Saint Francois County, Mo.	$98,000	$38,086	2.6
Saint Louis City, Mo.	$119,900	$34,227	3.5
Saint Louis County, Mo.	$175,000	$57,502	3.0
Warren County, Mo.	$156,500	$49,722	3.1
Washington County, Mo.	$83,600	$35,510	2.4
Bond County, Ill.	$103,000	$47,240	2.2
Calhoun County, Ill.	$92,500	$44,016	2.1
Clinton County, Ill.	$119,300	$54,313	2.2
Jersey County, Ill.	$110,400	$51,553	2.1
Macoupin County, Ill.	$88,900	$46,857	1.9
Madison County, Ill.	$117,700	$50,877	2.3
Monroe County, Ill.	$188,700	$66,850	2.8
Saint Clair County, Ill.	$116,300	$47,029	2.5

Data from American Community Survey (ACS). Based upon median house value (ACS does not record transaction prices).

NOTES

[1] *High-Income World: Core Cities and Densification*, http://demographia.com/db-worldcore400.htm, accessed November 30, 2011.

[2] Including the county equivalent jurisdiction of the city of Saint Louis.

[3] Rappaport, Jordan, and Jeffrey D. Sachs. "The United States as a Coastal Nation," *Journal of Economic Growth*, (2003): 8, 5-46.

[4] The U.S. Census Bureau reports domestic migration (movement within the nation) at the county or county equivalent level.

[5] Cox, Wendell. "Moving from the Coast," *The New Geography* (July 28, 2011): http://www.newgeography.com/content/002362-moving-coast, and Coastal County Population: 1900-2010: (NOAA 673 Coastal Counties): http://www.newgeography.com/files/db-coastalco.pdf.

[6] The Tax Foundation: *State to State Migration*, http://www.mytaxburden.org/migration.

[7] The U.S. Census Bureau defines metropolitan areas and urban areas. Metropolitan areas are labor market areas, and include both urban and rural areas. Metropolitan areas are composed of counties or county equivalent jurisdictions (such as the city of Saint Louis). Urban areas represent the physical definition of the urban organism, and are the extent of urban development, or the urban footprint. Metropolitan areas are the functional definition of the urban organism and represent the labor market area. Metropolitan areas include not only the urban area but also surrounding rural areas with strong economic connections to the urban area. The Census Bureau also defines "Combined Statistical Areas," which are larger metropolitan regions. In the case of Saint Louis, the combined statistical area includes Saint Francois County, Mo. The term "metropolitan region" is used in this paper to denote the combined statistical area. Urban areas are areas of continuous urban development and include no rural areas (an urban area is an "urban footprint").

[8] Housing affordability in this paper is evaluated between metropolitan areas, rather than within metropolitan areas or local areas. Other research attempts to identify the drivers of local house price differences. Differences in school performance, for example, have received attention. See: Chiodo, Abbigail J., Rubén Hernández-Murillo, and Michael T. Owyang. *Nonlinear Hedonics and the Search for School Quality*, Working Paper 2003-039E; Federal Reserve Bank of Saint Louis, http://research.stlouisfed.org/wp/2003/2003-039.pdf (2009) which focused on metropolitan Saint Louis; and Figlio, David N., and Maurice E. Lucas. *What's in a Grade? School Report Cards and House Prices*, NBER Working Paper 8019, www.nber.org/papers/w8019 (2000), which focused on Alachua County, Fla.

[9] The Median Multiple is not an indicator of house prices, but rather of house prices in relation to incomes. As such, the Median Multiple incorporates the effect of income growth, a principal factor in housing demand.

[10] See Rappaport, Jordan. *A Guide to Aggregate House Price Measures*, for a discussion of an array of house price metrics: http://www.kansascityfed.org/PUBLICAT/ECONREV/PDF/2q07rapp.pdf.

[11] UNHS and The World Bank, *Volume II: Indicator Tables*, unpublished preliminary results of the *Extensive Survey of Housing Indicators for 1990*. (April 1993): http://www.bus.wisc.edu/realestate/documents/hofinet/1993summary.pdf, and United Nations, *Indicators of SD: UN CSD Methodology Sheets*, http://esl.jrc.it/envind/un_meths/UN_ME050.htm and http://esl.jrc.it/envind/un_meths/UN_ME.htm. The indicator also frequently appears in research by the Organization for Economic Cooperation and Development and was the basis of a report by Zillow.com: (http://www.zillow.com/blog/research/2011/08/17/what-goes-up-must-come-down-comparing-price-to-income-ratios-across-markets/).

[12] *7th Annual Demographia International Housing Affordability Survey* (2011), http://www.demographia.com/dhi.pdf.

[13] The 51 metropolitan areas that had achieved 1 million in population by 2006.

[14] 1950 to 1970 data based upon median house value (from U.S. Census).

[15] See, for example, Rybczynski, Witold. *The Makeshift Metropolis* (Scribner, 2010); Jordan Rappaport. "The Increasing Importance of Quality of Life" (research working paper, Federal Reserve Bank of Kansas City Economic Research Department, October 2005): http://www.kansascityfed.org/Publicat/RESWKPAP/PDF/RWP07-02v4.pdf, and Wendell Cox "Growth, Economic Development, and Local Government Structure in Pennsylvania (research report for Pennsylvania State Association of Township Supervisors, June 2005): http://66.241.215.190/local_gov_growth_report.pdf: 47-52.

[16] *7th Annual Demographia International Housing Affordability Survey* (2011): http://www.demographia.com/dhi2011.pdf.

[17] Bureau of Labor Statistics, ftp://ftp.bls.gov/pub/special.requests/cpi/cpiri2009.txt (rent and owners equivalent rent of primary residences).

[18] The ACCRA Cost of Living Index is widely used for area to area comparisons of key consumer costs.

[19] According to Aten and D'Souza, "There is a very strong positive relationship between price levels and housing cost levels, and this enabled us to estimate the model with some confidence." Aten, Bettina H., and Roger J. D'Souza. *Regional Price Parities Comparing Price Level Differences Across Geographic Areas*, Bureau of Economic Analysis, U.S. Department of Commerce: 68. http://www.bea.gov/scb/pdf/2008/11%20November/1108_spotlight_parities.pdf.

[20] In 2006, Saint Louis had the lowest cost of living among all metropolitan areas with more than 1 million in population (23 of which are not covered by a metropolitan area Consumer Price Index), per Aten and D'Souza.

[21] Metropolitan area tax data is not readily available.

[22] Aten, Bettina H., and Roger J. Souza. *Regional Price Parities Comparing Price Level Differences Across Geographic Areas*, Bureau of Economic Analysis, U.S. Department of Commerce: http://www.bea.gov/scb/pdf/2008/11%20November/1108_spotlight_parities.pdf.

[23] Green, Richard K., and Stephen Malpezzi. *A Primer on U. S. Housing Markets and Housing Policy* (Urban Institute Press, 2003): 146.

[24] Green and Malpezzi: 148.

[25] Green and Malpezzi: 154.

[26] Green and Malpezzi: 191.

[27] Quigley, J.M., and L. Rosenthal. "The Effects of Land Use Regulation on the Price of Housing: What do We Know? What Can We Learn" (Cityscape, 2005): 8, 69–138.

[28] Eicher, Theo S. Housing Prices and Land Use Regulations: A Study of 250 Major US Cities, http://depts.washington.edu/teclass/landuse/Housing051608.pdf, accessed November 30, 2011.

[29] Downs, Anthony. "Satan or Savior: 1. Regulatory Barriers to Affordable Housing," *Journal of the American Planning Association*, 58, 4 (1992): 419-22.

[30] Cox, Wendell. *Association between Prescriptive Land Use Regulation and Higher House Prices: Literature Review on Smart Growth, Growth Management, Urban Containment and Compact City Policy:*. http://www.demographia.com/db-dhi-econ.pdf.

[31] Downs, Anthony. *New Visions for Metropolitan America* (Brookings Institution Press, 1994).

[32] Cox, Wendell. "Housing Constraints, Natural and Regulatory," *Econ Journal Watch*, January 2011. http://econjwatch.org/issues/volume-8-issue-1-january-2011.

[33] 2025 Task Force (New Zealand), *Answering the $64,000 Question: Closing the Income Gap with Australia by 2025: First Report and Recommendations*, http://treasury.govt.nz/downloads/pdfs/2025tf-1streport-nov09.pdf (2009).

[34] Nelson, Arthur C., Rolf Pendall, Casey J. Dawkins, and Gerrit J. Knapp. *The Link Between Growth Management and Housing Affordability: The Academic Evidence* (Brookings Institution, 2002): 24 (emphasis in original). http://www.brookings.edu/reports/2002/02housingaffordability.aspx.

[35] White, Michael T. "Curious County Zoning Law Gets Curiouser," *Journal of the Missouri Bar*, November-December 2008. It must be noted that municipalities within many of those 84 counties have adopted zoning laws within municipal boundaries.

[36] Repealed in 2011.

[37] Cox, Wendell. *Smart Growth and Housing Affordability* (report commissioned by the Congressional Millennial Housing Commission, 2002): http://www.demographia.com/coxsg.pdf.

[38] OECD (2005), "Recent House Price Developments: The Role of Fundamentals," *OECD Economic Outlook 78*, http://www.oecd.org/dataoecd/41/56/35756053.pdf.

[39] *High-Income World Urban Areas: Growth and Population Density*, http://demographia.com/db-econ-uaintl.htm, accessed November 30, 2011.

[40] Indianapolis has the highest domestic in-migration rate in the Frost Belt (Table 5).

[41] Land-use classifications are at *Comparison of House Price Increases: 2000 to 2010*, http://www.demographia.com/db-cosmg2010.pdf, accessed November 30, 2011.

[42] Burchell, Robert W., 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).

[43] Includes micropolitan areas.

[44] This includes areas outside metropolitan areas and a few smaller metropolitan areas for which the Census Bureau data was incomplete.

[45] This is net domestic migration, which is people moving from the Los Angeles metropolitan area to other areas in the nation. Population has continued to grow relatively modestly, from international migration and from the natural increase of births over deaths.

[46] Domestic migration data has not been released for 2010.

[47] The fact that four more restrictively-regulated major metropolitan areas had less severe housing bubbles is consistent with the Nelson et al. analysis, which indicates that where there is sufficient flexibility, more restrictive land-use regulation may not lead to higher house prices. This is evident, for example, in Memphis, where the urban growth boundary has been drawn sufficiently far away from the urban area to allow a competitive land supply to operate as indicated by Downs. See Downs, Anthony. *New Visions for Metropolitan America* (Brookings Institution Press, 1994).

[48] Logan, Tim. "A Youth Movement for St. Louis," *St. Louis Post-Dispatch*, December 4, 2011.

[49] Cox, Wendell. *Shrinking City, Flourishing Region: Saint Louis Region:* http://www.newgeography.com/content/002013-shrinking-city-flourishing-region-st-louis-region.

[50] Kotkin, Joel and Wendell Cox, "Cities and the Census," *City Journal*, http://www.city-journal.org/2011/eon0406jkwc.html, April 6, 2011.

[51] *The Evolving Urban Form: International Urban Area Profiles*, http://www.demographia.com/db-evolveix.htm.

[52] *Demographia Residential Land & Regulation Index*. http://www.demographia.com/dri-full.pdf.

[53] *Demographia Residential Land & Regulation Cost Index* (2010), http://demographia.com/dri-full.pdf.

[54] http://agebb.missouri.edu/aglaw/zone/aglaw1a.htm.

[55] http://www.impactfees.com/publications%20pdf/2010_survey.pdf.

[56] Smaller municipal jurisdictions are associated with lower public service costs per capita. This is illustrated at both the national level and in the state of Illinois by Wendell Cox, *Local Democracy and the Townships of Illinois: A Report to the People*, Township Officials of Illinois (2011): http://www.bettergov.org/assets/1/Page/TOI-ReporttothePeople-20110110.pdf.

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

[58] Downs, Anthony. *New Visions for Metropolitan America* (Brookings Institution Press): 36 and Wendell Cox, *"Growth, Economic Development, and Local Government Structure in Pennsylvania"* (research report for Pennsylvania State Association of Township Supervisors, June 2005).

[59] See, for example, Glaeser, Edward L. "If we build it, they will come," *The Boston Globe*, http://www.boston.com/realestate/news/articles/2011/01/23/if_we_build_it_they_will_come/, and Wendell Cox, http://66.241.215.190/local_gov_growth_report.pdf: 47-52.

[60] *INRIX National Traffic Scorecard: 2010*, http://scorecard.inrix.com/scorecard/Top100Metros.asp.

[61] Glaeser, Edward L. "Behind the Population Shift," *The New York Times* (December 28, 2010): (http://economix.blogs.nytimes.com/2010/12/28/behind-the-population-shift/).

[62] Kotkin, Joel, and Wendell Cox. "Cities and the Census," *City Journal* (April 6, 2011): http://www.city-journal.org/2011/eon0406jkwc.html.

[63] *High-Income World Metropolitan Areas: Core City & Suburban Population Trends*, http://demographia.com/db-highmetro.htm.

[64] Saint Louis County lost population, while the inner ring Illinois counties of Madison and Saint Clair made modest gains.

[65] Domestic migration data for 2010 has not been released.

AUTHOR'S BIOGRAPHY

Wendell Cox is principal of Demographia (Wendell Cox Consultancy), an international public policy firm in Saint Louis. Cox has completed projects on four continents regarding issues of housing, urban land use, transportation, and governance. Mayor Tom Bradley appointed him to three terms on the Los Angeles County Transportation Commission, a body that oversaw both transit and highways in the nation's largest county. He was appointed to the Amtrak Reform Council to complete the unexpired term of New Jersey Gov. Christine Todd Whitman.

He holds a B.A. in government from California State University-Los Angeles and an M.B.A. from Pepperdine University in Los Angeles. He is co-author of the annual *Demographia International Housing Affordability Survey*, which rates housing prices relative to incomes in more than 300 metropolitan areas in six nations and Hong Kong. He also is author of *Demographia World Urban Areas*, which is the only source for current population and population density estimates for all urban areas with more than 500,000 in population in the world.

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