

DEMOGRAPHIA

3rd Annual
Demographia
International Housing
Affordability Survey:
2007

Ratings for Major Urban Markets

Australia • Canada • Republic of Ireland
New Zealand • United Kingdom • United States

(Data for 3rd Quarter 2006)

Pavletich Properties Limited



3rd Annual Demographia International Housing Affordability Survey

SUMMARY TABLES

| 25 Most Unaffordable Housing Markets | | | | | | | |
|--------------------------------------|----------------|-------------------------------|-----------------|----|----------------|---------------------------|-----------------|
| # | Nation | Market | Median Multiple | # | Nation | Market | Median Multiple |
| 1 | United States | Los Angeles-Orange County, CA | 11.4 | 14 | United States | Miami-West Palm Beach, FL | 7.6 |
| 2 | United States | San Diego, CA | 10.5 | 14 | United States | Modesto, CA | 7.6 |
| 3 | United States | Honolulu, HI | 10.3 | 16 | United Kingdom | Cardiff | 7.5 |
| 4 | United States | San Francisco, CA | 10.1 | 17 | United Kingdom | Bristol | 7.3 |
| 5 | United States | Ventura County, CA | 9.4 | 18 | United States | Fresno, CA | 7.2 |
| 6 | United States | Stockton, CA | 8.6 | 18 | United States | New York, NY-NJ,-CT-PA | 7.2 |
| 7 | Australia | Sydney | 8.5 | 20 | Australia | Hobart | 7.0 |
| 8 | United States | San Jose, CA | 8.4 | 21 | New Zealand | Auckland | 6.9 |
| 9 | United Kingdom | London (GLA) | 8.3 | 21 | United Kingdom | London Exurbs | 6.9 |
| 10 | United Kingdom | Bournemouth-Dorset | 8.2 | 23 | Australia | Melbourne | 6.6 |
| 11 | Australia | Perth | 8.0 | 23 | United States | Sacramento, CA | 6.6 |
| 12 | United States | Riverside-San Bernardino, CA | 7.9 | 23 | United States | Sarasota, FL | 6.6 |
| 13 | Canada | Vancouver | 7.7 | 23 | Canada | Victoria | 6.6 |

| Affordable Housing Markets | | | | | | | |
|----------------------------|---------------|-------------------|-----------------|----|---------------|---------------------------|-----------------|
| # | Nation | Market | Median Multiple | # | Nation | Market | Median Multiple |
| 1 | United States | Fort Wayne, IN | 2.0 | 21 | United States | Cincinnati, OH-KY-IN | 2.7 |
| 1 | Canada | Regina | 2.0 | 21 | United States | Dallas-Fort Worth, TX | 2.7 |
| 1 | United States | Youngstown, OH | 2.0 | 21 | United States | Detroit, MI | 2.7 |
| 4 | United States | Buffalo, NY | 2.3 | 21 | United States | Harrisburg, PA | 2.7 |
| 4 | United States | Dayton, OH | 2.3 | 21 | United States | Lansing, MI | 2.7 |
| 4 | United States | Indianapolis, IN | 2.3 | 27 | United States | Cleveland, OH | 2.8 |
| 4 | United States | Rochester, NY | 2.3 | 27 | United States | Columbia, SC | 2.8 |
| 8 | United States | Akron, OH | 2.4 | 27 | United States | Kansas City, MO-KS | 2.8 |
| 9 | United States | Grand Rapids, MI | 2.5 | 27 | United States | St. Louis, MO-IL | 2.8 |
| 9 | United States | Omaha, NE-IA | 2.5 | 31 | United States | Atlanta, GA | 2.9 |
| 9 | Canada | Quebec | 2.5 | 31 | United States | Columbus, OH | 2.9 |
| 9 | United States | Toledo, OH | 2.5 | 31 | United States | Houston, TX | 2.9 |
| 9 | United States | Wichita, KS | 2.5 | 31 | United States | Louisville, KY-IN | 2.9 |
| 9 | Canada | Winnipeg | 2.5 | 31 | United States | Nashville, TN | 2.9 |
| 15 | United States | Des Moines, IA | 2.6 | 31 | United States | Oklahoma City, OK | 2.9 |
| 15 | United States | Huntsville, AL | 2.6 | 31 | Canada | Ottawa | 2.9 |
| 15 | United States | Northwest Indiana | 2.6 | 31 | United States | Scranton-Wilkes Barre, PA | 2.9 |
| 15 | United States | Pittsburgh, PA | 2.6 | 39 | United States | Little Rock, AR | 3.0 |
| 15 | Canada | Saskatoon | 2.6 | 39 | Canada | London | 3.0 |
| 15 | United States | Syracuse, NY | 2.6 | 39 | Canada | Oshawa | 3.0 |
| 21 | United States | Augusta, GA | 2.7 | 39 | United States | Tulsa OK | 3.0 |



3rd Annual Demographia International Housing Affordability Survey

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EXECUTIVE SUMMARY

The 3rd Annual Demographia International Housing Affordability Survey expands coverage to 159 major markets in Australia, Canada, Ireland, New Zealand, the United Kingdom and the United States. The *Demographia International Housing Affordability Survey* employs the “Median House Price to Median Household Income Multiple,” (“Median Multiple”) to rate housing affordability (Table ES-1).

| 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 |

In recent decades, the Median Multiple has been remarkably similar among the nations surveyed, with median house prices being generally 3.0 or less times median household incomes. This historic affordability relationship continues in many housing markets of the United States and Canada. However, the Median Multiple has escalated sharply in Australia, Ireland, New Zealand and the United Kingdom and in some markets of Canada and the United States.

2006 Housing Affordability Ratings

The most pervasive housing affordability crisis is in Australia, with an overall Median Multiple of 6.6. Affordability is only marginally better in New Zealand (6.0) Ireland (5.7), and the United Kingdom (5.5). On the other hand, the national Median Multiple in Canada is 3.2, indicating that housing is one-half as expensive relative to incomes as in Australia. The national Median Multiple in the United States is 3.7.

Least Affordable Markets: The least affordable markets are generally in California, Hawaii, the US East Coast, Australia, the United Kingdom, New Zealand and Vancouver. The least affordable market is Los Angeles & Orange County, with a Median Multiple of 11.4, far above the “severely unaffordable” threshold of 5.1 and approaching four times the 3.0 “affordability” standard. The Median Multiple is 8.5 in Sydney, 8.3 in London, 7.7 in Vancouver, and 6.9 in Auckland. All of the 25 least affordable markets are rated “severely unaffordable” (Table ES-2). Ireland’s only surveyed market, Dublin is also rated severely unaffordable, at 5.7.

Affordable Markets Remain: At the same time, 42 markets remain “affordable.” Seven of the “affordable” markets are in Canada and 35 are in the United States. The most affordable markets are Regina, Fort Wayne and Youngstown. Some of the fastest growing markets in the survey remain “affordable,” such as Dallas-Fort Worth, Houston, Atlanta and Oshawa (Table ES-3).



| Table ES-2 25 Most Unaffordable Housing Markets | | | | | | | |
|--|----------------|-------------------------------|-----------------|----|----------------|---------------------------|-----------------|
| # | Nation | Market | Median Multiple | # | Nation | Market | Median Multiple |
| 1 | United States | Los Angeles-Orange County, CA | 11.4 | 14 | United States | Miami-West Palm Beach, FL | 7.6 |
| 2 | United States | San Diego, CA | 10.5 | 14 | United States | Modesto, CA | 7.6 |
| 3 | United States | Honolulu, HI | 10.3 | 16 | United Kingdom | Cardiff | 7.5 |
| 4 | United States | San Francisco, CA | 10.1 | 17 | United Kingdom | Bristol | 7.3 |
| 5 | United States | Ventura County, CA | 9.4 | 18 | United States | Fresno, CA | 7.2 |
| 6 | United States | Stockton, CA | 8.6 | 18 | United States | New York, NY-NJ,-CT-PA | 7.2 |
| 7 | Australia | Sydney | 8.5 | 20 | Australia | Hobart | 7.0 |
| 8 | United States | San Jose, CA | 8.4 | 21 | New Zealand | Auckland | 6.9 |
| 9 | United Kingdom | London (GLA) | 8.3 | 21 | United Kingdom | London Exurbs | 6.9 |
| 10 | United Kingdom | Bournemouth-Dorset | 8.2 | 23 | Australia | Melbourne | 6.6 |
| 11 | Australia | Perth | 8.0 | 23 | United States | Sacramento, CA | 6.6 |
| 12 | United States | Riverside-San Bernardino, CA | 7.9 | 23 | United States | Sarasota, FL | 6.6 |
| 13 | Canada | Vancouver | 7.7 | 23 | Canada | Victoria | 6.6 |

| Table ES-3 Affordable Housing Markets | | | | | | | |
|--|---------------|-------------------|-----------------|----|---------------|---------------------------|-----------------|
| # | Nation | Market | Median Multiple | # | Nation | Market | Median Multiple |
| 1 | United States | Fort Wayne, IN | 2.0 | 21 | United States | Cincinnati, OH-KY-IN | 2.7 |
| 1 | Canada | Regina | 2.0 | 21 | United States | Dallas-Fort Worth, TX | 2.7 |
| 1 | United States | Youngstown, OH | 2.0 | 21 | United States | Detroit, MI | 2.7 |
| 4 | United States | Buffalo, NY | 2.3 | 21 | United States | Harrisburg, PA | 2.7 |
| 4 | United States | Dayton, OH | 2.3 | 21 | United States | Lansing, MI | 2.7 |
| 4 | United States | Indianapolis, IN | 2.3 | 27 | United States | Cleveland, OH | 2.8 |
| 4 | United States | Rochester, NY | 2.3 | 27 | United States | Columbia, SC | 2.8 |
| 8 | United States | Akron, OH | 2.4 | 27 | United States | Kansas City, MO-KS | 2.8 |
| 9 | United States | Grand Rapids, MI | 2.5 | 27 | United States | St. Louis, MO-IL | 2.8 |
| 9 | United States | Omaha, NE-IA | 2.5 | 31 | United States | Atlanta, GA | 2.9 |
| 9 | Canada | Quebec | 2.5 | 31 | United States | Columbus, OH | 2.9 |
| 9 | United States | Toledo, OH | 2.5 | 31 | United States | Houston, TX | 2.9 |
| 9 | United States | Wichita, KS | 2.5 | 31 | United States | Louisville, KY-IN | 2.9 |
| 9 | Canada | Winnipeg | 2.5 | 31 | United States | Nashville, TN | 2.9 |
| 15 | United States | Des Moines, IA | 2.6 | 31 | United States | Oklahoma City, OK | 2.9 |
| 15 | United States | Huntsville, AL | 2.6 | 31 | Canada | Ottawa | 2.9 |
| 15 | United States | Northwest Indiana | 2.6 | 31 | United States | Scranton-Wilkes Barre, PA | 2.9 |
| 15 | United States | Pittsburgh, PA | 2.6 | 39 | United States | Little Rock, AR | 3.0 |
| 15 | Canada | Saskatoon | 2.6 | 39 | Canada | London | 3.0 |
| 15 | United States | Syracuse, NY | 2.6 | 39 | Canada | Oshawa | 3.0 |
| 21 | United States | Augusta, GA | 2.7 | 39 | United States | Tulsa OK | 3.0 |

Home Ownership: The Social and Economic Imperatives

Home ownership has been a principal objective of public policy in all of the surveyed nations. Each nation has increased its home ownership rates markedly since World War II. There has been a strong association between expanded home ownership and improved



affluence --- what can be called the democratization of prosperity. This better quality of life appears to be threatened across the spectrum, from lower income households that will no longer be able to afford home ownership to middle income households, who will be able to afford only more modest houses. The unprecedented decoupling of house prices from incomes could lead to significantly reduced home ownership rates in the decades to come.

The High Cost of Decoupling House Prices from Incomes

The housing affordability crisis is of recent origin, principally over the past five to 10 years. Median Multiples of 4.0 or more were rare before the 1990s. Median Multiples of double the affordability standard --- 6.0 and above were virtually unheard of. Yet, today, the Median Multiple exceeds 8.0 in a number of markets and is more than 10 in some. In Australia there has been a marked loss of affordability over the past 10 years. In the United States, two distinctively different market classifications have developed. The most unaffordable markets have had a doubling of house costs relative to incomes. Ten years ago these markets were nearly as affordable as today's more affordable markets, which have seen little loss in affordability.

Depth of the Problem: In the most stressed markets, housing can now consume years of income compared to just 10 years ago. For example, in San Diego the median house price relative to incomes has risen by the equivalent of 14 years of median gross income. In Perth, 11 more years of gross income will be required. For households in England, the toll is seven years of gross income, and six years in Dublin. These huge additional expenditures for housing will considerably reduce purchasing power and are likely to lead to less economic growth and job creation. Further, there is likely to be less home ownership, especially among lower income households, which in some of the surveyed nations are disproportionately minority. There could be even greater consequences, given the close connection between economic growth and social cohesion.

Unsatisfactory Explanations Various explanations have been offered. Perhaps the most recurring is that higher demand arising from low interest rates has driven up housing prices. Another is that demand has changed radically, such that households now clamor for existing housing in better neighborhoods, with the heightened demand inflating housing prices. Finally, it has been suggested that land owners on the periphery have colluded to inflate prices. Each of these explanations is rendered unsatisfactory, however, by the fact that the housing inflation has occurred only in some markets. Lower interest rates, a desire for better neighborhoods and the potential for collusion exist in virtually all markets, yet not all markets have experienced the housing cost inflation. The Australian shows that there has been a land supply problem not an inability of the home building industry to meet demand. Nearly 90 percent of the increase in house costs is attributable to land price inflation, which has risen more than any other element of the Consumer Price Index and double that of petrol. A satisfactory explanation must account for the price trends both in markets where there has been housing inflation and in markets where housing inflation has not occurred.

The Cause: Land Use Planning Excesses: Research in the surveyed nations identifies the cause -- the housing cost escalation is principally the result of supply factors. Where there are significant constraints on the supply of land for residential development, housing inflation has occurred. Where



there are no such constraints, housing cost inflation has not occurred. Demand does not raise prices by itself. Demand can only raise prices where there is insufficient supply.

Land Use Policies that Produce Unaffordability: Various planning strategies have driven up the price of housing, such as land rationing (urban growth boundaries and infill requirements), extravagant amenity requirements, excessively high infrastructure fees and approval processes that are unnecessarily lengthy and complicated. Indeed, planning permission (appropriate zoning) itself represents a significant add-on to the market value of land for residential development, represented by prices many times that of adjacent land without such permission. The basic problem is that, in most of the least affordable markets, residential development is permitted only in accordance with inflexible government plans, while where housing remains affordable, people's preferences tend to drive development (consistent with environmental requirements). This is illustrated by comparing the similar markets of Austin, Texas and Perth, Australia. In Austin, a liberal regulatory regime has maintained affordability over the past decade. In Perth, a restrictive regulatory regime has been associated with raising the total price, including interest, of the median house by the equivalent of 11 years of gross median household income relative to just 10 years ago.

Ignoring the Economic and Social Dimensions: Generally, government has imposed restrictive planning policies without fully considering, much less comprehending the ultimate impacts on the economy and quality of life. Environmental and aesthetic issues, often real and sometimes exaggerated drove policy making, despite the fact that a clean environment can only be achieved by an affluent economy. The longer term social implications, which are so tied to affluence and the economy, were also missed.

The Emerging Costly Reality of Land Use Planning: There is considerable evidence that restrictive land use policies compromise the competitiveness of urban areas and lead to less economic growth. Home ownership among younger households is falling in the United Kingdom and Australia. There is a rush of domestic migration away from the least affordable markets in the United States to the more affordable markets, reversing decades long demographic trends.

The Emerging Consensus: Land Use Planning Destroys Housing Affordability: At the policy level, there is an increased awareness of the nexus between restrictive land use planning and inflated housing prices. Within the last year, Australia's Prime Minister, Treasurer and Reserve Bank Governor have cited planning induced land shortages for the loss of housing affordability. Similar views have been expressed by New Zealand's housing minister and mayors of major cities. The United Kingdom's *Barker* reports clearly blame land use planning for the runup of housing costs there.

Restoring Housing Affordability: Housing affordability can be restored by a program that re-establishes the balance between demand and supply in unaffordable markets. The most promising strategies are housing affordability targets, liberalization of land use regulation and measures to ensure that price distortion does not occur on the fringe of urban areas. There is also a need for focused research and improvements within planning education.



3rd Annual Demographia International Housing Affordability Survey

INTRODUCTION

House prices have risen strongly in relation to incomes in many markets. This has seriously eroded housing affordability. Housing price inflation has been pervasive in Australia, Ireland, New Zealand and the United Kingdom. Similar inflation has occurred in a number of markets in the United States and Canada. There is rising concern about this unprecedented loss in housing affordability in all of the surveyed nations. The concern transcends political parties and political philosophy

This is the third annual *Demographia International Housing Affordability Survey*. The *Survey* covers urban housing markets in Australia, Canada, Ireland, New Zealand, the United Kingdom and the United States.¹ This edition is expanded from 100 markets to 159 markets. The *Demographia International Housing Affordability Survey* is unique in providing standardized comparisons of housing affordability between international housing markets. The *3rd Annual Demographia International Housing Affordability Survey* reports data from September 2006.

The *Demographia International Housing Affordability Survey* uses the “Median Multiple” (median house price divided by median household income) to assess housing affordability. The Median Multiple is a technically sound indicator of housing affordability. The Median Multiple is widely used for evaluating urban markets, for example being recommended by the World Bank and the United Nations.² More elaborate indicators, which often include mortgage interest rates and other factors mask the structural elements of house pricing. They tend to be not well understood outside the financial sector, though are important to industry analysts.. The Median Multiple provides an easily understood indicator of the structural health of residential markets and facilitates meaningful housing affordability comparisons, both between national and international markets and over time.

In recent decades, the Median Multiple has been remarkably similar among the nations surveyed, with median house prices generally being 3.0 or less times median household incomes where demand and supply are balanced. This historic affordability relationship continues in many housing markets of the United States and Canada. However, the Median Multiple has escalated sharply in Australia, Ireland, New Zealand and the United Kingdom and in some markets of Canada and the United States.

2006 HOUSING AFFORDABILITY RATINGS

The *Demographia International Housing Affordability Survey* uses existing house sales data from September of 2006 to rate housing affordability in 159 markets. Fifty-nine (59) markets are rated “severely unaffordable” and 22 markets are “seriously unaffordable.” Thirty-six (36) markets are “moderately unaffordable.” Forty-two (42) markets are “affordable” (Table 1). The ratings for all housing markets are shown, by affordability rating category, in Schedule 1.³



Least Affordable Markets: Los Angeles is the least affordable market in the six surveyed nations, with a Median Multiple of 11.4, which is approaching four times the historical affordability standard of 3.0. Housing affordability has been diminished so much in Los Angeles that less than two percent of Los Angeles households can afford the median priced house.⁴

| Rating | Median Multiple | Number of Markets |
|-------------------------|-----------------|-------------------|
| Severely Unaffordable | 5.1 & Over | 59 |
| Seriously Unaffordable | 4.1 to 5.0 | 22 |
| Moderately Unaffordable | 3.1 to 4.0 | 36 |
| Affordable | 3.0 or Less | 42 |
| TOTAL | | 159 |

Nearby San Diego is the second least affordable market, with a Median Multiple of 10.5, while Honolulu is third with a Median Multiple of 10.3. Four more markets near San Francisco and Los Angeles are among the 10 least affordable markets. Sydney, London and Perth (Australia) are also ranked among the 10 least affordable markets (Table 2).

The United States has 14 markets ranked in the least affordable 25.⁵ Ten of these markets are in California, and two in Florida along with New York and Honolulu. Five United Kingdom markets are ranked in the least affordable 25 or higher, including both London and the London Exurbs (The East and Southeast of England). The least affordable 25 also includes four markets in Australia, two in Canada (Vancouver and Victoria) and one in New Zealand (Auckland).

| # | Nation | Market | Median Multiple | # | Nation | Market | Median Multiple |
|----|----------------|-------------------------------|-----------------|----|----------------|---------------------------|-----------------|
| 1 | United States | Los Angeles-Orange County, CA | 11.4 | 14 | United States | Miami-West Palm Beach, FL | 7.6 |
| 2 | United States | San Diego, CA | 10.5 | 14 | United States | Modesto, CA | 7.6 |
| 3 | United States | Honolulu, HI | 10.3 | 16 | United Kingdom | Cardiff | 7.5 |
| 4 | United States | San Francisco, CA | 10.1 | 17 | United Kingdom | Bristol | 7.3 |
| 5 | United States | Ventura County, CA | 9.4 | 18 | United States | Fresno, CA | 7.2 |
| 6 | United States | Stockton, CA | 8.6 | 18 | United States | New York, NY-NJ,-CT-PA | 7.2 |
| 7 | Australia | Sydney | 8.5 | 20 | Australia | Hobart | 7.0 |
| 8 | United States | San Jose, CA | 8.4 | 21 | New Zealand | Auckland | 6.9 |
| 9 | United Kingdom | London (GLA) | 8.3 | 21 | United Kingdom | London Exurbs | 6.9 |
| 10 | United Kingdom | Bournemouth-Dorset | 8.2 | 23 | Australia | Melbourne | 6.6 |
| 11 | Australia | Perth | 8.0 | 23 | United States | Sacramento, CA | 6.6 |
| 12 | United States | Riverside-San Bernardino, CA | 7.9 | 23 | United States | Sarasota, FL | 6.6 |
| 13 | Canada | Vancouver | 7.7 | 23 | Canada | Victoria | 6.6 |

Affordable Markets: All of the 41 affordable markets (having a Median Multiple of 3.0 or below) are in Canada and the United States (Table 3). The most affordable markets are Regina in Canada, and Youngstown and Fort Wayne in the United States, each with Median Multiples of 2.0. Eleven (11) other markets exhibit Median Multiples of 2.5 or less. These include Quebec and Winnipeg in



Canada and Buffalo, Indianapolis, Rochester, Akron, Dayton, Grand Rapids, Omaha, Toledo and Wichita. Dallas-Fort Worth, Atlanta and Houston are rated affordable. Atlanta, Dallas-Fort Worth and Houston, with average annual growth rates of more than two percent annually have been among the fastest growing urban areas in the high-income world, while the housing remains affordable in Oshawa, Canada’s fastest growing market, with an annual growth rate of 2.6 percent.⁶

| # | Nation | Market | Median Multiple | # | Nation | Market | Median Multiple |
|----|---------------|-------------------|-----------------|----|---------------|---------------------------|-----------------|
| 1 | United States | Fort Wayne, IN | 2.0 | 21 | United States | Cincinnati, OH-KY-IN | 2.7 |
| 1 | Canada | Regina | 2.0 | 21 | United States | Dallas-Fort Worth, TX | 2.7 |
| 1 | United States | Youngstown, OH | 2.0 | 21 | United States | Detroit, MI | 2.7 |
| 4 | United States | Buffalo, NY | 2.3 | 21 | United States | Harrisburg, PA | 2.7 |
| 4 | United States | Dayton, OH | 2.3 | 21 | United States | Lansing, MI | 2.7 |
| 4 | United States | Indianapolis, IN | 2.3 | 27 | United States | Cleveland, OH | 2.8 |
| 4 | United States | Rochester, NY | 2.3 | 27 | United States | Columbia, SC | 2.8 |
| 8 | United States | Akron, OH | 2.4 | 27 | United States | Kansas City, MO-KS | 2.8 |
| 9 | United States | Grand Rapids, MI | 2.5 | 27 | United States | St. Louis, MO-IL | 2.8 |
| 9 | United States | Omaha, NE-IA | 2.5 | 31 | United States | Atlanta, GA | 2.9 |
| 9 | Canada | Quebec | 2.5 | 31 | United States | Columbus, OH | 2.9 |
| 9 | United States | Toledo, OH | 2.5 | 31 | United States | Houston, TX | 2.9 |
| 9 | United States | Wichita, KS | 2.5 | 31 | United States | Louisville, KY-IN | 2.9 |
| 9 | Canada | Winnipeg | 2.5 | 31 | United States | Nashville, TN | 2.9 |
| 15 | United States | Des Moines, IA | 2.6 | 31 | United States | Oklahoma City, OK | 2.9 |
| 15 | United States | Huntsville, AL | 2.6 | 31 | Canada | Ottawa | 2.9 |
| 15 | United States | Northwest Indiana | 2.6 | 31 | United States | Scranton-Wilkes Barre, PA | 2.9 |
| 15 | United States | Pittsburgh, PA | 2.6 | 39 | United States | Little Rock, AR | 3.0 |
| 15 | Canada | Saskatoon | 2.6 | 39 | Canada | London | 3.0 |
| 15 | United States | Syracuse, NY | 2.6 | 39 | Canada | Oshawa | 3.0 |
| 21 | United States | Augusta, GA | 2.7 | 39 | United States | Tulsa OK | 3.0 |

Summary by Nation: Historic housing affordability has been lost in nearly all markets of Australia, Ireland, New Zealand and the United Kingdom, while the housing affordability crisis is considerably less severe in Canada and the United States (Table 4).

- **Australia:** The least affordable housing, overall, is in Australia, where seven of eight markets have Median Multiples of 6.0 or above and all markets are rated “severely unaffordable or “seriously unaffordable.”⁷ The national Median Multiple is 6.6, more than double the “affordable” standard of 3.0.
- **Canada:** In Canada, there are seven “affordable” markets and six “moderately unaffordable” markets. Two markets are rated “seriously unaffordable” and two markets are rated “severely unaffordable.” The national Median Multiple is 3.2, slightly above the “affordable” standard of 3.0.
- **Ireland:** Ireland’s only surveyed market, Dublin, has a Median Multiple of 5.7 and is rated “severely unaffordable.” This is nearly double the “affordable” standard of 3.0.



- **New Zealand:** In New Zealand, all three markets have Median Multiples in excess of 5.0 and are rated “severely unaffordable.” The national Median Multiple is 6.0, double the “affordable” standard of 3.0.
- **United Kingdom:** Housing unaffordability is also pervasive in the United Kingdom, where 19 of 23 markets are rated “severely unaffordable,” with Median Multiples above 5.0. Two markets are rated “seriously unaffordable” and two markets are rated “moderately unaffordable.” The national Median Multiple is 5.5, approaching double the “affordable” standard of 3.0.
- **United States:** In the United States, there are 35 “affordable” markets and 28 “moderately unaffordable” markets. Seventeen (17) markets are “seriously unaffordable” and 27 markets are “severely unaffordable.” However, these data tend to overstate the extent of the affordability crisis in the United States. Ten (10) of the US “severely unaffordable” and three (3) of the “seriously unaffordable” markets are within the larger New York, Los Angeles, Boston, San Francisco and Washington metropolitan areas.⁸ The national Median Multiple is 3.7, above the “affordable” standard of 3.0.

| Nation | Affordable (3.0 & Under) | Moderately Unaffordable (3.1-4.0) | Seriously Unaffordable (4.1-5.0) | Severely Unaffordable (5.1 & Over) | Total | Median |
|----------------|--------------------------------|---|--|--|-------|--------|
| Australia | 0 | 0 | 1 | 7 | 8 | 6.6 |
| Canada | 7 | 6 | 2 | 2 | 17 | 3.2 |
| Ireland | 0 | 0 | 0 | 1 | 1 | 5.7 |
| New Zealand | 0 | 0 | 0 | 3 | 3 | 6.0 |
| United Kingdom | 0 | 2 | 2 | 19 | 23 | 5.5 |
| United States | 35 | 28 | 17 | 27 | 107 | 3.7 |
| TOTAL | 42 | 36 | 22 | 59 | 159 | 4.1 |

Variation by Market Size: There is a broad array of housing affordability among all sizes of markets. For example, Los Angeles and London, with populations of more than 5,000,000 are both “severely unaffordable,” with Median Multiples above 8.0. At the same time, Dallas-Fort Worth and Houston, also with more than 5,000,000 are “affordable,” with Median Multiples below 3.0. Among middle-sized markets, both San Diego and Perth are “severely unaffordable,” with Median Multiples of 8.0 or higher. Middle-sized Ottawa and Nashville are “affordable,” with Median Multiples under 3.0. Among the smaller markets, Bournemouth and Hobart are “severely unaffordable,” while Regina and Des Moines are “affordable.”

HOME OWNERSHIP: THE SOCIAL AND ECONOMIC IMPERATIVES

Home ownership has been a principal objective of public policy in all of the surveyed nations. Each nation has been successful in increasing its home ownership rates markedly since World War II. This has primarily been achieved by lowering the price of home ownership. The crucial element has been land prices. Most new housing has been constructed on inexpensive land on the urban peripheries. Households that would otherwise have been forced to rent the property of others have been able instead to, in essence, pay themselves. As they paid their



mortgages, their equity built up and it was further built up by appreciation in housing values as real incomes rose. This process could be characterized as the “democratization of prosperity,” as the overwhelming majority of households gained an ownership stake in their neighborhoods and communities. If the houses had not been built on the periphery, millions of households would not have been able to afford the higher prices and home ownership rates would be substantially lower. Moreover, many of the “peripheral” neighborhoods have evolved into favored areas near urban cores.

Yet, the democratization of prosperity is threatened. As housing prices escalate relative to incomes, home ownership shares can be expected to decline. The potential for both social and economic exclusion is illustrated in an analysis by the National Association of Home Builders, in the United States, indicating the share of households that can afford houses at various price levels. For example, national data indicates that at Portland or Baltimore house prices, only 40 percent of households could afford a home, compared to the present national rate of nearly 70 percent. At San Francisco prices, under 10 percent of households could afford to buy a home (Figure 1)⁹. In the longer run, home ownership is likely to decline toward these shares if the housing cost inflation continues. Similar declines can be expected in the other surveyed nations as well.

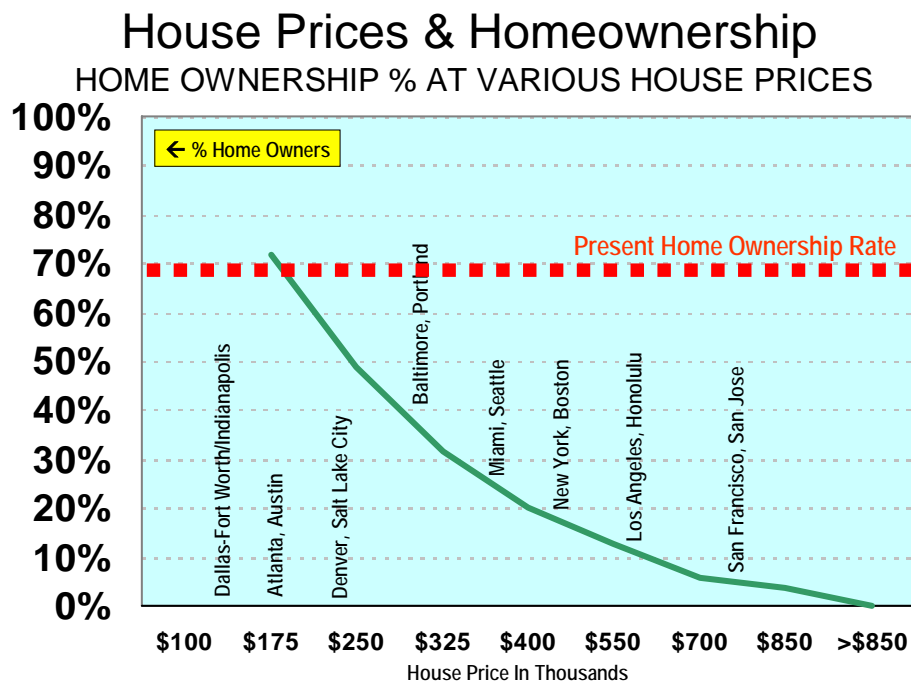


Figure 1

THE HIGH COST OF DECOUPLING HOUSE PRICES FROM INCOMES

In recent decades, the Median Multiple has been below 3.0 in most markets. However, this historic relationship has been broken in some markets, as unprecedented house price inflation has occurred relative to incomes.



A Recently Developing Crisis

The housing affordability crisis is of recent origin, having principally arisen over the past decade. Median Multiples of four or more were rare before the 1990s. Median Multiples of double the affordability standard --- 6.0 and above were unprecedented. Yet, today, the Median Multiple exceeds 8.0 in a number of markets and is more than 10 in some. Today's least affordable markets were largely affordable in the not too recent past.

This is illustrated by the situation in Australia. In the not-too-recent past, housing was comparatively affordable in most large Australian markets. In all markets there has been a marked loss of affordability over the past 10 years (Figure 2).

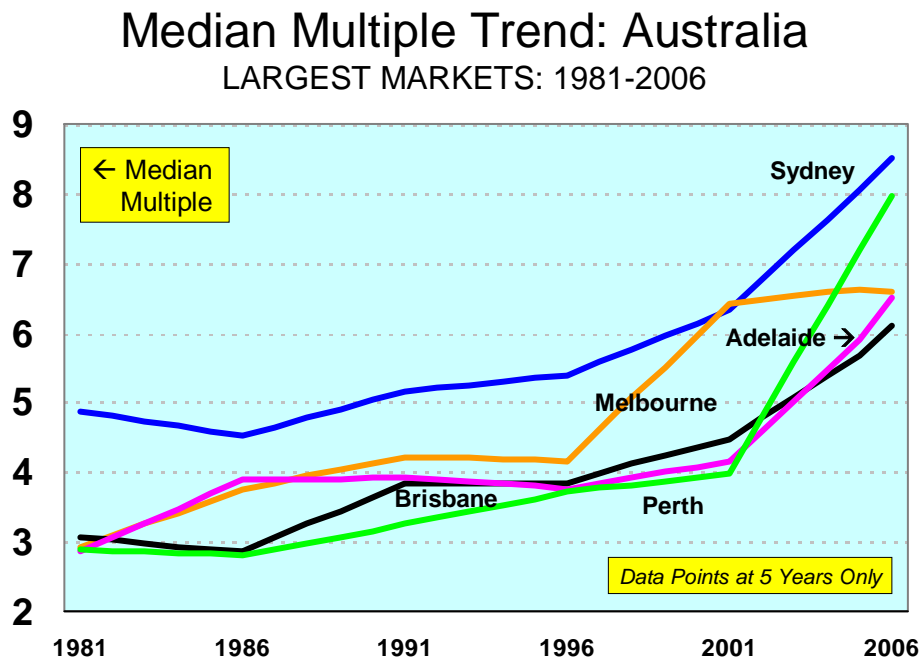


Figure 2

In the United States, two distinctively different classifications of housing inflation have occurred over the past 10 years. The “seriously unaffordable” and “severely unaffordable” markets have experienced a doubling of house costs relative to incomes (Median Multiple). These markets were only 0.5 Median Multiple points more unaffordable than today’s “affordable” and “moderately unaffordable” markets. Today, the least unaffordable markets have Median Multiples that are double the more affordable markets. As late as 1995, all of the major markets were either “affordable” or “moderately affordable,” including Los Angeles, San Diego and San Francisco. Today, each of these three markets has a Median Multiple above 10.0 (Figure 3).



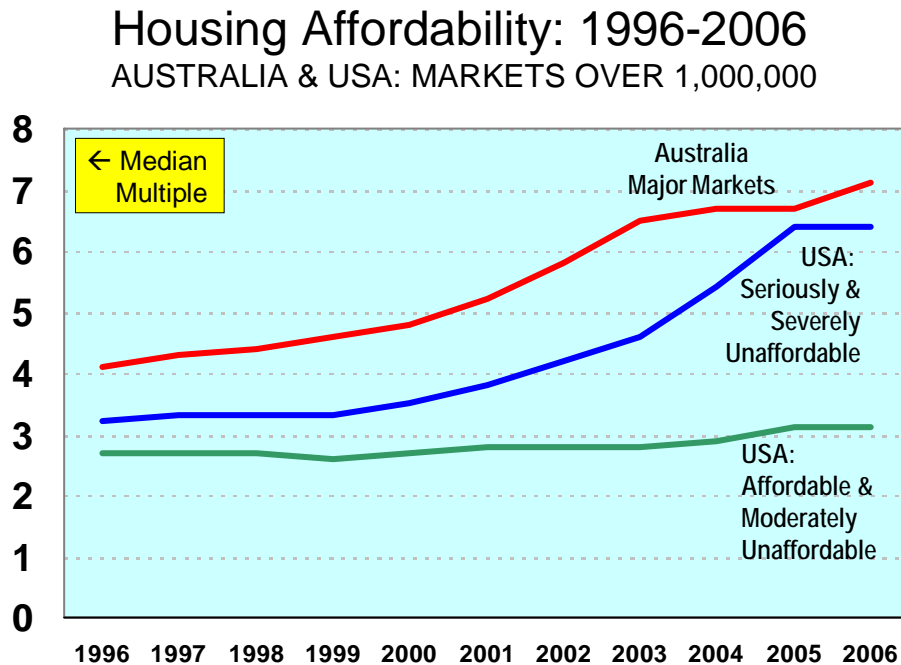


Figure 3

The housing cost inflation has been most pronounced in the last five years. This is illustrated by comparing to the Median Multiple trends in better performing markets, such as Dallas-Fort Worth and Indianapolis, where affordability has been maintained or improved and poorly performing markets, such as San Diego and Perth, where housing affordability has been drastically reduced (Figure 4).

Depth of the Problem

House price inflation is costing years in additional gross income for purchasing households in the most unaffordable markets. This includes both the purchase price and higher mortgage payments (Figure 5). For example, just over the past 10 years:

- United States:** The cost, including mortgage interest, of the median priced house in San Diego has risen more than \$800,000 compared to the Median Multiple in 1996. This equates to approximately 14 years of additional gross income for the median income household.¹⁰ Other major US markets exhibit 10 or more years of additional income being required, including Los Angeles (16 years), San Francisco (14), Miami (14 years), Riverside-San Bernardino (11 years) and San Jose (10). Nonetheless most markets in the United States have retained their affordability.
- Australia:** The cost, including mortgage interest, of the median priced house in Perth has risen more than \$575,000 compared to the Median Multiple in 1996. This is equal to 11 years of gross income for the median income household. Perth is the only market outside the



United States in which the loss in gross income has exceeded 10 years over this period of time.

- **England:** The cost, including mortgage interest, of the median priced house in England has risen more than £200,000 compared to the Median Multiple in 1996. This equates to approximately seven (7) years of additional gross income for the median income household over 10 years
- **Ireland:** The cost, including mortgage interest, of the median priced house in Dublin has risen more than €350,000 compared to the Median Multiple in 1996. This equates to approximately six (6) years of additional gross income for the median income household.
- **New Zealand:** The cost, including mortgage interest, of the median priced house in Auckland has risen more than \$225,000 compared to the Median Multiple in 1996. This equates to approximately four (4) years of additional gross income for the median income household. Auckland's house inflation began earlier than the markets noted above.

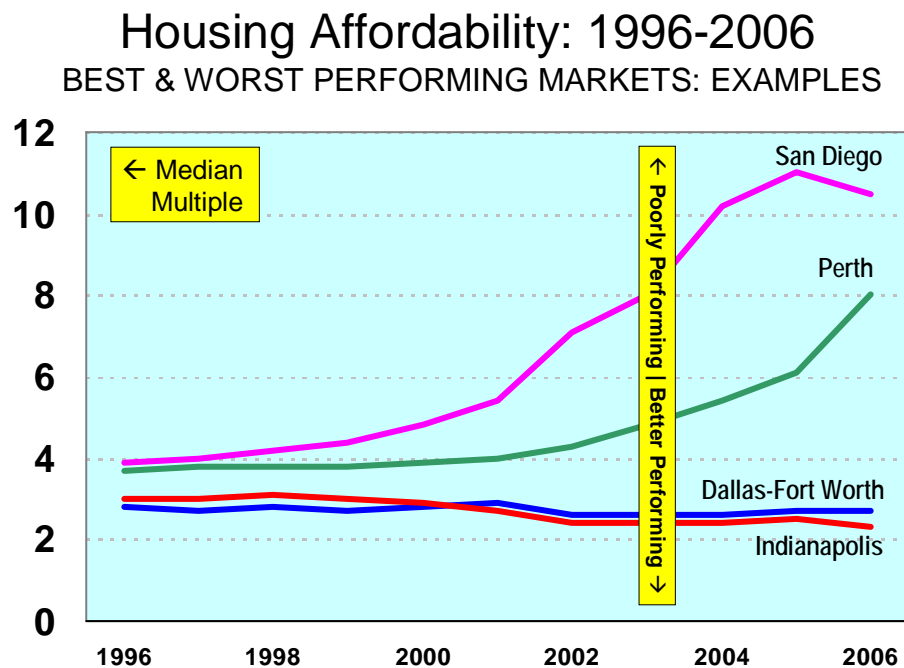


Figure 4

Households will have to adjust to the inflated housing prices. Some households will reduce spending for other goods and services. As the effect of inflated housing markets ripple through economies, reductions are likely to occur in spending on what households consider to be less essential goods and services. This, in turn, is likely to lead to fewer jobs and a less robust economy.

Spending restraint alone, however, is not likely to be sufficient to negate the higher house prices. Many households will be forced to accept much less in housing than they or their parents could have afforded just 10 years before. Still other households will not be able to buy houses and will be



denied the longer term financial and quality of life advantages home ownership provides. Even this new, larger cohort of renters will face greater financial hardship, to the extent that housing cost increases spillover into rental markets.

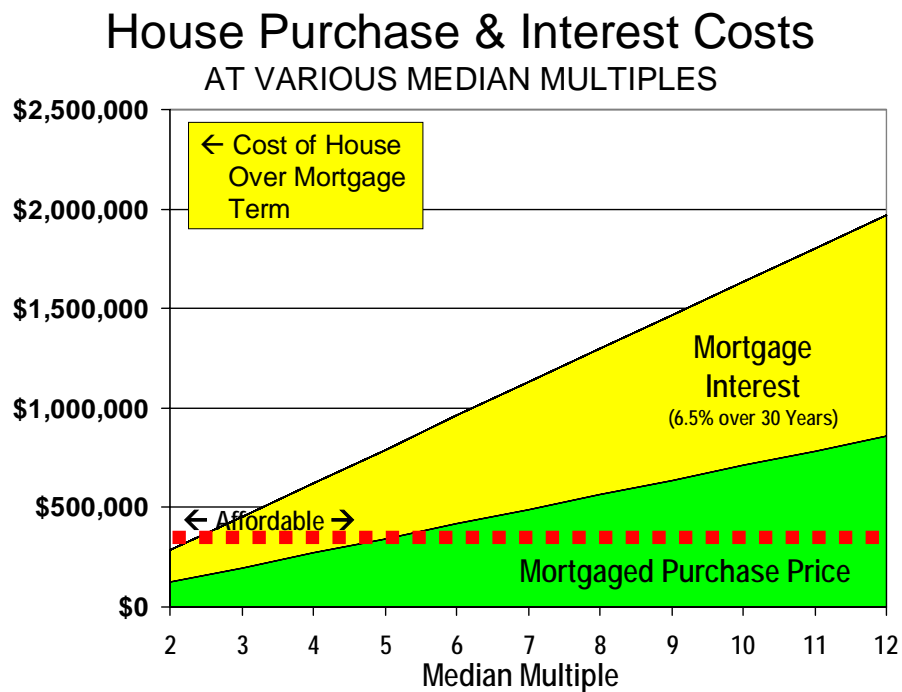


Figure 5

In time, virtually all households in inflated housing will have a lower standard of living than would have been the case if housing affordability had been maintained as in the affordable markets. The most disproportionate losses will be sustained by minorities, such as African-Americans and Hispanics in the United States, Blacks in the United Kingdom and Maori in New Zealand. Each of these minority groups already has considerably lower home ownership rates than the majority populations. In recent years, some progress has been made to narrow the home ownership gap between minorities and the majorities. Housing inflation is likely to reverse that progress and exacerbate income inequality.

Effects on the Economy: There are also potential macro-economic risks. The artificially inflated markets have led to the use of low documentation loans, initially reduced interest loans, negative equity loans and other more exotic lending instruments. These debt mechanisms and the higher household debt load have the potential to create instability to the housing market and the economy in general.

The housing inflation and related greater household debt could fuel higher rates of inflation. At the same time, central banks could come under unprecedented pressure to minimize their use of interest



rate increases to control inflation, out of concern for the larger number of households at risk of foreclosure or bankruptcy.

There are perhaps even more serious social risks, from the lower standard of living arising from the hyper-inflated housing prices, in particular denying the younger and lower income households access to homeownership. Fewer homeowners mean fewer households with a significant stake in neighborhoods and the economy. Harvard University economist Benjamin Friedman has shown that social cohesion can be threatened where there is not broadly shared economic growth.¹¹

There is nothing inevitable about this economic advance that has enabled an unprecedented share of the population to escape poverty. It has been a major social achievement of the past sixty years. Yet, democratized prosperity may be threatened by the present housing affordability crisis

Unsatisfactory Explanations

Various explanations have been offered for the unprecedented house price inflation.

Increasing Demand: One explanation is that low interest rates and more liberal financing instruments have driven the demand for housing up, which has purportedly raised housing prices.

The theory is that the demand for housing has outstripped the supply, as home builders were unable to produce at volumes demanded by the market. This phenomenon is called “stickiness.”

There are two ways that “stickiness” could have occurred. First; home builders might have been unable to respond to the demand because of labor or materials shortages, which would have increased house construction costs. The second way that “stickiness” could have occurred is if there was a constraint on the supply of land, which drove land prices up.

The comprehensive data on house and land prices in Australia can be used to test the “stickiness” hypothesis. There is virtually no evidence that the housing industry was incapable of meeting the supply. Indeed, William Lewis, founder of the McKinsey Global Institute found the Australian home building industry to be among the most efficient in the world.¹²

In fact, the evidence shows that virtually all of the increase in housing prices has been due to the second factor --- a shortage of land. Land prices have skyrocketed, while the price of building houses has risen only modestly in real terms. From 1993 to 2006, 88 percent of the combined cost of new houses and land has been attributable to inflation of land prices and only 12 percent to inflation in house building costs (Figure 6). Between 1993 and 2006, the inflation adjusted cost of building a typical house in Australia rose 16 percent. The cost of land for residential development has risen more than an inflation adjusted 125 percent, approximately eight (8) times the house price increase.¹³ The land price inflation is so great that none of the 90 categories surveyed for the Consumer Price Index rose as steeply. The land price escalation was more than double the increase in petrol costs (Figure 7).¹⁴



Land & House Cost Increase: 1993-2006 1,000,000+ POPULATION MARKETS IN AUSTRALIA

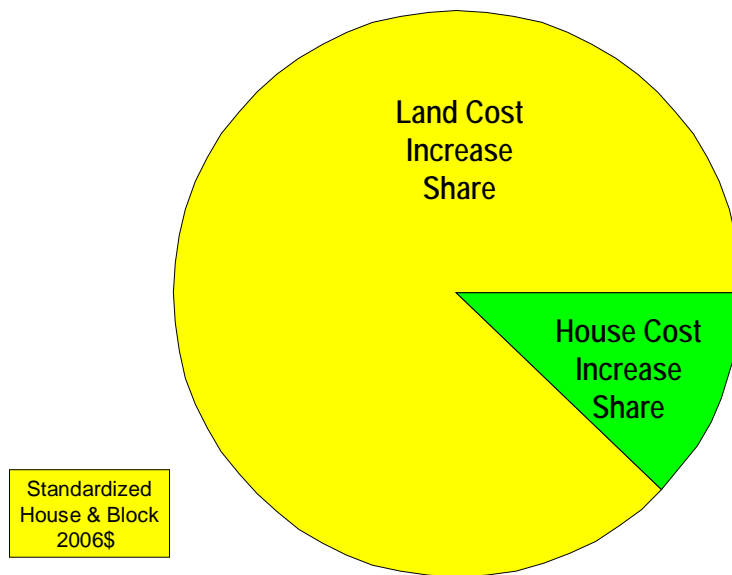


Figure 6

Australia: Cost Inflation 1993-2006 NEW HOUSES, LAND & SELECTED CPI ITEMS

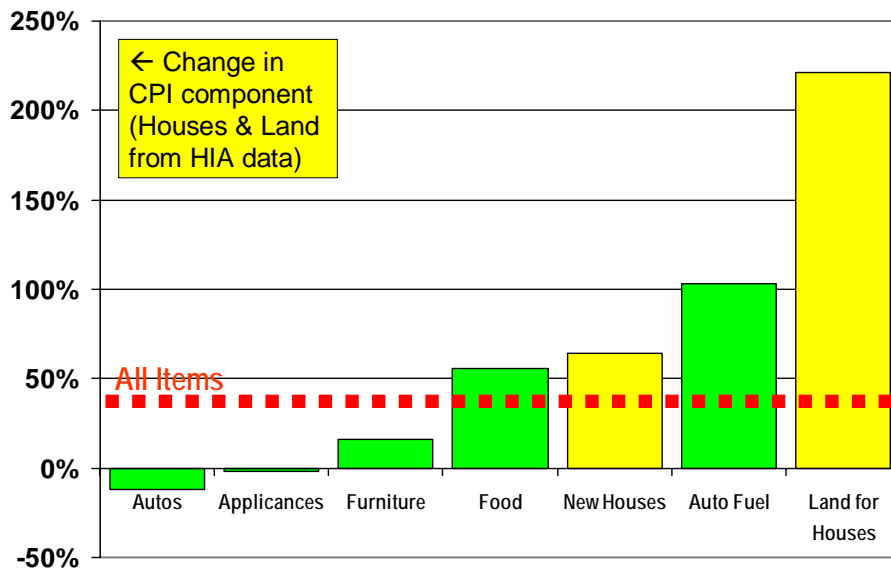


Figure 7



Further, there has been a reduction in the lot (block) size on which the new houses are built. In Sydney, for example, the Great Australian Dream of the “house on a quarter acre block” has been replaced by the house on a one-ninth acre block (or a high-rise condominium).¹⁵

The extreme land cost inflation leads to the premise that the housing cost inflation is largely due to a shortage of land for development. This may seem absurd in a nation that is 0.3 percent developed and in which large swaths of land exist that could be developed adjacent to all major markets. The problem, as the cited research below indicates, is an artificially created shortage of land for residential development.

The problem with the demand based explanations is that demand alone does not raise prices. This occurs only when higher demand is accompanied by insufficient supply. Where supply has not been constrained, the same low interest rates and more liberal financing instruments have been available, such as in the many affordable markets of Canada and the United States, where the inflation has not occurred. Included among these are three markets with the greatest demand, Atlanta, Dallas-Fort Worth and Houston, which are the fastest growing larger markets in the survey.

Favored Neighborhoods: There is also a theory that the house price inflation has been fueled by low interest rates that have permitted households to seek more expensive, higher quality houses in more favored neighborhoods. This theory would require a wholesale loss of interest in larger lot suburban development, which would represent a major change in attitudes from those that have prevailed for six decades in the surveyed nations.

But, again, this change has been inexplicably limited to some markets, not others. Similar purchasing power gains have occurred in all markets and more attractive neighborhoods are to be found in every market... The same reversal in preferences that is reputed to have driven extraordinary demand in markets such as San Francisco, Sydney, Manchester and Vancouver would have produced similar results in markets Atlanta, Dallas-Fort Worth, Ottawa and Kansas City. No such attitudinal change occurred in these markets. An Australian report characterized planning authorities as seeking to:

... modify ‘market’ demand through urban consolidation strategies and prepare land supply estimates based on, for example density targets, rather than prepare supply forecasts based on underlying demand.¹⁶

Moreover, the housing cost inflation in the unaffordable markets has been pervasive, not limited to the more favored neighborhoods. It is not plausible that the demand for housing on the fringe could have evaporated, while house prices inflated throughout the urban area, at the same time as first home buyer affordability has plummeted. It seems likely that first home buyers would have flocked to purchase less expensive housing on the urban fringe, just as they have for decades.

Collusion: A related argument is that large owners of peripheral land and developers are colluding to artificially inflate land prices. Collusion can only occur if the participants have sufficient power to control the market. Collusion could only occur if there were a shortage of land for development sufficient that a few companies commanded oligopolistic market power.



Unsatisfactory Explanations: Each of these explanations tends to be myopic, failing to explain why housing affordability has been destroyed in some markets and retained in others. This review of international markets demonstrates the spottiness of the housing affordability crisis --- housing cost inflation has occurred in some markets and not in others. Low interest rates cannot have fueled housing cost escalation in, for example, Sydney and Los Angeles, but not in Austin and Dallas-Fort Worth. Demand for better neighborhoods cannot have driven prices up throughout the entire urban area in Sydney, but not in Atlanta, despite Atlanta's having some of the most attractive central city neighborhoods in the world. All things being equal, collusion seems unlikely to have occurred in Perth or Adelaide, but not Ottawa or Charlotte. A satisfactory explanation must account for these differences.

Inflation Caused by Excessive Land Use Regulation

A satisfactory explanation is provided by the economic research that indicates why some markets have had inflation, while other markets have not. The research has identified a strong link between more restrictive land use regulations and inflated housing markets. For example:

- The *Barkeer Reports* of 2004 (housing supply) and 2006 (land use planning) commissioned by the government of the United Kingdom cited land regulation and the resulting land scarcity as a principal factor in the inordinate housing price increases and associated loss of affordability.¹⁷
- An Organization for Economic Cooperation and Development (OECD) report found an association between strongly regulated land markets and higher housing prices.¹⁸
- The Harvard University Joint Center for Housing Studies *State of the Nation's Housing Report 2005* notes that "development constraints drive up land and construction costs as well as prevent new housing from keeping pace with rising demand."¹⁹
- Two 2006 Australian studies place the blame for rising residential land costs on public policies that create land shortages.²⁰
- A report for the New Zealand government attributes much of that nation's house cost inflation to land price rises, which it suggests has a strong relationship to regulation of land supply.²¹
- Glaeser found that Boston area house prices had been inflated 60 percent by policy driven land scarcity.²²
- A report by the Royal Institution of Chartered Surveyors (RICS) in the United Kingdom attributed housing supply difficulties to land use regulation in some Western European nations, as well as the United Kingdom.²³
- A Federal Reserve Bank of Dallas article characterized the superior housing affordability of Texas to its more liberal zoning and the consequent greater supply of land for building houses.

The Texas market presents a marked contrast to such areas as the Pacific Coast, where tight supplies of vacant land and tougher zoning make building difficult. In Texas, the ready availability of land and low entry costs attract homebuilders, creating a competitive marketplace that helps keep a lid on price increases.²⁴



Finally, in a comprehensive review of US markets, Glaeser and Gyourko characterized land use controls as playing the “dominant role” in the housing costs differences.²⁵

Land Use Policies that Inflate House Prices

Echoing this reality, *New York Times* columnist and economist Paul Krugman coined the term “zoned zone” to denote the regions of the United States in which land use regulation has artificially driven prices up.²⁶ There are “zoned zones” in all of the nations surveyed. The more highly regulated markets overwhelmingly exhibit inflated housing prices, while more liberally regulated markets tend to remain more affordable (Figure 8).

Median Multiple by Market

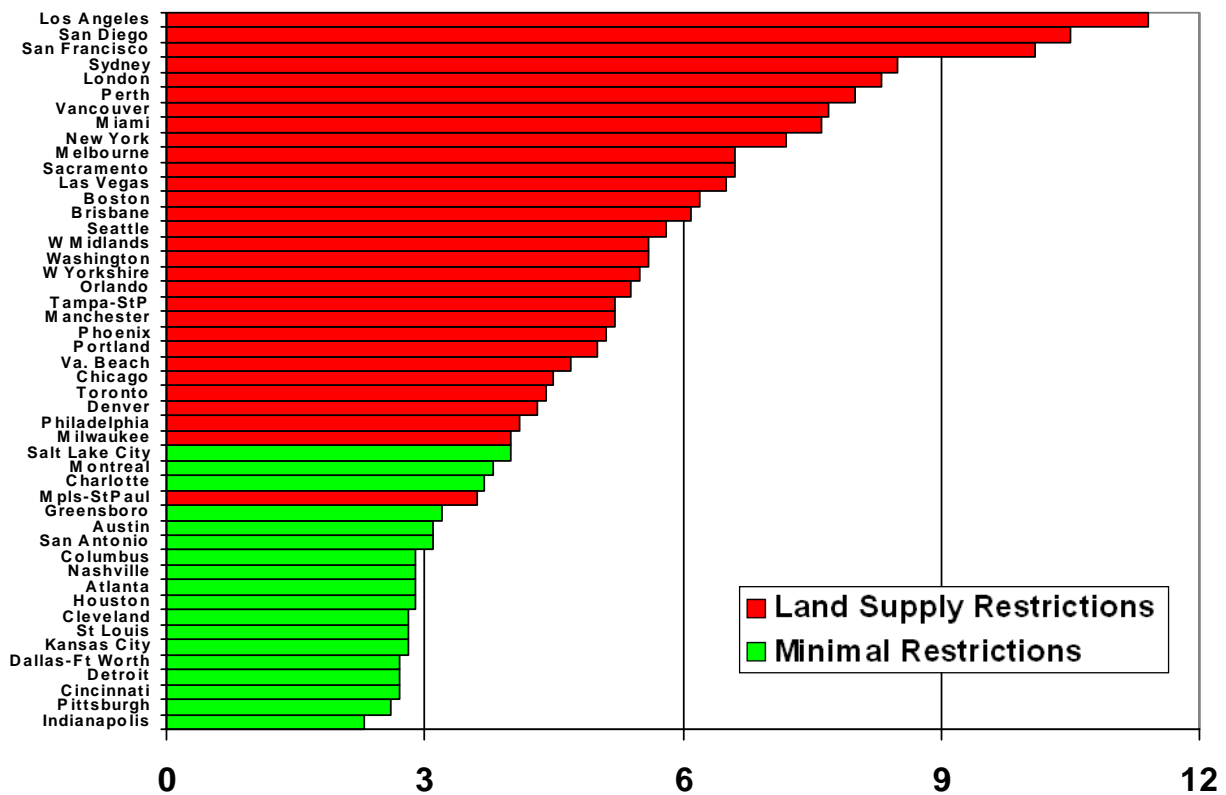


Figure 8

The policies and practices of the “zoned zone” go by various names, such as “smart growth” (a term used principally in the United States and Canada) “urban consolidation” (used principally in Australia) and the more generally used “compact city” policies. The compact city policies and practices most likely to drive housing prices up are summarized below.



Land rationing: Land rationing includes urban growth boundaries, insufficient “land release” rates by planning authorities, construction and development moratoria and large lot zoning also called “rural zoning”), which requires larger lot or block sizes on the urban periphery. Another land rationing strategy is government infill targets, such as policies in some urban areas of Australia and New Zealand and the United Kingdom that 60 percent or more of new housing must be constructed in established (brownfield) areas.²⁷ These policies have been implemented in nations with an abundance of undeveloped land (Box: Green Nations and Green Urban Areas). The restrictive land use policies and practices place artificial limits on the land that can be developed. Basic economics holds that rationing leads to higher prices. The loss of housing affordability seems to be an inevitable outcome of smart growth and urban consolidation land rationing policies.²⁸

Extravagant amenities: In some markets, new developments must be “master planned” and include extravagant amenities, such as expensive entrance walls, artificial lakes and fountains. “Master planning” requirements favor larger developers, which reduces competition and drives prices higher. Extravagant amenities may also be required for individual houses, such as brick facing requirements. There is nothing wrong with allowing communities and houses that are generally more attractive. However, mandating extravagant amenities raises house prices. This can eliminate the lower, less expensive tier of new housing from the market, reducing the opportunity for home ownership for many, especially first home buyers.

Excessive infrastructure fees: In many markets, new infrastructure financing has been shifted from the general tax or rate base to buyers of new homes. In some cases, infrastructure fees for new housing are considerably higher than the actual cost of the new infrastructure. This has been particularly severe in Australia. For example, infrastructure fees per new house are now approaching 40 times the direct cost of supplying infrastructure in Sydney, including more than \$60,000 in “indirect” infrastructure charges²⁹ per house that would have before been financed by the entire tax base.³⁰ At the same time, the artificially higher densities that are being imposed shorten the life of the existing infrastructure, precipitating the premature need for costly upgrades in the urban cores. As densities rise, such upgrades are made, and financed by the entire rate or tax base instead of being imposed on the new residents as infrastructure fees,³¹ the opposite of the policy approach on the urban fringe. Expensive infrastructure fees are discriminatory --- by transferring wealth from generally younger, lower income households in peripheral areas to higher income households, especially in luxury high-rise areas.

Box: Green Nations and Green Urban Areas

The *Barker* land use report notes that people tend to overestimate the amount of land under urbanization by a wide margin in the UK. This is to be expected because people who live in large urban areas generally see comparatively little green space. The *Barker* report indicates that people place a higher value on green space within urban areas than between urban areas.

In fact, only 10 percent of the United Kingdom is urbanized, an amount *exceeded* by the adjacent urban green belts in which development is prohibited. An even smaller portion of the other surveyed nations has been developed by urbanization --- 0.3 percent in Australia, four percent in Ireland, 1.4 percent in New Zealand and less than three percent in the United States. Approximately three percent of Canada’s agricultural belt is urbanized. Thus, in all surveyed nations, the overwhelming majority of land is either open space or agricultural, rather than urban.

Further, some urban areas have large amounts of green space. For example, 12 percent of the Chicago urban area is in forest preserves, a land area greater than the Manchester urban area. This does not include the smaller urban parks. However, comparative data on urban area parks and green space is limited or non-existent.



Complicated and Lengthy Approval Processes: In many markets, approval processes are unnecessarily complicated and lengthy, even for standardized construction. To operate in this environment, developers and home builders must hire additional staff to follow public processes and hire consultants to prepare analyses that were not previously required. Approval processes take more time, which adds greater risks, such as additional holding costs and higher interest charges. This raises housing costs and drives smaller companies out of the market because they cannot afford the more costly process. This can lead to less competitive housing markets that are dominated by a few large companies, which will tend to raise housing prices even more.³²

The Economic Value of Planning Permission: British property commentator and columnist Sarah Beeny summarizes the situation:

With growing demand for new housing, land with planning consent for dwelling construction has become an increasingly precious commodity.³³

This is illustrated by the fact that land on which residential development is permitted³⁴ in the United Kingdom averages more than 250 times the value per acre as agricultural land.³⁵ Differentials of up to 500 times have been noted for adjacent properties with and without planning permission.³⁶ Without these regulation imposed differences, adjacent properties would exhibit only marginal cost differences, and British house prices would be affordable. The World Bank has recommended the use of a performance indicator to ensure that there are not unwarranted differences between land with and without planning permission on the urban periphery.³⁷

A Culture of Control: A culture of control appears to have emerged in which development is allowed to occur only in accordance with government planning. The alternative to a culture of control is a more liberal land use regime, driven by the market, consistent with reasonable environmental regulations and standards. These results of these alternatives are compared in two similar markets, highly regulated Perth, Australia and liberally regulated Austin, Texas (Case Study: Austin's 11-Year Income Advantage over Perth). The evidence indicates that housing affordability may be incompatible with "smart growth," "urban consolidation" and other restrictive land use practices.

Ignoring the Economic and Social Dimensions

The smart growth and urban consolidation policies have been principally justified on aesthetic and environmental factors that are themselves the object of vigorous contention.³⁸ The issue, however, is not the merits of arguments on either side, but rather the nature of the public deliberations that have led to restrictive land use policies. These discussions have rarely considered the longer term economic and social implications, such as the destruction of housing affordability for large segments of the population.

Governments routinely consider the environmental impacts of major projects and policies, often through rigorously mandated processes established by higher levels of government (such as "Environmental Impact Statements"). It would have been appropriate for the same rigor to have



been applied to the economic and social impacts of restrictive land use policies. Whether out of ignorance or omission, decisions have been made on an apparent assumption that strong regulation could be imposed without significant economic and social impact. While elected officials cannot be experts in all of the subjects, they require economic expertise to responsibly perform their duties to the public. It is the responsibility of government staff to provide this expertise either directly or through the ample consulting budgets. This has generally not occurred. The negative economic and social externalities of restrictive land use and planning are substantial and are becoming more evident as the higher cost of housing begins to filter through to the rest of the economy.

There is a need for a balance between environmental protection, social impacts and economic impacts. This is best not only for people, but also for the environment. Recent history clearly indicates that the environment can only be adequately protected by societies affluent enough to afford it.

The Costly Reality of Land Use Planning

There is already evidence that restrictive land use and planning are having negative impacts, both on people and economies.

- The United Kingdom's *Barker* land use report indicates that restrictive land use policies may have significantly reduced international competitiveness of urban areas outside London, with commercial rental rates far higher than in comparable international locations. Further, a report by the Policy Exchange suggests long standing restrictive land use policies may have hampered economic growth in the United Kingdom.³⁹ These developments have sparked unprecedented debate on British land use policies.
- As housing inflation has occurred, home ownership by younger households has dropped markedly in the United Kingdom. From 2001 to 2006, the share of younger households purchasing their own homes has dropped from 40 percent to 34 percent, a decline of 15 percent.⁴⁰ In an apparently related development, the number of residents hoping to leave the United Kingdom has nearly doubled over three years, with many citing the high cost of living as a principal factor.⁴¹ The number of first home buyers in the United Kingdom is reported to have dropped to the lowest level since 1980, when interest rates were much higher.⁴²
- The home ownership share among younger households is declining in Australia, where the house price inflation has been pervasive. Between 1995 and 2004, there was a decline of seven percent in home ownership among younger households.⁴³ By comparison, in the United States, where land use regulation has been generally more liberal, younger household home ownership rose 12 percent in the same period.⁴⁴
- Long standing migration trends in the United States have changed significantly in the new century. Approximately 1,700,000 people moved from higher cost housing markets to lower cost markets between 2000 and 2005. These higher cost markets are principally in the West, which has grown rapidly in recent decades and in the Northeast.⁴⁵
- The "slowdown" in the United States economy during 2006 has been blamed, in part, on a decline in housing activity. Over the past year, existing house sales have declined in more regulated states at five times the rate of liberally regulated states.⁴⁶



These developments are consistent with economic theory to the effect that more costly markets suffer disadvantages relative to less costly markets. Economist Raven Saks of the US Federal Reserve Board has published research indicating the potential for economic loss.⁴⁷ The Joint Center for Housing Studies of Harvard University summarized the research as showing that metropolitan areas

*... with stringent development regulations generate less employment growth than expected given their industrial bases.*⁴⁸

These emerging consequences, from the household to urban area level, represent a “government failure” of monumental proportions

EMERGING CONSENSUS: LAND USE PLANNING INFLATES HOUSE PRICES

Over the past year, there has been a growing recognition of the link between the loss in housing affordability and excessive urban planning regulation. This is most evident in Australia, the surveyed nation where the housing affordability crisis is the most severe, with the Median Multiple exceeding 6.0 in all markets with more than 1,000,000 residents. In August, Reserve Board Governor Ian MacFarlane, testifying before a Parliamentary committee, blamed restrictive land use and planning policies for the loss of affordability for first home buyers.⁴⁹ At about the same time Prime Minister John Howard and Treasurer Peter Costello cited planning policies that restrict land supply as the cause of the nation’s housing affordability problem.⁵⁰

Demonstrating the bi-partisan nature of the concern, federal Labor Housing spokesperson Tanya Plibersek said:

*... a lot of people have given up on the great Australian dream of home ownership. I think that's something that we really need to fix ...*⁵¹

Queensland Deputy Premier Anna Bligh outlined the most important imperatives in announcing strategic objectives that would:

*... ensure that land is freed up as needed right across the State, ensure local government charges for infrastructure in new housing estates are fair and improve processes for development approvals.*⁵²

The *Barker* reports of 2004 and 2006 in the United Kingdom strongly connect restrictive planning policies and house price escalation. Moreover; the *Barker* reports recommend policy reforms that could begin to restore affordability in a nation that has become accustomed to some of the most cramped high-income world housing quarters, another legacy of restrictive planning. The average new British home is 815 square feet, or 76 square meters, slightly larger than the flats built by the East German government before 1990, and approximately one-third the size of the average new US or Australian house.⁵³



A report by Homes for Working Families by the Center for Housing Policy in the United States recommends making more land available for residential development through re-zonings, more efficient approval processes and more equitable impact fees.⁵⁴

New Zealand Minister of Housing Chris Carter identified similar concerns:

It is obvious an astonishing increase in the value of land has distorted house prices. Between 1981 and 2004, land prices rose 286 per cent in real terms. If it weren't for this increase, house prices would have risen only 16.4 per cent in real terms over the 23-year period instead of the 105 per cent they have actually increased.⁵⁵

New Zealand's opposition National Party has cited planning based land rationing for inflating housing prices. Party spokesman Phil Heatley casts the issue in the broader social and economic terms it deserves:

This is an inter-generational issue because grandparents and parents worry about how the next generation can afford a house. ...tragically we are now seeing the first generation of young people locked out of home ownership as a matter of course.⁵⁶

RESTORING HOUSING AFFORDABILITY

Policy makers are beginning to wrestle with the consequences of these destructive and incompletely conceived planning policies. Neither the problems nor the solutions are complex.

Ineffective Strategies: Regrettably, some popular policies will do little or nothing to restore housing affordability and can even worsen it by imposing additional costs on home buyers not qualifying for relief under the policies. Some governments have established first home buyer grants, however their amounts are trifling compared to the extent of the problem. It would, for example require \$120,000 of taxpayer funding in Adelaide, \$375,000 in San Diego, €175,000 in Dublin and £80,000 in the average UK market to nullify the excess housing cost inflation. Resources of this magnitude are simply not available. Affordable housing mandates, which require below-market rental or purchase of homes are a similar policy dead end. Such policies allow governments to pick a few “winners,” provide nominal assistance and issue reassuring press releases without addressing the root of the problem. Such strategies are not sustainable as solutions to the problem of housing affordability.

The Road to Recovery: Within the surveyed countries, virtually all urban markets were affordable within the last 10 to 20 years. The evidence indicates that much of the housing cost inflation is attributable to public policies that have rationed land and added costs to the house building process. Government policies can be used to restore housing affordability. The road to restoring housing affordability could include measures such as the following:

- **Housing Affordability Targets:** Governments and land regulatory bodies could establish Median Multiple housing affordability targets, which could be phased in over a reasonable period of time. This would be consistent with the practice in Germany and Switzerland,



where land use authorities are required to make enough land available to maintain housing affordability.⁵⁷

- **Liberalizing land use processes:** Liberalization is likely to have the greatest impact in restoring housing affordability. Markets in which the impetus for development would rely more on the market rather than government plans. An important part of any such program would be to phase out land shortages on the peripheries of urban areas and make approval processes as expeditious as possible. Liberalization would involve a presumption favoring development, except where reasonable environmental standards would be contravened, rather than a presumption new housing for people can only be built when government “land releases” occur.
- **Minimizing Peripheral Land Price Distortions:** Measures could also be introduced to ensure that land for development on the urban periphery is reasonably priced relative to its non-urban or agricultural use. Sufficient land for development is, by definition, not available so long as such peripheral land price distortions exist.
- **Equitable Infrastructure Finance:** Community infrastructure could be financed by the tax or rate base rather than being inequitably imposed in the form of fees and taxes on purchasers of new houses. Generally, community infrastructure was financed in this manner until recent years and remains so in most affordable markets.
- **Economic Impact Analyses:** Economic impacts and the attendant longer term social implications should be seriously considered in land use decisions, just as governments prepare statutorily required environmental documentation, such as “Environmental Impact Statements.” “Economic Impact Statements” could be used to project future housing affordability (Median Multiples), including their impact on the regional economy, households and competitiveness.
- **Professional Education:** Government professional staff has generally not provided policy makers with independent analyses of the impacts of proposed land use regulations on housing affordability. To some degree, this may represent a failure of planning education. A strong focus on economics could improve policy advice. This might be achieved by reform of planning school curricula and economics based continuing education for employed staff.
- **Research:** A focused research agenda could assist land use authorities in implementing policies to restore housing affordability. This would include the identification of land use and governance structures (see Case Study: Austin’s 11-Year Advantage over Perth) that foster housing affordability and rigorous research on the community costs of infrastructure.



CASE STUDY: AUSTIN'S 11-YEAR ADVANTAGE OVER PERTH

Perth (Australia) and Austin (the capital of Texas) are the second fastest growing metropolitan areas in their respective countries with more than 1,000,000 population. Both have approximately 1.5 million residents, with Perth slightly larger than Austin. Austin is the faster growing; having added 14.9 percent (3.0 percent average annual rate) to its population between 2000 and 2005, nearly double Perth's 7.6 percent (1.5 percent annual rate). In the latest year, Austin's two to one growth advantage has been maintained, despite Western Australia's resource boom (Figure 9). Residents tend to be proud of their communities and each metropolitan area is considered among the better places to live in their respective nations.

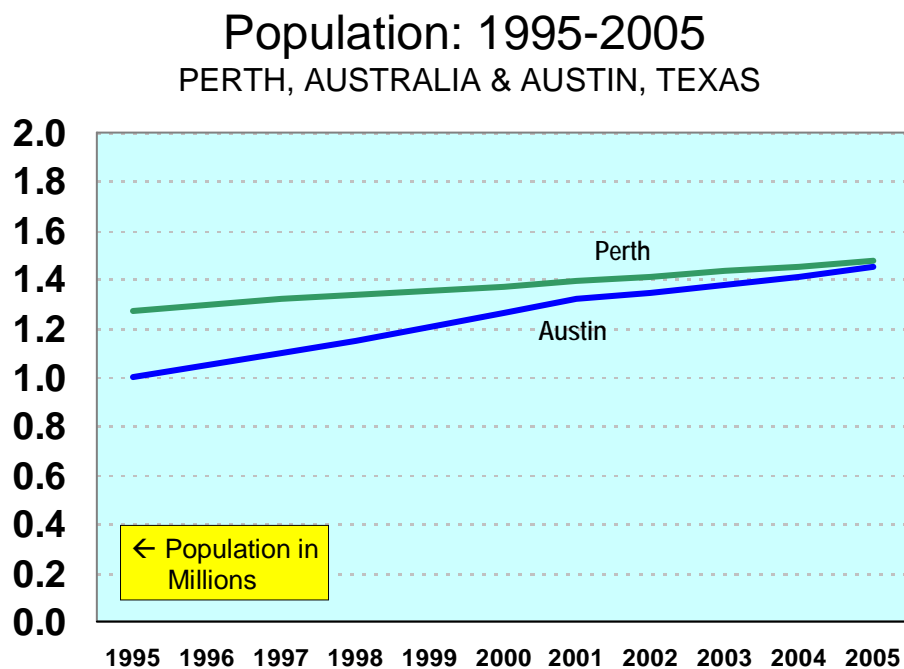


Figure 9

However, while the size and demographic trends in the two metropolitan areas are similar, trends in housing affordability could hardly be more different (Figure 10). In just the last year, the Perth median house price has risen 40 percent, while the Austin median house price rose five (5) percent.

- Housing affordability has been seriously eroded in Perth. Between 1996 and 2006, Perth's Median Multiple (median house price divided by median household income) rose from 3.7 to 8.0. The price of residential land in Perth has inflated from \$115,000 to \$265,000 per lot (block) in just one year.⁵⁸ As a result, the median house in 2006 is approximately \$575,000 more costly than in 1996, including mortgage interest (adjusted for income growth and current interest rates). This additional cost is equal to 11 years of gross income for a household with the median income (above).



- Housing remains affordable in Austin. Between 1996 and 2006, Austin’s Median Multiple improved from 3.2 to 3.1, reflecting a housing affordability gain.

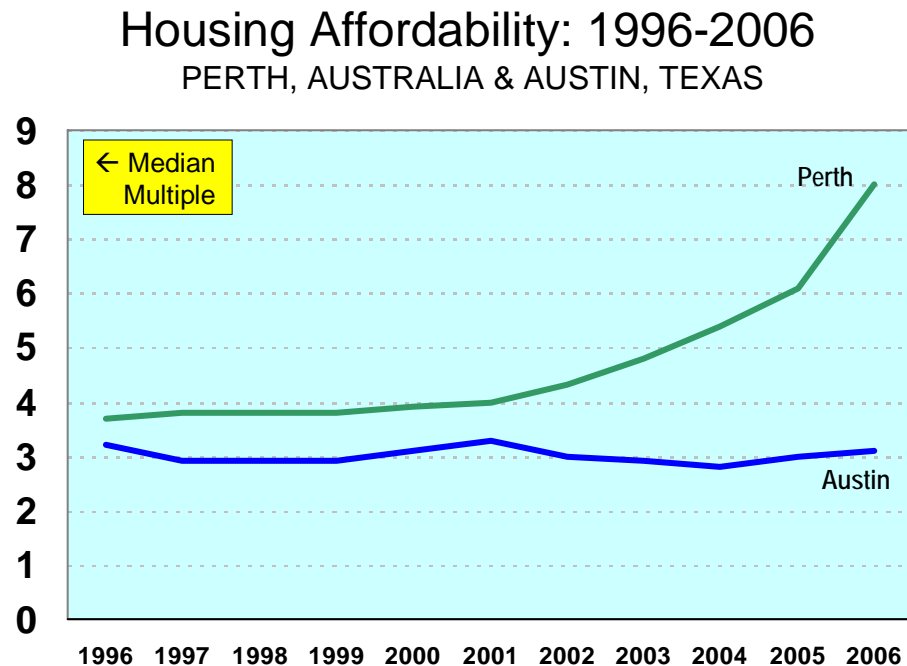


Figure 10

The land use policies and practices in the two metropolitan areas are just as different.

- Land use in Perth is centrally regulated by the state government of Western Australia. Residential developments must wait for government “land releases.” Slow land releases have been so slow that the price of land has skyrocketed. The state government has noted its recognition of this problem, however serious reforms have not been undertaken.
- Land use in Austin is generally lightly regulated by individual units of local government. The largest such jurisdiction, the city (local authority) of Austin, often labels its policies as “smart growth,” and seeks to significantly limit development on its west side, an environmentally sensitive area on the eastern edge of the Texas hill country. However, the city of Austin allows comparatively free development on the less environmentally sensitive east side of the city. There are more than 30 other local authorities in the metropolitan area that are responsible for their own land use and are generally liberal in their approach. Finally, land outside the jurisdiction of the cities is regulated by the five county governments in the metropolitan area. County governments in Texas have limited land use regulation authority, largely limited to sanitary and traffic issues. County jurisdiction applies to nearly one third of the central county (Travis) and nearly 90 percent of the metropolitan area. This comparatively light regulatory regime has been instrumental in maintaining housing affordability in Austin.



In Perth, the home building industry is permitted to build only as many houses as are allowed by the state government, which has been considerably less than the demand. In Austin, builders are free to build as many houses as the market requires.

Thus, while Perth and Austin are similar in some ways, their land use governance has produced very different results. Already filtering through the Perth economy is an 11 year income loss for purchasing households from housing cost inflation, built up in only 10 years. In contrast, housing affordability is slightly better today in Austin than it was 10 years ago. The Austin household buying the median priced house does so with 11 years less income. This is a considerable competitive advantage.



SCHEDULE 1
Housing Affordability Ratings
Using Median Multiple (Median House Price/Median Household Income)
2006 - 3rd Quarter

| Inter-national Rank | National Rank | Nation | Market | Median Multiple |
|---------------------|---------------|--------|--------|-----------------|
|---------------------|---------------|--------|--------|-----------------|

SEVERELY UNAFFORDABLE

| | | | | |
|----|----|----------------|---|------|
| 1 | 1 | United States | Los Angeles-Orange County, CA | 11.4 |
| 2 | 2 | United States | San Diego, CA | 10.5 |
| 3 | 3 | United States | Honolulu, HI | 10.3 |
| 4 | 4 | United States | San Francisco, CA | 10.1 |
| 5 | 5 | United States | Ventura County, CA (Los Angeles Area) | 9.4 |
| 6 | 6 | United States | Stockton, CA | 8.6 |
| 7 | 1 | Australia | Sydney | 8.5 |
| 8 | 7 | United States | San Jose, CA (San Francisco Area) | 8.4 |
| 9 | 1 | United Kingdom | London (GLA) | 8.3 |
| 10 | 2 | United Kingdom | Bournemouth-Dorset | 8.2 |
| 11 | 2 | Australia | Perth | 8.0 |
| 12 | 8 | United States | Riverside-San Bernardino, CA (Los Angeles Area) | 7.9 |
| 13 | 1 | Canada | Vancouver | 7.7 |
| 14 | 9 | United States | Miami-West Palm Beach, FL | 7.6 |
| 14 | 9 | United States | Modesto, CA | 7.6 |
| 16 | 3 | United Kingdom | Cardiff | 7.5 |
| 17 | 4 | United Kingdom | Bristol | 7.3 |
| 18 | 11 | United States | Fresno, CA | 7.2 |
| 18 | 11 | United States | New York, NY-NJ,-CT-PA | 7.2 |
| 20 | 3 | Australia | Hobart | 7.0 |
| 21 | 1 | New Zealand | Auckland | 6.9 |
| 21 | 5 | United Kingdom | London Exurbs (East & SE of England) | 6.9 |
| 23 | 4 | Australia | Melbourne | 6.6 |
| 23 | 13 | United States | Sacramento, CA | 6.6 |
| 23 | 13 | United States | Sarasota, FL | 6.6 |
| 23 | 2 | Canada | Victoria | 6.6 |
| 27 | 5 | Australia | Adelaide | 6.5 |
| 27 | 15 | United States | Las Vegas, NV | 6.5 |
| 29 | 16 | United States | Boston, MA-NH | 6.2 |
| 30 | 6 | Australia | Brisbane | 6.1 |
| 31 | 17 | United States | Bakersfield, CA | 6.0 |
| 31 | 6 | United Kingdom | Belfast | 6.0 |
| 31 | 2 | New Zealand | Christchurch | 6.0 |
| 31 | 6 | United Kingdom | Newcastle-Tyne & Wear | 6.0 |
| 35 | 18 | United States | Bridgeport, CT (New York Area) | 5.9 |
| 36 | 19 | United States | Seattle-Tacoma, WA | 5.8 |
| 37 | 1 | Ireland | Dublin | 5.7 |
| 37 | 8 | United Kingdom | Northampton | 5.7 |
| 37 | 20 | United States | Providence, RI-MA | 5.7 |
| 40 | 9 | United Kingdom | Birmingham-West Midlands | 5.6 |
| 40 | 7 | Australia | Darwin | 5.6 |



SCHEDULE 1
Housing Affordability Ratings
Using Median Multiple (Median House Price/Median Household Income)
2006 - 3rd Quarter

| Inter-national Rank | National Rank | Nation | Market | Median Multiple |
|---------------------|---------------|----------------|------------------------------|-----------------|
| 40 | 9 | United Kingdom | Swansea | 5.6 |
| 40 | 21 | United States | Tucson, AZ | 5.6 |
| 40 | 21 | United States | Washington, DC-VA-MD-WV | 5.6 |
| 45 | 11 | United Kingdom | Hull & Humber | 5.5 |
| 45 | 11 | United Kingdom | Leeds-West Yorkshire | 5.5 |
| 47 | 13 | United Kingdom | Leicester | 5.4 |
| 47 | 13 | United Kingdom | Middlesbrough-Durham | 5.4 |
| 47 | 23 | United States | Orlando, FL | 5.4 |
| 47 | 3 | New Zealand | Wellington | 5.4 |
| 51 | 15 | United Kingdom | Edinburgh-Lothian | 5.3 |
| 51 | 24 | United States | Fort Myers, FL | 5.3 |
| 51 | 15 | United Kingdom | Liverpool-Merseyside | 5.3 |
| 51 | 15 | United Kingdom | Stoke on Trent-Staffordshire | 5.3 |
| 55 | 18 | United Kingdom | Greater Manchester | 5.2 |
| 55 | 18 | United Kingdom | Sheffield-South Yorkshire | 5.2 |
| 55 | 25 | United States | Tampa-St. Petersburg, FL | 5.2 |
| 58 | 26 | United States | Charleston, SC | 5.1 |
| 58 | 26 | United States | Phoenix, AZ | 5.1 |

SERIOUSLY UNAFFORDABLE

| | | | | |
|----|----|----------------|--------------------------------|-----|
| 60 | 20 | United Kingdom | Nottingham | 5.0 |
| 60 | 28 | United States | Portland, OR-WA | 5.0 |
| 62 | 21 | United Kingdom | Blackpool-Lancashire | 4.9 |
| 62 | 8 | Australia | Canberra | 4.9 |
| 62 | 29 | United States | New Haven, CT (New York Area) | 4.9 |
| 62 | 29 | United States | Worcester, MA-CT (Boston Area) | 4.9 |
| 66 | 31 | United States | Baltimore, MD | 4.7 |
| 66 | 31 | United States | Daytona Beach, FL | 4.7 |
| 66 | 31 | United States | Lakeland, FL | 4.7 |
| 66 | 31 | United States | Virginia Beach-Norfolk, VA-NC | 4.7 |
| 70 | 35 | United States | Chicago, IL | 4.5 |
| 71 | 3 | Canada | Calgary | 4.4 |
| 71 | 36 | United States | New York: Poughkeepsie, NY | 4.4 |
| 71 | 36 | United States | Portland, ME | 4.4 |
| 71 | 36 | United States | Springfield, MA | 4.4 |
| 71 | 3 | Canada | Toronto | 4.4 |
| 76 | 39 | United States | Denver, CO | 4.3 |
| 77 | 40 | United States | Albuquerque, NM | 4.2 |
| 78 | 41 | United States | Colorado Springs, CO | 4.1 |
| 78 | 41 | United States | Hartford, CT | 4.1 |
| 78 | 41 | United States | Philadelphia, PA-NJ-DE-MD | 4.1 |
| 78 | 41 | United States | Richmond, VA | 4.1 |



SCHEDULE 1
Housing Affordability Ratings
Using Median Multiple (Median House Price/Median Household Income)
2006 - 3rd Quarter

| Inter-national Rank | National Rank | Nation | Market | Median Multiple |
|--------------------------------|---------------|----------------|-----------------------------|-----------------|
| MODERATELY UNAFFORDABLE | | | | |
| 82 | 22 | United Kingdom | Aberdeen | 4.0 |
| 82 | 45 | United States | Allentown, PA-NJ | 4.0 |
| 82 | 22 | United Kingdom | Glasgow-Strathclyde | 4.0 |
| 82 | 45 | United States | Melbourne, FL | 4.0 |
| 82 | 45 | United States | Milwaukee, WI | 4.0 |
| 82 | 45 | United States | New Orleans, LA | 4.0 |
| 82 | 45 | United States | Salt Lake City, UT | 4.0 |
| 89 | 50 | United States | Madison, WI | 3.9 |
| 90 | 51 | United States | Albany, NY | 3.8 |
| 90 | 51 | United States | Baton Rouge, LA | 3.8 |
| 90 | 51 | United States | Jacksonville, FL | 3.8 |
| 90 | 5 | Canada | Montreal | 3.8 |
| 94 | 54 | United States | Charlotte, NC-SC | 3.7 |
| 94 | 54 | United States | McAllen, TX | 3.7 |
| 94 | 54 | United States | Raleigh, NC | 3.7 |
| 94 | 6 | Canada | St. Catherines-Niagara | 3.7 |
| 98 | 57 | United States | Lafayette, LA | 3.6 |
| 98 | 57 | United States | Minneapolis-St. Paul, MN-WI | 3.6 |
| 100 | 59 | United States | Boise, ID | 3.5 |
| 100 | 7 | Canada | Edmonton | 3.5 |
| 100 | 59 | United States | El Paso, TX | 3.5 |
| 100 | 7 | Canada | Hamilton | 3.5 |
| 100 | 59 | United States | Knoxville, TN | 3.5 |
| 105 | 62 | United States | Birmingham, AL | 3.4 |
| 105 | 62 | United States | Greenville, SC | 3.4 |
| 105 | 62 | United States | Jackson, MS | 3.4 |
| 108 | 65 | United States | Chattanooga, TN-GA | 3.2 |
| 108 | 65 | United States | Greensboro, NC | 3.2 |
| 108 | 9 | Canada | Kitchener | 3.2 |
| 108 | 65 | United States | Lexington, KY | 3.2 |
| 112 | 68 | United States | Austin, TX | 3.1 |
| 112 | 10 | Canada | Halifax | 3.1 |
| 112 | 68 | United States | Memphis, TN-AR-MS | 3.1 |
| 112 | 68 | United States | Mobile, AL | 3.1 |
| 112 | 68 | United States | San Antonio, TX | 3.1 |
| 112 | 68 | United States | York, PA | 3.1 |

AFFORDABLE

| | | | | |
|-----|----|---------------|-----------------|-----|
| 118 | 73 | United States | Little Rock, AR | 3.0 |
| 118 | 11 | Canada | London | 3.0 |
| 118 | 11 | Canada | Oshawa | 3.0 |
| 118 | 73 | United States | Tulsa OK | 3.0 |



| SCHEDULE 1 | | | | |
|---|---------------|---------------|----------------------------------|-----------------|
| Housing Affordability Ratings | | | | |
| Using Median Multiple (Median House Price/Median Household Income) | | | | |
| 2006 - 3rd Quarter | | | | |
| Inter-national Rank | National Rank | Nation | Market | Median Multiple |
| 122 | 75 | United States | Atlanta, GA | 2.9 |
| 122 | 75 | United States | Columbus, OH | 2.9 |
| 122 | 75 | United States | Houston, TX | 2.9 |
| 122 | 75 | United States | Louisville, KY-IN | 2.9 |
| 122 | 75 | United States | Nashville, TN | 2.9 |
| 122 | 75 | United States | Oklahoma City, OK | 2.9 |
| 122 | 13 | Canada | Ottawa | 2.9 |
| 122 | 75 | United States | Scranton-Wilkes Barre, PA | 2.9 |
| 130 | 82 | United States | Cleveland, OH | 2.8 |
| 130 | 82 | United States | Columbia, SC | 2.8 |
| 130 | 82 | United States | Kansas City, MO-KS | 2.8 |
| 130 | 82 | United States | St. Louis, MO-IL | 2.8 |
| 134 | 86 | United States | Augusta, GA | 2.7 |
| 134 | 86 | United States | Cincinnati, OH-KY-IN | 2.7 |
| 134 | 86 | United States | Dallas-Fort Worth, TX | 2.7 |
| 134 | 86 | United States | Detroit, MI | 2.7 |
| 134 | 86 | United States | Harrisburg, PA | 2.7 |
| 134 | 86 | United States | Lansing, MI | 2.7 |
| 140 | 92 | United States | Des Moines, IA | 2.6 |
| 140 | 92 | United States | Huntsville, AL | 2.6 |
| 140 | 92 | United States | Northwest Indiana (Chicago Area) | 2.6 |
| 140 | 92 | United States | Pittsburgh, PA | 2.6 |
| 140 | 14 | Canada | Saskatoon | 2.6 |
| 140 | 92 | United States | Syracuse, NY | 2.6 |
| 146 | 97 | United States | Grand Rapids, MI | 2.5 |
| 146 | 97 | United States | Omaha, NE-IA | 2.5 |
| 146 | 15 | Canada | Quebec | 2.5 |
| 146 | 97 | United States | Toledo, OH | 2.5 |
| 146 | 97 | United States | Wichita, KS | 2.5 |
| 146 | 15 | Canada | Winnipeg | 2.5 |
| 152 | 101 | United States | Akron, OH | 2.4 |
| 153 | 102 | United States | Buffalo, NY | 2.3 |
| 153 | 102 | United States | Dayton, OH | 2.3 |
| 153 | 102 | United States | Indianapolis, IN | 2.3 |
| 153 | 102 | United States | Rochester, NY | 2.3 |
| 157 | 106 | United States | Fort Wayne, IN | 2.0 |
| 157 | 17 | Canada | Regina | 2.0 |
| 157 | 106 | United States | Youngstown, OH | 2.0 |



| SCHEDULE 2 | | | | | | |
|--|---------------|----------------|--------------------------|-----------------|--------------------|-------------------------|
| Housing Affordability by Nation | | | | | | |
| Using Median Multiple (Median House Price/Median Household Income) | | | | | | |
| 2006 - 3rd Quarter | | | | | | |
| Inter-national Rank | National Rank | Nation | Market | Median Multiple | Median House Price | Median Household Income |
| AUSTRALIA | | | | | | |
| 27 | 5 | Australia | Adelaide | 6.5 | \$285,000 | \$43,900 |
| 30 | 6 | Australia | Brisbane | 6.1 | \$330,000 | \$54,000 |
| 62 | 8 | Australia | Canberra | 4.9 | \$375,000 | \$76,000 |
| 40 | 7 | Australia | Darwin | 5.6 | \$385,000 | \$68,200 |
| 20 | 3 | Australia | Hobart | 7.0 | \$290,000 | \$41,500 |
| 23 | 4 | Australia | Melbourne | 6.6 | \$377,000 | \$57,100 |
| 11 | 2 | Australia | Perth | 8.0 | \$430,000 | \$53,900 |
| 7 | 1 | Australia | Sydney | 8.5 | \$520,300 | \$61,200 |
| | | | Median | 6.6 | | |
| CANADA | | | | | | |
| 71 | 3 | Canada | Calgary | 4.4 | \$319,000 | \$73,300 |
| 100 | 7 | Canada | Edmonton | 3.5 | \$233,800 | \$66,500 |
| 112 | 10 | Canada | Halifax | 3.1 | \$176,000 | \$56,800 |
| 100 | 7 | Canada | Hamilton | 3.5 | \$215,700 | \$61,300 |
| 108 | 9 | Canada | Kitchener | 3.2 | \$211,300 | \$65,500 |
| 118 | 11 | Canada | London | 3.0 | \$166,700 | \$56,100 |
| 90 | 5 | Canada | Montreal | 3.8 | \$189,500 | \$49,700 |
| 118 | 11 | Canada | Oshawa | 3.0 | \$222,900 | \$75,400 |
| 122 | 13 | Canada | Ottawa | 2.9 | \$201,500 | \$70,300 |
| 146 | 15 | Canada | Quebec | 2.5 | \$128,200 | \$51,100 |
| 157 | 17 | Canada | Regina | 2.0 | \$115,000 | \$57,500 |
| 140 | 14 | Canada | Saskatoon | 2.6 | \$138,000 | \$52,100 |
| 94 | 6 | Canada | St. Catherines-Niagara | 3.7 | \$193,500 | \$52,500 |
| 71 | 3 | Canada | Toronto | 4.4 | \$295,900 | \$66,900 |
| 13 | 1 | Canada | Vancouver | 7.7 | \$448,800 | \$58,100 |
| 23 | 2 | Canada | Victoria | 6.6 | \$370,500 | \$55,900 |
| 146 | 15 | Canada | Winnipeg | 2.5 | \$130,100 | \$52,300 |
| | | | Median | 3.2 | | |
| IRELAND | | | | | | |
| 37 | 1 | Ireland | Dublin | 5.7 | €354,000 | €61,900 |
| NEW ZEALAND | | | | | | |
| 21 | 1 | New Zealand | Auckland | 6.9 | \$395,000 | \$57,500 |
| 31 | 2 | New Zealand | Christchurch | 6.0 | \$291,000 | \$48,400 |
| 47 | 3 | New Zealand | Wellington | 5.4 | \$331,000 | \$61,400 |
| | | | Median | 6.0 | | |
| UNITED KINGDOM | | | | | | |
| 82 | 22 | United Kingdom | Aberdeen | 4.0 | £105,874 | £26,454 |
| 31 | 6 | United Kingdom | Belfast | 6.0 | £139,386 | £23,125 |
| 40 | 9 | United Kingdom | Birmingham-West Midlands | 5.6 | £130,000 | £23,234 |
| 62 | 21 | United Kingdom | Blackpool-Lancashire | 4.9 | £120,614 | £24,447 |
| 10 | 2 | United Kingdom | Bournemouth-Dorset | 8.2 | £214,018 | £26,015 |
| 17 | 4 | United Kingdom | Bristol | 7.3 | £180,156 | £24,821 |



SCHEDULE 2
Housing Affordability by Nation
Using Median Multiple (Median House Price/Median Household Income)
2006 - 3rd Quarter

| Inter-national Rank | National Rank | Nation | Market | Median Multiple | Median House Price | Median Household Income |
|---------------------|---------------|----------------|--------------------------------------|-----------------|--------------------|-------------------------|
| 16 | 3 | United Kingdom | Cardiff | 7.5 | £156,455 | £20,741 |
| 51 | 15 | United Kingdom | Edinburgh-Lothian | 5.3 | £136,312 | £25,862 |
| 82 | 22 | United Kingdom | Glasgow-Strathclyde | 4.0 | £97,532 | £24,260 |
| 55 | 18 | United Kingdom | Greater Manchester | 5.2 | £125,000 | £24,013 |
| 45 | 11 | United Kingdom | Hull & Humber | 5.5 | £125,207 | £22,605 |
| 45 | 11 | United Kingdom | Leeds-West Yorkshire | 5.5 | £129,950 | £23,671 |
| 47 | 13 | United Kingdom | Leicester | 5.4 | £145,007 | £26,884 |
| 51 | 15 | United Kingdom | Liverpool-Merseyside | 5.3 | £125,000 | £23,754 |
| 21 | 5 | United Kingdom | London Exurbs (East & SE of England) | 6.9 | £198,732 | £28,802 |
| 9 | 1 | United Kingdom | London (GLA) | 8.3 | £249,950 | £30,001 |
| 47 | 13 | United Kingdom | Middlesbrough-Durham | 5.4 | £109,418 | £20,260 |
| 31 | 6 | United Kingdom | Newcastle-Tyne & Wear | 6.0 | £123,995 | £20,529 |
| 37 | 8 | United Kingdom | Northampton | 5.7 | £147,500 | £26,087 |
| 60 | 20 | United Kingdom | Nottingham | 5.0 | £129,754 | £26,078 |
| 55 | 18 | United Kingdom | Sheffield-South Yorkshire | 5.2 | £119,950 | £23,101 |
| 51 | 15 | United Kingdom | Stoke on Trent-Staffordshire | 5.3 | £131,674 | £25,072 |
| 40 | 9 | United Kingdom | Swansea | 5.6 | £116,657 | £20,918 |
| | | | Median | 5.5 | | |

| UNITED STATES | | | | | | |
|---------------|-----|---------------|--------------------------------|-----|-----------|----------|
| 152 | 101 | United States | Akron, OH | 2.4 | \$118,200 | \$50,000 |
| 90 | 51 | United States | Albany, NY | 3.8 | \$197,600 | \$51,800 |
| 77 | 40 | United States | Albuquerque, NM | 4.2 | \$191,100 | \$45,500 |
| 82 | 45 | United States | Allentown, PA-NJ | 4.0 | \$210,000 | \$52,600 |
| 122 | 75 | United States | Atlanta, GA | 2.9 | \$176,100 | \$60,500 |
| 134 | 86 | United States | Augusta, GA | 2.7 | \$118,900 | \$44,700 |
| 112 | 68 | United States | Austin, TX | 3.1 | \$175,500 | \$57,300 |
| 31 | 17 | United States | Bakersfield, CA | 6.0 | \$260,000 | \$43,300 |
| 66 | 31 | United States | Baltimore, MD | 4.7 | \$286,500 | \$61,300 |
| 90 | 51 | United States | Baton Rouge, LA | 3.8 | \$178,400 | \$47,000 |
| 105 | 62 | United States | Birmingham, AL | 3.4 | \$165,200 | \$48,600 |
| 100 | 59 | United States | Boise, ID | 3.5 | \$174,000 | \$49,400 |
| 29 | 16 | United States | Boston, MA-NH | 6.2 | \$412,300 | \$66,200 |
| 35 | 18 | United States | Bridgeport, CT (New York Area) | 5.9 | \$466,600 | \$78,800 |
| 153 | 102 | United States | Buffalo, NY | 2.3 | \$106,000 | \$45,700 |
| 58 | 26 | United States | Charleston, SC | 5.1 | \$216,100 | \$42,700 |
| 94 | 54 | United States | Charlotte, NC-SC | 3.7 | \$198,300 | \$53,800 |
| 108 | 65 | United States | Chattanooga, TN-GA | 3.2 | \$139,500 | \$43,800 |
| 70 | 35 | United States | Chicago, IL | 4.5 | \$279,400 | \$61,700 |
| 134 | 86 | United States | Cincinnati, OH-KY-IN | 2.7 | \$144,900 | \$52,700 |
| 130 | 82 | United States | Cleveland, OH | 2.8 | \$138,500 | \$49,200 |
| 78 | 41 | United States | Colorado Springs, CO | 4.1 | \$224,000 | \$54,600 |
| 130 | 82 | United States | Columbia, SC | 2.8 | \$140,100 | \$49,800 |
| 122 | 75 | United States | Columbus, OH | 2.9 | \$151,400 | \$52,500 |
| 134 | 86 | United States | Dallas-Fort Worth, TX | 2.7 | \$151,300 | \$56,200 |
| 66 | 31 | United States | Daytona Beach, FL | 4.7 | \$201,500 | \$43,000 |
| 153 | 102 | United States | Dayton, OH | 2.3 | \$113,000 | \$48,500 |
| 76 | 39 | United States | Denver, CO | 4.3 | \$253,200 | \$59,500 |
| 140 | 92 | United States | Des Moines, IA | 2.6 | \$145,900 | \$56,300 |



SCHEDULE 2
Housing Affordability by Nation
Using Median Multiple (Median House Price/Median Household Income)
2006 - 3rd Quarter

| Inter-national Rank | National Rank | Nation | Market | Median Multiple | Median House Price | Median Household Income |
|---------------------|---------------|---------------|----------------------------------|-----------------|--------------------|-------------------------|
| 134 | 86 | United States | Detroit, MI | 2.7 | \$154,100 | \$57,200 |
| 100 | 59 | United States | El Paso, TX | 3.5 | \$129,900 | \$36,700 |
| 51 | 24 | United States | Fort Myers, FL | 5.3 | \$255,400 | \$48,600 |
| 157 | 106 | United States | Fort Wayne, IN | 2.0 | \$101,400 | \$49,900 |
| 18 | 11 | United States | Fresno, CA | 7.2 | \$306,000 | \$42,400 |
| 146 | 97 | United States | Grand Rapids, MI | 2.5 | \$136,600 | \$53,600 |
| 108 | 65 | United States | Greensboro, NC | 3.2 | \$151,900 | \$47,300 |
| 105 | 62 | United States | Greenville, SC | 3.4 | \$156,300 | \$45,900 |
| 134 | 86 | United States | Harrisburg, PA | 2.7 | \$140,000 | \$52,500 |
| 78 | 41 | United States | Hartford, CT | 4.1 | \$263,100 | \$64,600 |
| 3 | 3 | United States | Honolulu, HI | 10.3 | \$635,000 | \$61,600 |
| 122 | 75 | United States | Houston, TX | 2.9 | \$152,800 | \$53,000 |
| 140 | 92 | United States | Huntsville, AL | 2.6 | \$131,800 | \$51,200 |
| 153 | 102 | United States | Indianapolis, IN | 2.3 | \$122,400 | \$53,300 |
| 90 | 51 | United States | Jacksonville, FL | 3.8 | \$196,100 | \$51,100 |
| 105 | 62 | United States | Jackson, MS | 3.4 | \$148,700 | \$43,700 |
| 130 | 82 | United States | Kansas City, MO-KS | 2.8 | \$158,100 | \$56,600 |
| 100 | 59 | United States | Knoxville, TN | 3.5 | \$153,500 | \$43,400 |
| 98 | 57 | United States | Lafayette, LA | 3.6 | \$136,000 | \$37,700 |
| 66 | 31 | United States | Lakeland, FL | 4.7 | \$201,000 | \$43,000 |
| 134 | 86 | United States | Lansing, MI | 2.7 | \$139,800 | \$51,800 |
| 27 | 15 | United States | Las Vegas, NV | 6.5 | \$318,000 | \$49,000 |
| 108 | 65 | United States | Lexington, KY | 3.2 | \$149,000 | \$47,300 |
| 118 | 73 | United States | Little Rock, AR | 3.0 | \$128,900 | \$43,400 |
| 1 | 1 | United States | Los Angeles-Orange County, CA | 11.4 | \$582,000 | \$51,100 |
| 122 | 75 | United States | Louisville, KY-IN | 2.9 | \$142,500 | \$48,700 |
| 89 | 50 | United States | Madison, WI | 3.9 | \$227,700 | \$58,300 |
| 94 | 54 | United States | McAllen, TX | 3.7 | \$109,000 | \$29,400 |
| 82 | 45 | United States | Melbourne, FL | 4.0 | \$193,600 | \$48,300 |
| 112 | 68 | United States | Memphis, TN-AR-MS | 3.1 | \$145,300 | \$46,800 |
| 14 | 9 | United States | Miami-West Palm Beach, FL | 7.6 | \$365,100 | \$47,900 |
| 82 | 45 | United States | Milwaukee, WI | 4.0 | \$219,300 | \$54,300 |
| 98 | 57 | United States | Minneapolis-St. Paul, MN-WI | 3.6 | \$233,500 | \$65,100 |
| 112 | 68 | United States | Mobile, AL | 3.1 | \$137,000 | \$43,700 |
| 14 | 9 | United States | Modesto, CA | 7.6 | \$372,000 | \$48,800 |
| 122 | 75 | United States | Nashville, TN | 2.9 | \$150,000 | \$52,000 |
| 62 | 29 | United States | New Haven, CT (New York Area) | 4.9 | \$297,400 | \$60,400 |
| 82 | 45 | United States | New Orleans, LA | 4.0 | \$174,500 | \$43,300 |
| 18 | 11 | United States | New York, NY-NJ,-CT-PA | 7.2 | \$477,700 | \$66,600 |
| 71 | 36 | United States | New York: Poughkeepsie, NY | 4.4 | \$295,000 | \$66,300 |
| 140 | 92 | United States | Northwest Indiana (Chicago Area) | 2.6 | \$135,300 | \$52,200 |
| 122 | 75 | United States | Oklahoma City, OK | 2.9 | \$127,000 | \$44,200 |
| 146 | 97 | United States | Omaha, NE-IA | 2.5 | \$139,900 | \$55,400 |
| 47 | 23 | United States | Orlando, FL | 5.4 | \$271,000 | \$50,300 |
| 78 | 41 | United States | Philadelphia, PA-NJ-DE-MD | 4.1 | \$236,200 | \$58,300 |
| 58 | 26 | United States | Phoenix, AZ | 5.1 | \$266,500 | \$52,700 |
| 140 | 92 | United States | Pittsburgh, PA | 2.6 | \$120,400 | \$45,600 |
| 71 | 36 | United States | Portland, ME | 4.4 | \$244,400 | \$55,000 |
| 60 | 28 | United States | Portland, OR-WA | 5.0 | \$285,000 | \$56,600 |



| SCHEDULE 2 | | | | | | |
|--|---------------|---------------|---|-----------------|--------------------|-------------------------|
| Housing Affordability by Nation | | | | | | |
| Using Median Multiple (Median House Price/Median Household Income) | | | | | | |
| 2006 - 3rd Quarter | | | | | | |
| Inter-national Rank | National Rank | Nation | Market | Median Multiple | Median House Price | Median Household Income |
| 37 | 20 | United States | Providence, RI-MA | 5.7 | \$288,200 | \$50,300 |
| 94 | 54 | United States | Raleigh, NC | 3.7 | \$213,500 | \$57,000 |
| 78 | 41 | United States | Richmond, VA | 4.1 | \$231,400 | \$57,100 |
| 12 | 8 | United States | Riverside-San Bernardino, CA (Los Angeles Area) | 7.9 | \$408,000 | \$51,400 |
| 153 | 102 | United States | Rochester, NY | 2.3 | \$121,800 | \$52,100 |
| 23 | 13 | United States | Sacramento, CA | 6.6 | \$375,400 | \$56,700 |
| 82 | 45 | United States | Salt Lake City, UT | 4.0 | \$216,300 | \$54,500 |
| 112 | 68 | United States | San Antonio, TX | 3.1 | \$146,400 | \$46,600 |
| 2 | 2 | United States | San Diego, CA | 10.5 | \$601,900 | \$57,200 |
| 4 | 4 | United States | San Francisco, CA | 10.1 | \$749,400 | \$74,000 |
| 8 | 7 | United States | San Jose, CA (San Francisco Area) | 8.4 | \$747,400 | \$89,100 |
| 23 | 13 | United States | Sarasota, FL | 6.6 | \$320,700 | \$48,800 |
| 122 | 75 | United States | Scranton-Wilkes Barre, PA | 2.9 | \$122,900 | \$41,700 |
| 36 | 19 | United States | Seattle-Tacoma, WA | 5.8 | \$372,400 | \$64,100 |
| 71 | 36 | United States | Springfield, MA | 4.4 | \$218,800 | \$50,100 |
| 6 | 6 | United States | Stockton, CA | 8.6 | \$434,000 | \$50,200 |
| 130 | 82 | United States | St. Louis, MO-IL | 2.8 | \$154,400 | \$54,700 |
| 140 | 92 | United States | Syracuse, NY | 2.6 | \$124,200 | \$47,400 |
| 55 | 25 | United States | Tampa-St. Petersburg, FL | 5.2 | \$234,000 | \$44,900 |
| 146 | 97 | United States | Toledo, OH | 2.5 | \$115,400 | \$46,600 |
| 40 | 21 | United States | Tucson, AZ | 5.6 | \$243,700 | \$43,300 |
| 118 | 73 | United States | Tulsa OK | 3.0 | \$134,900 | \$45,700 |
| 5 | 5 | United States | Ventura County, CA (Los Angeles Area) | 9.4 | \$686,700 | \$72,700 |
| 66 | 31 | United States | Virginia Beach-Norfolk, VA-NC | 4.7 | \$243,800 | \$52,100 |
| 40 | 21 | United States | Washington, DC-VA-MD-WV | 5.6 | \$431,900 | \$76,700 |
| 146 | 97 | United States | Wichita, KS | 2.5 | \$127,900 | \$50,700 |
| 62 | 29 | United States | Worcester, MA-CT (Boston Area) | 4.9 | \$285,400 | \$58,800 |
| 112 | 68 | United States | York, PA | 3.1 | \$173,600 | \$55,200 |
| 157 | 106 | United States | Youngstown, OH | 2.0 | \$86,000 | \$42,600 |
| | | | Median | 3.7 | | |



APPENDIX: METHODS AND SOURCES

Sources: Median house price information is generally obtained from national reporting agencies. Where median house prices are unavailable, they are estimated from historic conversion factors. Median household income data is generally estimated using national statistics bureau generated base adjusted to a 2006 estimate by the best available indicator of median income growth. In some cases statistical agencies recalibrate year to year data, while in other cases more reliable conversion factors are identified. Because of data variations and alternative estimation methods, caution should be employed in making definitive time-series income comparisons. The most relevant comparisons are between categories of housing affordability. The principal data sources were as follows:

AMP Banking (Australia)
 Australian Bureau of Statistics
 Bank of Ireland
 California Association of Realtors
 Canada Mortgage and Housing Corporation
 Canadian Home Builders Association
 Canadian Real Estate Association
 Central Statistics Office Ireland
 Chambre Immobilière de Québec
 Communities and Local Government (Ministry), United Kingdom
 Department of the Environment, Heritage and Local Government (Ireland)
 Housing Industry Association (Australia)
 Institute of Public Affairs
 John Burns Real Estate Consulting
 National Association of Home Builders (USA)
 National Association of Realtors (USA)
 National Statistics (United Kingdom)
 Property Council of Australia
 Permanent TSB (Ireland)
 Real Estate Board of Winnipeg
 Real Estate Institute of Australia
 Real Estate Institute of New Zealand
 Reserve Bank of Australia
 Residential Property Council, Division of the Property Council of Australia
 Royal Bank of Canada
 Royal LePage Real Estate Services (Canada)
 Statistics Canada
 Statistics New Zealand
 United States Department of Commerce: Bureau of Economic Administration
 United States Department of Commerce: Bureau of the Census
 United States Department of Housing and Urban Development
 University of Ulster
 Urban Development Institute of Australia



Notes on Figures:

Figure 1: Data from the National Association of Home Builders (United States).

Figure 2: estimated based upon Real Estate Institute of Australia median house prices and Australian Bureau of Statistics data.

Figure 3: Australian data estimated based upon Real Estate Institute of Australia median house prices and Australian Bureau of Statistics data. United States data estimate using National Association of Realtors median house prices, United States Bureau of the Census and United States Department of Housing and Urban Development data.

Figure 4: Australian data estimated based upon Real Estate Institute of Australia median house prices and Australian Bureau of Statistics data. United States data estimate using National Association of Realtors median house prices, United States Bureau of the Census and United States Department of Housing and Urban Development data.

Figure 5: Hypothetical case based on the United States median priced house (\$220,000) in a market with a Median Multiple of 3.0. A 6.5 percent 30-year fixed rate mortgage is assumed. A down-payment of 10% assumed...

Figure 6: Calculated from Housing Industry Association (Australia), using the average of the markets.

Figure 7: Calculated from Australian Bureau of Statistics data and Housing Industry Association (Australia) data, using the average of the markets.

Figure 8: Schedule 1: All markets with a population of 1,500,000 or more. Excludes smaller markets in combined metropolitan areas (such as East and Southeast England in the London area and San Jose in the San Francisco area).

Figure 9: Australian Bureau of Statistics and United States Bureau of the Census data.

Figure 10: Perth data estimated based upon Real Estate Institute of Australia median house prices and Australian Bureau of Statistics data. United States data estimate using National Association of Realtors median house prices, United States Bureau of the Census and United States Department of Housing and Urban Development data.

| Table 5 Markets Included in the 3 rd Annual Demographia International Housing Affordability Survey | |
|---|---|
| Nation | Markets Included |
| Australia | Markets corresponding to capital city statistical areas |
| Canada | Markets corresponding to all metropolitan areas over 200,000 |
| Ireland | Dublin Region (former Dublin County) |
| New Zealand | Markets corresponding to all metropolitan areas over 300,000 |
| United Kingdom | Markets areas corresponding to urban areas over 200,000 |
| United States | Markets corresponding to all metropolitan areas (MSAs) over 500,000 |

Footer Illustrations: New Houses (Left to Right):

- Suburban Kansas City, United States
- Suburban Montréal, Canada
- East of England (London Exurbs), United Kingdom
- Suburban Dublin, Ireland
- Suburban Auckland, New Zealand
- Suburban Adelaide, Australia



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Wendell Cox is principal of Wendell Cox Consultancy (Demographia), an international public policy consulting firm. He also serves as a visiting professor at the Conservatoire National des Arts et Metiers in Paris (a national university). He is also associated with various public policy organizations, such as the Heritage Foundation (Washington), the Heartland Institute (Chicago), the Cato Institute (Washington), Frontier Centre (Winnipeg), Texas Public Policy Foundation, Independence Institute (Denver), Institut économique de Montréal, National Center for Policy Analysis (Dallas), Reason Public Policy Institute (Los Angeles), Georgia Public Policy Foundation, Virginia Institute for Public Policy and Maryland Public Policy Institute. He has lectured widely, including a month long tour to all Australian state and territorial capitals in 2006. Wendell Cox has completed projects in the United States, Western Europe, Canada, Australia and New Zealand in urban policy, demographics and transport. He was appointed to three terms on the Los Angeles County Transportation Commission by Mayor Tom Bradley and to the Amtrak Reform Council by Speaker of the U. S. House of Representatives Newt Gingrich. Wendell Cox Consultancy sponsors three internet web sites (www.demographia.com, www.rentalcartours.net, www.publicpurpose.com), one of which has been honored as one of the nation's top internet transport sites by the *National Journal* (www.publicpurpose.com):

Hugh Pavletich

Hugh Pavletich is the Managing Director of Pavletich Properties Ltd, a commercial property development and investment company, based at Christchurch, South Island, New Zealand. He commenced his working life as a farm worker and wool classer (wool classifier) in 1967 and moved to Christchurch in 1980 where he started developing small factory units and has developed commercial and industrial property on freehold and Maori leasehold land in other centers of the South Island as well. His industry involvement commenced when elected President of the South Island Division of the Property Council of New Zealand (then the Building Owners & Managers Association – BOMA) soon after its inception in 1991, which he led for four years. He has had extensive involvement with public policy issues of local authority financial management, land use regulation and heritage. In 2004, he was elected a fellow of the Urban Development Institute of Australia (UDIA) for services to the industry. During that year, he felt there was a need for an international measure of housing affordability and teamed up with Wendell Cox, to develop the annual *Demographia International Housing Affordability Survey*.



ENDNOTES

¹ Approximately two-thirds of the surveyed markets are in the United States, which has approximately two-thirds of the population of the surveyed nations.

² *Promoting Sustainable Human Development*, United Nations, <http://www.un.org/esa/sustdev/natlinfo/indicators/worklist.htm> and http://esl.jrc.it/envind/un_meths/UN_ME050.htm and *Sectoral Indicators*, The World Bank, <http://www.worldbank.org/html/opr/pmi/urban/urban006.html>.

³ States are shown for US markets in Schedules 1 and 2 because many markets are located in more than one state.

⁴ National Association of Home Builders and Wells Fargo Bank, *Housing Opportunity Index*, http://www.nahb.org/fileUpload_details.aspx?contentID=537.

⁵ There are more than 25 markets listed because four are ranked at 23 with the same Median Multiple.

⁶ <http://www.demographia.com/db-econ-uaintl.htm>.

⁷ Figure sources are cited at the end of this article.

⁸ These areas are classified as “combined statistical areas” by the Bureau of the Census. New York with Bridgeport and New Haven, Los Angeles & Orange County with Riverside-San Bernardino and Ventura County, Boston with Providence and San Francisco with San Jose are “severely unaffordable.” Worcester in the Boston area and Baltimore in the Washington area are “seriously unaffordable.” The components markets of combined metropolitan areas are indicated in the tables with the metropolitan area in parentheses, such as: “Ventura County (Los Angeles).”

⁹ Sources for figures are described in the Appendix: Methods and Sources.

¹⁰ The calculations in this section assume a 30 year mortgage with a currently prevailing fixed rate over the term of the loan. In some nations, long term fixed rates are not the norm, which could result in higher or lower interest costs depending upon the longer term trends. Moreover, present interest rates are comparatively low by historic standards and as a result it is likely that this analysis understates the additional years of income that is necessitated to pay the mortgage in an environment of housing inflation.

¹¹ Benjamin M. Friedman, *The Moral Consequences of Economic Growth*, New York: Alfred A. Knopf, 2005.

¹² William Lewis, *The Power of Productivity*, 2004.

¹³ Calculated from Housing Industry Association (Australia) data. See: *Land and House Costs: 1993-2006: Australia*, <http://www.demographia.com/dhi2007-ausland.htm>.

¹⁴ The automobile fuel cost increase, like the residential land inflation, is the result of government rationing policies (principally the Organization of the Petroleum Exporting Countries).

¹⁵ Based upon David Poole, *The 2006 UDIA State of the Land Report* Urban Development Institute of Australia, 2006.

¹⁶ Macroplan Australia Pty. Ltd, *Australian Broad Hectare Land Supply Study*, report prepared for the Residential Development Council of Australia, October 2006.

¹⁷ Kate Barker (2004 and 2006). *Review of Housing Supply: Delivering Stability: Securing Our Future Housing Needs: Final Report—Recommendations*. Norwich, England: Her Majesty’s Stationery Office. www.hm-treasury.gov.uk/consultations_and_legislation/barker/consult_barker_index.cfm and *Barker Review of Land Use Planning*, http://www.hm-treasury.gov.uk/media/4EB/AF/barker_finalreport051206.pdf.

¹⁸ “Recent House Price Developments: The Role of Fundamentals,” *OECD Economic Outlook* #78 (2005), www.oecd.org/dataoecd/41/56/35756053.pdf.

¹⁹ *State of the Nation’s Housing Report 2005*, Harvard University Joint Center for Housing (2005), www.jchs.harvard.edu/publications/markets/son2004.pdf.

²⁰ Macroplan Australia Pty. Ltd, *Australian Broad Hectare Land Supply Study*, report prepared for the Residential Development Council of Australia, October 2006 and David Poole, *The 2006 UDIA State of the Land Report* Urban Development Institute of Australia, 2006.

²¹ Arthur Grimes and Andrew Aitken, *Regional Housing Markets in New Zealand: House Price, Sales and Supply Responses*, Center for Housing Research Aotearoa New Zealand (CHRANZ), November 2005, <http://www.hnzc.co.nz/chr/pdfs/regional-housing-markets.pdf>.

²² Edward L. Glaeser, Jenny Schuetz, and Bryce Ward, *Regulation and the Rise of Housing Prices in Greater Boston*, Pioneer Institute for Public Policy Research and Rappaport Institute for Greater Boston, Kennedy School of



Government, Harvard University (2005).

www.ksg.harvard.edu/rappaport/downloads/housing_regulations/regulation_housingprices.pdf.

²³ Michael Ball, *RICS European Housing Review 2005*, Royal Institution of Chartered Surveyors, (2005), www.rics.org/NR/rdonlyres/FE69252B-B62E-47BD-820E-471AA2072C65/0/ehr_2005_full_report.pdf.

²⁴ D'Ann Peterson, "Texas Housing: A Boom with no Bubble," *Southwest Economy*, Federal Reserve Bank of Dallas, May/June 2006. <http://dallasfed.org/research/swe/2006/swe0603b.pdf>.

²⁵ Edward L. Glaeser and Joseph Gyourko (2002). *The Impact of Zoning on Housing Affordability*, Cambridge, MA: Harvard Institute of Economic Research.

²⁶ Paul Krugman, "About that Hissing Sound in the Zoned Zone," *The New York Times*, 8 August 2005.

²⁷ The Policy Exchange has notes the significant inflation in housing prices that occurred following the U.K. government's adoption of this policy in 1997. See: Alan W. Evans and Oliver Marc Hartwich, *The Best Laid Plans: How Planning Prevents Economic Growth*, (in publication, 2007), <http://www.policyexchange.org.uk/>.

²⁸ Examples of urban growth boundaries are found in London and other UK urban areas, Portland, Oregon, the San Francisco-San Jose area, Auckland and Melbourne. Perth, Australia engages in insufficient land release, while government land auction policies produce insufficient land release rates in Las Vegas and Phoenix. At the same time, a Las Vegas exurb (Boulder City) has outlawed development on approximately 100 square miles (250 square kilometers), which makes the shortage of land even more critical. Development bans have been implemented in the Washington, DC and San Francisco-San Jose areas. Large lot zoning has occurred in many northeastern United States markets, such as New York, Boston and Washington.

²⁹ Indirect costs are community level improvements that do not directly or exclusively serve the new house, such as public transport and parks.

³⁰ Urbis JHD, *National Infrastructure Costs Study*, Residential Development Council, 2006.

³¹ Infrastructure fees are sometimes referred to as "developer fees" or even "developer contributions." These are misleading terms, because they are incorporated into prices and paid for by the households purchasing the houses.

³² In his book *The Power of Productivity*, William Lewis stresses the importance of smaller organizations and contractors in keeping new housing costs competitive.

³³ As quoted at UK Land Directory internet page, <http://www.uklanddirectory.org.uk/>.

³⁴ Prior to subdivision and infrastructure works.

³⁵ Calculated from data in the *Barker Land Use Review*.

³⁶ Dr. Timothy Leunig, "Turning NIMBYs into IMBYs", *The Guardian*, September 2, 2004.

<http://society.guardian.co.uk/housingdemand/0,14488,1192601,00.html>. The article noted that a 220-acre (90 hectare) farm released for development would rise in value from £500,000 to £250,000,000.

³⁷ and *Sectoral Indicators*, The World Bank, <http://www.worldbank.org/html/opr/pmi/urban/urban006.html>

³⁸ Various books have been published in the last 18 months that critique justifications for smart growth or urban consolidation policies, such as *Sprawl: A Compact History* by Robert Bruegmann, *The City: A Global History*, by Joel Kotkin, *Let's Build!*, by James Heartfield, *The Tragedy of Planning* by Alan Moran, *Don't Call It Sprawl: Metropolitan Structure in the 21st Century*, by William T. Bogart and *War on the Dream: How Anti-Sprawl Policy Threatens the Quality of Life*, by Wendell Cox, a co-author of this report. Smart growth and urban consolidation policies are critiqued on pages 71 to 115 of the latter volume.

³⁹ Alan W. Evans and Oliver Marc Hartwich, *The Best Laid Plans: How Planning Prevents Economic Growth*, (in publication, 2007), <http://www.policyexchange.org.uk/>.

⁴⁰ United Kingdom Ministry for Communities and Local Government, *Survey of English Housing Provisional Results: 2005/2006*, 2006.

⁴¹ *More Britains Consider Move Abroad*, British Broadcasting Corporation,

http://news.bbc.co.uk/2/hi/uk_news/5237236.stm, 2 August 2006.

⁴² *First Time Buyer Annual Review*, HBOS PLC,

http://www.hbosplc.com/media/includes/30_12_06HalifaxAnnualFirstTimeBuyerReview.doc

⁴³ Households with a householder less than 35 years old.

⁴⁴ Calculated from Australian Bureau of Statistics and United States Bureau of the Census data.

⁴⁵ *Domestic Migration & Housing Affordability: US Metropolitan Areas over 1,000,000: 2000-2005*

<http://www.demographia.com/db-metmigramm.htm>.



⁴⁶ USA House Sales by Level of Land Use Regulation: 3rd Quarter 2006: Annual Change, <http://www.demographia.com/db-xsales200609.htm>.

⁴⁷ Raven E. Saks, *Job Creation and Housing Construction: Constraints on Metropolitan Area Employment Growth*, <http://www.federalreserve.gov/pubs/feds/2005/200549/200549pap.pdf>.

⁴⁸ *State of the Nation's Housing Report 2005*, Harvard University Joint Center for Housing (2005). p. 6., www.jchs.harvard.edu/publications/markets/son2004.pdf

⁴⁹ House of Representatives, *Official Committee Hansard*, Standing Committee on Economics, Finance and Public Administration, 18 August 2006.

⁵⁰ Christopher Pearson, "Howard Makes Home Run," *The Australian*, 2-3 September 2006.

⁵¹ Kate Corbett, "Home ownership focus for Plibersek" *the Australian*, 11 December 2006, <http://www.theaustralian.news.com.au/story/0,20867,20908129-1702,00.html>.

⁵² Statement by the Deputy Premier, <http://www.cabinet.qld.gov.au/MMS/StatementDisplaySingle.aspx?id=48894>.

⁵³ 2nd Annual Demographia International Housing Affordability Survey, <http://www.demographia.com/dhi200509.pdf>.

⁵⁴ Jeffrey Lubell, *Increasing the Availability of Affordable Homes*, Homes for Working Families and the Center for Housing Policy, 2006. The board of directors of Homes for Working Families includes former US Secretary of Housing and Urban Development Henry Cisneros and former Indianapolis Mayor Stephen Goldsmith.

⁵⁵ Speech to the Real Estate Institute of New Zealand Annual Conference, 18 September 2006, <http://www.beehive.govt.nz/ViewDocument.aspx?DocumentID=27140>.

⁵⁶ Anne Gibson, "National Takes Aim at Housing Prices," *The New Zealand Herald*, 18 January 2007, http://www.nzherald.co.nz/section/8/story.cfm?c_id=8&objectid=10419632.

⁵⁷ Alan W. Evans and Oliver Marc Hartwich, *Bigger, Better, Faster, More: Why Some Countries Plan Better than Others*, Policy Exchange (2005), http://www.policyexchange.org.uk/uploads/media/Bigger_Better_Faster_More_-_final.pdf.

⁵⁸ Louise Staley and Alan Moran, *Fixing the Crisis: A fair deal for homebuyers in WA*, Institute of Public Affairs, http://ipa.org.au/files/STALEY&MORAN_WAHousing_DEC06.pdf.

