DEMOGRAPHIA INTERNATIONAL HOUSING AFFORDABILITY

2025 EDITION

WENDELL COX

CHAPMAN UNIVERSITY

Acknowledgments

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Center for Demographics and Policy
Chapman University

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Our research aims to analyze current affairs and public policies and develop effective and meaningful ideas for good governance and reform. We provide a platform for public debate and engage with the public through our numerous publications and events.

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Cover image: Pittsburgh, Pennsylvania, the most affordable market in each of the last five years. Photo by Carol M. Highsmith, used under CC 2.0 License.

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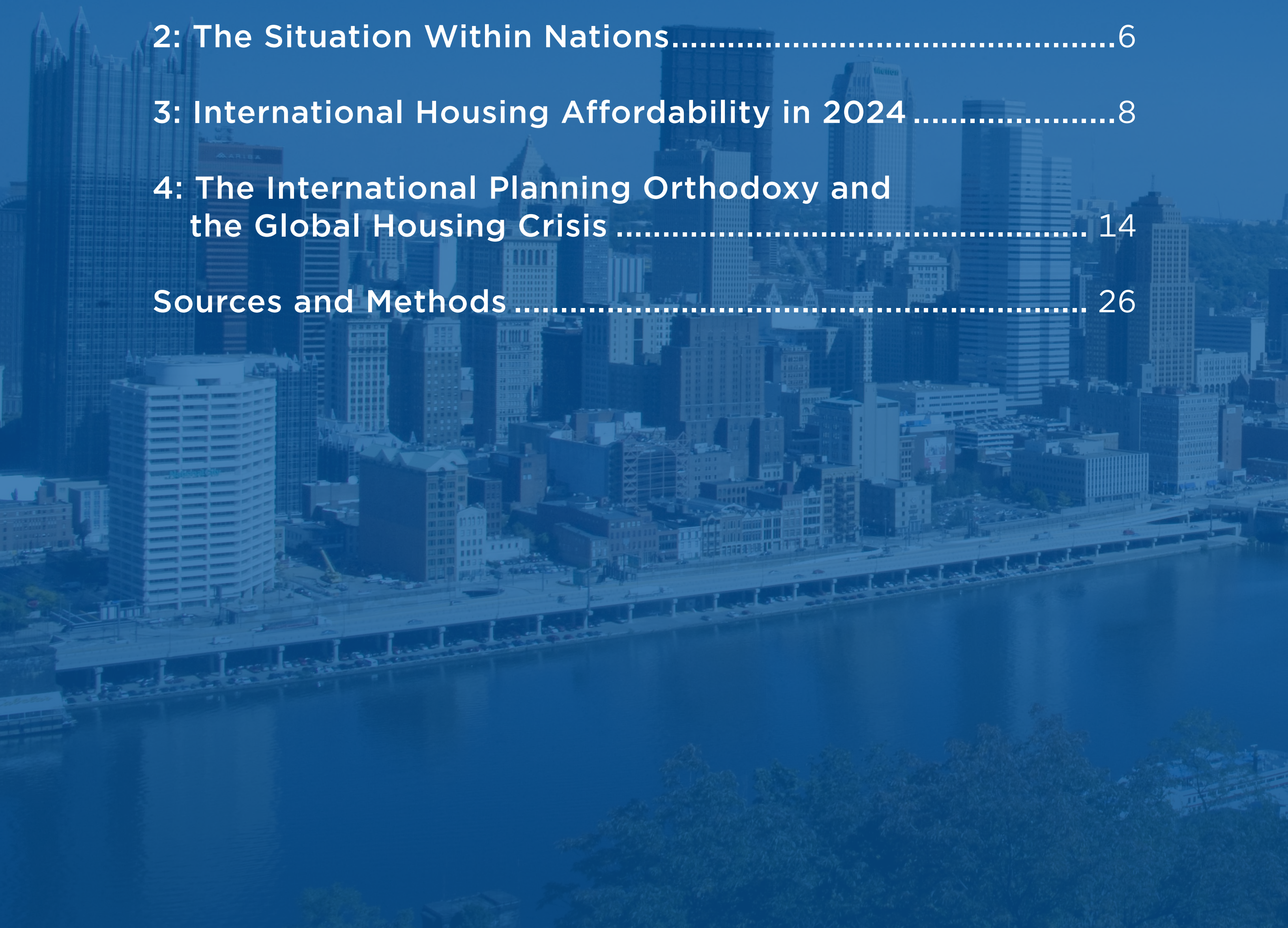

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INTRODUCTION

For more than two decades the *Demographia International Housing Affordability* report (this year authored by Wendell Cox) has been the gold standard for people looking at the cost of housing. In those decades the Demographia reports have become ever more critical as housing inflation has grown all around the world.

Ultimately, as the report suggests, these high prices are largely the product of policies that seek to limit growth on the periphery, which has been the usual way that cities have grown. The Demographia report has shown that where such policies predominate, for example in the United Kingdom, California, Washington, Oregon, Colorado, New Zealand, Australia and much of Canada, the results are disastrous, at least for potential homebuyers.

For us at the Chapman Center for Demographics and Policy, the study also has grave implications on the prospects for upward mobility. High housing prices, relative to incomes, are having a distinctly feudalizing impact on our home state of California, where the primary victims are young people, minorities and immigrants. Restrictive housing policies may be packaged as progressive, but in social terms their impact could better be characterized as regressive.

As with any problem, the first step towards a resolutions should be to understand the basic facts. This is what the Demographia study offers, and why we are so proud to be partners with Canada's Frontier Centre for Public Policy. Now comes the difficult part: convincing policy makers to change directions before the new generation loses all hope of home ownership.

Joel Kotkin
Director,
Center for Demographics and Policy
Chapman University

The Frontier Centre for Public Policy and the Chapman University Center for Demographics and Policy are pleased to present the 2025 edition of *Demographia International Housing Affordability*. This report provides housing affordability ratings for the third quarter of 2024 for 95 major markets (metropolitan areas) in eight nations.

In its 21 annual editions, *Demographia International Housing Affordability* has robustly documented the deterioration of housing affordability. Housing affordability measures necessarily relate the costs of housing to income. Demographia uses the median multiple, a price-to-income ratio that divides the median house price by the median household income.

Because housing is usually the most expensive element of household budgets, this deterioration has been the principal driver of the present cost of living crisis affecting the middle and working classes. Generally, housing affordability is worse, and the cost of living is higher, where land use regulation is the most restrictive at the housing market (metropolitan area) level.

Coming out of the turbulence of the COVID-19 lockdowns, housing affordability remained severely challenged across most markets in 2023 with slightly increasing unaffordability in major Canadian markets surveyed. In some smaller markets, there have been improvements as remote working (telework) continues to accelerate movements to more affordable places. This should flatten or even reduce prices in the highest-cost housing markets as other households seek less costly housing elsewhere.

There is a genuine need to substantially restore housing affordability in many markets throughout the covered nations. In Canada, policy makers are scrambling to “magic wand” more housing but continue to mostly ignore the main reason for our dysfunctional costly housing markets – suburban land use restrictions.

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DEMOGRAPHIA

EXECUTIVE SUMMARY

This annual report assesses housing affordability in 95 major markets across eight nations (Australia, Canada, China, Ireland, New Zealand, Singapore, United Kingdom and the, United States). The 2025 edition covers the third quarter of 2024.

KEY POINTS

Ratings: The report uses a median price-to-income ratio ("median multiple") to determine affordability.

Affordability Categories: Housing markets are rated from "affordable" to "impossibly unaffordable" based on their median multiple (Table ES-1).

Geography: Housing markets are labor markets (which are also metropolitan areas or functional urban areas), largely defined by the "commuting shed." Housing affordability comparisons can be made, (1) between housing markets (such as a comparison between Adelaide and Melbourne) or (2) over time within the same housing market (such as between years in Adelaide).

Table ES-1
DEMOGRAPHIA HOUSING AFFORDABILITY RATINGS

Rating	Median Multiple
Affordable	3.0 & Under
Moderately Unaffordable	3.1 to 4.0
Seriously Unaffordable	4.1 to 5.0
Severely Unaffordable	5.1 & 8.9
Impossibly Unaffordable	9.0 & Over

Median multiple: Median house price divided by median household income

Variations within Nations: The report emphasizes that affordability often varies *significantly* between markets within the same country. National averages aren't always representative.

Details on housing affordability for all 95 markets, displayed by median multiple, are provided in *Table 3* and by geography in *Table 4*.

Table ES-2
Housing Affordability Ratings by Nation: Totals by Market

Nation	Affordable (3.0 &Under)	Moderately Unaffordable (3.1-4.0)	Seriously Unaffordable (4.1-5.0)	Severely Unaffordable (5.1 - 8.9)	Impossibly Unaffordable (9.0 &Over)	Total	Median Market
Australia	0	0	0	1	4	5	9.7
Canada	0	1	2	2	1	6	5.4
China: Hong Kong	0	0	0	0	1	1	14.4
Ireland	0	0	0	1	0	1	5.1
New Zealand	0	0	0	1	0	1	7.7
Singapore	0	1	0	0	0	1	4.2
United Kingdom	0	2	7	13	1	23	5.6
United States	0	11	21	20	5	57	4.8
TOTAL	0	15	28	40	12	95	5.1

For the fifth year in a row, Pittsburgh (PA), in the United States, was the most affordable market in *Demographia International Housing Affordability*. This year the Pittsburgh median multiple was 3.2, which is moderately unaffordable.

Pittsburgh was followed closely by Cleveland (OH), St. Louis (MO-IL), and Rochester (NY). Number five ranked Edmonton is the top market from markets from outside the United States and is tied with Middlesbrough & Durham (UK), Oklahoma City, (OK) and Omaha (NE-IA). The balance of the most affordable 10 includes Sheffield (UK), Cincinnati, (OH-KY-IN), Detroit (MI), Buffalo (NY), Louisville (KY-IN) and Minneapolis-St.Paul (MN-WI). The last three were tied for 10th.

The least affordable market in *Demographia International Housing Affordability* in 2024 was Hong Kong, with a median multiple of 14.4, followed by Sydney at 13.8, San Jose, at 12.1, Vancouver at 11.8, Los Angeles at 11.2, Adelaide at 10.9, Honolulu at 10.8, San Francisco at 10.0, Melbourne at 9.7, San Diego and 9.5, Brisbane at 9.3 and Greater London at 9.1. All of these markets are rated impossibly unaffordable.

EXISTENTIAL THREAT TO MIDDLE-INCOME HOUSEHOLDS

Among high-income nations, middle-income homeownership was once widespread, with house prices aligned with incomes. Since the 1990s, however, prices have surged—especially in markets governed by *urban containment* strategies early (e.g., San Francisco, Sydney, London) —with homes now costing 9–15 times household income.

This shift is linked to the international planning orthodoxy, which restricts urban expansion through greenbelts, urban growth boundaries (UGBs), rural zoning, and compact city policies. While intended to increase density and sustainability, these policies have severely limited land supply, raising land and housing costs and making housing unaffordable for the middle class.

Nearly all severely unaffordable housing markets follow the urban containment model. The resulting land scarcity inflates prices, particularly near UGBs. This pattern, rooted in the UK's 1947 Town and Country Planning Act, has spread virtually around the world.

Purpose of Urban Planning: Urban planning is meant to improve lives. As Jane Jacobs said: "*If planning helps people, they ought to be better off as a result, not worse off*." Yet urban containment has made many people worse off, by virtue of its association with substantially worsened housing affordability.

Current planning approaches emphasize multifamily housing and other densification while restricting new detached homes at the fringe—strategies that helped create today's crisis.

Counterurbanization: Middle-income households are increasingly leaving expensive markets for more affordable places—a trend especially visible in Canada and the U.S. These moves reflect long-term structural problems. People are "*voting with their feet,*" to obtain the housing denied them in markets with deteriorated housing affordability. Without major reform, this migration seems likely to continue.

DEMOGRAPHIA INTERNATIONAL HOUSING AFFORDABILITY: 2025 EDITION

MIDDLE-INCOME HOUSING AFFORDABILITY RATINGS

"One thing I can say with confidence, however, is that house prices will not return to more affordable levels until land becomes available at more reasonable prices."

- Reserve Bank of New Zealand Governor Donald Brash (1988-2002)[1]

Demographia International Housing Affordability rates middle-income housing affordability in 95 major housing markets in eight nations: Australia, Canada, China, Ireland, New Zealand, Singapore, the United Kingdom, and the United States. Housing markets are metropolitan areas, which are also labor markets.

The 2025 edition rates housing affordability for the third quarter of 2024 (September quarter). This is the 21st annual edition in the *Demographia International Housing Affordability* series. The 2020 edition was featured in the International Monetary Fund newsletter.

1: ASSESSING HOUSING AFFORDABILITY

House price data is estimated from sources reporting on housing types representing the majority of existing dwellings in each nation.

Often housing affordability is evaluated simply by comparing house prices. However, without consideration of incomes, housing affordability cannot be assessed. Housing affordability is house prices in relation to incomes.

Demographia International Housing Affordability uses a price-to-income ratio, the "median multiple" to rate middle-income housing affordability. The median multiple is a price-to-income ratio of the median house price divided by the gross median household income. Price-to-income ratios have been widely used, such as by the Bank for International Settlements, the World Bank,[2] the United Nations, the Organization for International Cooperation and Development (OECD), the Joint Center for Housing Studies at Harvard University, and others. Median measures better reflect the housing affordability impacts on middle-income and lower-income households, as

1 Governor Brash, Introduction to the 4th Annual Demographia International Housing Affordability Survey (2008).
2 The Housing Indicators Program, http://siteresources.worldbank.org/INTURBANDEVELOPMENT/Resources/336387-1169578899171/rd-hs7.htm. Also see Shlomo Angel, Housing Policy Matters: A Global Analysis. Oxford University Press, 2000.

opposed to averages, which are skewed upward by the inclusion of the highest incomes and prices.

Following the housing market definition described above, housing affordability comparisons can appropriately be made, (1) between housing markets (such as a comparison between Toronto and Melbourne) or (2) over time within the same housing market (such as between years in Melbourne).

AFFORDABILITY: THE HISTORICAL CONTEXT

In a well-functioning market, median priced houses should be affordable to middle-income households, as they were in virtually all markets before the inception of urban containment policies. Fundamentally, urban containment seeks to stop the expansion of urban areas (urban expansion or "urban sprawl") and increase urban population densities. This international planning orthodoxy relies on urban containment, including strategies such as greenbelts, urban growth boundaries, rural (large lot) zoning on urban peripheries, and compact city policies.

Historically only a few markets were subject to urban containment. But by the 1970s, many more followed . As late as about 1990, national price-to-income ratios were "affordable," at 3.0 or less in Australia, Canada, Ireland, New Zealand, the United Kingdom, and the United States (Figure 1). Urban containment policies are overwhelmingly popular in international urban planning circles. They are, however, strongly associated with substantial deterioration in housing affordability, which is crucial for the future of the middle class.

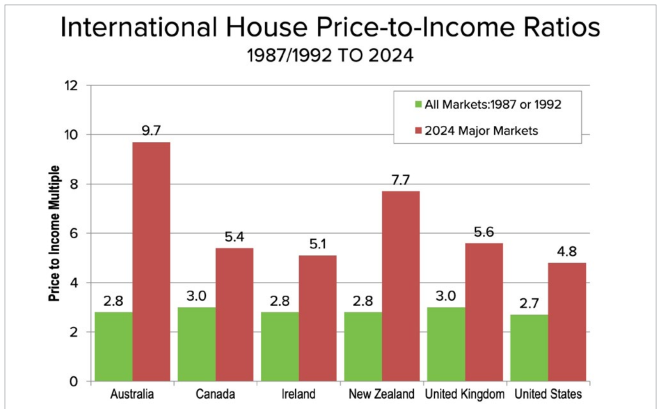

Figure 1

RATINGS

Middle-income housing affordability has been rated in four categories, ranging from the most affordable ("affordable") to the least affordable (severely unaffordable), for the first 19 annual *Demographia International Housing Affordability* editions.[3]

Last year, a new category was added, "impossibly unaffordable," which applies to markets with a median multiple triple or more the "affordable" standard (3.0) which was predominant only three decades ago.

3 House price data is estimated from sources reporting on housing types representing the majority of existing owned dwellings in each nation. Official government produced sales registers are used where available (Ireland, England and Wales). Other sources include authoritative real estate time series and market reports. Pre-tax median household incomes for the present year are estimated based on official government data.

The term 'impossible' was selected to convey the extreme difficulty faced by middle-income households in affording housing at a median multiple of 9.0. This level of unaffordability did not exist just over three decades ago. Furthermore, securing financing for a house at this median multiple is largely impossible for middle-income households (Table 1, below). In the US, qualifying for a mortgage on the median priced house typically requires an income in the top 20% of households. All of this is before considering the elevated interest rates of the present.

THE GEOGRAPHY OF HOUSING AFFORDABILITY

Many international housing affordability comparisons focus only at the national level. This is understandable, with much of the business press focusing on national housing affordability indicators. However, there can be substantial differences in housing affordability between housing markets in the same nation. For this reason, Demographia focuses on the housing market level *within* nations.

Table 1
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Median multiple: Median house price divided by median household income

Housing markets are synonymous with labor markets and correspond to metropolitan areas (which are defined by their employment commuting zones). In the overwhelming majority of cases, housing markets include more than one municipality (city). To focus on just one jurisdiction, as many do, misses the totality of the housing market.

In *Demographia International Housing Affordability*, cities (core municipalities) encompass entire housing markets only in Auckland, Hong Kong, Greater London, Honolulu and Singapore. All of the other markets encompass multiple local jurisdictions, including core municipalities and other local government areas.

2: THE SITUATION WITHIN NATIONS

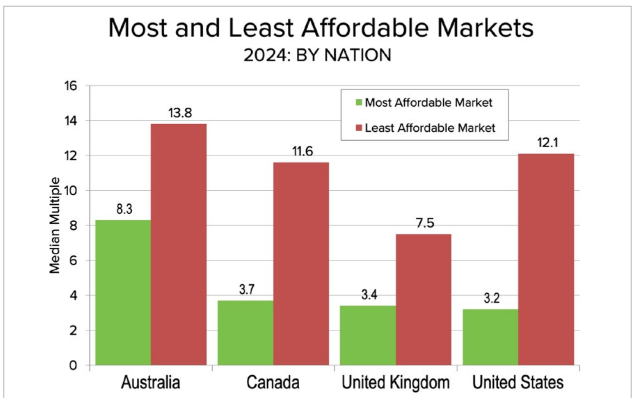

Figure 2

The differences between markets can be substantial even within nations.

The huge affordability differences within nations is illustrated in Figure 2, The least affordable housing market in Australia (Sydney) has a median multiple two-thirds above that of least expensive Perth. In Canada, the least affordable housing market (Vancouver) is 3.2 times as costly as the most affordable (Edmonton). In the United

Kingdom, the least affordable housing market (Greater London) is 2.5 times as costly as the most affordable (Middlesbrough & Durham). The least affordable housing market in the United States (San Jose) is nearly four times as costly as the most affordable (Pittsburgh).

Overall, there were 12 impossibly unaffordable markets in the eight nations, 40 severely unaffordable markets and 28 seriously unaffordable markets. There were 15 moderately unaffordable markets. There were no affordable markets (Table 2).

For the fifth year in a row, Pittsburgh (PA), in the United States, was the most affordable market in Demographia International Housing Affordability. This year the Pittsburgh median multiple was 3.2, which is moderately unaffordable.

Pittsburgh was followed closely by Cleveland (OH), St. Louis (MO-IL), and Rochester (NY). Number five ranked Edmonton is the top market from markets from outside the United States and is tied with Middlesbrough & Durham (UK), Oklahoma City, (OK) and Omaha (NE-IA). The balance of the most affordable 10 includes Sheffield (UK), Cincinnati, (OH-KY-IN), Detroit (MI), Buffalo (NY), Louisville (KY-IN) and Minneapolis-St.Paul (MN-WI). The last three were tied for 10th.

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Table 2
Housing Affordability Ratings by Nation: Totals by Market

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TOTAL	0	15	28	40	12	95	5.1

Details on housing affordability for all 95 markets, displayed by median multiple, are provided in *Table 3* and by geography in *Table 4*.

3: INTERNATIONAL HOUSING AFFORDABILITY IN 2024

The national housing affordability situations are described below.

Australia: Australian markets have a median multiple of 9.7.

Sydney has the least affordable market, with an impossibly unaffordable median multiple of 13.8, making it the second least affordable market internationally (ranking 94th in affordability out of 95 markets) (Figure 3). Sydney has had the first, second or third least affordable housing of any major market in 16 of the last 17 years.

Even the smallest Australian market, Adelaide endures an impossibly unaffordable median multiple of 10.9, ranked 90th among the 95 markets. Melbourne, with impossibly unaffordable median multiple of 9.7, is the 87th least affordable. Brisbane was an impossibly unaffordable 9.3 and ranked 85th out of 95. Perth at 8.3, was the 82nd least unaffordable market. It is remarkable that these markets are less affordable than widely recognized world cities like New York, London, or Chicago.

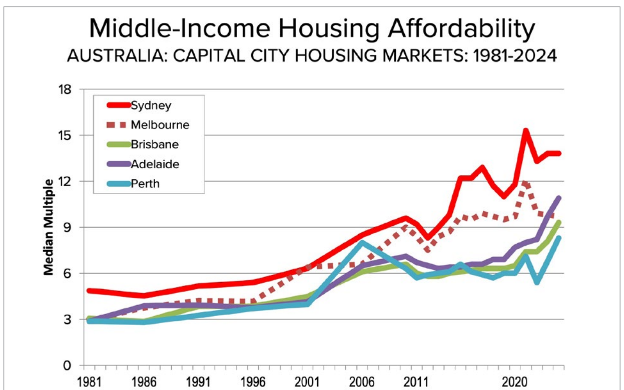

Figure 3

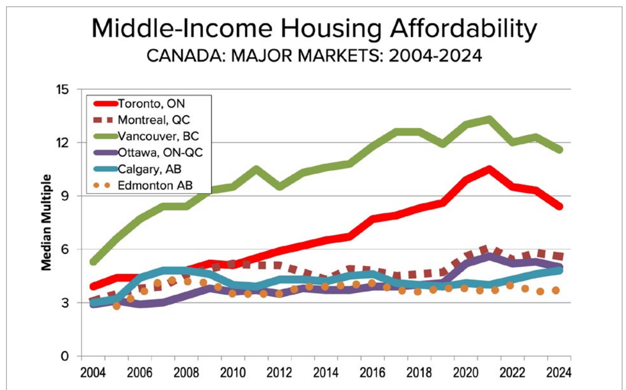

Figure 4

Canada: The markets in Canada have a median multiple of 5.4. Three of the six markets in Canada are rated severely unaffordable or impossibly unaffordable. There has been a considerable loss of housing affordability in Canada since the mid-2000s, especially in the Vancouver and Toronto markets (Figure 4). In contrast, there had been no deterioration in housing affordability in Toronto from 1971 to 2004 --- more than three decades. Much of this has to do with the operation of urban containment policies.

Vancouver is the least affordable market in Canada and the 92nd least affordable of the 95 markets, with an impossibly unaffordable median multiple of 11.8, making it more unaffordable than all markets except Hong Kong, Sydney and San Jose. Vancouver has been among the four l least affordable major market in each of the last 18 years.

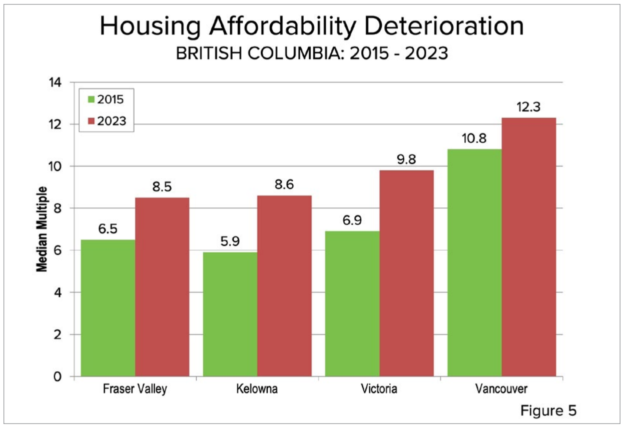

Figure 5

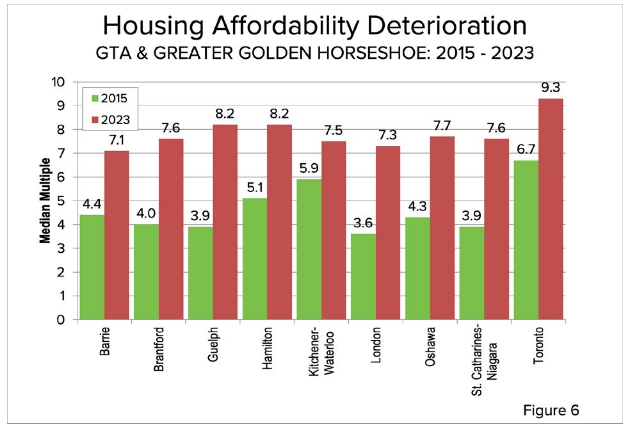

Figure 6

Troublingly, the impact of planning policies is also exercising influence over smaller markets in British Columbia, such as Chilliwack, the Fraser Valley, Kelowna, and markets on Vancouver Island have followed Vancouver in becoming significantly less affordable.[4] From 2015 to 2023, housing affordability worsened by the equivalent of 2.5 years of median household income in smaller markets outside Vancouver, an even greater loss than the 1.2 years in the Vancouver market itself (Figure 5).

Toronto is the second least affordable market in Canada and ranks 84th out of 95 markets in international affordability, with a severely unaffordable median multiple of 8.4.As in Vancouver, severely unaffordable housing has spread to smaller, less unaffordable markets in Ontario, such as Kitchener-Cambridge-Waterloo, Brantford, London, and Guelph, as residents of metro Toronto seek lower costs of living outside the Toronto market. From 2015 to 2023, housing affordability has worsened by the equivalent of 3.3 years of median household income in smaller markets outside Toronto, a greater loss than the 2.6 years in the Toronto market itself (Figure 6).[5]

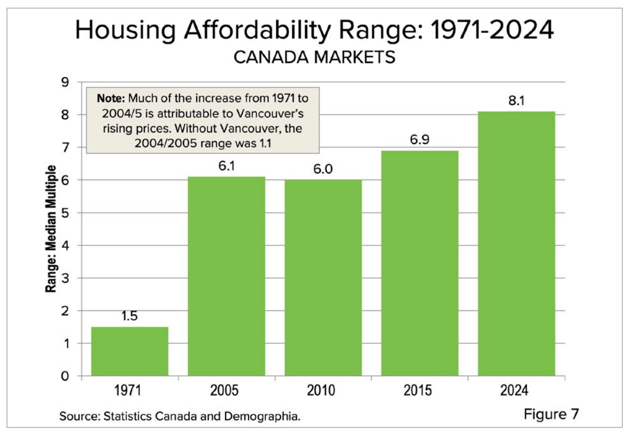

Figure 7

Montreal (5.8) is also severely unaffordable. The most affordable Canadian market is Edmonton, with a moderately unaffordable median multiple of 3.7. Calgary, with a median multiple of 4.8, was seriously unaffordable. Both Edmonton and Calgary could see improved economic growth as a result of increasing fossil fuel demand and increased pipeline capacity.

Should internal migration increase materially, it will be important land use authorities (cities and regional municipalities) to ensure that there is plenty of land for additional single family housing, which is likely to be most demanded. Despite significant planning efforts to force densification,

4 See Wendell Cox (2023), *Housing Affordability in Canada: 2023*, Frontier Centre for Public Policy.
5 Unpublished *Demographia* data

detached housing remains as the largest share in Australia, Canada, New Zealand and the United States as of the most frequent national government data.

The range between the most affordable and least affordable markets has risen from 1.5 median multiple points in 1971 to 8.1 points in 2024. The increase is the equivalent of 6.6 years of median household income (see Figure 7, above).

China: Hong Kong[6] has been the least affordable market in *Demographia International Housing Affordability*, for the 14 years since its inclusion. However, in recent years there are been material improvement. The 2024 Hong Kong median multiple of 14.4, improved from 16.7 in 2023. This is an even greater improvement Hong Kong's pre-pandemic 20.8 in 2019.

China's central government has given Hong Kong a clear responsibility to improve housing affordability and increase house sizes, which are among the smallest in the world.

Two major projects could add substantially to Hong Kong's housing stock. The "Northern Metropolis," virtually adjacent to neighboring Shenzhen would add more than 900,000 new housing units over the next two decades, with a target of more than 40% to be completed by 2032. Another project, Lantau Vision Tomorrow would add more than 200,000 new housing units on reclaimed islands near Hong Kong International Airport. This significant addition of housing units could moderate Hong Kong's still high housing costs.

Ireland: Dublin, Ireland's sole major metropolitan area, deteriorated from seriously unaffordable to severely unaffordable in 2024, with a median multiple of 5.1.

New Zealand: Auckland has a severely unaffordable median multiple of 7.7. This is an improvement from the 8.6 in the last pre-pandemic year (2019). Important drivers have been strong income trends, combined with the recovery of about half of the Covid-era demand shock. It is also likely that the liberal land use reforms announced by the Coalition government elected in 2023 has begun discounting overly expensive land prices.

The Coalition government (National/ACT/New Zealand First) government is implementing a housing policy that will open a considerable amount of land to greenfield development, consistent with promises made in the 2023 election. In recent addresses to local government and housing industry officials, Housing Minister Chris Bishop noted that "our housing crisis is holding New Zealand back socially and economically." Bishop emphasized, "We need more houses, and we need more greenfield development."

The government's "Going for Housing Growth" program will seek to ensure abundant developable land within and *around* urban areas, preventing the artificial scarcity that has driven house prices so high under the present urban containment.

6 Hong Kong is the only Chinese market included in *Demographia International Housing Affordability*.

To finance infrastructure needs, the Coalition will use "Special Purpose Vehicles," which allows developers or governments to finance infrastructure costs, and are repaid by beneficiaries over a period of up to 50 years. This model is similar to the Municipal Utility Districts (MUDs) in Texas and Colorado, that have relieved local taxpayers of the infrastructure burden from new greenfield housing.

New Zealand has developed a reputation for public policy innovation. "Going for Housing Growth" may be the next example, which in opening up to Greenfield housing, could materially improve housing affordability, reducing the cost of living and poverty.

Singapore: Overall, the median multiple for the resale market of Housing and Development Board (HDB) flats, was a seriously unaffordable 4.2. Singapore ranks as the 17th most affordable market this year.

In the early 1960s, Singapore faced a desperate housing situation, characterized by unhygienic slums and crowded squatter settlements. To address this, Singapore established the Housing and Development Board (HDB), adopted policies to …*encourage a property-owning democracy in Singapore and to enable Singapore citizens in the lower middle-income group to own their own homes*.

This objective has been largely achieved, with Singapore's home ownership rate at +90%. This is by far the highest home ownership rate among the eight nations in *Demographia International Housing Affordability*. Approximately 78% of Singapore households live in HDB housing. The 2020 edition includes a description of Singapore's housing policy ("Focus on Singapore").

The commitment in Singapore to home ownership and housing affordability remains strong. In his National Day Message in 2023, Prime Minister Lee Hsien Loong reiterated Singapore's dedication to home ownership and housing affordability:

> "Decade after decade, the Government has invested heavily to build affordable, accessible, and high-quality HDB flats for millions of Singaporeans…Even amidst this changing landscape, we must still ensure public housing is accessible and affordable for Singaporeans of all income groups. We must also keep our housing schemes fair and inclusive for all. This is how we keep our national housing story going strong for current and future generations. This is my Government's commitment to you, and we will deliver on it."
>
> *- Singapore Prime Minister Lee Hsien Loong, 2023*

Moreover, Singapore is notable for having a comprehensive low-income housing policy that subsidizes new low-income housing within the HDB framework. Over the past year, the Ministry of National Development and HDB have implement measures to ease first home purchases by household. This included increased grants and a lower loan-to-value limit. The government believes that these measures will improve overall housing affordability.

United Kingdom: In 2024, the United Kingdom had a median multiple of 5.6. Among the UK markets, one was impossibly unaffordable, 13 were severely unaffordable and five were seriously unaffordable. Two markets were moderately unaffordable.

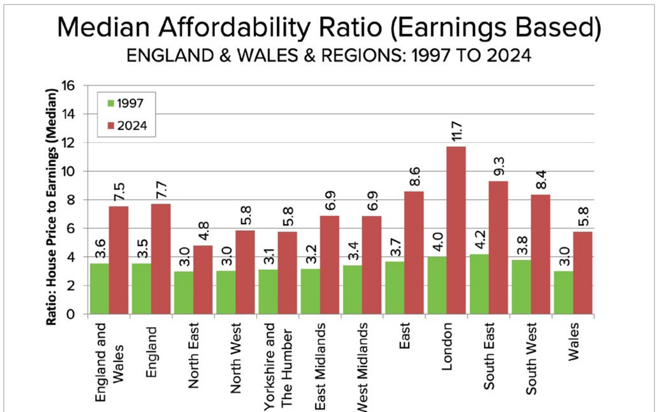

Figure 8

Greater London was the least affordable market, at an impossibly unaffordable 9.1. Greater London is entirely encircled by the London Greenbelt. Outside the Greenbelt (which contains much of the London Ring Road, the M-25), the London Exurbs (East and Southeast of England) have a severely unaffordable median multiple of 7.3.

Outside of London, Bristol-Bath is the least affordable market, at a severely unaffordable 7.5. Warrington and Cheshire also have a severely unaffordable median multiple of 7.4, while Bournemouth and Dorset have a severely unaffordable median multiple of 7.3.

The other severely unaffordable markets include Greater Manchester, Hull & Humber, Leeds. Leicester & Leicester. Northampton, Plymouth & Devon, Swindon & Wiltshire and Edinburgh.

The most affordable markets were Middlesbrough & Durham and Sheffield, both with moderately unaffordable ratios.

The United Kingdom has the longest experience with urban containment policy, and house price increases for decades have far outpaced incomes. This is illustrated in Figure 8, showing the change in the Office of National Statistics Median Affordability Ratio (median house price divided by median earnings). From 1997 to 2024) median house prices have increased at 2.1 times the increase in median wages in England and Wales.

The largest increase occurred in Greater London, where median house prices increased at 2.9 times the rate of median earnings between 1997 and 2024. In the Southwest and London exurbs (East and Southeast), house prices rose from 2.2 to 2.3 times incomes. The smallest increase was in the Northeast region, with house prices rising 1.6 times earnings. In Wales, house prices increased 1.9 times the rate of earnings.

These increases began at about the same time that the Blair Labour Government imposed a planning target for 60% of new housing to be infill (brownfield development). This further market distortion may have contributed to these house price increases, making regulation even more restrictive than under the earlier existing urban containment environment.

United States: The US median multiple in 2024 was 4.8, down from 5.0 in 2023, but up from 3.9 in 2019, indicating an increase of 0.9 years of median household income since before the pandemic.

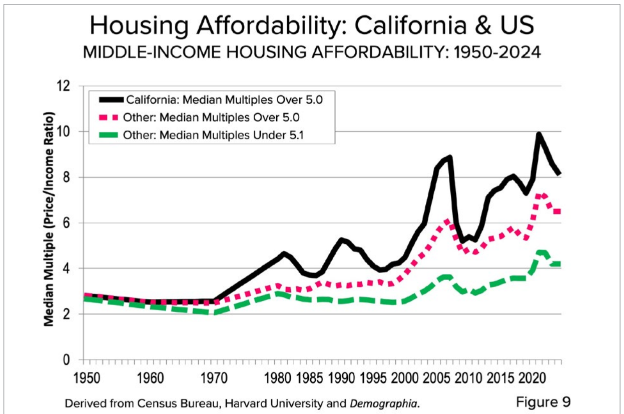

Figure 9

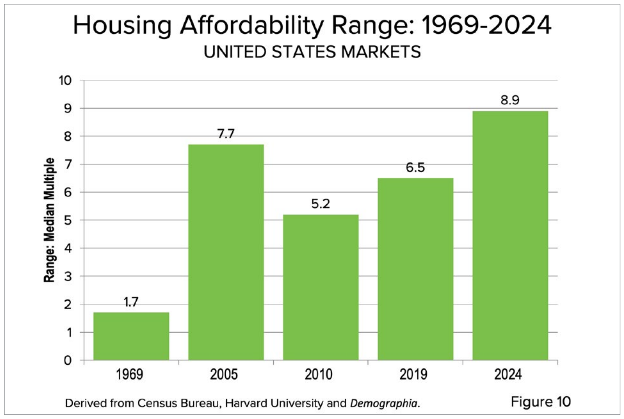

Figure 10

The most affordable market was Pittsburgh (PA), with a median multiple of 3.2, (the most affordable internationally), followed by Rochester (NY) and St. Louis, (MO-IL) at 3.4 and Cleveland at 3.5.

The United States had five impossibly unaffordable markets, four of which are located in California. San Jose was the least affordable major US housing market in 2024, with a median multiple of 12.1 (93rd internationally). Los Angeles was the second least affordable in the US (91st internationally), with a median multiple of 11.2, while San Francisco had a 10.0 median multiple and San Diego's median multiple was 9.5. Honolulu was the third least affordable, with a median multiple of 10.8 (89th internationally). Figure 9 compares historical trends in housing affordability between California markets and those in other states, indicating a concentration of unaffordability in the state.

There were 20 severely unaffordable US markets. Miami (FL), with a median multiple of 8.1 (81st internationally) was the least affordable, followed by New York (NY-NJ-PA) at 7.4 (77th internationally).

Other severely unaffordable US markets were Seattle, WA, Boston, MA-NH, Riverside-San Bernardino, CA, Portland OR-WA, Las Vegas, NV, Providence, RI-MA. Denver, CO, Providence, RI-MA, Salt Lake City, UT, Fresno, CA, Sacramento, CA, Orlando, FL, Tucson, AZ,Tampa-St. Petersburg, FL, Phoenix, AZ, Milwaukee, WI, Washington, DC-VA-MD-WV, Jacksonville, FL and Charlotte, NC-SC.

The range between the least affordable and most affordable markets in the US was 8.9 years of median household income in 2024, compared to 1.7 in 1969 (Figure 10). This increase is the equivalent of 7.2 years of median household income.

4: THE INTERNATIONAL PLANNING ORTHODOXY AND THE GLOBAL HOUSING CRISIS

For decades in the high-income world, a hallmark of a strong middle class was the widespread ability to own a home—house prices generally rose in line with household incomes. As late as the late 1980s and early 1990s, house prices were three times or less than household incomes in most, if not all, housing markets of New Zealand, Canada, the US, Australia, the UK, and Ireland.

However, this healthy pattern has been broken in many markets, with house prices escalating far above household incomes (measured by the price-to-income ratio, or "median multiple"). Land prices have become the dominant driver of house prices in many urban containment markets. House prices relative to household incomes have up to tripled in markets such as San Francisco, Sydney, Vancouver, Honolulu, and London and elsewhere. These markets have each had house prices equivalent to 9 to 15 years of household income.

In the United States, where there is the greatest gap between the most expensive and least expensive housing markets, three-quarters of the cost-of-living difference between the most expensive markets is attributable to higher housing costs.

URBAN PLANNING AND THE MIDDLE-CLASS

Over the last half-century, more restrictive urban planning policies have been associated with undermined housing affordability for the middle class. Given the primacy of housing costs in household budgets, this also means that these stronger policies, especially urban containment, have been associated with greater overall poverty. Some research even suggests that rigid regulation has taken a heavy toll on the economy.[7]

Proponents expect these policies to increase urban densities, which is a core objective of the international planning orthodoxy.

All of the "Impossibly Unaffordable Markets" (median multiple 9.0 and over) in *Demographia International Housing Affordability* follow the international planning orthodoxy, as do nearly all of the severely unaffordable markets (median multiple 5.1 to 8.9).

The international planning orthodoxy has been associated with escalating and market produced housing unaffordable to middle-income households.

Economics of Urban Containment: Generally, land values in the physical city (built-up urban area) increase toward the urban center (all else equal).[8] Urban containment disrupts this pattern, causing abrupt land value spikes at the edges of areas permitted for development—such as at

7 For example, see: Hsieh, Chang-Tai and Moretti, Enrico, Housing Constraints and Spatial Misallocation (May 2018). CEPR Discussion Paper No. DP12912.

8 William Alonso (1964), *Location and Land Use: Toward a General Theory of Land Rent* (Cambridge, Massachusetts, Harvard University Press).

urban growth boundaries and greenbelts. This land value spike on the periphery drives land prices within the “contained area” (areas within the urban growth boundary). This drives up land prices throughout the market, which tend to become the most expensive factor of production where there is urban containment.

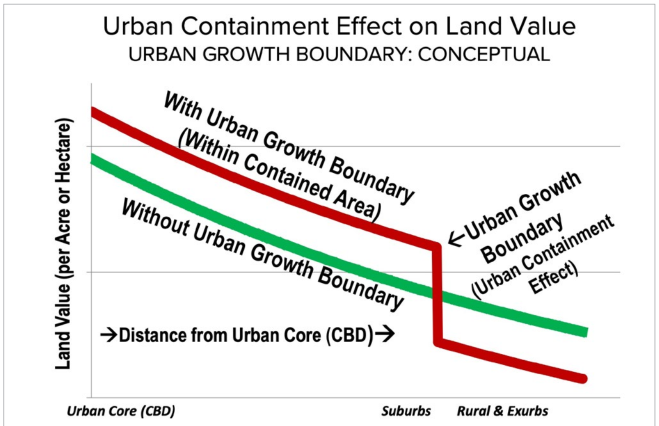

Figure 11

Much of this can be traced back to the British Town and Country Planning Act of 1947, which established large greenbelts around urban areas that were largely banned from development, leading to land cost escalation.

Outside Britain, similar urban fringe restrictions are often called urban growth boundaries, which are also associated with negative impacts on housing affordability.

London School of Economics professor Christian Hilber noted: “What is striking is that the countries at the top [of home-price growth] are all Commonwealth countries that copied elements of the restrictive British planning system.”[9] Moreover, many markets throughout the world—not just in Commonwealth countries—have adopted British-style land use policies, with similar consequences.

Urban containment, as explained by proponents, is:...contrasted with traditional approaches to land use regulation by the presence of policies that are explicitly designed to limit the development of land outside a defined urban area...”

Each of these strategies reduces the land available for development of middle-income housing in the forms most households prefer (ground-oriented, such as detached, semi-detached, or row houses).

The impact of urban containment on land values is illustrated in Figure 11.[10] The land value increases within the urban growth boundary (UGB) are the “urban containment effect.” These regulations make it all but impossible to profitably build tracts of housing affordable to middle-income households in many markets.

9 https://www.wsj.com/economy/housing/housing-affordability-crisis-europe-global-3e0d969a?mod=latest_headlines

10 Figure is adapted from other works dealing with urban growth boundaries. Other graphical representations of this relationship can be found in Gerrit Knaap and Arthur C. Nelson, The Regulated Landscape: Lessons on State Land Use Planning from Oregon, Cambridge, Massachusetts: Lincoln Institute of Land Policy, 1992; William A. Fischel, Zoning Rules! The Economics of Land-use Regulation, Lincoln Institute of Land Policy, 2015; Gerard Mildner, “Public Policy & Portland’s Real Estate Market,” Quarterly and Urban Development Journal, 4th Quarterly 2009: 1-16, and others. Under traditional land use regulation, where there is no urban containment boundary, the land price gradient would be smooth (the green line labeled “Before Urban Growth Boundary”). On the other hand, an abrupt increase occurs at an urban boundary (the red line labeled “After Urban Growth Boundary”).

According to prominent urban planners Arthur C. Nelson and Casey J. Dawkins:

> **"...urban containment involves drawing a line around an urban area. Urban development is steered to the area inside the line and discouraged (if not prevented) outside it."**

> **"Urban containment programs can be distinguished from traditional approaches to land-use regulation by the presence of policies that are explicitly designed to limit the development of land outside a defined urban area while encouraging infill development and redevelopment inside the urban area."**

Nelson and Dawkins also note:

> **"[B]ecause land outside the containment boundary is restricted to resource uses or very-low-density residential development, the regional demand for urban development is shifted to the area inside the boundary. This shift should decrease the value of land outside the boundary and increase the value of land inside the boundary."**

They emphasize that:

> **"If a gap in land values on both sides of the boundary does not emerge, either the boundary is too large in the near term or there is too much development potential remaining in rural areas regardless of any land-use restrictions."**

Regrettably, the proponents of the international planning orthodoxy were right—urban containment is associated with materially higher land prices, which makes housing less affordable.

More than five decades ago, the renowned planner Sir Peter Hall—of University College London and a former president of the Town and Country Planning Association—reflected on the first quarter century of the British Town and Country Planning Act. He observed that "perhaps the biggest single failure" of urban containment was its inability to prevent the erosion of housing affordability.[11]

The Middle-Class Squeeze: This has been to the detriment of many households, exposing them to greater inequality and frustration of homeownership aspirations. The middle class is challenged principally due to escalating land costs. As land has been rationed to curb sprawl, the excess of demand over supply has driven prices up.

11 Peter Hall, et al (1973), *The Containment of Urban England*, Volume 2.

This is consistent with economic principles. Alain Bertaud, former principal urban planner at the World Bank, asserts that: "arbitrary limits on city expansion" (such as urban growth boundaries and greenbelts) result in "predictably higher prices."[12]

Rising house prices are further inflated by speculative activity. The net effect is that land values and house prices have become skewed against the middle class, whose viability depends on the competitive land market that the international planning orthodoxy has eroded.

There has been some recognition of these difficulties in the planning community, but few —if any— programs have materially improved housing affordability. The Organization for Economic Cooperation and Development (OECD) has raised the alarm about urban containment and worsening housing affordability.

In *Rethinking Urban Sprawl: Moving Toward Sustainable Cities*, the OECD warned that without sufficient developable land on the urban periphery , housing affordability will deteriorate. Anthony Downs of the Brookings Institution stressed the need to maintain a competitive land market to counteract this effect.[13]

Moreover, the OECD has also documented the shrinking of the middle class across the developed world. In *Under Pressure: The Squeezed Middle-Class*, it emphasized that the threat to the middle-class results from living costs rising faster than incomes—driven principally by housing costs. The OECD found that housing affordability losses were substantial for both renters and owners, though greater for homeowners.

Purpose of Urban Planning: Ultimately, the purpose of urban planning should be about people. Fabled urbanist Jane Jacobs offered the test: "If planning helps people, they ought to be better off as a result, not worse off."

The intensity of the housing affordability crisis suggests the need to revise land use policies to focus on what is fundamentally good for people. As Paul Cheshire, Max Nathan, and Henry Overman of the London School of Economics put it:

> **"The ultimate objective of urban policy is to improve outcomes for people rather than places; for individuals and families rather than buildings."**

Densification and Its Limits: More recently, the planning community has emphasized densifying existing urban areas, often favoring multi-family housing (both high-rise and low-rise) over the single-family homes most households prefer. This intense planning preference for densification can be illustrated by the New York Times headline "Build Build Build Build Build Build Build Build Build Build Build Build Build Build." In fact, it is unsound to suggest that the housing shortage can

12 Alain Bertaud, *Order without Design: How Markets Shape Cities*, https://mitpress.mit.edu/9780262550970/order-without-design/

13 Anthony Downs, *New Visions for Metropolitan America*, (1994), https://www.brookings.edu/book/new-visions-for-metropolitan-america/

be solved just by building houses that are, in a number of markets, too expensive to be afforded by middle-income households, and are often small units unattractive to many households. In fact, in a number of markets, urban containment makes it illegal and commercially infeasible to build the housing people prefer.

There are also questions about whether these denser housing types actually improve housing affordability In an exhaustive meta-analysis, Urban Institute economist Jonah Freemark found that upzoning (densification) showed only “mixed” success in improving affordability and housing production.

Meanwhile, the very strategies associated with the land price explosion—such as prohibiting new detached housing on the urban periphery, particularly through greenbelts and urban growth boundaries—remain in place.

Counterurbanization: There has been some progress. This is primarily not because of a shift in planning theory. Rather, it has come from the migration of middle-income households away from expensive markets to more affordable ones. It is not that urban planning is achieving the fundamental objective of housing affordability, but rather that households are exiting markets with urban containment and moving to smaller markets, where housing affordability is often better and the standard of living is better.[14]

This trend, particularly strong in Canada and the United States, is known as counterurbanization—movement from larger markets to suburban, exurban, or rural areas. Geography professor Brian J. L.Berry (who served at the University of Chicago, Harvard University, Carnegie Mellon University and the University of Texas at Dallas) proposed the concept in a 1980 paper and later work that characterized the decentralization of urbanization that continues to this day.

In Canada, between 2019 and 2023, large markets (Census Metropolitan Areas) experienced a net loss of nearly 275,000 domestic migrants. Smaller markets (Census Agglomerations) gained nearly 110,000, while the rest of the country[15] gained 165,000 (Figure 12, below). This contrasts sharply with 2004–2018, when large markets gained 19,000 and smaller markets 77,000, while the balance of the nation lost 97,000.[16]

In the United States, since 2010, large metropolitan areas have experienced increasing out-migration. Between 2020 and 2023, all metro areas over 1 million people lost net domestic

14 The relative standard of living can be estimated by the price levels relative to incomes in metropolitan areas.

15 In both Canada and the United States, census authorities define larger labor markets (metropolitan areas). However, there is no formal designation of the smallest markets, which represent the balance of both nations.

16 See: Wendell Cox (2023), “Opinion: Want to help solve Canada’s housing crisis? Move” The latest StatCan data reveal Canadians are leaving the priciest cities and moving to rural areas, reversing the traditional trend,” Financial Post, https://financialpost.com/opinion/want-help-solve-canada-housing-crisis-move

migrants, while all classifications below 1 million gained them (Figure 13).

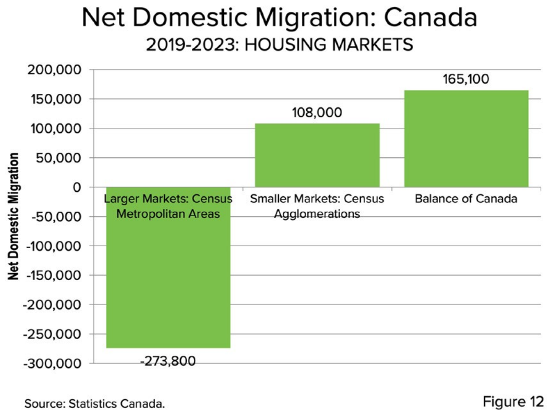

Figure 12

Net Domestic Migration: United States
2010-2023: HOUSING MARKETS

	Average Annual Net Domestic Migration %		
Market Population	2010-2015	2015-2020	2020-2023
Smallest (Not defined)	-0.32%	-0.07%	0.49%
Under 100,000	-0.22%	-0.07%	0.28%
100,000 - 249,999	-0.04%	0.12%	0.50%
250,000 - 499,999	0.09%	0.22%	0.33%
500,000 - 999,999	0.08%	0.27%	0.59%
1,000,000 - 2,499,999	0.28%	0.32%	0.04%
2,500,000 - 4,999,999	0.19%	0.11%	-0.15%
5,000,000 - 9,999,999	0.07%	-0.17%	-0.18%
10,000,000 & Over	-0.58%	-0.99%	-1.49%

Derived from Census Bureau data

Derived from U.S. Census Bureau data

Figure 13

During the final stages of producing *Demographia International Housing Affordability 2025*, The New York Times published an article by well-known housing reporter Conor Dougherty suggesting the need for more “sprawl” to solve the US housing crisis (“Why America Should Sprawl: The word has become an epithet for garish, reckless growth — but to fix the housing crisis, the country needs more of it.” Long friendly to density advocates, *The Times* and Dougherty have recognized that densification cannot solve the housing affordability crisis. They are right.

Toward Improved Housing Affordability: Counterurbanization is one cause for some optimism on housing affordability. New Zealand’s recently enacted housing reforms are another.

To its credit, the New Zealand government has adopted a program that should lead to much lower suburban and exurban land prices, leading to materially improved housing affordability (See Section 3). Similar models should be implemented in housing markets around the world. These reforms should be a template for policies that, along with migration patterns, could augur in a period of price stability. Until fundamental reforms are made in the most expensive markets, households seeking a better quality of life are likely to continue moving elsewhere. He largest and most expensive markets are likely to continue shedding residents to more affordable areas, making them considerably less dominant in the future.

Table 3 HOUSING MARKETS RANKED BY AFFORDABILITY: MOST AFFORDABLE TO LEAST AFFORDABLE Median Multiple (Median House Price/Median Household Income): 2024: Third Quarter				
National Affordability Rank	Major Market Affordability Rank	Nation	Metropolitan Market	Median Multiple
1	1	U.S.	Pittsburgh, PA	3.2
2	2	U.S.	Cleveland, OH	3.3
3	3	U.S.	St. Louis,, MO-IL	3.5
4	4	U.S.	Rochester, NY	3.6
1	5	Canada	Edmonton, AB	3.7
1	5	U.K.	Middlesbrough & Durham	3.7
5	5	U.S.	Oklahoma City, OK	3.7
6	5	U.S.	Omaha, NE-IA	3.7
2	9	U.K.	Sheffield	3.8
8	10	U.S.	Cincinnati, OH-KY-IN	3.9
7	10	U.S.	Detroit, MI	3.9
9	12	U.S.	Buffalo, NY	4.0
10	12	U.S.	Louisville, KY-IN	4.0
11	12	U.S.	Minneapolis-St. Paul, MN-WI	4.0
12	15	U.S.	Indianapolis. IN	4.1
13	15	U.S.	Tulsa, OK	4.1
1	17	Singapore	Singapore	4.2
14	17	U.S.	Kansas City, MO-KS	4.2
21	19	U.S.	Atlanta, GA	4.3
15	19	U.S.	Columbus, OH	4.3
20	19	U.S.	Dallas-Fort Worth, TX	4.3
17	19	U.S.	Grand Rapids, MI	4.3
16	19	U.S.	Hartford, CT	4.3
18	19	U.S.	Houston, TX	4.3
19	19	U.S.	San Antonio, TX	4.3
24	26	U.S.	Baltimore, MD	4.4
22	26	U.S.	Chicago, IL-IN-WI	4.4
25	26	U.S.	Memphis, TN-MS-AR	4.4
23	26	U.S.	Philadelphia, PA-NJ-DE-MD	4.4
26	26	U.S.	Virginia Beach-Norfolk, VA-NC	4.4
27	31	U.S.	Birmingham, AL	4.5
6	32	U.K.	Derby & Derbyshire	4.6

Table 3, contd. HOUSING MARKETS RANKED BY AFFORDABILITY: MOST AFFORDABLE TO LEAST AFFORDABLE Median Multiple (Median House Price/Median Household Income): 2024: Third Quarter				
National Affordability Rank	Major Market Affordability Rank	Nation	Metropolitan Market	Median Multiple
3	32	U.K.	Nottingham	4.6
3	32	U.K.	Stoke on Trent & Staffordshire	4.6
5	32	U.K.	Glasgow	4.6
28	32	U.S.	New Orleans. LA	4.6
7	37	U.K.	Newcastle	*4.7*
2	38	Canada	Calgary, AB	4.8
29	38	U.S.	Austin, TX	4.8
30	38	U.S.	Raleigh, NC	4.8
9	41	U.K.	Blackpool & Lancashire	4.9
8	41	U.K.	West Midlands	4.9
31	41	U.S.	Nashville, TN	4.9
32	41	U.S.	Richmond, VA	4.9
3	45	Canada	Ottawa-Gatineau, ON-QC	5.0
1	46	Ireland	Dublin	5.1
33	46	U.S.	Charlotte, NC-SC	5.1
34	46	U.S.	Jacksonville, FL	5.1
35	49	U.S.	Washington, DC-VA-MD-WV	5.2
10	50	U.K.	Liverpool	5.3
36	50	U.S.	Milwaukee, WI	5.3
11	52	U.K.	Hull & Humber	5.4
37	52	U.S.	Phoenix, AZ	5.4
39	54	U.S.	Tampa-St. Petersburg, FL	5.5
38	54	U.S.	Tucson, AZ	5.5
12	56	U.K.	Leicester & Leicestershire	5.6
40	56	U.S.	Orlando, FL	5.6
13	58	U.K.	Leeds	5.7
4	59	Canada	Montreal, QC	5.8
41	59	U.S.	Sacramento, CA	5.8
14	61	U.K.	Northampton	5.9
42	61	U.S.	Fresno, CA	5.9
15	63	U.K.	Plymouth & Devon	6.0
43	63	U.S.	Salt Lake City, UT	6.0

Table 3, contd. HOUSING MARKETS RANKED BY AFFORDABILITY: MOST AFFORDABLE TO LEAST AFFORDABLE Median Multiple (Median House Price/Median Household Income): 2024: Third Quarter				
National Affordability Rank	Major Market Affordability Rank	Nation	Metropolitan Market	Median Multiple
16	65	U.K.	Edinburgh	6.2
45	65	U.S.	Denver, CO	6.2
44	65	U.S.	Providence, RI-MA	6.2
47	68	U.S.	Las Vegas, NV	6.3
46	68	U.S.	Portland, OR-WA	6.3
17	70	U.K.	Greater Manchester	6.4
18	70	U.K.	Swindon	6.4
48	72	U.S.	Riverside-San Bernardino, CA	6.6
49	73	U.S.	Boston, MA-NH	6.7
50	74	U.S.	Seattle, WA	7.1
20	75	U.K.	Bournemouth & Dorset	7.3
19	75	U.K.	London Exurbs	7.3
21	77	U.K.	Warrington & Cheshire	7.4
51	77	U.S.	New York, NY-NJ-PA	7.4
22	79	U.K.	Bristol-Bath	7.5
1	80	N.Z.	Auckland	7.7
52	81	U.S.	Miami, FL	8.1
1	82	Australia	Perth, WA	8.3
5	83	Canada	Toronto, ON	8.4
23	84	U.K.	Greater London	9.1
2	85	Australia	Brisbane, QLD	9.3
53	86	U.S.	San Diego, CA	9.5
3	87	Australia	Melbourne, VIC	9.7
54	88	U.S.	San Francisco, CA	10.0
55	89	U.S.	Honolulu, HI	10.8
4	90	Australia	Adelaide, SA	10.9
56	91	U.S.	Los Angeles, CA	11.2
6	92	Canada	Vancouver, BC	11.8
57	93	U.S.	San Jose, CA	12.1
5	94	Australia	Sydney, NSW	13.8
1	95	China	Hong Kong	14.4

Table 4 ALL HOUSING MARKETS BY NATION Median Multiple (Median House Price/Median Household Income): 2024: Third Quarter				
National Affordability Rank	Major Market Affordability Rank	Nation	Metropolitan Market	Median Multiple
4	90	Australia	Adelaide, SA	10.9
2	85	Australia	Brisbane, QLD	9.3
3	87	Australia	Melbourne, VIC	9.7
1	82	Australia	Perth, WA	8.3
5	94	Australia	Sydney, NSW	13.8
2	38	Canada	Calgary, AB	4.8
1	5	Canada	Edmonton, AB	3.7
4	59	Canada	Montreal, QC	5.8
3	45	Canada	Ottawa-Gatineau, ON-QC	5.0
5	83	Canada	Toronto, ON	8.4
6	92	Canada	Vancouver, BC	11.8
1	95	China	Hong Kong	14.4
1	46	Ireland	Dublin	5.1
1	80	N.Z.	Auckland	7.7
1	17	Singapore	Singapore	4.2
9	41	U.K.	Blackpool & Lancashire	4.9
20	75	U.K.	Bournemouth & Dorset	7.3
22	79	U.K.	Bristol-Bath	7.5
6	32	U.K.	Derby & Derbyshire	4.6
16	65	U.K.	Edinburgh	6.2
5	32	U.K.	Glasgow	4.6
23	84	U.K.	Greater London	9.1
17	70	U.K.	Greater Manchester	6.4
11	52	U.K.	Hull & Humber	5.4
13	58	U.K.	Leeds	5.7
12	56	U.K.	Leicester & Leicestershire	5.6
10	50	U.K.	Liverpool	5.3
19	75	U.K.	London Exurbs	7.3
1	5	U.K.	Middlesbrough & Durham	3.7
7	37	U.K.	Newcastle	4.7
14	61	U.K.	Northampton	5.9
3	32	U.K.	Nottingham	4.6

Table 4, contd. ALL HOUSING MARKETS BY NATION Median Multiple (Median House Price/Median Household Income): 2024: Third Quarter				
National Affordability Rank	Major Market Affordability Rank	Nation	Metropolitan Market	Median Multiple
15	63	U.K.	Plymouth & Devon	6.0
2	9	U.K.	Sheffield	3.8
3	32	U.K.	Stoke on Trent & Staffordshire	4.6
18	70	U.K.	Swindon	6.4
21	77	U.K.	Warrington & Cheshire	*7.4*
8	41	U.K.	West Midlands	4.9
21	19	U.S.	Atlanta, GA	4.3
29	38	U.S.	Austin, TX	4.8
24	26	U.S.	Baltimore, MD	4.4
27	31	U.S.	Birmingham, AL	4.5
49	73	U.S.	Boston, MA-NH	6.7
9	12	U.S.	Buffalo, NY	4.0
33	46	U.S.	Charlotte, NC-SC	5.1
22	26	U.S.	Chicago, IL-IN-WI	4.4
8	10	U.S.	Cincinnati, OH-KY-IN	3.9
2	2	U.S.	Cleveland, OH	3.3
15	19	U.S.	Columbus, OH	4.3
20	19	U.S.	Dallas-Fort Worth, TX	4.3
45	65	U.S.	Denver, CO	6.2
7	10	U.S.	Detroit, MI	3.9
42	61	U.S.	Fresno, CA	5.9
17	19	U.S.	Grand Rapids, MI	4.3
16	19	U.S.	Hartford, CT	4.3
55	89	U.S.	Honolulu, HI	10.8
18	19	U.S.	Houston, TX	4.3
12	15	U.S.	Indianapolis. IN	4.1
34	46	U.S.	Jacksonville, FL	5.1
14	17	U.S.	Kansas City, MO-KS	4.2
47	68	U.S.	Las Vegas, NV	6.3
56	91	U.S.	Los Angeles, CA	11.2
10	12	U.S.	Louisville, KY-IN	4.0
25	26	U.S.	Memphis, TN-MS-AR	4.4

Table 4, contd. ALL HOUSING MARKETS BY NATION Median Multiple (Median House Price/Median Household Income): 2024: Third Quarter				
National Affordability Rank	Major Market Affordability Rank	Nation	Metropolitan Market	Median Multiple
52	81	U.S.	Miami, FL	8.1
36	50	U.S.	Milwaukee, WI	5.3
11	12	U.S.	Minneapolis-St. Paul, MN-WI	4.0
31	41	U.S.	Nashville, TN	4.9
28	32	U.S.	New Orleans. LA	4.6
51	77	U.S.	New York, NY-NJ-PA	7.4
5	5	U.S.	Oklahoma City, OK	3.7
6	5	U.S.	Omaha, NE-IA	3.7
40	56	U.S.	Orlando, FL	5.6
23	26	U.S.	Philadelphia, PA-NJ-DE-MD	4.4
37	52	U.S.	Phoenix, AZ	5.4
1	1	U.S.	Pittsburgh, PA	3.2
46	68	U.S.	Portland, OR-WA	6.3
44	65	U.S.	Providence, RI-MA	6.2
30	38	U.S.	Raleigh, NC	4.8
32	41	U.S.	Richmond, VA	4.9
48	72	U.S.	Riverside-San Bernardino, CA	6.6
4	4	U.S.	Rochester, NY	3.6
41	59	U.S.	Sacramento, CA	5.8
43	63	U.S.	Salt Lake City, UT	6.0
19	19	U.S.	San Antonio, TX	4.3
53	86	U.S.	San Diego, CA	9.5
54	88	U.S.	San Francisco, CA	10.0
57	93	U.S.	San Jose, CA	12.1
50	74	U.S.	Seattle, WA	7.1
3	3	U.S.	St. Louis,, MO-IL	3.5
39	54	U.S.	Tampa-St. Petersburg, FL	5.5
38	54	U.S.	Tucson, AZ	5.5
13	15	U.S.	Tulsa, OK	4.1
26	26	U.S.	Virginia Beach-Norfolk, VA-NC	4.4
35	49	U.S.	Washington, DC-VA-MD-WV	5.2

SOURCES AND METHODS

House price data is estimated from sources reporting on housing types representing the majority of existing owned dwellings in each nation. Official government produced sales registers are used where available (Ireland, England Wales). Other sources include authoritative real estate time series and market reports. Pre-tax median household incomes for the present year are estimated based on official government data.

AUTHOR

Wendell Cox is principal of Demographia, a St. Louis based international public policy consulting firm and a senior fellow of the Center for Demographics and Policy. He is author of ***Demographia World Urban Areas***, the only regularly published resource for the population, land area and population densities of world urban areas.

Cox was appointed to three terms on the Los Angeles County Transportation Commission (LACTC) by Mayor Tom Bradley and was appointed by US House of Representative Speaker Newt Gingrich to complete the unexpired term of New Jersey Governor Christine Todd Whitman on the Amtrak Reform Council. He has served as a visiting professor at the Conservatoire National des Arts et Metiers (CNAM), a national university in Paris and as vice-president of CODATU, a France based research organization dedicated to improving transportation in developing countries. He holds a BA in Government from California State University, Los Angeles and an MBA from Pepperdine University in Los Angeles.

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