

CANADA'S MIDDLE-INCOME HOUSING AFFORDABILITY CRISIS

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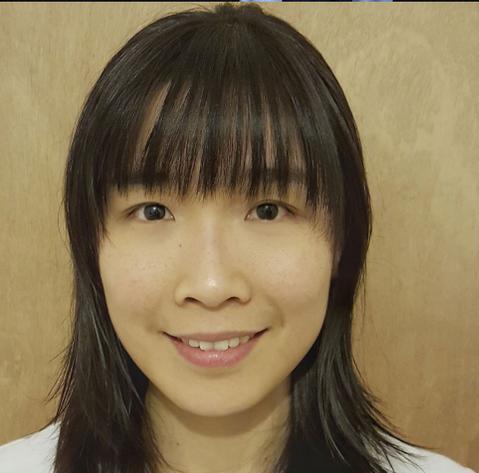
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EXECUTIVE SUMMARY

Canada has a serious middle-income housing affordability crisis. Canada's house prices have grown nearly three times that of household income since 2000. This contrasts with the stability between growth in house prices and household income during the previous three decades. These house-price increases raised serious concerns at the Bank of Canada and at international financial organizations such as the Organisation for Economic Co-operation and Development (OECD) and the International Monetary Fund (IMF).

This public policy report examines overall housing affordability in 35 housing markets, including all 33 CMAs and two census agglomerations (Section 1).

Higher house prices reduce the standard of living and constrain economic growth. Housing affordability is analyzed using indicators with comparisons *between* housing markets and within individual housing markets *over time*. Price-to-income multiples are used. Higher house prices mean less home buyer discretionary income (the amount left over after paying for necessities such as housing, food, clothing and transportation). Households have less income available for purchasing other goods and services, which can constrain economic growth and job creation. Moreover, less discretionary income translates into lower standards of living (Sections 1.1 and 1.2).

There was serious deterioration in middle-income housing between 2000 and 2015. This analysis shows that house prices rose faster than income in each of the 35 markets. The largest losses in housing affordability occurred in the six markets with a population of more than one million (Calgary, Edmonton, Montréal, Ottawa-Gatineau, Toronto and Vancouver), where house prices rose on average 3.3 times that of household income. More alarmingly, house prices rose more than four times household income in Vancouver and Toronto. In the five metropolitan areas with between 500,000 and one million residents (Hamilton, Kitchener-Waterloo, London, Québec and Winnipeg), house prices rose 3.2 times that of

household income. Even in the smaller markets, house prices rose by at least double that of household income (Section 2).

Substantial mortgage affordability losses could occur with the expected interest increases. Should mortgage interest rates rise in 2020 as projected by The Conference Board of Canada, approximately 800,000 fewer households will be able to qualify for a mortgage on an average-priced house, all else being equal. This could have an impact sooner than expected, since many mortgages require renewing every five years (Section 3).

Higher house prices have made it more difficult for middle-income households to afford the housing that Canadians have preferred for decades. Higher house prices appear to have been a principal factor in a trend toward smaller houses and condominiums across Canada between 2001 and 2011. This shift is most evident in Vancouver and Toronto, where housing markets have the most-restrictive land-use regulation (Section 4).

Restrictive land-use policy is associated with housing affordability losses. International economic literature associates more-restrictive land-use regulation with diminished housing affordability. The largest housing affordability losses have occurred in metropolitan areas (markets) that have adopted urban containment land-use strategies, which severely limit the land that can be used for building houses on and beyond the urban fringe. Consistent with basic economics, this reduction of land supply is associated with rising land prices, which lead to higher house prices. Without the substantial reform of restrictive land-use policies, housing affordability is likely to continue deteriorating (Section 5).

Higher house prices impose adverse social and economic consequences. Higher house prices are associated with increased rates of internal migration out of higher-cost markets, increased inequality, overcrowding, the greater public expenditure that is required to support low-income housing and losses to the economy (Section 6).

Solving the middle-income housing affordability crisis will require policy reforms. There is considerable evidence that restrictive land-use policies are associated with significant losses in housing affordability in Canada and elsewhere. Metropolitan areas with restrictive land-use policy should undertake reforms aimed at improving housing affordability. There should be a moratorium on the adoption of urban containment policy where it is not yet in place. Concerns have been expressed about the potential for high house prices and high household debt to complicate the ability of central banks (such as the Bank of Canada) to perform their monetary policy responsibilities. **It is concluded that middle-income housing affordability in Canada is a profound social and economic crisis that warrants serious and concentrated public policy attention (Section 7).**

1.0 BACKGROUND

Note: This report builds on “A Question of Values: Middle-Income Housing Affordability and Urban Containment Policy,”¹ which contains a more detailed analysis of the impact of land-use policy on housing affordability. Parts of the present report are adapted from “A Question of Values.”

In 2014, The *New York Times* reported that Canada had developed the most affluent middle class in the world. It reached this conclusion using the Luxembourg Income Study Database data and the rise of income in Canada relative to the United States in recent years.² However, just as the Canadian middle class was emerging with the top income in the world, it also experienced extraordinary and unprecedented house-price increases. Between 2000 and 2015, house prices rose at nearly three times the rate of household income increases. This led to a loss of middle-income housing affordability, which is a stark contrast with at least the three previous decades, when house prices rose at approximately the same rate as household income.

The Bank of Canada and international organizations such as the OECD³ and the IMF⁴ raised broader concerns about these rising house prices and the associated increase in household debt levels. Recalling the national and international financial devastation that resulted from the collapse of housing prices in the United States in the late 2000s, some analysts have even suggested that Canada has a housing bubble.⁵ This could lead to similar catastrophic declines in housing values and severely disrupt people’s lives and damage the economy. The “UBS Real Estate Bubble Index” recently ranked Vancouver below only London, Hong Kong and Sydney in its potential for a housing bubble.⁶ The Bank of Canada included the housing market and the related high household debt levels as two of three vulnerabilities in the economy in its December 2015 “Financial System Review.”⁷

These factors would work against high priority domestic objectives of improving the standard of living and reducing

poverty. Ultimately, housing policy should be evaluated based on such objectives.

Description of the Report

This public policy report analyzes housing affordability trends in 35 housing markets (CMAs or CAs) including all 33 CMAs and two CAs,⁸ Fredericton, New Brunswick, and Charlottetown, Prince Edward Island. These CAs are the only provincial capitals in the analysis that are not metropolitan areas.⁹

The principal analysis is a comparison of housing affordability measures from 2000 and 2015 in the 35 markets. This analysis shows a significant loss of housing affordability that is out of step with affordability in the preceding three decades. A comparison of average house price to household income ratios over the period illustrates this (Section 1.2).

A theoretical analysis asks the question (all else being equal), *What would the effects have been on housing affordability in 2015 if the projected mortgage interest rates for 2020 had been in place?* It concludes that rising interest rates would likely substantially reduce to an even greater degree the share of households that could afford homes (Section 3).

Another analysis examines how rising house costs appear to be limiting the dwelling choices (among types of housing) of Canadian households, which are increasingly unable to afford single-detached houses (housing that has been the standard throughout the nation) and are now purchasing smaller houses (especially condominiums).¹⁰ For many, this could mean a reduction in their standard of living (Section 4).

These analyses point to housing affordability losses that are substantial enough to justify serious policy attention.

1.1 MIDDLE-INCOME HOUSING AFFORDABILITY

Middle-income housing affordability is distinguished from that of low-income households that often require housing subsidies.¹¹ Historically, the competitive market provided middle-income housing without housing subsidies. Middle-income housing affordability has received little attention from government, but it has been thrust on to the public agenda by the huge price increases relative to income.

Housing is the largest expenditure category in household budgets. As a result, any substantial increase in housing costs is likely to be a challenge for most middle-income households. Servicing mortgages for more expensive houses reduces the discretionary income that households would have after paying for necessities such as taxes, transportation, food and clothing.

Middle-income housing affordability is also important to the economy. Paul Cheshire of the London School of Economics and Wouter Vermeulen of VU University wrote,¹² "... [h]ousing being the dominant asset in most households' portfolios, there are also repercussions on saving, investment and consumption choices." Where housing is more affordable, households will have enough discretionary income available to purchase additional goods and services and to save (which generates investment). All of this can contribute to job creation and a stronger economy.

Discretionary income virtually defines a household's standard of living or its poverty. Therefore, it is important to keep middle-income housing affordable when seeking the objectives of a better standard of living and less poverty.

Measuring Middle-Income Housing Affordability: Between and Within Markets

By definition, housing affordability implies a relationship between the price of housing and household income. One

of the most utilized housing affordability metrics is the price-to-income ratio. A United Nations' publication indicated,¹³

If there is a single indicator that conveys the greatest amount of information on the overall performance of housing markets, it is the house price-to-income ratio. It is obviously a key measure of housing affordability. When housing prices are high relative to incomes, other things being equal, a smaller fraction of the population will be able to purchase housing.

The median multiple (median house price divided by median household income) and the average price-to-income multiple (average house price divided by average household income) are examples of price-to-income ratios.

In this report, middle-income housing affordability is measured at the housing market level (CMAs or CAs).¹⁴ No comparisons are made between municipalities, neighbourhoods or other geographical components within housing markets. From a consumer and economic perspective, there are two dimensions of middle-income housing affordability --- between housing markets and within an individual market over time).

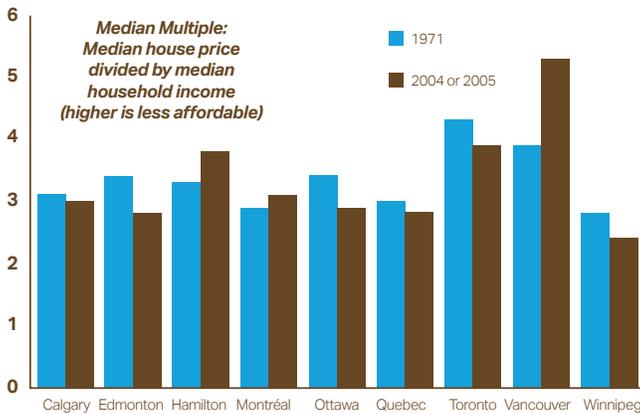
Thus, housing affordability comparisons are made using the average price-to-income multiples among the 35 housing markets. Price-to-income multiples are also compared over time within housing markets, principally between 2000 and 2015.

Industry sources such as the Canada Mortgage and Housing Corporation (CMHC), the Canadian Real Estate Association and local and provincial real estate boards publish periodic average house-price data. This report uses the average price-to-income multiple to evaluate housing affordability.¹⁵ The average household income data is derived from Statistics Canada and The Conference Board of Canada data.¹⁶

1.2 MIDDLE-INCOME HOUSING AFFORDABILITY TREND

For the 35 years following 1971, house prices increased at approximately the same rate as household incomes in the largest metropolitan areas. Among the nine metropolitan areas with more than 500,000 people in 2004 or 2005, the median multiple (median house price divided by median household income) remained constant at 3.3 in both 1971 and 2004 or 2005 (Figure 1).¹⁷ However, since then, the long-standing demand and supply relationship that had characterized the Canadian market was broken by unprecedented house-price escalation.

Housing Affordability: 1972 & 2004 or 2005 Median Multiple: Metropolitan Areas



Estimated from Statistics Canada and Demographia data

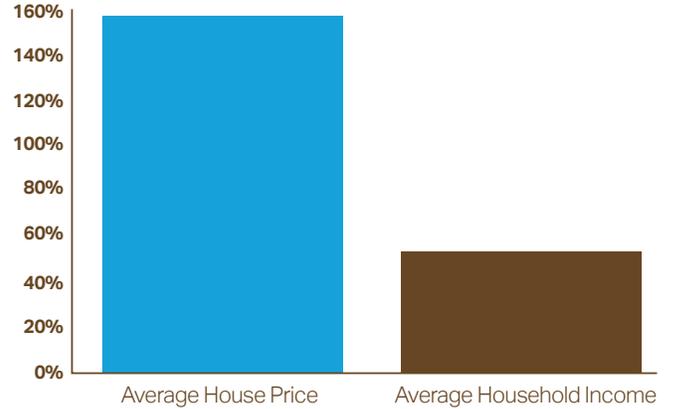
Figure 1

The substantial increase in house prices relative to income developed over the last decade. By the time the 11th Annual *Demographia International Housing Affordability Survey* was published, the average median multiple for the same nine metropolitan areas had risen to 5.1. This is more than a 50 per cent increase from 2004-2005 in house prices relative to income and represents a radical departure from the stability that characterized the previous three and one-half decades.

The average house price rose 158 per cent between 2000 and 2015. By comparison, the average household income rose only 55 per cent over the same period (Figure 2).

Thus, the average house price rose 2.9 times the rate of household income.¹⁸

House Prices & Household Incomes Change in 35 Markets: 2000 - 2015



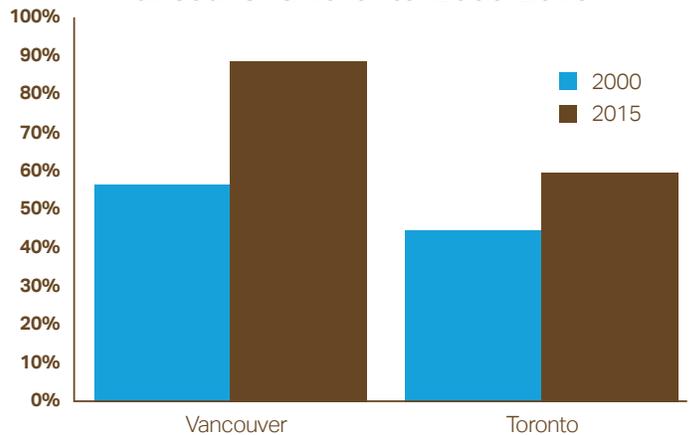
Estimated from Statistics Canada and Conference Board data

Figure 2

The RBC Housing Affordability Measure paints a particularly stark picture.¹⁹ It estimates the share of pre-tax median household income that is required to pay for the average-priced house. The calculation includes the mortgage, property taxes and utilities.²⁰ CMHC guidelines indicate that the total mortgage payment, property taxes and utilities should not exceed 32 per cent of gross income.²¹

Figure 3 indicates that the purchase of a standard 1,200-square-foot detached bungalow in the Vancouver metropolitan area requires 88.6 per cent of monthly household income. This is nearly three times the CMHC

RBC Affordability Measure: Bungalow Vancouver & Toronto: 2000-2015



RBC Data

Figure 3

guideline and obviously places such housing outside the financial means of middle-income households. In comparison, in 2000, 56.6 per cent of pre-tax income was required to pay for the average-priced bungalow in Vancouver.²² Even that was much higher than the 32 per cent CMHC guideline.

The situation is also severe in Toronto, where in 2015, 59.8 per cent of the pre-tax median household income would have been required to pay for the average-priced house. This is an increase from 44.6 per cent in 2000. Even this was well above the CMHC 32 per cent standard.

2.0 MIDDLE-INCOME HOUSING AFFORDABILITY 2000-2015

As indicated above, there has been a serious loss in housing affordability in Canada since 2000. This section provides housing affordability comparisons between housing markets and within individual markets over 15 years (2000 to 2015).²³ It includes the trends in average house prices, average household income and the average house price to average household income ratio (price-to-income ratio).

House prices rose at a greater rate than household income in all 35 markets, indicating a pervasive loss of housing affordability (Table A-1).²⁴

2.1 Metropolitan Areas with More than 1,000,000 Population

The six largest metropolitan areas, each with more than 1,000,000 residents, (Toronto, Montréal, Vancouver, Calgary, Edmonton and Ottawa-Gatineau) are particularly important to the national economy. Statistics Canada indicates that these areas accounted for approximately 51 per cent of the gross domestic product (GDP).²⁵ The six largest metropolitan areas had approximately 47 per cent of the national population in 2014.²⁶

These six metropolitan areas accounted for the greatest loss in housing affordability. The average house price²⁷ rose 176 per cent from 2000 to 2015, or 3.3 times the 54 per cent average increase in household income (Figure 4).²⁸

Toronto: Toronto, the largest metropolitan area, contained approximately 6.1 million residents in 2014, an increase of nearly 30 per cent over 2001.²⁹ Toronto plays a leading role in the national economy, generating 19 per cent of the GDP.

Toronto has experienced strong house-price increases since 2000, with the average house price rising by 164 per cent. This is 4.1 times the estimated 39 per cent rise in

average household income. In 2015, the price-to-income ratio was 6.0 in Toronto. This compares with 3.2 in 2000. The average house price has nearly doubled relative to the income of the average household.

On average, condominiums are the least costly housing option in Toronto, though they are often not considered the most desirable or appropriate dwelling type by households, especially families with children. The seriousness of Toronto's housing market cost escalation is indicated by the fact that by 2015 the average price of condominiums was higher than that of detached bungalows in 2004 (not inflation adjusted).³⁰ With rising land prices (Section 5) and less detached housing construction, higher detached housing prices have driven many home buyers to condominiums (whether they prefer them or not).

Montréal: Montréal, the second-largest metropolitan area, had a population of 4.0 million in 2014, an increase of 18 per cent from 2001. Montréal accounts for 11 per cent of the national GDP.

The average house-price increase in Montréal was even higher than the house-price increase in Toronto, at 172 per cent between 2000 and 2002. This increase was 3.7 times the estimated 47 per cent increase in average household income. Montréal's average price-to-income rose from 2.3 in 2000 to 4.3 in 2015.

Vancouver: Vancouver is the third-largest metropolitan area and had a population of approximately 2.5 million in 2014, up nearly 25 per cent from 2001. Vancouver accounts for nearly 7 per cent of the national GDP.

International surveys routinely rank Vancouver as one of the top metropolitan areas in the world for quality of life. Yet, Vancouver has by far the worst housing affordability in Canada and is among the worst in the high-income world. The 11th Annual *Demographia Housing Affordability Survey* (2014 data) rated Vancouver the second-least-affordable major metropolitan area.³¹ Among metropolitan areas in the

nine nations surveyed, Vancouver's house price-to-income multiple was the highest except for Hong Kong.

In 2015, Vancouver's price-to-income multiple was 9.6. This is more than double the 4.7 price-to-income multiple in 2000. Between 2000 and 2015, the average house price rose 207 per cent. This is 4.1 times the estimated 51 per cent increase in household income. The price of detached homes now averages over \$1.4-million. The Vancouver City Savings Credit Union (Vancity) forecasted that detached house prices could reach \$2.1-million in 15 years.³²

Condominiums, the least costly home ownership option in Vancouver, escalated to a 2015 average price greater than the price of detached bungalows in 2004 (not inflation adjusted).³³ As in Toronto, with rising land prices (Section 5) and less detached housing construction, higher detached housing prices have driven many home buyers to condominiums (whether they prefer them or not).

Calgary: Calgary is the fourth-largest metropolitan area and had a population of 1.4 million in 2014. Its 48 per cent population increase since 2001 is the largest among the six metropolitan areas of more than 1,000,000 population. Calgary represents approximately 5 per cent of the national GDP.

Calgary has experienced extraordinary household income growth since 2000. Yet, income has not kept pace with house-price increases. Between 2000 and 2015, the average house price rose 162 per cent, 2.2 times the estimated 73 per cent increase in the average household income. Calgary's price-to-income multiple rose from 2.4 in 2000 to 3.6 in 2015, a 50 per cent increase.

Edmonton: Edmonton is the fifth-largest metropolitan area, with a population of 1.3 million in 2014. The population increased 42 per cent from 2001. Edmonton, which had been the sixth-largest metropolitan area, displaced Ottawa-Gatineau in 2014. Edmonton represents approximately 5 per cent of the national GDP.

Like Calgary, Edmonton enjoyed extraordinary income growth between 2000 and 2015. Nonetheless, house prices rose at an even greater rate. The average house price increased 202 per cent between 2000 and 2015. This is 2.7 times the 75 per cent increase in average household income. Edmonton's price-to-income multiple rose from 2.0 in 2000 to 3.5 in 2015, a 75 per cent increase.

Ottawa-Gatineau: Ottawa-Gatineau³⁴ is the sixth-largest metropolitan area, with 1.3 million residents in 2014, which reflected an increase of nearly 25 per cent from 2001. Ottawa-Gatineau represents approximately 5 per cent of the national GDP.

Its average house price increased 148 per cent between 2000 and 2015. This is approximately 3.9 times the estimated 38 per cent increase in average household income. The price-to-income multiple in Ottawa-Gatineau rose from 2.1 in 2000 to 3.7 in 2015, nearly 75 per cent.

House Price & Household Income Growth Average: CMA's Over 1,000,000: 2000-2015

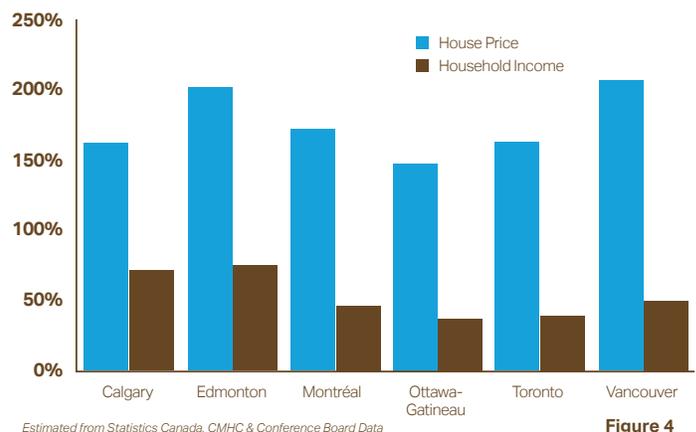


Figure 4

2.2 Metropolitan Areas with 500,000 to 1,000,000 Population

The five metropolitan areas with between 500,000 and 1,000,000 residents accounted for approximately 9 per

cent of the GDP³⁵ as well as approximately 9 per cent of the national population in 2014.³⁶

These metropolitan areas include two that are exurban (outside Toronto) and are located in the Greater Golden Horseshoe,³⁷ Hamilton and Kitchener-Waterloo. The largest metropolitan areas in this population category are Québec (Québec City or Ville de Québec) and Winnipeg. The category also includes London.

The housing affordability losses in metropolitan areas with 500,000 to 1,000,000 people were somewhat smaller than they were in the major metropolitan areas. The average house price rose 164 per cent between 2000 and 2015. This is 3.2 times the 52 per cent increase in average household income (Figure 5).

Québec: The Québec metropolitan area had a 2014 population of approximately 800,000 residents. It is the second-largest metropolitan area in Québec and the seventh in Canada. Between 2000 and 2015, the average house price rose 200 per cent, 3.4 times the 60 per cent increase in average household income. Québec's price-to-income multiple nearly doubled from 1.8 in 2000 to 3.4 in 2015.

Winnipeg: The Winnipeg metropolitan area had a population of approximately 780,000 in 2014. Winnipeg experienced the largest house-price increase of any metropolitan area over 500,000 population, at 224 per cent. This is 3.7 times the increase in average household income of 60 per cent. Winnipeg's price-to-income multiple was 1.6 in 2000 and rose to 3.3 in 2015, more than doubling.

Hamilton: The Hamilton metropolitan area is adjacent to the Toronto metropolitan area and can be considered a continuation of the Toronto urban footprint. Hamilton is located 63 kilometres from the Pearson International Airport area and 69 kilometres from downtown Toronto, Canada's two largest employment centres. Hamilton had a population of 765,000 in 2014. It ranks third in population in Ontario and ninth in Canada.

Hamilton house prices rose 173 per cent between 2000 and 2015. This is 3.7 times the 47 per cent increase in average household income. Hamilton's average price-to-income multiple rose from 2.6 in 2000 to 4.8 in 2015, a 75 per cent increase.

Kitchener-Waterloo: Kitchener-Waterloo had a population of almost 510,000 in 2014. It is the tenth-largest metropolitan area in Canada and the fourth largest in Ontario. Kitchener-Waterloo is located in the Greater Golden Horseshoe and is a long commute from Pearson International Airport (90 kilometres) and downtown Toronto (approximately 111 kilometres).

The average house price increased 125 per cent from 2000 to 2015. This is considerably less than all but one other metropolitan area with a population over 500,000 (London). Nonetheless, the average house price increased 2.4 times the average household income increase of 52 per cent between 2000 and 2015. The price-to-income multiple in Kitchener-Waterloo rose from 2.4 in 2000 to 3.5 in 2015, a 45 per cent increase.

London: London had a population of just over 500,000 in 2014. House prices rose the least of any metropolitan area over 500,000 population, at 100 per cent between 2000 and 2015. This is 2.3 times the 42 per cent increase in average income. London's price-to-income multiple increased from 2.3 in 2000 to 3.2 in 2015, nearly 40 per cent.

House Price & Household Income Growth Average: CMAs 500,000 - 1,000,000: 2000-2015



Estimated from Statistics Canada, CMHC & Conference Board Data

Figure 5

2.3 Markets with Less than 500,000 Population

The housing markets with less than 500,000 population account for at least 12 per cent of the GDP.³⁸ These markets represent a somewhat larger 14 per cent of the national population.³⁹

Among these 24 markets (22 metropolitan areas and the two census agglomerations, Fredericton and Charlottetown), the average house-price increase was 108 per cent between 2000 and 2015, or 2.1 times the 52 per cent increase in average household income.

Worst-performing Markets: House prices rose three times or more than the rate of household income increases in five of the areas. The largest relative house-price increase was in Abbotsford in the exurban Vancouver area at 3.5. Regina had the second-highest increase in house prices relative to income at 3.2, followed by St. John's at 3.0.

The least-affordable markets with a population under 500,000 were Abbotsford, with a 6.5 house price-to-income ratio, along with the two other British Columbia metropolitan areas outside Vancouver, Victoria (6.0) and Kelowna (5.3). In comparison, in 2000, the price-to-income multiples in these three metropolitan areas were between 3.5 and 4.1.

Two Greater Golden Horseshoe metropolitan areas had price-to-income multiples of 4.0 or more, Oshawa (4.2) and Barrie (4.0). Nearby Peterborough (3.8), Guelph (3.7), Brantford (3.7) and St. Catharines-Niagara (3.5) also increased toward 4.0. In other parts of the country, Saskatoon (3.6), Kingston (3.6) and Halifax (3.5) had price-to-income multiples of 3.5 or more.

With the exception of the three British Columbia metropolitan areas, all of the markets with fewer than 500,000 people had average price-to-income ratios below 3.0 in 2000, including those in the Greater Golden Horseshoe.

Markets with the Least Housing Affordability Losses:

Unlike the markets with populations of more than 500,000, some markets with under 500,000 people experienced house-price increases that were less than double the household income increase rate between 2000 and 2015.⁴⁰ Even this is cause for concern, in view of the connection between house-price increases and income increases in the previous decades.

The smallest house-price increases were in Saint John and Moncton at 1.3 times that of household income. Charlottetown and Windsor had house-price increases of 1.5 times that of household income.

Despite the pervasive losses in housing affordability, a number of markets retained price-to-income ratios below 3.0. The best price-to-income ratios were in Moncton and Saint John, at 2.0. Fredericton, Windsor, Saguenay and Trois-Rivières followed at 2.3. Charlottetown, Sudbury and Thunder Bay also had price-to-income ratios below 3.0.

3.0 IMPACT OF EXPECTED HIGHER INTEREST RATES

This section asks the following theoretical question:

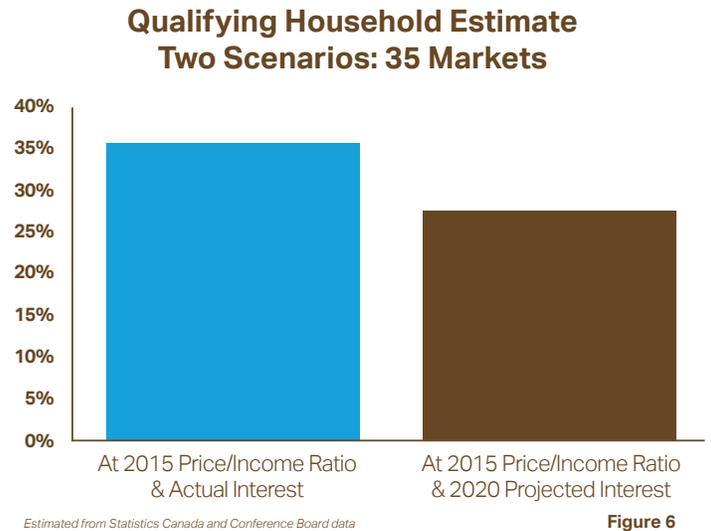
What would the effect have been on housing affordability in 2015 if the mortgage interest rates projected for 2020 had been in place?

Despite the huge losses in housing affordability that occurred in the last 15 years, it seems likely that the losses would have been even greater had mortgage interest rates not fallen so sharply (other factors held constant). This analysis is a theoretical attempt to suggest the potential impact of projected interest rate increases, holding other factors unchanged.

Under CMHC guidelines,⁴¹ households may qualify for mortgages if their housing expenses (including mortgage payment, property taxes, utilities and mortgage insurance) are no more than 32 per cent of their income.

Although the expected interest rate increases are not in place, there seems to be a consensus among economists that interest rates will return to levels more consistent with historic rates. The Conference Board of Canada projects that five-year conventional mortgage rates will be 6.57 per cent by the middle of 2020.⁴² Because of the large number of five-year renewable mortgages, higher mortgage interest rates at renewal could raise housing costs for many households in a comparatively short period.

If the mortgage rates projected for 2020 had been in effect in 2015, only 28 per cent of households in the 35 markets would have been able to qualify for a mortgage on an average-priced house, all else being equal. This compares with the 36 per cent of households that would have been eligible at the mortgages rates and price-to-income ratio of 2015 (Figure 6). This would reduce the number of eligible households by nearly one-quarter (800,000).



4.0 THE CANADIAN DREAM

While there have been substantial housing affordability losses across Canada, price-to-income ratios may understate the extent of the losses. At the same time that prices have been rising, houses have become smaller and the cost per square foot has risen even more than average house prices have.

As a result, some households in the Millennial generation as well as others are increasingly unable to afford the single-detached houses that have been the preference of Canadian households for decades. Some households may associate smaller housing with a lower standard of living.⁴³

In a report titled “Downsizing the Canadian Dream: Homeownership Realities for Millennials and Beyond,” Vancity says that the future “will see single detached homes become a scarce luxury.”⁴⁴

Preference for Home Ownership

Home ownership remains a priority, even for the Millennial generation. As Vancity indicates:

While many assume that Millennials want to rent a cool apartment in a hip inner-city neighbourhood forever, a recent study by the Demand Institute revealed that 60% of Millennials say they eventually want to own a home, 75% think ownership is a primary long-term goal and 73% believe a home is an excellent investment.

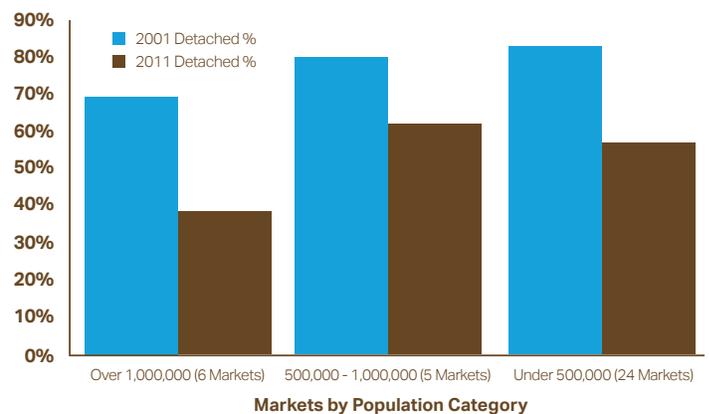
According to an online survey conducted by real estate firm Royal LePage,⁴⁵ a large majority of young Canadians are worried that affordability will hamper their chances of ever becoming homeowners. Although more than 72 per cent of the interviewees are pessimistic about being able to afford a house at the current prices, they expressed a strong desire for owning homes in the future.

Losses in housing affordability have taken a toll on first-time home buyers.⁴⁶ Many, especially younger households, have delayed home purchases, especially because of their more-limited income relative to house-price growth.⁴⁷

Decline in Detached Housing: 2001-2011

Detached housing became a smaller share of owned housing between 2001 and 2011. At the national level, the detached share of owned housing dropped from 80 per cent in 2001 to 76 per cent in 2011.⁴⁸ The largest decline was in the more than 1,000,000 population category, from 69.4 per cent to 62.5 per cent. The decline in the 500,000 to 1,000,000 category was from 80.1 per cent to 77.2 per cent, while the under 500,000 category experienced a decline from 82.9 per cent to 78.9 per cent (Figure 7).

2001 & 2011 Detached Housing Share CMA's by Size (Owned Housing)



Derived from 2001 Census & 2011 National Household Survey

Figure 7

All of the six metropolitan areas with more than 1,000,000 population experienced a reduction in detached housing as a percentage of all owned housing between 2001 and 2011. The largest declines were 24 per cent in Vancouver and 13 per cent in Toronto (Table 1). In Vancouver, there was a net reduction in detached housing between 2001 and 2011.

Table 1
Detached Owned Housing Stock Share: 2001-2011
CMA's Over 1,000,000 Population

CMA	2001	2011	Change in Detached Share
Calgary	79%	74%	-7%
Edmonton	82%	76%	-7%
Montréal	60%	57%	-4%
Ottawa-Gatineau	68%	64%	-7%
Toronto	66%	57%	-13%
Vancouver	61%	46%	-24%

Calculated from 2001 Census & 2011 National Household Survey

Though their reductions were below 10 per cent (Table 2), the five metropolitan areas with 500,000 to 1,000,000 residents also experienced a decline in the share of detached housing between 2001 and 2011.

Table 2
Detached Owned Housing Stock Share: 2001-2011
CMA's 500,000 to 1,000,000 Population

CMA	2001	2011	Change in Detached Share
Hamilton	81%	75%	-7%
Kitchener-Waterloo	79%	76%	-4%
London	82%	81%	-2%
Québec	71%	68%	-4%
Winnipeg	88%	87%	-1%

Calculated from 2001 Census & 2011 National Household Survey data

Among the metropolitan areas with under 500,000 population, all except St. John's and Saguenay experienced a reduction in detached-housing shares. The largest declines were in Victoria at 18 per cent and Abbotsford at 15 per cent (Table A-2). As in Vancouver, the number of detached houses declined in Victoria between 2001 and 2011.

Preferences, Smaller Dwellings and Urban Cores

There are at least two perspectives on why house sizes have decreased and why more households are buying condominiums.

Smaller Versus Larger Houses: One perspective is that people now prefer denser, multifamily dwellings such as apartments and condominiums closer to the city centre

as opposed to larger houses, which are generally in the suburbs.⁴⁹ Proponents point to an unprecedented resurgence of population growth in urban cores (in and around downtown areas).

Another viewpoint is that the more-restricted housing choices are driving the reduction in house size. This view holds that the huge price increases relative to inflation have removed the detached house as a choice for a large share of the middle-income population. Proponents indicate that this has left many households with no choice but to accept smaller houses or condominiums.

There are advantages and disadvantages associated with all housing sizes and all urban environments, whether living in smaller or larger dwellings or in urban cores or suburban areas. When households make house-purchase decisions, there are not only considerations such as house size but also neighborhood safety, surrounding amenities, travel time to work and other factors.

For example, smaller dwellings in higher density urban cores are often situated so that jobs, service and shopping are within walking or cycling distance, and transit service tends to be a better match to consumer travel demand than it is in suburban areas. Cultural opportunities are likely to be closer. However, traffic congestion is likely to be worse.⁵⁰ There can be a shortage of open spaces and recreational facilities and a higher incidence of crime, problems that urban cores are trying to address.⁵¹

At the same time, the lower density suburbs generally offer more living space and backyards, which can be important for families with children. Traffic congestion is usually less severe and despite generally longer distances from downtown, work trips often take less time due to the dispersion of employment throughout the metropolitan area.⁵² Moreover, research indicates that larger lot sizes and house sizes, which are generally found in the suburbs, are the most important preferences in determining house prices and demand.⁵³

Urban Cores Versus Suburbs: A closely related issue is whether there has been a substantial shift in preferences toward living in urban cores and away from suburbs. In recent years, urban cores have experienced a resurgence virtually across North America. Older, disused office and warehouse buildings are being converted to apartments and condominiums in dense urban cores.

After decades of stagnation or even population decline, urban core populations have generally grown. In the last 20 years, urban core environments have improved markedly. In part, the improvement may be the result of the dropping crime rates, which have increased the safety of the more-exposed modes of mobility typical of urban cores (walking, cycling and transit). These population increases reflect, at least to some, a greater preference than before for urban living. Another factor, however, might be that rapidly rising detached-housing prices may have encouraged some people to accept smaller houses, sometimes in the urban core. However, in the context of metropolitan area trends, the urban core population gains are modest.

The overwhelming proportion of metropolitan population growth continues to be in automobile-oriented suburbs. Small-area (census tract) research by David L.A. Gordon and Isaac Shirokoff at Queen's University found that 90 per cent of metropolitan area growth was in automobile-oriented suburbs and exurbs between the 2006 and 2011 censuses.⁵⁴ Other research indicates that between 87 per cent and 98 per cent of growth in the six largest metropolitan areas was outside the urban cores, with an overall average of 94 per cent (2006-2011).⁵⁵ This tends to indicate a preference for more-suburban locations, albeit less intense than before.

Assessment: The question is whether the trend toward smaller houses and the restoration of population growth in the urban cores is the result of changes in preference or the substantial price increases in housing. The evidence seems to be stronger on the economic side, given the continuing dominance of population growth in the suburbs.

The largest shifts in house size have been in Toronto and Vancouver. These markets have had the largest losses in housing affordability and the largest reduction in detached housing shares. In these markets, land-use planning policies are directed toward limiting the amount of detached housing being built and favour smaller houses and condominiums. These public policies seem to be limiting the choices available to many middle-income households.

Before policy makers start looking for remedies for housing affordability crises, it is important to analyse potential drivers to ever-increasing house prices. Section 5 focuses on the association between losses in housing affordability and one particularly important factor--restrictive land use policy.

5.0 RESTRICTIVE LAND-USE POLICY

Metropolitan land-use policies have become stronger in recent years. Restrictive land-use policies⁵⁶ are associated with severe housing unaffordability in the metropolitan areas of Canada and other nations.⁵⁷ Restrictive land-use policy can include components such as urban containment policy, excessively large infrastructure fees, height limits, large lot zoning and building moratoria. This section, aimed particularly at policy-makers, describes research on the influence of such policies on housing affordability.

Urban Containment Policy

Housing markets with urban containment policy have substantial losses in housing affordability when compared with other housing markets and within the individual markets. Many urban containment markets have had house-price escalation as their price-to-income ratio differentials have expanded relative to more liberally regulated markets. Moreover, there have been substantial losses in housing affordability over time in such markets, which are associated with the implementation of urban containment policy.⁵⁸

Urban containment policy is characterized by severe restrictions or even prohibitions on greenfield land.⁵⁹ This land, on and beyond the periphery of urban areas, is less expensive, which, all else being equal, makes housing less expensive. Specific strategies can include urban containment boundaries, so-called growth areas (with most land being off limits to development) and other measures that significantly reduce the supply of developable land relative to housing demand. This leads to higher house prices, all else being equal.

Urban Containment Policy and Basic Economics:

The association between higher house prices and urban containment policy is a matter of basic economics. All things equal, the price of a good or service that is in demand will increase where supply is limited. Economists

Richard Green of the University of Southern California and Stephen Malpezzi of the University of Wisconsin described the impact of more-restrictive land-use policy: “When the supply of any commodity is restricted, the commodity’s price rises. To the extent that land-use, building codes, housing finance or any other type of regulation is binding, it will worsen housing affordability.”⁶⁰

International research demonstrates the association between urban containment policy and higher house prices relative to income. For example, a Reserve Bank of Australia paper noted,⁶¹ “There is a growing body of international evidence on the role of supply-side constraints in limiting construction and driving up prices.”⁶²

In a groundbreaking evaluation of urban containment policy in Great Britain four decades ago, legendary urban planner Peter Hall et al.⁶³ said, “[P]erhaps the biggest single failure” of urban containment has been that it has failed to prevent losses in housing affordability. Hall et al. continued, “In practice the system seems almost systematically to have had the reverse effect: it is the most fortunate who have gained the most benefits from the operation of the system, while the least fortunate have gained very little.”⁶⁴

Urban Containment Policy: Irreconcilable with Housing Affordability?

Paul Cheshire of the London School of Economics referred to “the irreconcilable conflict between current planning policies and underlying economic forces” in contending that housing affordability is not compatible with urban containment.⁶⁵

OECD and other research⁶⁶ indicates that the prices tend to be more stable (less volatile) where housing supply is more responsive to demand.⁶⁷ Edwin Mills of Northwestern University, a premier urban economist, concluded, “The result of controls on housing supply is high prices,” and they “... contribute to home prices that are not only high, but unstable as well.” Mills expressed his concern about the impact on all households but particularly on low-income households.⁶⁸

Finally, comparisons between metropolitan areas show that the worst housing affordability is strongly associated with urban containment policy. Data from one of the world's most comprehensive metropolitan housing affordability reports, the *Demographia International Housing Affordability Survey*, shows this.⁶⁹ The 11th annual survey rated housing affordability in 378 metropolitan areas, including 86 major metropolitan areas⁷⁰ in nine nations (Canada, Australia, China, Ireland, Japan, New Zealand, Singapore, the United Kingdom and the United States). Virtually all of the major metropolitan markets that were rated "severely unaffordable" (price-to-income ratios exceeding 5.0) in the history of the survey have urban containment policies.

Nearly all of these "severely unaffordable" markets had price-to-income ratios of 3.0 or less before adopting urban containment policy. Some markets with urban containment policy have experienced a tripling or even more of their price-to-income ratios from before the adoption of urban containment.⁷¹

Donald Brash, formerly a long-time governor of the Reserve Bank of New Zealand,⁷² noted, "... [T]he affordability of housing is overwhelmingly a function of just one thing, the extent to which governments place artificial restrictions on the supply of residential land."⁷³

Illustrating the Urban Containment Association with Higher Prices: The economic relationship between markets with and without urban containment boundaries is shown in Figure 8.⁷⁴ In urban containment markets, a large gap in land price occurs at or near the urban containment boundary. The value of comparable land per hectare has been shown to vary by six to hundreds of times inside the urban containment boundary, usually virtually across the street (the blue line in Figure 8 illustrates this). In contrast, in liberally regulated markets (those without urban containment policy), the land-value gradient tends to fall gradually from the city centre to where agricultural, resource (such as mining) or undevelopable lands begin (the red line in Figure 8 illustrates this).

Urban Growth Boundary & Land Values Theoretical Land Value Gradient

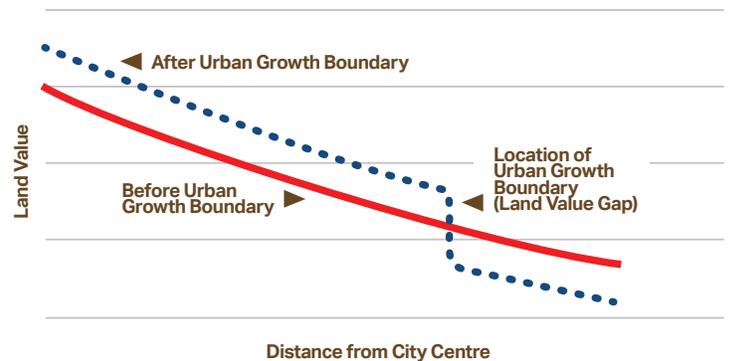


Figure 8

Urban Containment: Association with House Price Increases: Land is an important element in the cost of houses. Because urban containment policy is associated with higher land prices inside an urban containment boundary, it is also associated with higher house prices, all else being equal. Indeed, the house-value increases that occur inside the urban containment boundary can be expected to produce a windfall financial gain for all existing homeowners. This can further enlarge inequality differences between incumbent homeowners with properties within urban containment boundaries and renters.

Urban containment theorists expected that denser housing would be constructed inside the urban containment boundaries.⁷⁵ They hoped that the land-cost increases would be at least offset by the expected lower cost of denser housing that would be built inside the boundary (Figure 8). This ideal, though well intentioned, typically has not been achieved, as is indicated by the housing affordability losses in severely unaffordable markets (above).

Origin and the Spread of Urban Containment Policy: Urban containment policy has been a national policy since the late 1940s in the United Kingdom. Metropolitan areas such as Vancouver, Sydney and Portland (Oregon) adopted it around 1970. A number of other metropolitan areas have

adopted urban containment policy since then. Virtually all of the major metropolitan areas of the United Kingdom, Australia and New Zealand are subject to urban containment policy. In each of these cases, house prices have doubled or tripled relative to household income since the adoption of urban containment policy.

Urban Containment Policy in Canada: Vancouver was among the earliest metropolitan areas outside the United Kingdom to adopt urban containment policy. Vancouver's policies date back more than 40 years.

During the 2000s, the Ontario government began implementing its Places to Grow⁷⁶ policy, which severely constrained the land available for greenfield development. Places to Grow was initially implemented in Toronto and is now in effect in other metropolitan areas in the province.

Montréal has long had an agricultural preservation boundary. The diminishing supply of land on which building is permitted has put upward pressure on land prices.

The City of Calgary, which represents nearly all of the Calgary housing market population, implemented urban containment policies, starting with its Plan It Calgary program in the early 2000s.

A number of metropolitan areas have adopted urban containment policies since 2000.

A Future of Even Higher Prices Likely: Generally, house prices continue to increase under urban containment policy because demand continues to exceed supply because of the reduction in land supply. Prices for the more-constrained land tend to increase well ahead of household income, as indicated by the much higher house prices in strong urban containment markets.⁷⁷

Moreover, housing affordability deteriorates even more as time goes on, because the imbalance between demand and insufficient supply grows as long as the problem is not addressed properly.

*The problem is it is utterly unviable in the long term. With every passing decade the problems would get worse, the wider economic costs would become more penalising, the economy and monetary policy more unmanageable and the outcomes – the divide between the property haves and the property have-nots – more unacceptable.*⁷⁸

For example, in Vancouver, the market with the strongest urban containment policies, house prices have doubled relative to income since 2004. The most recent data (December 2015) indicate that the average detached-house price in the Vancouver metropolitan area has risen to approximately \$1.65-million, an increase of nearly \$250,000 since July of 2015. This is approximately 2.5 times the average annual household income in the Vancouver metropolitan area.⁷⁹

Similarly, house prices continue to rise in Toronto, with its more recently enacted urban containment policy. In Toronto, the escalation of house prices relative to household income is becoming evident in exurban metropolitan areas such as Hamilton, Oshawa, Kitchener-Waterloo, Barrie, Brantford and Peterborough (Section 2).

For up to seven decades, urban containment policy has been used in metropolitan areas to combat urban sprawl, the spatial expansion of cities.⁸⁰ In recent years, environmental issues have been the principal justification for policies to curb urban sprawl, though such rationales are questionable.⁸¹

Yet, as *The Economist* noted in an article on the housing affordability losses that are associated with London's urban containment policy: "Suburbs rarely cease growing of their own accord. The only reliable way to stop them, it turns out, is to stop them forcefully. But the consequences of doing that are severe."⁸²

Infrastructure Fees

In addition to restrictions like urban containment boundaries, more-restrictive land-use policy often includes significant

infrastructure fees (impact fees) on new houses.⁸³ There can be huge differences in infrastructure fees, even within the same housing market (below). Research indicates that infrastructure fees are often passed on to purchasers of new homes, and worse, that at least a portion of any such increase can occur in higher market values of already existing housing in a metropolitan area.⁸⁴ In effect, this provides a windfall profit to owners of existing houses (as in the case of urban containment boundaries). As in the case of urban growth boundaries, this can further enlarge inequality differences between incumbent homeowners with properties within urban containment boundaries and renters.

In Canada, infrastructure fees are generally set at the municipal level rather than at the metropolitan area level. There is considerable variation in infrastructure fees between municipalities, even within the same province and metropolitan area. A CMHC report on larger municipalities found a range from zero on new detached houses in Montréal and Québec and \$2,000 in Halifax to \$46,000 in Vaughn, a suburb of Toronto, and \$41,000 in Surrey in the Vancouver metropolitan area. The City of Vancouver's infrastructure charge was \$18,000, while the City of Toronto's was \$15,000. Another Vancouver suburb, Burnaby, had a much lower infrastructure fee of \$4,500.⁸⁵

No research has been identified that compares housing affordability measures between metropolitan areas based on differences in infrastructure fees, though house prices could be driven upward over time in a housing market if virtually all new housing is subjected to substantial infrastructure fees.

Other Restrictive Land-Use Policies

No research was identified associating other restrictive land-use policies with substantial differences between housing affordability measures (such as price-to-income ratios) at the market level. Further, there appears to be little research associating substantial housing affordability losses over time within individual housing markets (Section

1.1). An exception is Boston, a severely unaffordable market in which large lot zoning was identified as the most important factor in that metropolitan area's severely unaffordable housing.⁸⁶ Boston's median multiple was 5.4 in 2014, and Boston was the 20th least-affordable market among the 24 severely unaffordable markets in the *Demographia International Housing Affordability Survey* (2014).⁸⁷

Large lot zoning is frequently cited as a major impediment to housing affordability. This type of regulation, aimed at limiting population densities, has been used mainly in the United States.⁸⁸ However, no research was found, beyond Boston, linking large lot zoning with severe unaffordability at the housing market level or within a housing market over time. This is indicated by an analysis of major metropolitan area land-use classifications developed by the Brookings Institution. The markets in the Brookings' land-use classification with the most frequently occurring large lot zoning (Middle America) averaged a median multiple of 3.0 in 2014. This is within the affordable range (2.1 to 3.0) and well below the severely unaffordable minimum (5.1), which is characteristic of many housing markets with urban containment policy.⁸⁹

Low Interest Rates and Related Higher Demand

The more-accessible mortgage loan products and low mortgage interest rates of recent years are likely to have increased the demand for owned housing. However, the influence of these factors would be similar in all markets across the nation and are unlikely to be the source of housing affordability differences between markets.

It is likely that the resulting higher demand would have a greater upward association with house prices where there were more-restrictive land-use regulations. In more liberally regulated markets, it can be expected that the higher prices would lead to a subsequent increase in the supply of new housing. As a result, there would be comparatively little upward impact on house prices.⁹⁰

Much of the loss in housing affordability might have been averted in the most expensive markets if urban containment policy had not been adopted. Much or all of the increased demand from the lower interest rates and more-accessible mortgages could have been satisfied by the increased supply of housing, and housing would have remained more affordable.

6.0 CONSEQUENCES

The potential consequences of higher house prices relative to income extend well beyond the housing affordability impact on middle-income households.

- Higher house prices relative to income have an effect on internal migration. Since 2004, there has been net internal migration away from Toronto, Montréal and Vancouver (Figure 9). Even with the strong urban core resurgence in Toronto, there have been substantial net internal migration losses in the city itself, with some of the losses going to suburbs within the Toronto metropolitan area, some to more-distant metropolitan areas such as Kitchener-Waterloo and Barrie, some to other parts of Ontario and some outside Ontario (Figure 10). This is consistent with the international experience.⁹¹ In the United States, metropolitan areas with less-affordable housing have tended to lose internal migrants.⁹²
- Inequality is likely to increase, especially to the disadvantage of younger households, visible minorities and immigrants. Massachusetts Institute of Technology researcher Matthew Rognlie found that virtually all of the rising inequality identified by French economist Thomas Piketty has been in the increase in housing values.⁹³ Public policy that induces a reverse Robin Hood redistribution violates a fundamental Canadian value of fairness and is inappropriate. Rognlie noted,

... [T]he literature studying markets with high housing costs finds that these costs are driven in large part by artificial scarcity through land use regulation A natural first step to combat the increasing role of housing wealth would be to reexamine [sic] these regulations and expand the housing supply.
- Higher house prices can lead to economic losses. Raven Saks of the U.S. Federal Reserve Board has shown that

metropolitan areas with stronger housing regulation tend to have slower than expected job growth.⁹⁴

- Higher house prices have imposed an annual reduction of nearly \$2-trillion US in the United States' gross domestic product, according to *Chang-Tai Hsieh* of the University of Illinois and Enrico Moretti of the University of California. An economic loss of this magnitude would equal 12 per cent of the U.S. economy (2009). They referred to the effect as a "large *negative externality*." [emphasis in original]⁹⁵

In addition to the above issues, the Productivity Commission of New Zealand attributed social consequences to higher house prices, such as a decline in home ownership, greater overcrowding and increased low-income housing subsidy requirements.⁹⁶

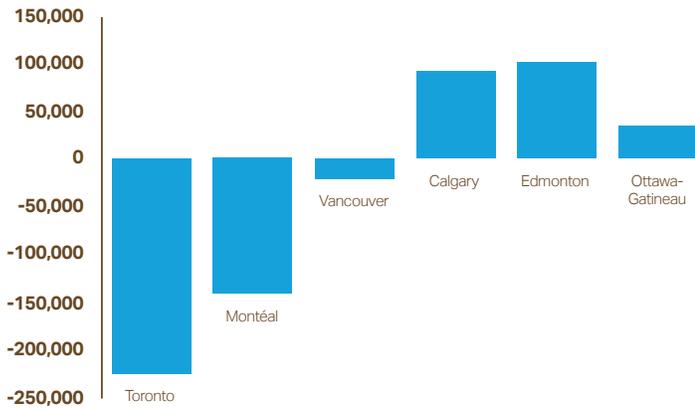
The Greater Golden Horseshoe and its Importance to the Economy

The higher house prices that are emerging could retard economic growth in the Greater Golden Horseshoe. This could have a dampening effect on the national economy, because the Greater Golden Horseshoe accounts for a disproportionately high share of national economic production (approximately one-quarter).⁹⁷

The Greater Golden Horseshoe could be at some risk because of economic reforms that could improve the competitiveness of nearby U.S. states, especially for manufacturing. For example, Michigan, Indiana and Wisconsin enacted voluntary unionism laws that for decades have been associated with lower labor costs, giving the South the advantage in attracting manufacturing investment and employment.⁹⁸ Each of the states implementing these reforms has better housing affordability, which can be an important issue in business-site selection. Poor housing affordability can represent an important barrier for businesses in attracting a qualified

work force at competitive compensation rates. The higher land prices can also lead to higher commercial property prices, creating another barrier to business expansion and job creation.

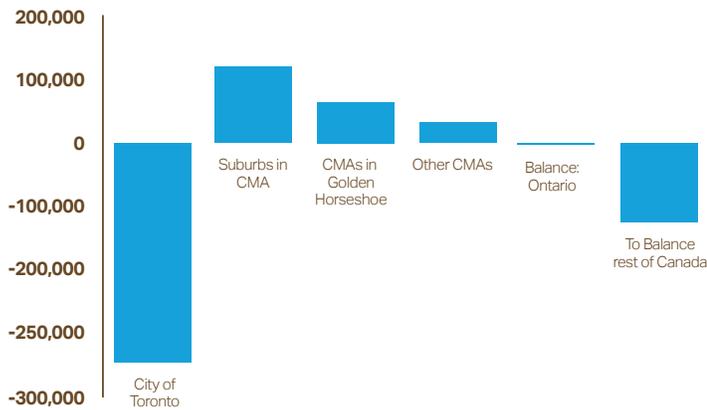
Internal Migration 2004-2014 Interprovincial & Intraprovincial



Statistics Canada Data

Figure 9

Internal Migration: GTA: 2004-2014 Interprovincial & Intraprovincial



Statistics Canada Data

Figure 10

7.0 POLICY OPTIONS

There is considerable evidence that restrictive land-use regulation, especially urban containment policy, is associated with the huge differences in housing affordability that have developed in Canada and other countries. These differences are not only evident between metropolitan areas, but also over time following the implementation of urban containment policy (Sections 2 and 5).⁹⁹ Huge housing affordability losses have occurred in markets with urban containment policy in Canada and other nations.

It will likely be difficult to prevent additional losses in housing affordability, much less roll back the excessively high house prices that have developed in recent years. Of course, consistent with concerns raised in various quarters, a housing bust as occurred in the United States and countries such as Ireland and Spain could do serious damage to the economy and severely disrupt people's lives (Section 1). It is therefore important that governments first seek to prevent further housing affordability losses and then restore housing affordability to the greatest extent possible.

Urban Containment Reforms

The challenges are substantial with respect to the urban land-use regulations, which will be far more difficult to unravel than they were to implement. As metropolitan housing markets become more distorted by urban containment policy, many people and business organizations develop strong financial interests in their retention and expansion.¹⁰⁰ Yet, this happens at great cost to younger households, less affluent households and the economy in general.

Provincial and Metropolitan Recommendations

Authorities overseeing land-use policy at both the provincial and metropolitan area levels ought to undertake the following actions:

1. Implement measures to halt and reverse the deterioration in housing affordability. In the metropolitan markets with urban containment policy, reforms are needed to prevent further deterioration in housing affordability, moderate its severity and work toward the eventual restoration of housing affordability. Housing affordability improvement objectives should be set and annually reviewed, and if the objectives are not met, land-use regulations should be liberalized. Solutions could be modelled after approaches that have been proposed in New Zealand (see box below).
2. There should be a moratorium on the implementation of urban containment policy in metropolitan areas where it has not been adopted.

The New Zealand Correction Proposals

Two recent proposals were made to reverse housing affordability in New Zealand, where the largest housing market (Auckland) has a price-to-income ratio of approximately 10.0.¹⁰¹

"Event Trigger" Expansion of Greenfield Land: In late 2015, the Productivity Commission of New Zealand held that land use authorities have a responsibility to provide "capacity to house a growing population while delivering a choice of quality, affordable dwellings of the type demanded"¹⁰²

Consistent with that finding, the Productivity Commission proposed a measure that would automatically expand the supply of greenfield land when housing affordability targets are not met. The Commission said, "Where large discontinuities emerge between the price of land that can be developed for housing and land that cannot be developed, this is indicative of the inadequacy of development capacity being supplied within the city." The Productivity Commission recommended that

expansion of greenfield land for development be required where the difference between land prices on either side of an urban containment boundary become too great.¹⁰³ The government intends to consider this recommendation as part of its land-use planning reforms, which have not been finalized.¹⁰⁴

The Commission further noted that failures in this regard imposed consequences (negative externalities) on the nation as a whole.

Adoption of Housing Affordability Targets:

The Chief Economist of the Auckland City Council recommended that the City adopt an objective to reduce the price-to-income ratio by approximately 50 per cent between 2015 and 2030. This would require various strategies, such as expanding greenfield land supply and allowing higher population densities in inner areas.¹⁰⁵

London School of Economics and Political Science economists Paul C. Cheshire, Max Nathan and Harry G. Overman made a similar recommendation in their recent book.

Cheshire et al. join others¹⁰⁷ in noting that restrictive planning increases price volatility. Further, they also express concerns about the impact on central banks (such as the Bank of Canada, the Bank of England and the Reserve Bank of New Zealand) as they manage monetary policy. Price volatility

...makes monetary policy more difficult even for central independent bankers since it becomes increasingly difficult to ignore housing-market pressures rather than just inflation targeting in setting monetary policy.¹⁰⁸

The Bank of Canada has important macroeconomic objectives. Yet, the growth in house prices and related household debt levels¹⁰⁹ may unduly constrain it. Restrictive land-use policies independently adopted at the provincial or metropolitan area level can strongly influence these factors. The Productivity Commission of New Zealand and Cheshire et al. raise this concern.

It is important that the Bank of Canada, which was established to “promote the economic and financial welfare of Canada,”¹¹⁰ not be encumbered by provincial or metropolitan policies that have the potential to work against this important objective. This fundamental issue should be carefully considered at the federal level, by the first ministers and especially by the Bank of Canada. These officials should commence a comprehensive and systematic review of the effect of higher house prices and their causes on both national economic performance and middle-income households.

A Profound Social and Economic Crisis

The loss of housing affordability is an issue deserving of greater public consideration. Already, discretionary income has been sharply reduced, as housing expenditures continue to consume a greater part of household income, especially in the largest metropolitan areas. Less discretionary income leads to lower standards of living and

Restrictive Land-Use Policy and Monetary Policy

Through its association with higher house prices and higher consumer debt levels, restrictive land-use policy may negatively affect the achievement of monetary policy objectives. Such concerns were recently raised by the Productivity Commission of New Zealand with respect to housing affordability in that nation’s largest metropolitan area (Auckland). The Commission indicated that high house prices could result in a greater risk of economic volatility and macroeconomic instability and could undermine “the effectiveness of monetary policy to manage economy-wide inflation.”¹⁰⁶

higher public expenditures, such as subsidized housing. Less discretionary income is also associated with less consumer demand for goods and services. As a result, lower levels of employment and economic growth are likely.

In conclusion, middle-income housing affordability in Canada has become a profound social and economic crisis worthy of serious and concentrated public policy attention.

APPENDIX A: DETAILED TABLES

Table A-1 Housing Affordability: 2000 to 2015 35 Housing Markets					
Housing Market	Price-to-Income Ratio		Change: 2000 to 2015		
	2000	2015	Average House Price	Average Household Income	House-Price Increase Relative to Income
Abbotsford	3.5	6.5	190%	55%	3.5
Barrie	2.7	4.0	116%	45%	2.6
Brantford	2.6	3.7	125%	54%	2.3
Calgary	2.4	3.6	162%	73%	2.2
Charlottetown	2.2	2.6	81%	56%	1.5
Edmonton	2.0	3.5	202%	75%	2.7
Fredericton	2.0	2.3	65%	48%	1.4
Guelph	2.8	3.7	105%	55%	1.9
Halifax	2.3	3.5	125%	48%	2.6
Hamilton	2.6	4.8	173%	47%	3.7
Kelowna	3.6	5.3	142%	64%	2.2
Kingston	2.2	3.6	133%	46%	2.9
Kitchener-Waterloo	2.4	3.5	125%	52%	2.4
London	2.3	3.2	100%	42%	2.3
Moncton	1.9	2.0	62%	47%	1.3
Montréal	2.3	4.3	172%	47%	3.7
Oshawa	2.6	4.2	148%	53%	2.8
Ottawa-Gatineau	2.1	3.7	148%	38%	3.9
Peterborough	2.7	3.8	114%	51%	2.2
Québec	1.8	3.4	200%	60%	3.4
Regina	1.7	3.3	242%	76%	3.2
Saguenay	1.6	2.3	144%	69%	2.1
Saint John	1.8	2.0	78%	61%	1.3
Saskatoon	2.1	3.6	206%	81%	2.5
Sherbrooke	2.1	3.4	149%	52%	2.9
St. Catharines-Niagara	2.3	3.5	111%	41%	2.7
St. John's	1.8	3.3	204%	67%	3.1
Sudbury	2.0	2.6	125%	71%	1.8
Thunder Bay	2.0	2.8	117%	50%	2.4
Toronto	3.2	6.0	164%	39%	4.1
Trois-Rivières	1.6	2.3	133%	61%	2.2
Vancouver	4.7	9.6	207%	51%	4.1

Victoria	4.1	6.0	122%	49%	2.5
Windsor	2.1	2.3	44%	29%	1.5
Winnipeg	1.6	3.3	224%	60%	3.7
UNWEIGHTED AVERAGES					
CMAAs over 1,000,000	2.8	5.1	176%	54%	3.3
CMAAs 500,000-1,000,000	2.1	3.6	164%	52%	3.2
Markets under 500,000	2.3	3.4	108%	52%	2.1
35 Markets					
	2.4	3.8	158%	55%	2.9
Methodology: Section 2					

Table A-2
Detached Owned-Housing Stock Share: 2001-2011
Housing Markets Under 500,000 Population

Housing Market	2001	2011	2001-2011 Net Change
Abbotsford	68%	58%	-15%
Barrie	87%	83%	-5%
Brantford	87%	86%	0%
Charlottetown	89%	88%	-1%
Fredericton	89%	78%	-12%
Guelph	81%	76%	-7%
Halifax	79%	76%	-4%
Kelowna	75%	66%	-11%
Kingston	82%	81%	-1%
Moncton	86%	77%	-10%
Oshawa	82%	79%	-3%
Peterborough	91%	89%	-2%
Regina	92%	87%	-5%
Saguenay	75%	75%	0%
Saint John	83%	80%	-3%
Saskatoon	86%	80%	-6%
Sherbrooke	78%	77%	-1%
St. Catharines-Niagara	87%	85%	-3%
St. John's	74%	75%	0%
Sudbury	89%	86%	-3%
Thunder Bay	91%	88%	-3%
Trois-Rivières	78%	77%	-1%
Victoria	71%	58%	-18%
Windsor	90%	87%	-3%

Calculated from 2001 Census and 2011 NHS data

ENDNOTES

¹ Wendell Cox, "A Question of Values: Middle-Income Housing Affordability and Urban Containment Policy," Frontier Centre for Public Policy, October 2015. Available online at https://www.fcpp.org/a_question_of_values.

² David Leonhardt and Kevin Quealy, "The American Middle Class is No Longer the World's Richest," *The New York Times*, April 22, 2014. Available online at <http://www.nytimes.com/2014/04/23/upshot/the-american-middle-class-is-no-longer-the-worlds-richest.html>.

³ Organisation for Economic Co-operation and Development, "OECD Economic Surveys Canada," June 2014. Available online at http://www.oecd.org/eco/surveys/Overview%20CANADA_2014.pdf.

⁴ International Monetary Fund, "2014 Article IV Consultation – Staff Report; Staff Statement; and Press Release," *IMF Country Report No. 15/22*, January 2015. Available online at <https://www.imf.org/external/pubs/ft/scr/2015/cr1522.pdf>.

⁵ There have been many news articles and commentaries on this subject. For example, see Kim Mackrael and Jason Chow, "Canada Grapples with Housing Bubble Risk," January 19, 2016, *The Wall Street Journal*. Available online at <http://www.wsj.com/articles/canada-grapples-with-housing-bubble-risk-1453229761>.

⁶ UBS, "UBS Global Real Estate Bubble Index," 2015. Available online at https://www.agefi.com/uploads/media/UBS_Global_Real_Estate_Bubble_Index_Study.pdf.

⁷ Bank of Canada, "Financial System Review – December 2015." Available online at <http://www.bankofcanada.ca/2015/12/fsr-december-2015/>.

⁸ According to Statistics Canada, "A census metropolitan area (CMA) or a census agglomeration (CA) is formed by one or more adjacent municipalities centred on a population centre (known as the core). A CMA must have a total population of at least 100,000 of which 50,000 or more must live in the core. A CA must have a core population of at least 10,000. To be included in the CMA or CA, other adjacent municipalities must have a high degree of integration with the core, as measured by commuting flows derived from previous census place of work data." Statistics Canada, "Census Dictionary 2011," p. 90. Available online at <https://www12.statcan.gc.ca/census-recensement/2011/ref/dict/98-301-X2011001-eng.pdf>.

⁹ The local or regional focus of this report, CMAs, is labour markets (which are also housing markets). These are the economic and physical forms of the city (as opposed to individual municipalities, which are parts of metropolitan areas). Census agglomerations are labour and housing markets that are smaller than metropolitan areas.

¹⁰ Statistics Canada term.

¹¹ The term "affordable housing" is often used to denote lower-income housing affordability, especially subsidized housing.

¹² Paul Cheshire and W. Vermeulen, "Land markets and their regulation: the welfare economics of planning," LSE Research online, 2009. Available online at [http://eprints.lse.ac.uk/30787/1/Land_markets_and_their_regulation_\(LSERO_version\).pdf](http://eprints.lse.ac.uk/30787/1/Land_markets_and_their_regulation_(LSERO_version).pdf).

¹³ Shlomo Angel, Stephen K. Mayo and William L. Stephens, Jr., "The Housing Indicators Program: A Report on Progress and Plans for the Future," *Netherlands Journal of Housing and the Built Environment* 8, no. 1 (1993): 13-48. Available online at <http://sollyangel.com/wp-content/uploads/2013/10/38.-1993-The-Housing-Indicators-Program.pdf>.

¹⁴ A census metropolitan area or census agglomeration is the economic city and usually includes multiple municipalities. For example, the Toronto metropolitan area includes at least 20 municipalities (or equivalents), such as the cities of Toronto, Markham, Richmond Hill and Mississauga. The Montréal metropolitan area includes approximately 90 municipalities (or equivalents), such as the Ville de Montréal, the Ville de Laval and the Ville de Sainte-Thérèse. The Vancouver metropolitan area includes nearly 40 municipalities (or equivalents), such as the city of Vancouver, the city of Surrey and the city of New Westminster. Among the other six largest metropolitan areas, Calgary has nine municipalities or equivalents, Edmonton has approximately 35 and Ottawa-Gatineau has 15. Some international metropolitan areas have even more municipalities. For example, the Paris metropolitan area, with a population of approximately double that of the Toronto metropolitan area, has nearly 1,800 municipalities.

¹⁵ In a number of nations, periodic house prices are reported as medians (middle of the distribution) rather than as averages. The International Demographia Housing Affordability Survey principally uses the median multiple rather than the average price-to-income multiple used in this report. Co-author Wendell Cox is also co-author of the Demographia Survey.

¹⁶ Statistics Canada 2001 Census and 2011 National Household Survey and The Conference Board of Canada, *Metropolitan Forecast*, August 7, 2015.

¹⁷ The 1971 median house value and median household income data are from the Census of Canada for 1971 (Statistics Canada). The 2004 and 2005 median house-price data and median household income are from the Annual Demographia International Housing Affordability Surveys. Five metropolitan areas reported in 2004 (Toronto, Montréal, Vancouver, Ottawa and Calgary) and four other metropolitan areas were added in 2005 (Edmonton, Québec, Winnipeg and Hamilton).

¹⁸ All house price and income data are in current dollars (not inflation adjusted) unless otherwise noted.

¹⁹ Royal Bank of Canada, "RBC Housing Affordability Report," various issues. Available online at <http://www.rbc.com/newsroom/reports/rbc-housing-affordability.html>.

²⁰ A down payment of 25 per cent is assumed.

²¹ See Canada Mortgage and Housing Corporation, "Homebuying Step by Step: Step 2: Are You Financially Ready?" Available online at http://www.cmhc-schl.gc.ca/en/co/buho/hostst/hostst_002.cfm.

²² Estimated from RBC graph using Craig Wright and Robert Hogue, "Housing Trends and Affordability," RBC Economics Research, August 2015.

²³ Average 2000 house prices from CMHC and Statistics Canada, "Evolving Housing Conditions in Canada's Census Metropolitan Areas, 1991-2001," January 2005. Available online at <http://publications.gc.ca/collections/Collection/Statcan/89-613-MIE/89-613-MIE2004005.pdf>; see Appendix Table A1. Average 2015 prices from the second quarter are from CMHC "Housing Now," various editions. Available online at <https://www03.cmhc-schl.gc.ca/catalog/productDetail.cfm?cat=70&itm=1&lang=en&sid=1NFLgwlCBuWLPTW9eHPcAGA4mlaozlvGL7s97PJ6nW24H3xwnSWeoheFRFVfjCx8&fr=1447160020302>.

²⁴ In Appendix A.

²⁵ Latest available Statistics Canada data. See Mark Brown and Luke Rispoli, "Metropolitan Gross Domestic Product: Experimental Estimates, 2001 to 2009," Statistics Canada, Economic Analysis Division, November 10, 2014. Available online at <http://www.statcan.gc.ca/pub/11-626-x/11-626-x2014042-eng.htm>.

²⁶ Statistics Canada.

²⁷ Unweighted.

²⁸ The 2015 average household income is from the 2011 National Household Survey (2010 data), adjusted by the per capita income estimated change from The Conference Board to 2014, then adjusted to 2015 using the provincial change in weekly earnings.

²⁹ Statistics Canada, "Population of census metropolitan areas," February 2015. Available online at <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/demo05a-eng.htm>.

³⁰ Calculated from RBC data.

³¹ Metropolitan markets with more than one million population.

³² Vancouver City Savings Credit Union, "Downsizing the Canadian Dream: Homeownership Realities for Millennials and Beyond," March 2015. Available online at https://www.vancity.com/SharedContent/documents/News/Downsizing_Canadian_Dream_March2015.pdf.

³³ Calculated from RBC data.

³⁴ Ottawa-Gatineau was called Ottawa-Hull in 2000.

³⁵ Brown and Rispoli, "Metropolitan Gross Domestic Product."

³⁶ Statistics Canada, "Population of census metropolitan areas."

³⁷ See map at Neptis, "Implementing the Growth Plan for the Greater Golden Horseshoe," October 2013, p. 21. Available online at http://www.neptis.org/sites/default/files/growth_plan_2013/theneptisgrowthplanreport_final.pdf.

³⁸ This excludes Fredericton and Charlottetown, for which data is not available.

³⁹ Statistics Canada, "Population of census metropolitan areas."

⁴⁰ The Saguenay metropolitan area was called Chicoutimi-Jonquière in 2000.

⁴¹ Canada Mortgage and Housing Corporation, "Are You Financially Ready? Affordability Rule #1." Available online at http://www.cmhc-schl.gc.ca/en/co/buho/hostst/hostst_002.cfm.

⁴² Even this rate would be well below historic norms. The Conference Board of Canada data indicate an average five-year conventional mortgage rate of approximately 10.0 per cent between 1975 and 2010. Canadian Forecast - 20 yr.

⁴³ Based on their own preferences, individual households determine their quality of life. Given the overwhelming preference of households for single-family houses, it seems likely that most households would equate being priced out of the market for single-family houses with a lesser quality of life. However, other households might not consider that this more-limited choice represents a lesser quality of life (percentage in single-family houses then and now).

⁴⁴ Vancity, "Downsizing the Canadian Dream."

⁴⁵ Royal LePage, Royal LePage Baby Boomer and Generation Y Survey, March 2013. Available online at <http://www.royallepage.ca/realestate/news/despite-challenges-canadas-generation-y-still-plan-to-own-homes-according-to-royal-lepage-national-survey/#Vs57DOZVfgo>.

⁴⁶ Jeff Lagerquist, "Condos the only option for average Toronto first-time homebuyers," Business News Network. Available online at <http://www.bnn.ca/News/2015/10/5/Condos-the-only-option-for-average-Toronto-first-time-homebuyers.aspx>.

⁴⁷ Feng Hou, "Homeownership over the Life Course of Canadians: Evidence from Canadian Censuses of Population," Statistics Canada Analytical Branch Research Paper Series 325 (2010).

⁴⁸ Average of 35 markets. Data from the 2001 Census of Canada and the 2011 National Household Survey.

⁴⁹ GWL Realty Advisors Inc., "Drivers of Apartment Living in Canada for the Twenty-First Century," September 2010. Available online at http://www.gwltrealtysadvisors.com/Portals/0/Research%20Reports/2010/Drivers_of_21st_century_apartment_living%5B1%5D.pdf.

⁵⁰ Wendell Cox, "Smart Growth (Livability), Air Pollution and Public Health," Newgeography, September 29, 2011. Available online at <http://www.newgeography.com/content/002462-smart-growth-livability-air-pollution-and-public-health>.

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⁵² Contrary to popular perception, downtown areas contain comparatively little metropolitan area employment. In 2006, downtown employment represented an average of just 14 per cent of employment in the six largest metropolitan areas, ranging from 7 per cent in Edmonton and 12 per cent in Toronto to 20 per cent in Calgary. See Wendell Cox, "Improving the Competitiveness of Metropolitan Areas," Frontier Centre for Public Policy, May 2012. Available online at http://archive.fcpc.org/files/1/PS135_Transit_MY15F3.pdf.

⁵³ Raymond B. Palmquist, "Estimating the Demand for the Characteristics of Housing," *The Review of Economics and Statistics* (1984): 394-404, and Stacy Sirmans, David Macpherson and Emily Zietz, "The Composition of Hedonic Pricing Models," *Journal of Real Estate Literature* 13, no. 1 (2005): 1-44.

⁵⁴ David L.A. Gordon and Isaac Shirokoff, "Suburban Nation? Population Growth in Canadian Suburbs, 2006-2011," Council for Canadian Urbanism, Working Paper No. 1, July 2014. Available online at <http://www.canadianurbanism.ca/wp-content/uploads/2014/07/CanU%20WP1%20Suburban%20Nation%202006-2011%20Text%20and%20Atlas%20comp.pdf>. Similar research in the United States, where there has also been a resurgence of urban core growth, indicates that virtually all major metropolitan area growth between 2000 and 2010 was in automobile-oriented suburbs. The urban core growth was more than offset by population losses in the ring outside the central business districts. See Wendell Cox, "The Long Term: Metro America Goes from 82% to 86% Suburban since 1990," Newgeography, June 12, 2014. Available online at <http://www.newgeography.com/content/004361-the-long-term-metro-america-goes-from-82-86-suburban-since-1990>.

⁵⁵ Wendell Cox, "Special Report: Census 2011: Urban Dispersion in Canada," Newgeography, February 14, 2012. Available online at <http://www.newgeography.com/content/002672-special-report-census-2011-urban-dispersion-canada>.

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⁵⁷ Cox, "A Question of Values."

⁵⁸ The increase in land values (and house prices) can precede the adoption of the urban containment boundary. Participants in the housing market, both buyers and sellers, may anticipate the higher prices as there are indications that stronger regulations may be adopted. For example, Ball et al. document an announcement effect on values in Melbourne, Australia. (Michael Ball, Melek Cigdem, Elizabeth Taylor and Gavin Wood, "Urban Growth Boundaries and their Impact on Land Prices," Working Papers in Real Estate and Planning, August 2012, Reading, U.K.: University of Reading.

⁵⁹ Undeveloped land on or beyond the urban fringe.

⁶⁰ Richard K. Green, and Stephen Malpezzi, *A Primer on U.S. Housing Markets and Housing Policy*, The Urban Institute Press, 2003, p. 146.

⁶¹ Mariano Kulish, Anthony Richards and Christian Gillitzer, "Urban Structure and Housing Prices: Some Evidence from Australian Cities," *Economic Record* 88, no. 282 (2012): 303-322.

⁶² All cited in this report.

⁶³ Peter G. Hall, Ray Thomas, Harry Gracey and Roy Drewett, *The Containment of Urban England: The Planning System: Objectives, Operations, Impacts*, Vol. 2. Allen and Unwin [for] P.E.P., 1973.

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- ⁶⁹ Wendell Cox and Hugh Pavletich, "11th Annual Demographia International Housing Affordability Survey: 2015," Demographia. Available online at <http://www.demographia.com/dhi2015.pdf>.
- ⁷⁰ Populations of more than 1,000,000 people.
- ⁷¹ Cox and Pavletich.
- ⁷² New Zealand's central bank.
- ⁷³ Donald Brash, "Introduction to the 4th Annual Demographia International Housing Affordability Survey," Demographia. Available online at <http://demographia.com/dhi4-preface.pdf>.
- ⁷⁴ Other graphical representations of this relationship are 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.
- ⁷⁵ See Gerrit J. Knaap and Arthur C. Nelson, "The effects of regional land use control in Oregon: a theoretical and empirical review," *The Review of Regional Studies* 18, no. 2 (1988): 37-46.
- ⁷⁶ For more information, see https://www.placestogrow.ca/index.php?option=com_content&task=view&id=9&Itemid=14.
- ⁷⁷ Cox, "A Question of Values," p. 50-53, describes the public policy failure to provide sufficient land to maintain housing affordability.
- ⁷⁸ Paul C. Cheshire, Max Nathan and Henry G. Overman, *Urban Economics and Urban Policy: Challenging Conventional Policy Wisdom*, Edward Elgar Publishing, 2014.
- ⁷⁹ Based on data from the Real Estate Board of Greater Vancouver, "Monthly Statistical Reports," various reports from June to October 2015. Available online at <http://www.rebgv.org/monthly-reports>.
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- ⁸³ There are also significant taxes, such as provincial sales tax, federal goods and services tax and land registry fees or land transfer tax, which are proportionate to the price of the house, according to CMHC 2010.
- ⁸⁴ The extent, if any, of this is the result of local demand and supply factors. See for example, Vicki Been, "Impact Fees and Housing Affordability," *Cityscape: A Journal of Policy Development and Research*, vol. 8, no. 1 (2005): 139-185, and G.S. Burge, "Impact Fees in Relation to Housing Prices and Affordable Housing Supply," *A Guide to Impact Fees and Housing Affordability*, Washington, D.C.: Island Press, (2008).
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- ⁸⁶ Planned residential developments in which houses can only be sold (or rented to) people above a certain age, such as 55.
- ⁸⁷ The land consuming effect of Boston's large lot zoning is illustrated by its large urban footprint, which at the metropolitan region level (combined statistical area) exceeds all urban areas in the world with the exceptions of New York and Tokyo-Yokohama. Yet, the population of Boston's urban footprint is only one-third that of New York and one-fifth that of Tokyo-Yokohama. See Wendell Cox, "The Evolving Urban Form: Sprawling Boston," *Newgeography*, July 16, 2015. Available online at <http://www.newgeography.com/content/004987-the-evolving-urban-form-sprawling-boston>.
- ⁸⁸ Another density regulating measure is the floor space index (FSI) or floor area ratio (See Alain Bertaud, Mumbai FAR/FSI conundrum, July 20, 2011.

Available online at http://alainbertaud.com/wp-content/uploads/2013/06/AB-Mumbai-FSI-Conundrum-Revised_June-2013_kk-ab1.pdf), which limits the amount of floor space that can be built on particular plots. An FSI is effectively a height limit. Bertaud, a former principal planner at the World Bank, shows that Mumbai has an FSI that is minuscule in an international context. Its highest FSI is less than one-sixteenth that of Vancouver, and Mumbai's FSI is lower than that of Vancouver for the first 25 kilometres from the city centre, despite Mumbai's far larger population. This has seriously decreased the standard of living in Mumbai and is associated with a substantial increase in slum populations. FSIs of this severity that cover so much of a housing market are unknown in North America.

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⁹⁰ See for example, Amber C. McCullagh and Robert W. Gilmer, "Neither Boom nor Bust: How Houston's Housing Market Differs from Nation's," *Houston Business*, January 2008. Available online at <http://dallasfed.org/assets/documents/research/houston/2008/hb0801.pdf>.

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⁹² Peter Ganong and Daniel Shoag, "Why Has Regional Income Convergence in the U.S. Declined?" Research Working Paper Series, March 28, 2013. Available online at http://papers.ssrn.com/sol3/Delivery.cfm/SSRN_ID2241069_code1638787.pdf?abstractid=2081216&mirid=5 and Demographia, "Net Domestic Migration & Land Regulation by Severity of the Housing Bubble." Available online at <http://www.demographia.com/db-bubblehaff.pdf>.

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⁹⁴ Raven Saks, "Job creation and housing construction: Constraints on metropolitan area employment growth," *Joint Center for Housing Studies Working Papers*. Available online at http://www.jchs.harvard.edu/sites/jchs.harvard.edu/files/w04-10_saks.pdf.

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⁹⁹ Or even in anticipation of urban containment regulation (Ball et al., 2012).

¹⁰⁰ These challenges are further discussed in William A. Fischel, "Why are there NIMBYs?" *Land Economics* 77, no. 1 (2001): 144-152; U.S. Department of Housing and Urban Development, "'Why Not In Our Community?' Removing Barriers to Affordable Housing," U.S. Department of Housing and Urban Development, HUD's Office of Policy Development and Research, February 2005. Available online at <https://www.huduser.gov/portal/Publications/wnioc.pdf>; and David Schleicher, "City Unplanning," *Yale Law Journal* 122, no. 7 (2012).

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¹⁰⁴ New Zealand Parliament, "Order Paper and questions: 5. Housing Affordability and Availability – Productivity Commission Report," sitting date October 22, 2015. Available online at http://www.parliament.nz/en-nz/pb/business/qa/51HansQ_20151022_00000005/5-housing-affordability-and-availability%e2%80%94productivity.

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¹⁰⁶ Productivity Commission of New Zealand, "Using Land for Housing."

¹⁰⁷ Such as Glaeser and Gyourko (2008) and Andrews (2010).

¹⁰⁸ Cheshire et al., 2015.

¹⁰⁹ Bank of Canada analysis indicates that increases in household debt mainly come from the increase in home equity loans, while first mortgage debt has only grown modestly. Nevertheless, a financial collapse would likely have a disastrous effect on repayment of this debt, like that of first mortgages. Jeannine Bailliu, Katsiaryna Kartashova and Césaire Meh, "Household Borrowing and Spending in Canada," *Bank of Canada Review* Winter (2011-2012): 16-29.

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