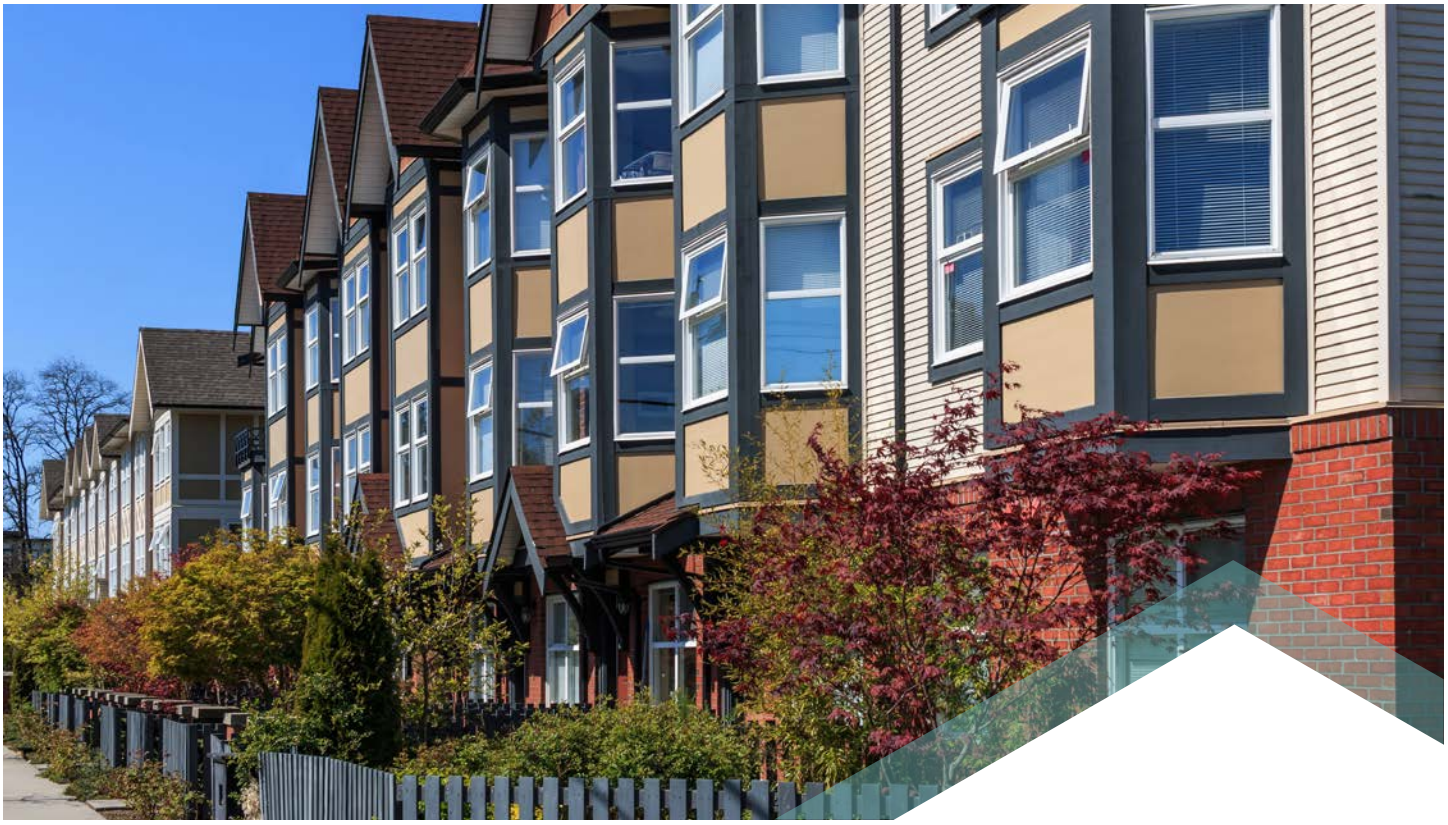

HOUSING RESEARCH REPORT

Is Rental Housing Affordable to Low-Income Households? A Supply-Side Perspective

Canada

CMHC SCHL

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Is Rental Housing Affordable to Low-Income Households? A Supply-Side Perspective

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July 2020

Abstract

The affordability of rental housing has been a growing concern across Canada over the past decades. A majority of the studies in this area tackle this problem by examining the number of households spending more than 30% of total income on shelter expenses and tracking how this estimate changes over time. In this paper, we propose an alternative measure of rental housing affordability. Using the Rental Market Survey (RMS) and the Longitudinal Administrative Databank (LAD), we analyze the trends in the percentage of rental housing stock that is affordable to households, given their income and the number of bedrooms needed. We find that, except for the CMAs in Quebec, low-income households needing one bedroom are being the worst affected by the growing affordability problem. A decomposition exercise suggests that accelerated growth in rents is responsible for the declining affordability across the CMAs.

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1 Introduction

There has been increasing concern regarding the prevalence and the persistence of housing unaffordability— defined as a shelter cost-to-income ratio (STIR) of more than 30%.[1]— in Canada. Estimates from census data files (2006, 2011, and 2016) show that about one-fourth of Canadian households spent more than 30% of total household income on shelter expenses; in other words, they are considered to live in housing that is unaffordable. The situation is even more severe for renter households.

Indeed, the percentage of renter households spending more than 30% of income on shelter has stubbornly remained, on average, at around 40% from 2006 to 2016. This relatively high rate of unaffordability suggests that a small increase in rents could have a significant impact on the household's ability to afford other non-housing necessities such as food, medicine, clothing and transportation, increasing the risk of homelessness. The grave concerns regarding the affordability of housing prompted the Government of Canada to launch the National Housing Strategy (NHS) with an ambitious target of making housing affordable for everyone in Canada by 2030.

Studies assessing the affordability of rental housing typically measure the degree of affordability using the percentage of households living in unaffordable housing (see for example Moore and Andrejs (2004); Luffman (2006); Simonova (2019) and Shan (2019)), that is, these studies ask how many households are spending more than 30% of their income on shelter. While this approach provides solid ground for the empirical examination of the affordability problem, it reflects merely the rising costs of housing and does not address the supply of rental units that Canadians can in fact afford. This study

[1]Typically, for renters, shelter cost includes rents and payments for electricity, fuel, water and other municipal services where applicable. For homeowners, it includes mortgage payments, property taxes, condominium fees, and payments for electricity, fuel, water and other municipal services where applicable.

aims to address this gap in the literature.

Specifically, this study analyzes the trends in housing unaffordability directly from the supply side of the rental housing market, questioning instead how much of the existing rental stock is affordable to households within a given income class. We also take into account the needs in terms of housing suitability—the required number of bedrooms given the size and makeup of the family.[2] Simply put, we ask: given the household's income, bedroom needs and rent, what percentage of the existing rental stock is affordable and how has this changed overtime?

This approach merits attention for two reasons. First, it augments the story around affordability of rental housing from both demand and supply point of views, allowing researchers to identify gaps between households' bedroom needs and the existing stock. Second, it lends a natural path toward a decomposition exercise whose results yield further insights on the proximate factors driving changes in the affordable rental stock. Our findings suggest that, across all the census metropolitan areas (CMA) considered in this study, low-income households who need one-bedroom units are particularly impacted by an acute undersupply of affordable rental units across the country.

There are four main takeaways from our analysis. First, we find that only four types of households are unable to afford 100% of the existing rental stock. These are households in the bottom two income quintiles needing one bedroom and households in the bottom income quintile needing two or three bedrooms. Second, households in the bottom income quintile who need one bedroom are being worst affected by the decline in affordability. More specifically, in the majority of the CMAs analyzed, the percentage

[2] According to the National Occupancy Standard (NOS), suitable housing is housing that has enough bedrooms given the household size and makeup. Enough bedrooms means one-bedroom for each cohabiting adult couple, lone parent, unattached household member aged 18 or older, same-sex pair of children under 18, and additional boy or girl in the family, unless there are two opposite-sex children under 5 years old, in which case they are expected to share a bedroom. A household of one individual can occupy a bachelor unit.

of one-bedroom dwellings affordable to households in this income group was no more than 5% of the one bedroom rental stock between 2002 and 2016. Third, we observe a strong correlation in affordability trends among CMAs of the same province, suggesting province-level factors are important in explaining affordability changes at the CMA level; and, fourth, we observe a negative correlation between the proportion of one bedroom rental dwellings affordable to households in the bottom of the income distribution and the incidence of core housing need (CHN).[3] This observation suggests that an increase in the stock of one-bedroom dwellings renting for 30% or less of the income of households in this income class could potentially reduce the incidence of CHN.

In addition, we decompose the changes in the percentage of the affordable rental stock into two components—changes in affordability due to changes in income, holding rents constant, and changes in affordability due to changes in rents, holding income constant. This exercise answers whether the erosion in the proportion of affordable dwellings is due to growth in rental prices outpacing growth in income over time or vice versa. The findings from this analysis indicate that, indeed, where there are positive changes in the percentage of affordable dwellings, increase in income accounts for a larger percentage of the change relative to the increase in rents and, where there are erosions in the percentage of affordable rental dwellings, the increase in rents accounts for much of the change.

The rest of the paper is organized as follows. The next section outlines the data and

[3] A household is in core housing need if its housing doesn't meet one or more of the adequacy, suitability or affordability standards, and it would have to spend 30% or more of its before-tax income to access local housing that meets all three standards. Adequate housing here refers to housing that residents believe doesn't require major repairs. Major repairs include defective plumbing or electrical wiring, or structural repairs to walls, floors or ceilings. Suitable housing is housing with enough bedrooms given the household's size and makeup and affordable housing is housing that costs less than 30% of before-tax household income. If a housing unit meets these three housing standards, it is said to be acceptable. Assessing whether a household is in core housing need involves two steps: determining whether or not the household lives in acceptable housing and if they don't, determining whether its before-tax income is sufficient to access acceptable housing (CMHC, 2014).

methods. Section 3 presents the results and section 4 concludes.

2 Data and methods

2.1 Data and variables

The rental housing market data for this analysis come from the Canada Mortgage and Housing Corporations (CMHC) Rental Market Survey (RMS) for the years 2002 to 2016. The RMS is conducted annually in all urban areas with a population of 10,000 or more and targets only purpose-built privately owned apartment rental buildings with at least three units that have been on the market for at least three months. The survey collects data on market rent, availability and turnover for all sampled units. Even though the survey sample changes every year, the sampling approach is consistent, which makes RMS samples consistent and comparable over time.

The survey focuses primarily on rental dwellings in the primary market, which largely covers landlords owning three or more rental units, and excludes the secondary rental market. This exclusion can potentially bias our estimation if average rents and distribution of dwelling types in the two markets are systematically different. A CMHC analysis of the two markets using the 2011 National Household Survey (NHS) found that average rents are slightly lower in the primary market than in the secondary market (CMHC, 2016). Given that our analysis focuses largely on low-income households, this therefore implies that our estimated stock of units affordable to low-income households will actually be overestimated because the same dollar could buy more housing in the primary market than in the secondary market. The implication of this observation will be discussed in the last section. The same CMHC study also found that low-income households are equally likely to rent in the primary or secondary market, so they are

not significantly overrepresented or underrepresented in any of the rental markets.

Five main variables are extracted from the RMS: *rents, unit type, CMA, province* and *year*. The variable *rents* is recorded in nominal values and is used as a proxy for shelter cost.[4] The variable *unit type* defines the number of bedrooms in the unit. This variable has five categories: studio, one bedroom, two bedrooms, three bedrooms, and four or more bedrooms. We merge the studio and one-bedroom categories because both types are characterized as suitable housing for households requiring one bedroom as per the NOS. We exclude from the analysis , four or more bedrooms category which represents about 0.4% of the sample, because there are not enough sampled units to allow for a year-by-year analysis. This exclusion leaves a total sample size of about 24 million observations, averaging about 1 million observations for each cycle of the survey. A total of 23 CMAs from nine provinces are included in the study. Other CMAs are excluded because of inconsistent data coverage across the survey cycles.

Household-related data is obtained from the Longitudinal Administrative Databank (LAD). The LAD comprises a 20% sample of annual tax filers (representing an average of more than four million annual individual tax filers between 2000 and 2016) and contains data on individual and household income and demographics. The data set has two main components—the children's file and the family/individual file. We use the information from both files (number of adults, number of children, sex, age) to estimate the household size and the number of bedrooms required.[5]

We follow the definition of total household income as per the Canada Revenue Agency

[4]It is possible that rents for some buildings will cover some utilities like water, but because we do not observe which utilities are included and which ones are not, we simplify the analysis by proxying utility costs with rents.

[5]A household here refers to Statistic Canada's definition of census family, defined as a married couple and the children, if any, of either and/or both spouses; a couple living common law and the children, if any, of either and/or both partners; or a lone parent of any marital status with at least one child living in the same dwelling and that child or those children.

(CRA).[6] Total household income is defined as the sum of income from the following sources: Canada/Quebec Pension Plan benefits, capital gains/losses, dividends, employment earnings, interest and investment, Old Age Security pension, pension and superannuation income, rental income, self-employment income, employment insurance benefits, social assistance payments and alimony or maintenance income.[7] Given that it is impossible to distinguish between renters and homeowners in the LAD, we focus primarily on households at the bottom of the income distribution as they are more likely to be renters (Gensey, 2019).

2.2 Methods

To estimate the percentage of the rental dwellings affordable to households in different income quintiles based on the number of bedrooms needed, we first group all households into three categories of bedroom need, that is, households who need one-bedroom, households who need two-bedrooms, and households who need three-bedrooms. Within each bedroom need category, we stratify the households by income quintile and define the affordability thresholds as the 30% of the quintile cut-off values. These calculated affordability thresholds reflect the maximum 30% housing expense for each group of households in each income quintile. Next, we determine whether a rental unit is affordable to households in each income quintile by comparing the rental price to their respective affordability thresholds. For example, the rental price of each one-bedroom unit in a CMA is compared with the affordability thresholds for households in the bottom income quintile needing one bedroom to determine if this one-bedroom unit is indeed affordable to the said population. The rental unit is considered to be affordable

[6]There are two estimates for total household income in the data set, one based on a definition by the Canada Revenue Agency (CRA) and the other based on Statistics Canada's definition. We conducted the analysis using both definitions and found no significant differences in the results.

[7]A more detailed breakdown of each income category and the associated tax line code can be found on page 14 here: LAD Data Dictionary, 2017.

if the rental price does not exceed the associated affordability threshold. Finally, using the number of bedrooms needed and the income quintile, we estimate the percentage of the rental stock that is affordable to households.

For the decomposition exercise, we divide the data into three periods—2002-2006, 2007-2011 and 2012-2016—corresponding to the state of the rental market before, during and after the 2008 recession. Then using the bedroom category and income quintile, we estimate the average percentage point change in the percentage of units in a bedroom category that are affordable per year and average it over each period, which we then decompose into changes due to income and rent as follows:

$$\begin{aligned}\Delta_i &= \frac{1}{n}\sum_{n=1}^{n}(P^{t}_{Aff_t} - P^{t-1}_{Aff_t-1}) \\ &= \frac{1}{n}\sum_{n=1}^{n}(P^{t}_{Aff_t} - P^{t-1}_{Aff_t-1} - P^{t-1}_{Aff_t} + P^{t-1}_{Aff_t}) \\ &= \underbrace{\frac{1}{n}\sum_{n=1}^{n}(P^{t}_{Aff_t} - P^{t-1}_{Aff_t})}_{\text{Due to Rent}} + \underbrace{\frac{1}{n}\sum_{n=1}^{n}(P^{t-1}_{Aff_t} - P^{t-1}_{Aff_t-1})}_{\text{Due to Income}}\end{aligned} \tag{1}$$

Where Δ is the average percentage point change; i represents the period (2002-2006, 2007-2011 or 2012-2016); n is the number of years; $t = 2002, 2003...2016$, and P_{Aff} is the percentage of the rental stock that is affordable.

3 Results

3.1 Descriptive analysis

To recap, we use the LAD to group households based on the number of bedrooms needed considering the size and makeup of the family as suggested by the NOS, and we stratify each category by quintile of the household income distribution. This constitutes

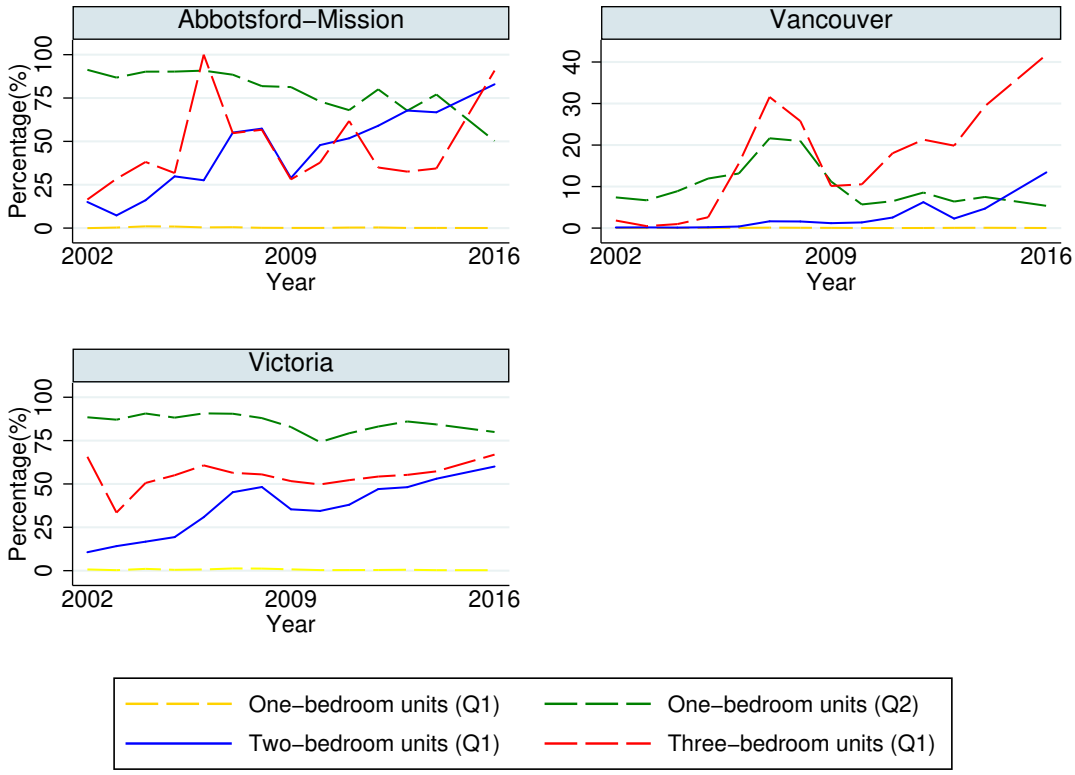
the potential demand for rental housing. We use the RMS to paint the rental supply landscape, and then make comparisons between the potential demand and supply to speak to whether the rental units that meet the bedroom requirement are affordable to the households based on the 30% affordability threshold.

We have a few interesting results. First, we find that the households in the lowest income quintiles are ones experiencing the brunt of the affordability problems, specifically households in the lowest two income quintiles needing one bedroom and households in the bottom income quintile needing two or three bedrooms. Since all other households appear to be able to afford rents within the 30% threshold, we concentrate our discussion on the aforementioned groups.

Figures 1 to 5 show the percentages of rental dwellings that are affordable, by number of bedrooms needed, to different income groups for selected CMAs in British Columbia, the Prairies, Ontario, Quebec, and Atlantic Canada from 2002 to 2016. Each line in the figures represents the percentage of rental units affordable to households in the bottom or second lowest income quintile given their bedroom need. In figure 1, for example, the yellow line represents the percentage of one-bedroom units affordable to all households in the lowest income quintile (Q1), and the green line represents the percentage of one-bedroom units affordable to all households in the second lowest income quintile (Q2).

Our second key finding is that, in almost all cases considered, we observe severe and persistent shortages of one-bedroom units that would rent for less than 30% of total income among households in the bottom income quintile (Q1). Figure 1 indeed shows the near-zero percentage of one bedroom units affordable to all households in the bottom income quintile in all three CMAs in British Columbia. The situation for this group of households is not much better when we consider other CMAs (see figures 2 to 5), with some exceptions, such as a spike in affordability in Saskatoon in 2006, though this

FIGURE 1: Percentage of affordable rental units by number of required bedrooms and income groups: British Columbia



Data sources: Rental Market Survey (RMS) and Longitudinal Administrative Databank (LAD), Note: Q1 = income quintile 1 or the lowest quintile, Q2 = income quintile 2, Q3 = income quintile 3.

deteriorated thereafter, improvements in the last decade in Saguenay, Sherbrooke and Trois-Rivières, and a relative stability in affordability of around 10% to 18% of dwellings in Saint John.

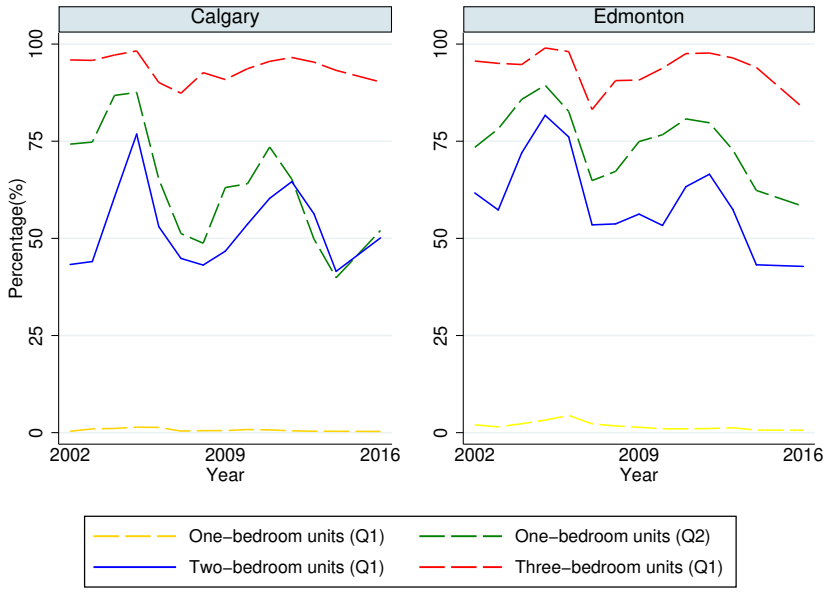
Next, we observe strong correlations in the affordability trends among CMAs in the same provinces, implying that there could be province-specific factors driving these observed trends. Focusing on households in the lowest income quintile needing units with two or three bedrooms, we find a general upward trend in British Columbia, improving significantly over the last 15 years. In Abbotsford-Mission, for example, the percentages of affordable two- and three-bedroom dwellings rose dramatically from around 20% in

the early 2000s to over 80% in 2016. In Vancouver, the increase was the largest for the percentage of affordable three-bedroom units, which rose from nearly zero in 2005 to over 40% in 2016, while the percentage of affordable two-bedroom units affordable saw a more modest increase of about 10 percentage points during the last five years. Victoria also saw a climb in the percentages of affordable two-bedroom units, from about 15% in 2002 to 60% in 2016, and three-bedroom units, from about 40% in 2003 to over 60% in 2016. For households in the second lowest income quintile (Q2) needing one bedroom, the percentages of units deemed affordable in Vancouver and Abbotsford-Mission appear to drop significantly. In Vancouver, the percentage of these units appears to drop to around 10%, after a temporary jump to 20% in 2008, and in Abbotsford-Mission, the figure declines significantly from close to 100% in 2002 to slightly above 50% in 2016.

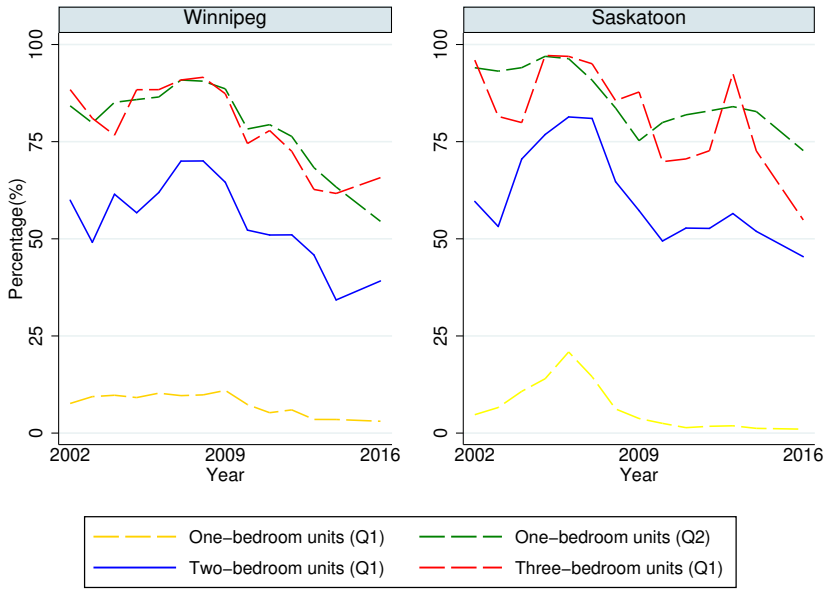
In the Prairies, there is a general downward trend for all types of units affordable to the two lowest income quintiles considered. We posit that, even within the same province, the CMAs with similar economic factors appear to have more similar patterns. Figures 2a and 2b demonstrate this point—Calgary and Edmonton depict a pattern, while Winnipeg and Saskatoon portray another. This supports our earlier hypothesis that there could be economic factors specific to the region that influence the trend observed. It is also worth noting that, though the percentage of three-bedroom units affordable to all households in Q1 remain relatively high in Calgary and Edmonton, the figures decline significantly by about 20 percentage points in Winnipeg and by almost 50 percentage points in Saskatoon from 2002 to 2016.

No specific pattern emerges for the CMAs in Ontario (figure 3), in fact, there appears to be quite a variation among these CMAs over the period of the study. As expected, the affordability problem in Toronto can be seen clearly in the persistent shortages of affordable rental supply, implying that households in these bottom income groups needing

FIGURE 2: Percentage of affordable rental units by number of required bedrooms and income groups: The Prairies



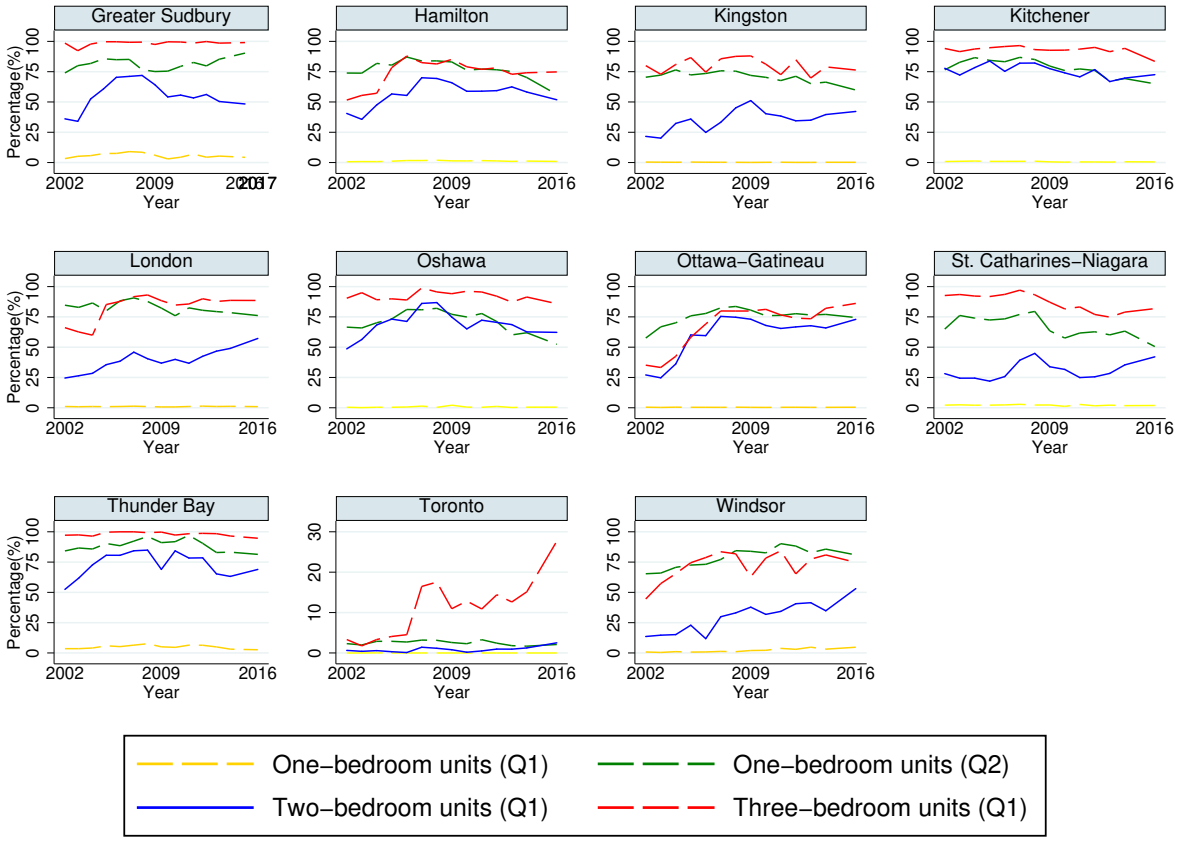
(a) Calgary and Edmonton



(b) Winnipeg and Saskatoon

Data sources: Rental Market Survey (RMS) and Longitudinal Administrative Databank (LAD), Note: Q1 = income quintile 1 or lowest quintile, Q2 = income quintile 2, Q3 = income quintile 3.

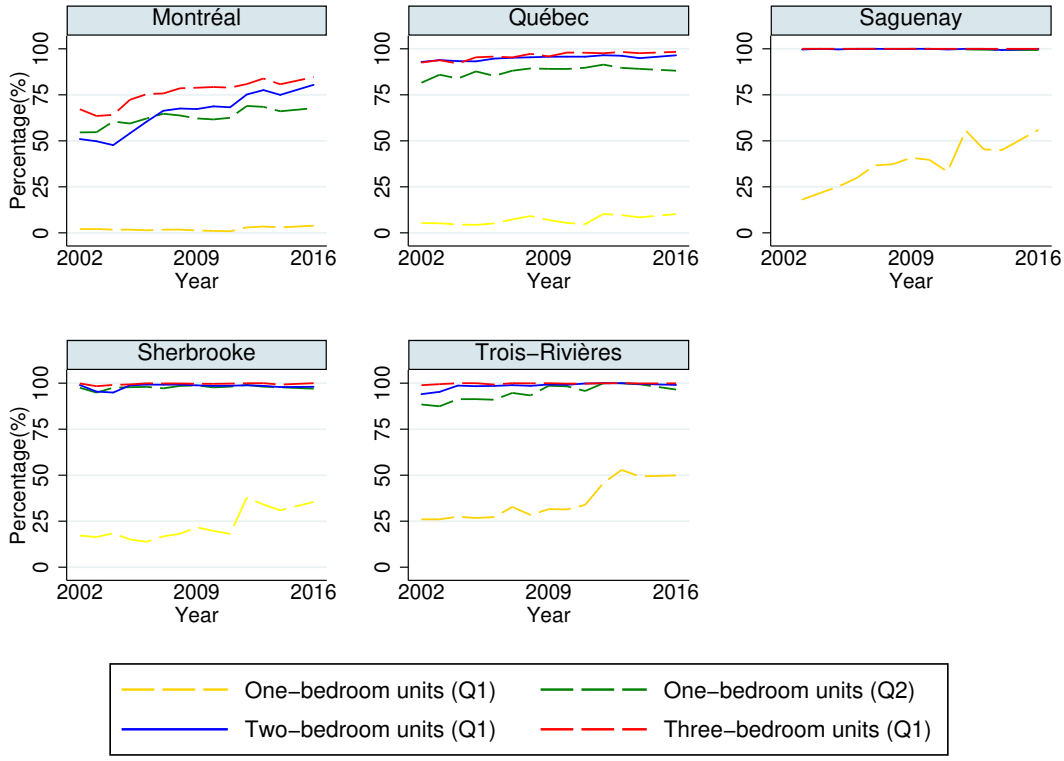
FIGURE 3: Percentage of affordable rental units by number of required bedrooms and income groups: Ontario



Data sources: Rental Market Survey (RMS) and Longitudinal Administrative Databank (LAD), Note: Q1 = income quintile 1 or lowest quintile, Q2 = income quintile 2, Q3 = income quintile 3.

one-, two- or three-bedroom dwellings have significant difficulties finding housing that would cost below 30% of their total household income. The figures largely remain below 5%, with the exception of the percentage of three-bedroom units affordable to households in Q1, which saw a jump to around 18% in 2007 and again rose to almost 30% in 2016. Ottawa-Gatineau also appears to have a remarkable surge in the percentages of two- and three-bedroom units that are affordable to households in the bottom income quintile, from about 30% in 2002 to approximately 75% in 2016.

FIGURE 4: Percentage of affordable rental units by number of required bedrooms and income groups: Quebec

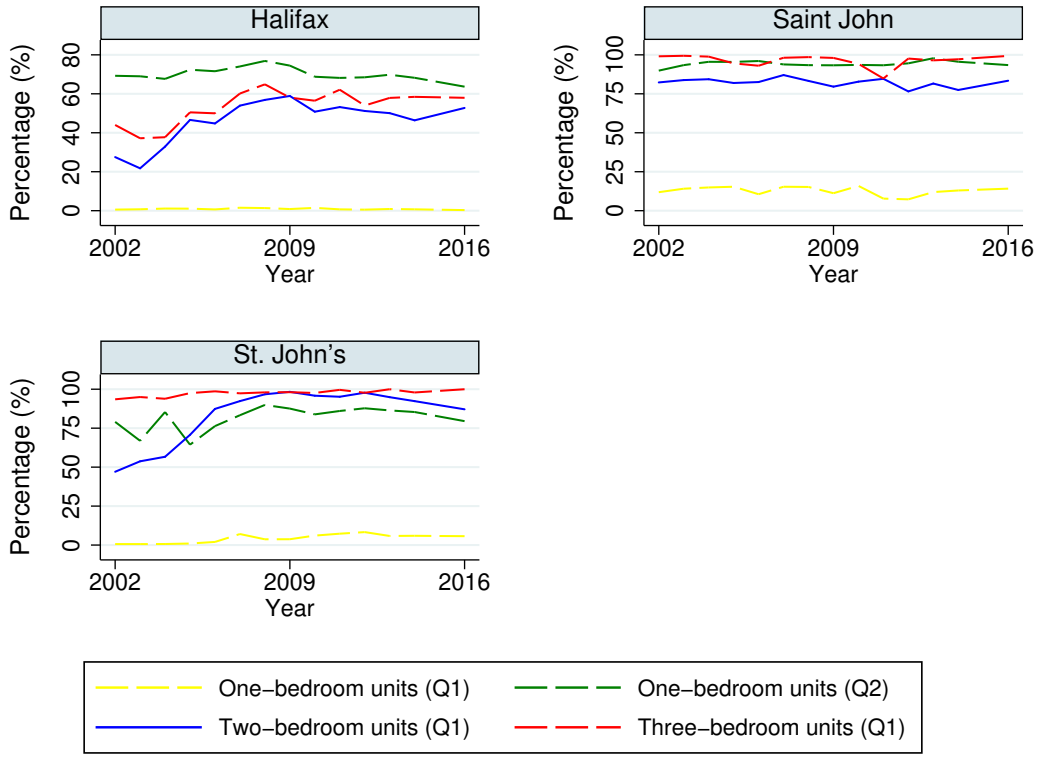


Data sources: Rental Market Survey (RMS) and Longitudinal Administrative Databank (LAD), Note: Q1 = income quintile 1 or lowest quintile, Q2 = income quintile 2, Q3 = income quintile 3.

In the case of Quebec, figure 4 shows an exceptional situation in all the CMAs in this study. Except for the households in the lowest income quintile needing a one-bedroom unit, all other households in vulnerable income groups needing one, two or three bedrooms are likely to find rental units that do not cost them more than 30% of their total household income—the trends are at 100% or near 100% over the period observed. The figures in Montréal, though relatively lower than those in the other CMAs in the province, trend upwards and show a much more tolerable situation when compared with those prevailing in other major metropolitan areas such as Toronto and Vancouver.

In Atlantic Canada (figure 5), Halifax and St. John's seem to exhibit similar trends,

FIGURE 5: Percentage of affordable rental units by number of required bedrooms and income groups: Atlantic Canada

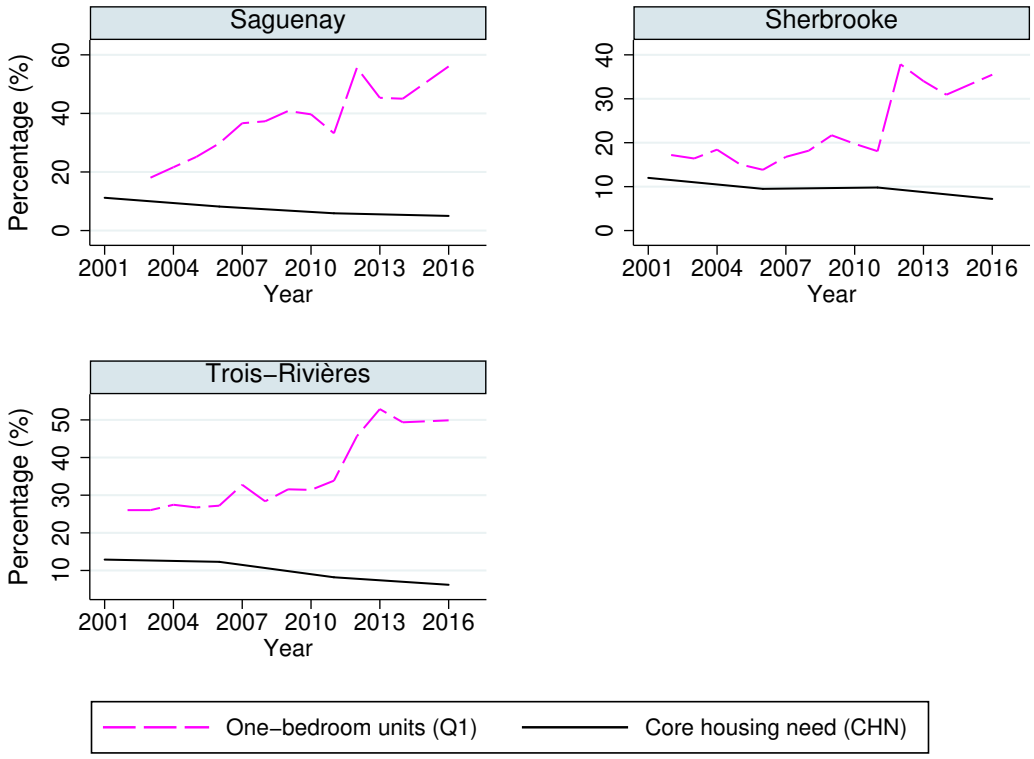


Data sources: Rental Market Survey (RMS) and Longitudinal Administrative Databank (LAD), Note: Q1 = income quintile 1 or lowest quintile, Q2 = income quintile 2, Q3 = income quintile 3.

with both having experienced an increase in the percentage of affordable units in 2008 and a levelling off thereafter. Notwithstanding the pervasive shortages of one-bedroom units that are affordable to households in the lowest income quintile, from 2009 to 2016, Saint John and St. John's boast near 100% of supply being affordable to every other household while Halifax shows percentages hovering around 60% to 75%.

Lastly, we find a negative correlation between the incidence of core housing need (CHN) and the percentage of one-bedroom dwellings affordable to households in the bottom income quintile. Figure 6 demonstrates this point, drawing from Saguenay, Sherbrooke and Trois-Rivières. We exploit the fact that all other households, except the ones

FIGURE 6: Core housing need and percentage of one-bedroom rental units affordable to households in the lowest income quintile



Data sources: Rental Market Survey (RMS) and Longitudinal Administrative Databank (LAD); Note: Q1 = income quintile 1 or lowest quintile.

in the bottom income quintile needing one bedroom, can afford 100% of the stock of the type of bedroom units they need to demonstrate this correlation. As figure 6 shows, an increase in the percentage of one-bedroom dwellings affordable to all households in the bottom income quintile needing one bedroom is associated with a decrease in the incidence of core housing need. This finding has a significant implication: an increase in the supply of one-bedroom rental units that do not cost more than 30% of total income among those in the bottom of the income distribution could potentially drive down CHN rates.

In addition, tables 2, 3 and 4 show median rents, average numbers of rental units and

medians of quintile cut-off values, respectively, and are included for reference purposes. Table 2 clearly demonstrates that median rents have increased significantly across all CMAs and for all different bedroom unit types. During the same period, the average numbers of rental units remained stagnant or in some cases declined, as can be seen in table 3.

3.2 Decomposition analysis

We perform a decomposition exercise as outlined in section 2 to quantify how much of the observed changes in the percentages of rental dwellings affordable is due to changes in income levels, holding rents constant, and how much is due to changes in rental prices, holding income constant. We focus our analysis solely on the rental supply for the most vulnerable population suggested in the previous section, that is, households in the lowest income quintile needing one-bedroom rental units.

Table 1 contains results from the decomposition analysis, demonstrating the average percentage point changes for three separate periods: 2002 to 2006, 2007 to 2011 and 2012 to 2016. The column *Change* contains the average annual percentage change in the percentage of one-bedroom rental units affordable to all households in the bottom income quintile for each CMA during the five-year period. A positive number signifies an average increase in the percentage of affordable one-bedroom dwellings and a negative number signifies an average decrease. For instance, Calgary saw an average rise of 0.25 of a percentage point in the percentage of affordable units in the earlier period, and an average decline of 0.13 and 0.12 percentage point in latter periods.

The column *Rent* illustrates the change in the percentage of affordable units due to a change in rents, holding income level constant, and the column *Income* illustrates the change in the percentage of affordable units due to a change in the income level, holding

rents constant. Note that the sum of the columns *Rent* and *Income* equals to the value in the column *Change*. Take for example the result for Québec CMA for the last five years of the study (2012-2016), holding income unchanged, the rise in rental prices would have dampened the average percentage of affordable units by 2.38 percentage points. On the contrary, holding rent unchanged, the increase in income level would have resulted in a rise in the average percentage of affordable units by 3.62 percentage points. The two forces work against one another, and thus, the average change in the percentage of affordable one-bedroom units in the Québec CMA during that period was a mere 1.24 percentage points.

A clear pattern emerges from table 1. In all cases, we find that contractions in the proportions of one-bedroom dwellings affordable are driven by the increases in rental prices surpassing the increases in income. Conversely, in cases where the average percentage of affordable one-bedroom units increased, the increase in income primarily explains the observed phenomenon. Therefore, excessive growth in rents is broadly responsible for the sharp decline in the affordability of rental housing, and to understand the fundamental drivers, we need to explore the drivers of growth in rents. We will leave this analysis for future studies to explore.

TABLE 1: Decomposition of Changes in the Percentages of One-Bedroom Rental Units Affordable to the Lowest Income Quintile Households: Rent vs Income

	2002-2006			2007-2011			2012-2016		
CMA	Change	Rent	Income	Change	Rent	Income	Change	Rent	Income
Calgary	0.25	-0.43	0.68	-0.13	-0.11	-0.01	-0.12	-0.07	-0.05
Edmonton	0.60	-2.00	2.6	-0.69	-0.37	-0.32	-0.10	-0.18	0.08
Abbotsford-Mission	0.10	-0.33	0.43	-0.02	0.00	-0.02	-0.07	0.00	-0.07
Vancouver	0.00	-0.03	0.03	-0.01	-0.01	0.01	0.02	-0.01	0.03
Victoria	0.00	-0.55	0.54	-0.07	-0.08	0.01	-0.02	-0.09	0.07
Saskatoon	4.03	-6.79	10.83	-3.89	-1.71	-2.18	-0.06	-0.30	0.24
Winnipeg	0.66	-2.35	3.01	-1.01	-0.88	-0.13	-0.58	-0.47	-0.12
Greater Sudbury	1.06	-3.10	4.16	-0.62	-2.71	2.09	0.31	-0.26	0.56
Hamilton	0.24	-0.46	0.70	-0.01	-0.25	0.24	-0.12	-0.40	0.28
Kingston	-0.04	-0.09	0.05	0.00	-0.10	0.10	-0.01	-0.10	0.09
Kitchener	0.03	-0.27	0.30	-0.09	0.00	-0.09	0.04	-0.18	0.22
London	0.00	-0.33	0.33	0.01	-0.14	0.15	0.04	-0.16	0.19
Oshawa	0.06	-0.07	0.13	-0.04	-0.04	-0.01	0.01	0.19	-0.18
Ottawa-Gatineau	-0.02	-0.08	0.06	-0.01	-0.15	0.15	-0.01	-0.12	0.11
St. Catharines-Niagara	0.05	-1.02	1.07	0.07	-0.41	0.49	-0.33	-0.55	0.23
Thunder Bay	0.42	-1.05	1.48	0.25	-1.69	1.94	-1.11	-0.93	-0.18
Toronto	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Windsor	0.01	-0.21	0.22	0.58	-0.58	1.16	-0.21	-1.05	0.83
Saint John	-0.33	-2.95	2.62	-0.56	-3.45	2.89	1.75	-4.02	5.77
St. John's	0.35	-1.16	1.51	1.05	-4.28	5.33	-0.44	-1.26	0.82
Halifax	0.02	-0.41	0.43	0.01	-0.36	0.37	0.01	-0.10	0.11
Montréal	-0.17	-0.74	0.57	-0.11	-0.54	0.43	0.69	-1.26	1.95
Saguenay	3.91	-8.38	12.13	0.69	-8.84	9.53	3.93	-4.98	8.91
Sherbrooke	-0.84	-3.66	2.82	0.85	-5.72	6.57	4.29	-6.63	10.92
Trois-Rivières	0.30	-5.81	6.11	1.33	-6.14	7.46	5.17	-4.28	9.45
Québec	-0.05	-2.03	1.98	-0.08	-1.96	1.88	1.24	-2.38	3.62

4 Conclusion

This study examines the trends in the proportions of rental dwellings affordable to Canadian households given bedroom need and income levels. We find that low-income households, particularly those requiring one bedroom, are the most impacted by the chronic undersupply of low-income rental housing in the country. We also find that affordability rates in CMAs of the same province tend to follow similar trends, suggesting that province-level factors could be the main drivers of the trends. Our analysis also shows a negative correlation between the changes in the percentage of one-bedroom units that are affordable to the poorest Canadians and the incidence of CHN. This finding implies that, if the proportion of one-bedroom units that is affordable to the bottom income earners has been flat over time, then so should the incidence of CHN. This is indeed what we observe in the data. This finding suggests that targeting households at the lowest income level needing one-bedroom units could have a role in reducing unaffordability in the rental housing space as well as the incidence of CHN.

The natural question that follows, then, is which households are likely to be in a low-income situation and require one bedroom? In all the CMAs included in this study, these are households earning less than $25,000 per year. Households who fit this profile are composed of young adults, low-income single parents or seniors. However, estimates show that seniors (person aged 65 or older) have one of the highest homeownership rates in Canada, at 75%, according to data from the 2016 Census (Gensey, 2019). Therefore, in the case of unaffordable rental housing, young adults and low-income single parents are likely the most impacted. This observation is not surprising. When housing affordability is measured by the STIR, affordability is correlated with income. As such, housing will appear to be less affordable to young adults and seniors, and more affordable to households at the peak of their earning profiles.

Given the previous conjecture that the affordability problem is also a natural phenomenon intertwining with the life-cycle earnings profile, it is plausible that some unaffordability is temporary, and that most young adults could transition out of such stage as they age, accumulate more human capital and, as a result, see their labour market earnings go up. We stress that CHN, thus, contains both transitory and permanent components that need to be discerned in policy making.

The decomposition exercise suggests that the proximate cause of the chronic and persistent unaffordability of rental housing among low-income households needing one-bedroom is largely due to the growth in rents consistently outpacing the growth in income. This means that affordability of rental housing could be addressed through policies that simultaneously slow down the growth in rents, for example, and increase the supply of low-cost one-bedroom units. At the same time, there also need to be policies aimed at increasing the income of those at the very bottom of the income scale to effectively alleviate the problems at hand.

Further analysis need to be done to explore the different province-level factors that drive rental affordability at the local level and also to decompose the incidence of CHN into permanent and transitory components to help policy makers target any intervention. We leave this to future research.

References

CMHC (2014). *Canadian Housing Observer*. Canada Mortgage and Housing Corporation. https://chbanl.ca/wp-content/uploads/Canadian-Housing-Observer-2014.pdf.

CMHC (2016). The Secondary Rental Market in Canada: Estimated Size and Composition. Canada Mortgage and Housing Corporation. https://assets.cmhc-schl.gc.ca/sf/project/cmhc/pubsandreports/pdf/68565.pdf?rev=960c40f1-b6d7-4cf0-ae6a-a832159ee503.

Gensey, T. (2019). *Homeownership in Canada*. Canada Mortgage and Housing Corporation.

Luffman, J. (2006). Measuring housing affordability. Statistics Canada.

Moore, E. and Andrejs, S. (2004). Canada's increasing housing affordability burdens. Housing Studies, 19(3):395–413.

Shan, R. (2019). Recent Refugee Housing Conditions in Canada. Canada Mortgage and Housing Corporation.

Simonova, E. (2019). Affordability of Rental Housing in Census Metropolitan Areas (CMAs). Canada Mortgage and Housing Corporation.

5 Appendix

TABLE 2: Median Rent by CMA and Number of Bedrooms

	2002-2006			2007-2011			2012-2016		
CMA	1-BDR	2-BDR	3-BDR	1-BDR	2-BDR	3-BDR	1-BDR	2-BDR	3-BDR
Calgary	685	820	850	920	1,100	1,174	1,050	1,250	1,259
Edmonton	595	725	799	830	1,009	1,169	950	1,200	1,350
Abbotsford-Mission	550	680	950	630	755	1,100	685	835	1,225
Vancouver	740	895	1,050	850	1,050	1,260	978	1,200	1,399
Victoria	615	780	985	750	950	1,275	825	1,050	1,453
Saskatoon	458	575	630	685	875	920	850	1,045	1,235
Winnipeg	531	675	749	608	800	914	762	985	1,172
Greater Sudbury	540	680	700	680	850	850	775	975	1,000
Hamilton	619	768	925	650	810	967	749	925	1,127
Kingston	650	785	890	725	879	990	840	1,015	1,185
Kitchener	660	770	875	717	835	950	804	944	1,084
London	600	730	835	675	801	914	748	877	995
Oshawa	750	850	981	800	900	1,038	895	994	1,150
Ottawa-Gatineau	729	875	1,018	795	936	1,100	894	1,050	1,237
St. Catharines-Niagara	631	749	811	699	821	899	780	916	990
Thunder Bay	565	695	615	600	738	760	728	875	1,025
Toronto	850	1,000	1,175	880	1,043	1,225	1,000	1,185	1,370
Windsor	650	800	848	625	775	900	662	816	959
Saint John	435	505	570	510	600	670	575	690	730
St. John's	510	575	645	570	670	725	740	865	895
Halifax	595	725	950	670	825	1,025	775	950	1,200
Montréal	550	650	730	600	705	800	650	761	850
Saguenay	380	460	500	425	510	560	470	568	605
Sherbrooke	380	480	570	435	550	650	470	585	695
Trois-Rivières	370	440	495	425	500	567	450	550	615
Québec	510	600	695	575	689	778	636	774	873

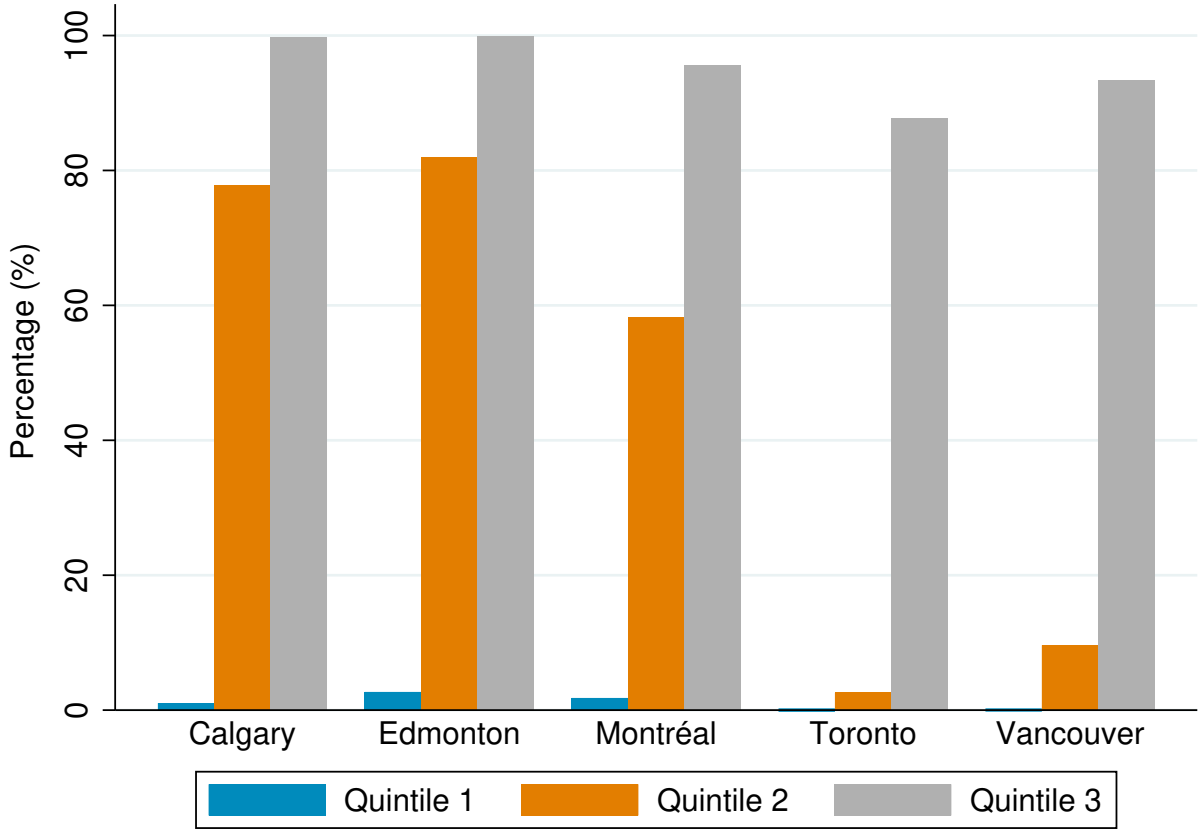
TABLE 3: Average Number of Rental Units by CMA and Number of Bedrooms

	2002-2006			2007-2011			2012-2016		
CMA	1-BDR	2-BDR	3-BDR	1-BDR	2-BDR	3-BDR	1-BDR	2-BDR	3-BDR
Calgary	14,960	30,126	8,167	13,737	26,579	7,017	14,360	27,874	7,231
Edmonton	26,947	48,873	23,742	24,020	43,894	20,834	25,273	49,729	20,962
Abbotsford-Mission	1,737	4,024	482	1,800	3,638	373	1,816	3,749	366
Vancouver	58,864	40,861	11,141	61,865	41,754	10,185	65,082	44,112	10,600
Victoria	14,161	12,956	2,266	14,741	13,746	2,180	14,680	13,484	2,053
Saskatoon	5,762	15,032	3,721	5,206	12,859	2,774	4,849	12,921	2,625
Winnipeg	25,435	34,030	4,842	23,476	33,357	4,020	23,928	35,916	4,874
Greater Sudbury	2,657	9,047	3,047	2,474	8,418	2,759	2,351	7,962	2,600
Hamilton	13,465	26,384	8,889	10,706	21,635	7,170	9,617	20,062	6,323
Kingston	2,966	9,650	1,187	3,293	10,747	1,205	3,387	11,371	1,300
Kitchener	5,669	20,075	5,203	6,823	25,459	5,413	6,491	22,903	4,874
London	11,259	28,553	8,826	12,727	33,730	8,309	12,462	32,751	7,191
Oshawa	2,533	8,999	4,311	2,635	9,360	4,149	2,438	8,788	3,890
Ottawa-Gatineau	31,807	52,236	23,615	32,679	53,678	23,144	29,047	47,181	19,491
St. Catharines-Niagara	4,486	12,947	3,932	4,133	11,864	3,216	3,848	11,416	2,929
Thunder Bay	1,460	4,115	1,041	1,826	4,704	1,111	1,711	4,554	1,027
Toronto	103,075	178,585	68,360	100,816	167,172	65,023	100,968	171,214	63,961
Windsor	5,289	6,930	1,095	6,219	8,329	1,270	5,843	7,438	1,081
Saint John	1,294	4,615	1,421	1,708	6,404	1,729	1,665	6,563	1,831
St. John's	1,577	3,776	852	1,245	3,407	824	1,267	3,334	761
Halifax	11,953	25,018	5,590	13,604	30,231	6,887	14,724	35,708	8,123
Montréal	85,071	111,637	29,678	90,827	128,140	35,726	77,346	110,242	30,328
Saguenay	781	3,024	1,669	1,137	4,474	2,383	1,293	4,359	1,962
Sherbrooke	4,799	13,670	5,129	6,396	18,573	7,238	6,179	18,212	7,554
Trois-Rivières	2,557	6,481	4,639	2,715	7,178	4,595	2,670	7,042	4,722
Québec	12,844	30,450	10,903	14,559	35,819	12,268	14,493	38,276	12,077

TABLE 4: Median Income of Households in the Lowest Income Quintile by CMA amd Number of Bedrooms

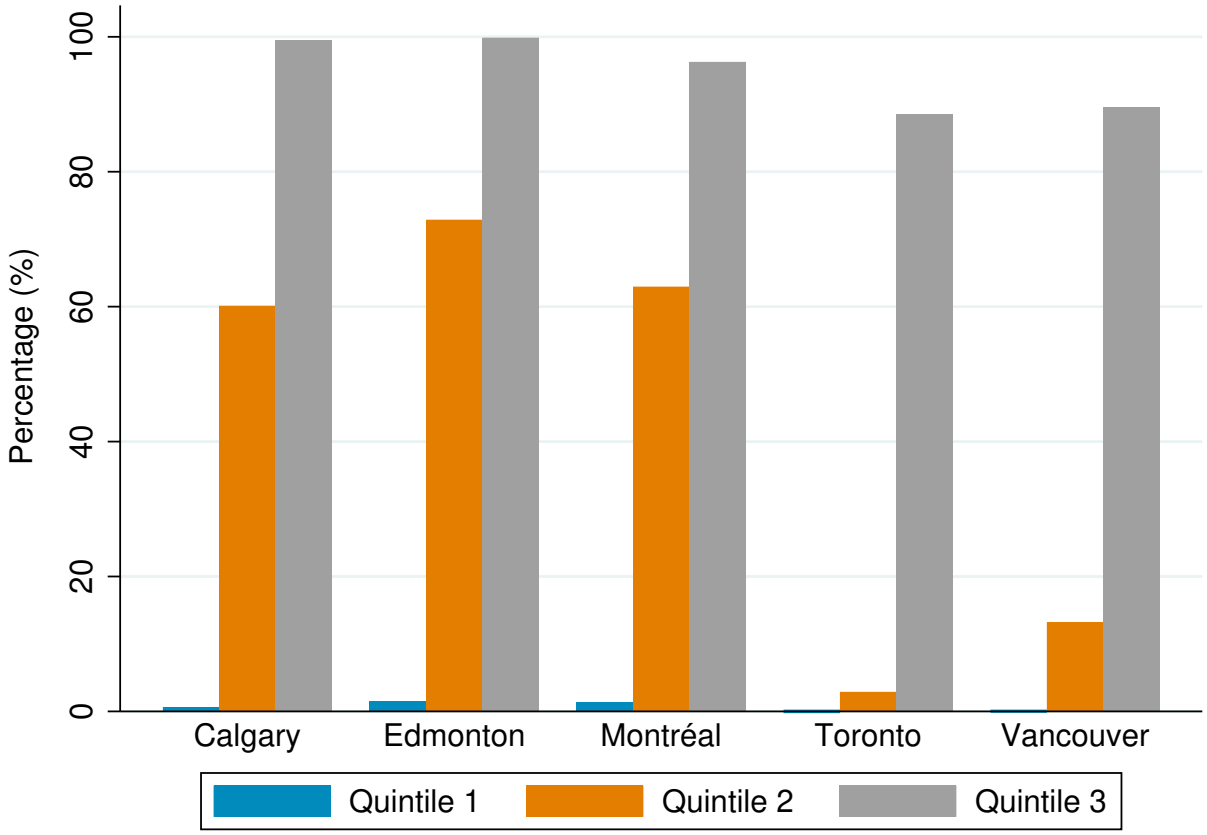
	2002-2006			2007-2011			2012-2016		
CMA	1-BDR	2-BDR	3-BDR	1-BDR	2-BDR	3-BDR	1-BDR	2-BDR	3-BDR
Calgary	16,800	32,900	43,400	20,500	43,500	57,000	22,150	50,150	62,500
Edmonton	16,300	31,200	40,900	20,400	41,700	53,900	22,500	48,000	62,100
Abbotsford-Mission	14,200	24,800	35,100	16,400	30,500	43,600	17,650	34,800	47,850
Vancouver	12,600	21,600	30,700	15,300	28,800	39,800	16,550	33,500	47,200
Victoria	15,900	27,500	39,800	18,700	36,700	52,800	19,750	41,550	58,600
Saskatoon	14,700	24,500	31,400	18,600	37,300	48,100	21,300	42,250	52,850
Winnipeg	14,700	28,100	34,600	17,000	34,000	48,800	18,100	37,100	49,200
Greater Sudbury	14,500	27,100	39,100	17,600	36,100	53,900	20,200	39,200	62,100
Hamilton	15,800	30,700	38,600	17,200	34,800	47,200	19,300	38,600	52,950
Kingston	15,000	29,000	39,100	16,900	34,500	49,700	19,150	37,750	55,200
Kitchener	16,400	34,400	46,700	18,100	37,700	50,300	19,150	40,800	55,350
London	15,100	27,100	35,300	16,500	31,000	42,500	18,550	34,300	46,250
Oshawa	17,300	35,900	44,600	19,000	39,300	52,500	20,350	41,200	57,100
Ottawa-Gatineau	15,100	33,200	39500	17,600	42,000	53,100	19,300	45,250	56,150
St. Catharines-Niagara	15,800	27,400	38,900	17,400	31,500	45,100	18,950	34,100	46,950
Thunder Bay	15,200	29,800	39,300	17,300	33,300	45,000	19,200	37,250	53,500
Toronto	13,100	26,000	34,600	14,200	30,900	41,300	15,700	33,700	46,350
Windsor	14,500	27,600	37,200	15,600	29,200	40,000	17,400	30,750	44,850
Saint John	13,800	23,600	34,400	17,000	29,800	42,800	18,400	32,450	44,700
St. John's	13,000	23,200	35,900	16,300	35,600	51,500	18,950	43,050	67,700
Halifax	14,300	26,200	34,500	17,000	34,100	44,100	18,500	37,550	50,250
Montréal	13,000	25,500	33,700	14,800	31,700	43,400	17,000	37,350	49,550
Saguenay	13,200	30,200	43,700	16,100	39,200	56,300	18,450	47,350	63,400
Sherbrooke	13,100	26,700	36,800	15,300	32,400	45,300	17,550	39,900	52,800
Trois-Rivières	12,900	26,900	37,800	15,400	33,500	46,200	17,900	37,150	53,250
Québec	14,300	34,200	47,800	17,300	44,500	62,500	19,750	51,700	72,950

FIGURE 7: Share of 1-bedroom units affordable for first three income quintiles, averaged over 2002-2006: Top 5 CMAs



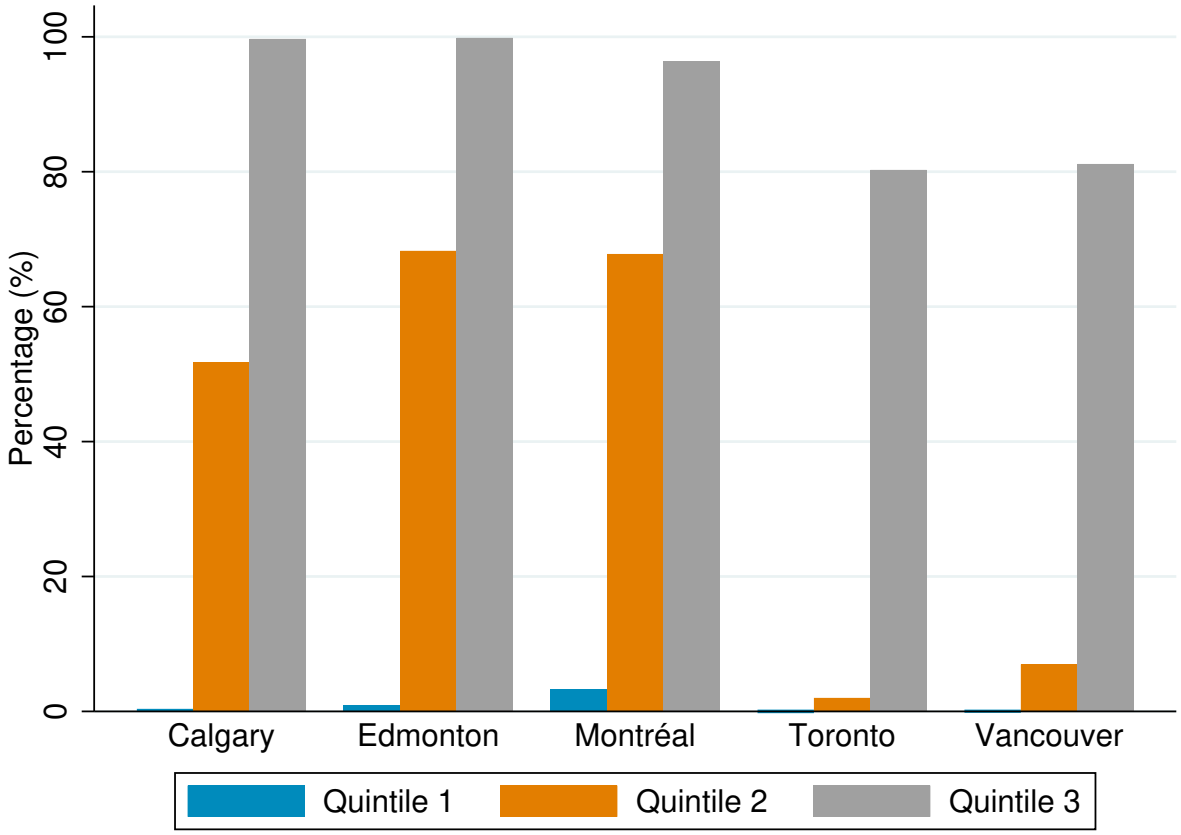
Data sources: Rental Market Survey (RMS) and Longitudinal Administrative Databank (LAD)

FIGURE 8: Share of 1-bedroom units affordable for first three income quintiles, averaged over 2007-2011: Top 5 CMAs



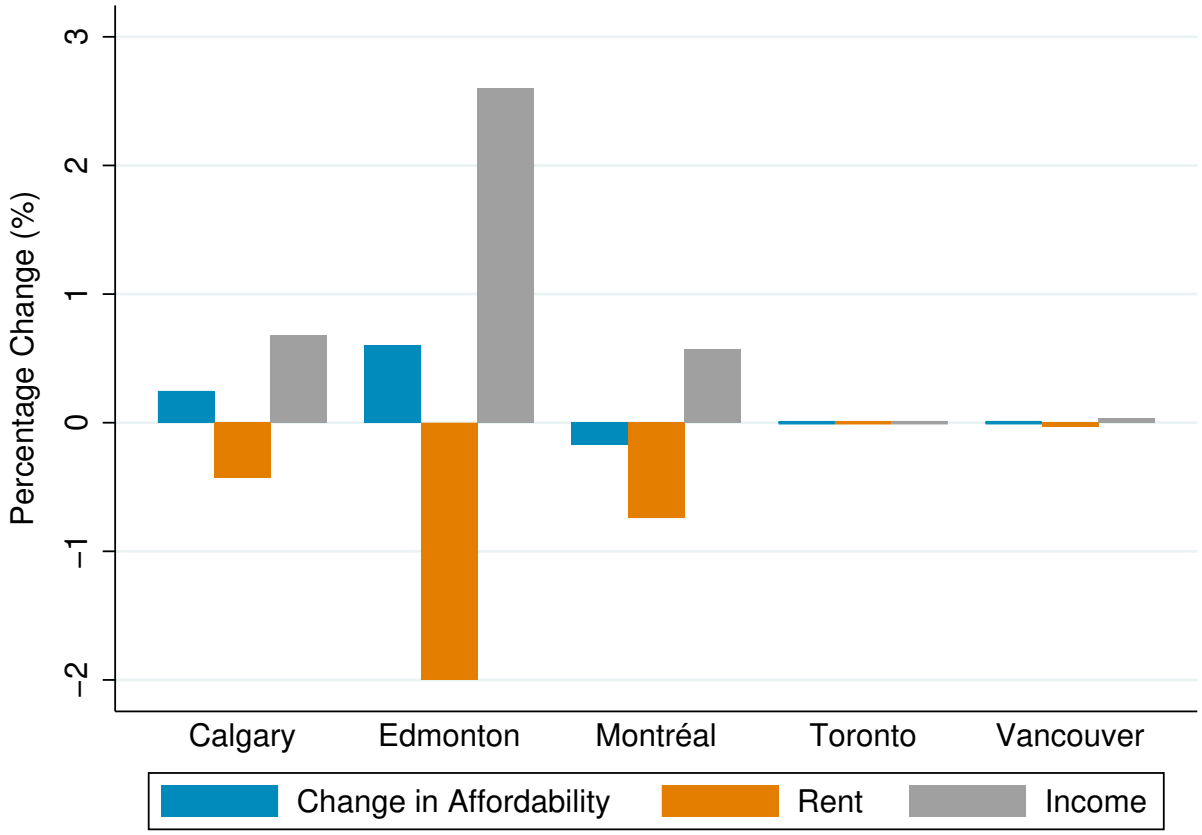
Data sources: Rental Market Survey (RMS) and Longitudinal Administrative Databank (LAD)

FIGURE 9: Share of 1-bedroom units affordable for first three income quintiles, averaged over 2011-2016: Top 5 CMAs



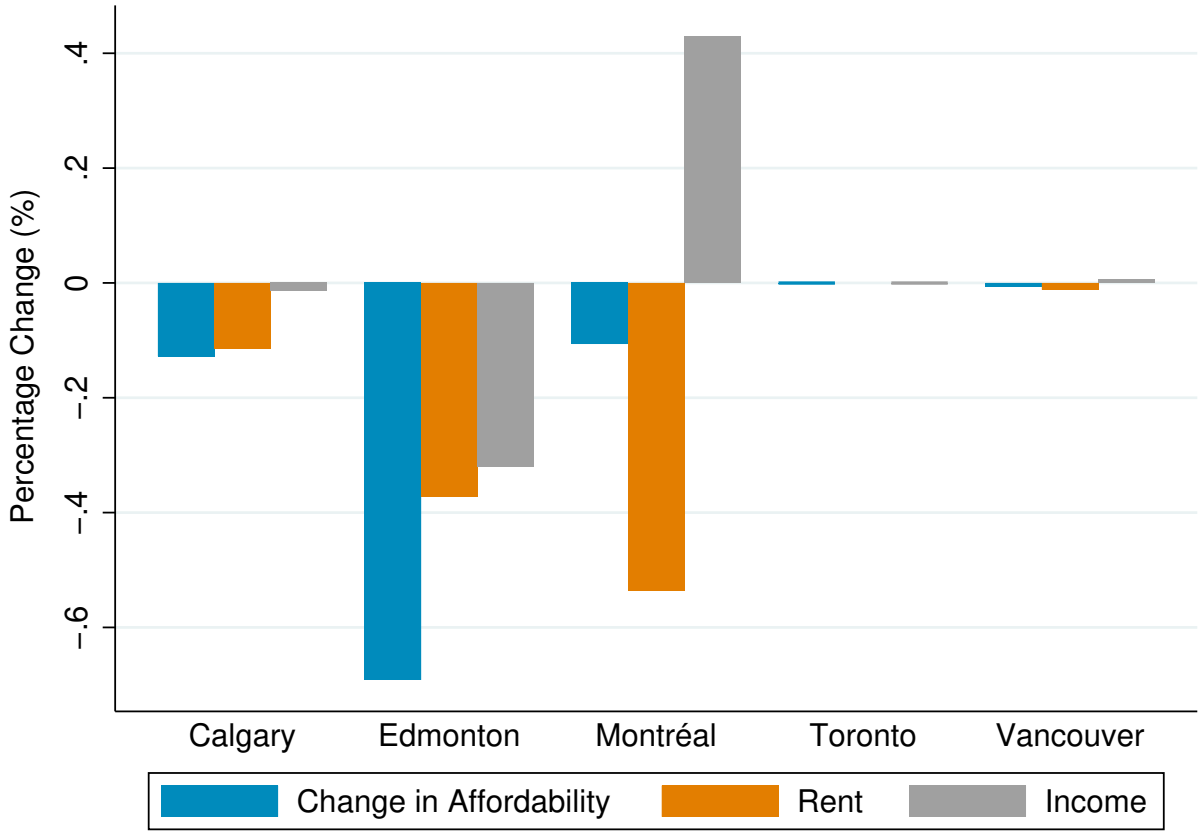
Data sources: Rental Market Survey (RMS) and Longitudinal Administrative Databank (LAD)

FIGURE 10: Accounting for changes in affordability of 1-bedroom units for the bottom income quintile, averaged over 2002-2006: Top 5 CMAs



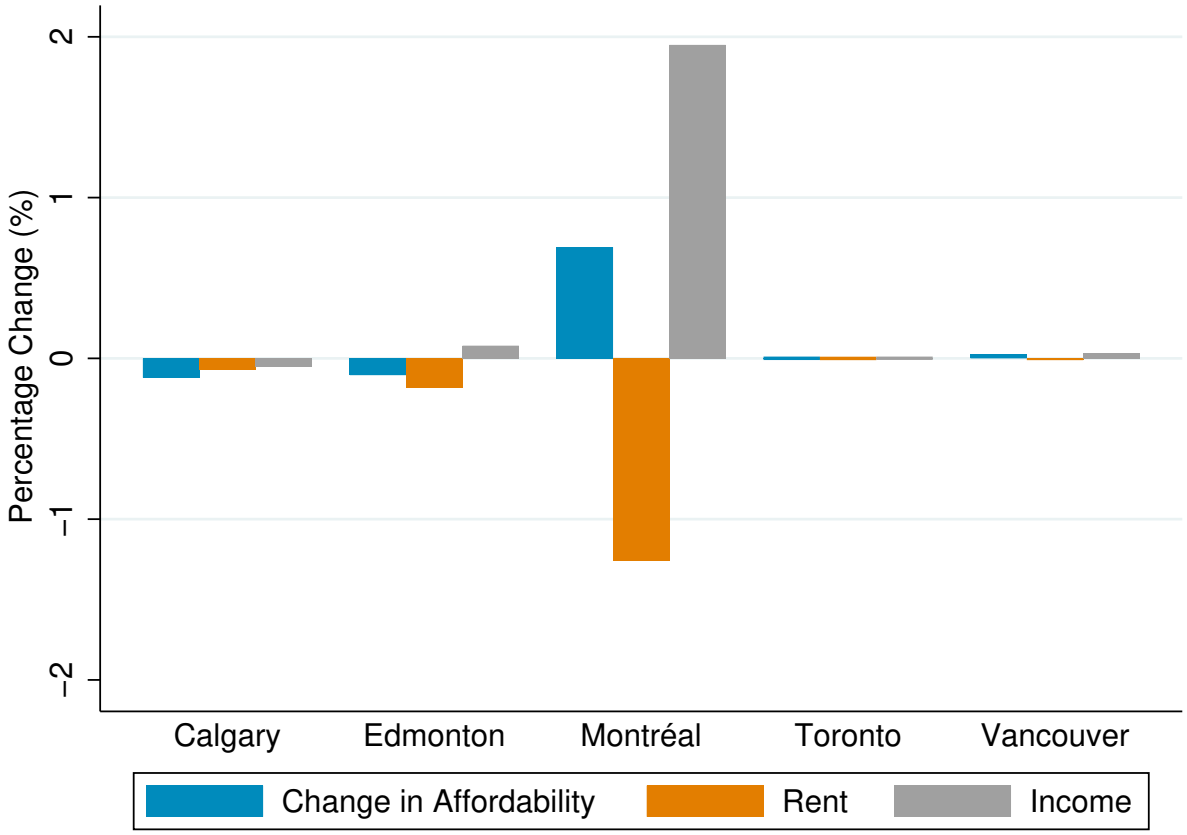
Data sources: Rental Market Survey (RMS) and Longitudinal Administrative Databank (LAD)

FIGURE 11: Accounting for changes in affordability of 1-bedroom units for the bottom income quintile, averaged over 2007-2011: Top 5 CMAs



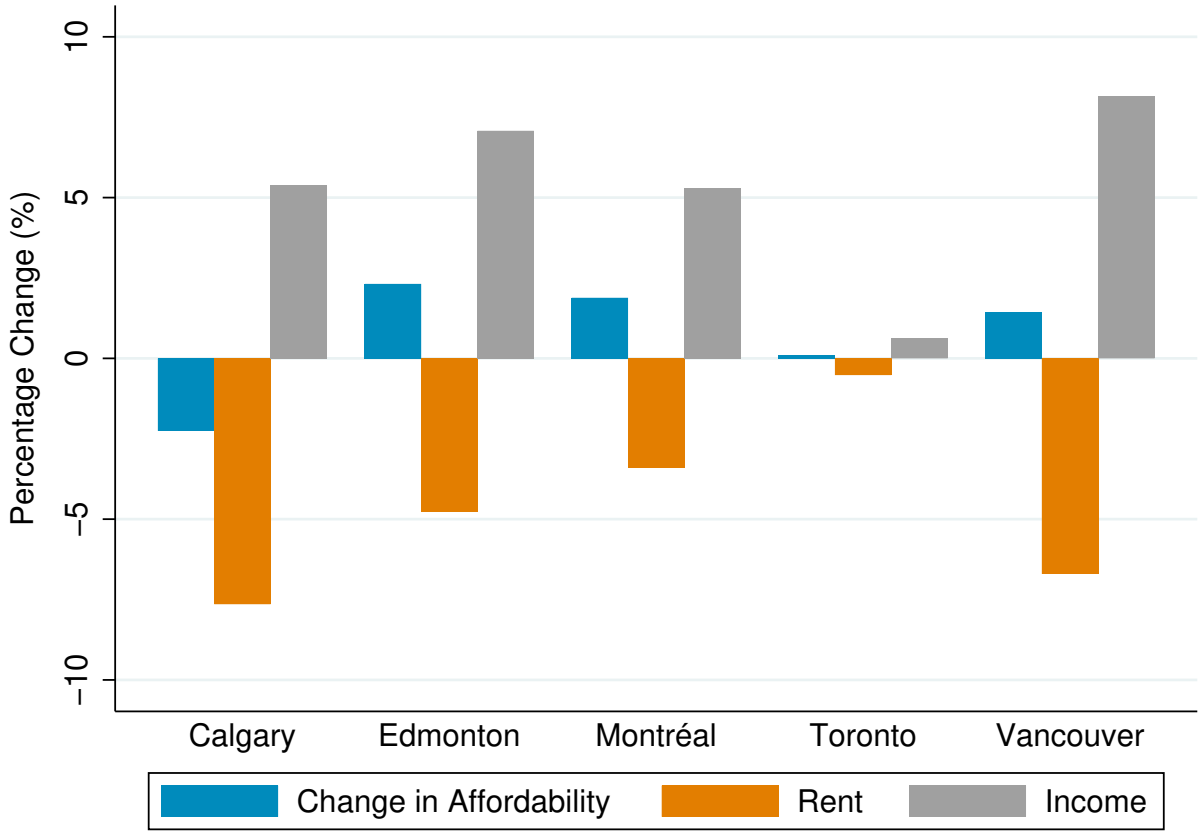
Data sources: Rental Market Survey (RMS) and Longitudinal Administrative Databank (LAD)

FIGURE 12: Accounting for changes in affordability of 1-bedroom units for the bottom income quintile, averaged over 2011-2016: Top 5 CMAs



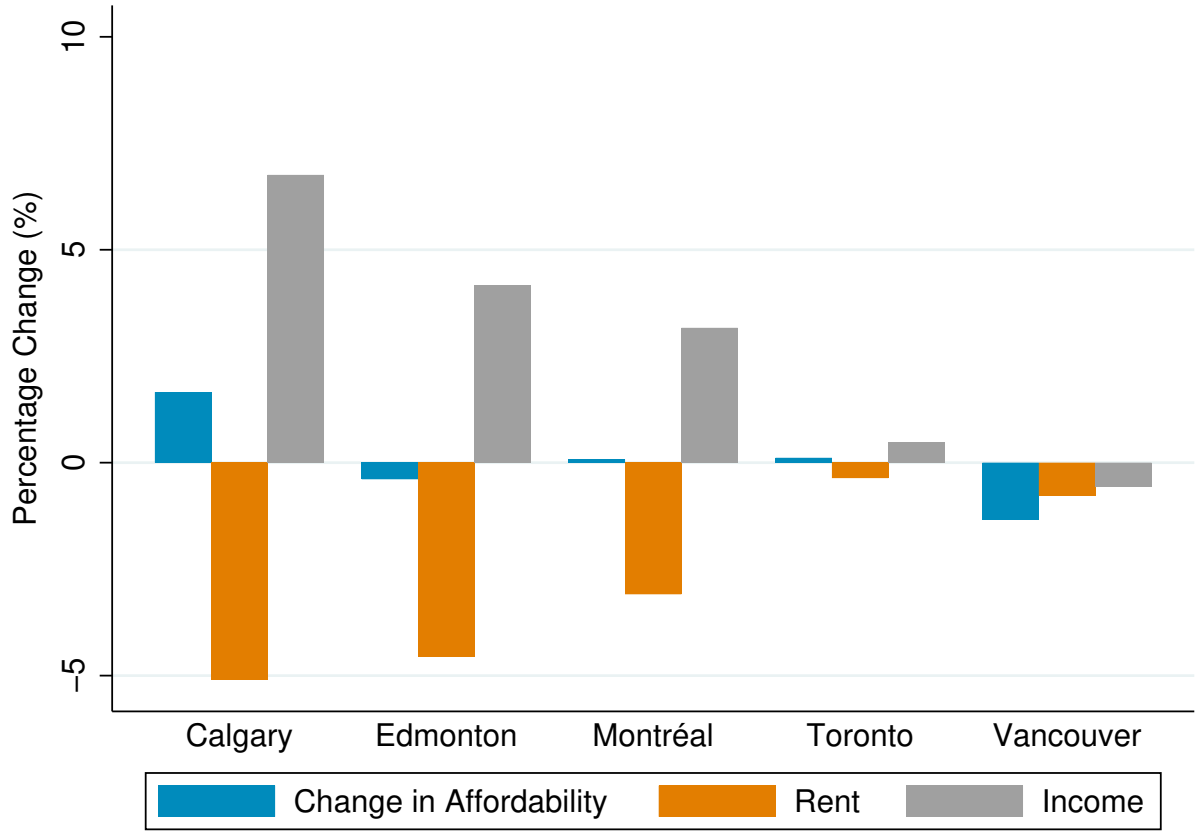
Data sources: Rental Market Survey (RMS) and Longitudinal Administrative Databank (LAD)

FIGURE 13: Accounting for changes in affordability of 1-bedroom units for the second income quintile, averaged over 2002-2006: Top 5 CMAs



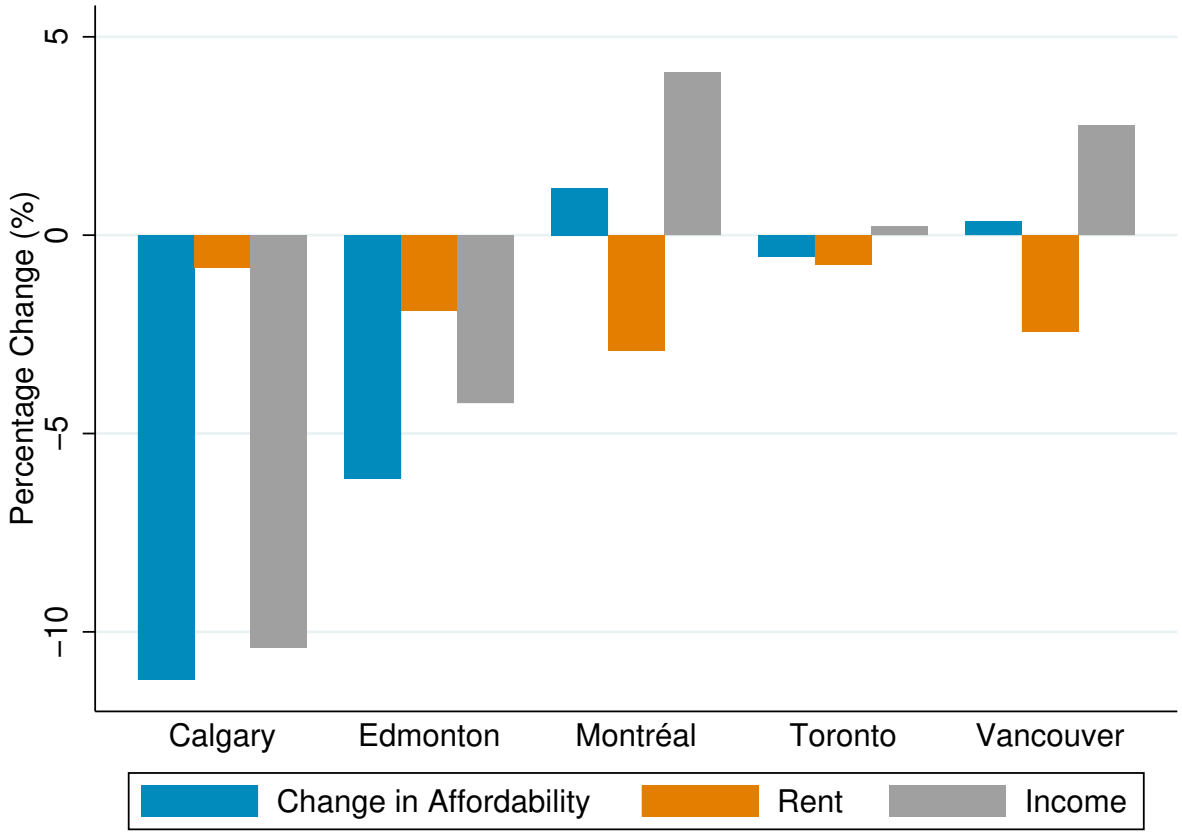
Data sources: Rental Market Survey (RMS) and Longitudinal Administrative Databank (LAD)

FIGURE 14: Accounting for changes in affordability of 1-bedroom units for the second income quintile, averaged over 2007-2011: Top 5 CMAs



Data sources: Rental Market Survey (RMS) and Longitudinal Administrative Databank (LAD)

FIGURE 15: Accounting for changes in affordability of 1-bedroom units for the second income quintile, averaged over over 2011-2016: Top 5 CMAs



Data sources: Rental Market Survey (RMS) and Longitudinal Administrative Databank (LAD)

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