Airbnb Activity and Rental Markets in Canada

Analyzing the Impact of Short-Term Rentals

Data briefing | October 11, 2023

Contents

Key findings

- We observe a correlation in Airbnb activity and rents across different neighbourhoods in Canadian cities, but this does not mean that Airbnb activity is the cause of rent increases.

- We tested for a causal link between Airbnb activity and rent increases between 2016 and 2022 across 330 neighborhoods in 19 Canadian cities. We find no compelling evidence that the level of Airbnb activity had a meaningful impact on rents.

- Out of the 30 per cent increase in rents observed in our sample of neighbourhoods between 2016 and 2022, at most less than 1 percentage point, or just under $10, can be attributed to increased Airbnb activity.

- To assess the robustness of this result, we tested different combinations of the data, such as changing the time period, how we measure Airbnb activity, and varying the included neighbourhoods. In all cases, we found no evidence of a meaningful effect on rents.

- The fact that we fail to find evidence that Airbnb activity has contributed meaningfully to higher rents across Canada can be rationalized by the fact that the share of dwellings used for Airbnb activity is too small in most neighbourhoods—on average less than 0.5 per cent—to have a meaningful impact.

- When we allow the effect of Airbnb to vary by province, we find a small positive relationship in Quebec only, where a one percentage point increase in the share of high-use Airbnbs as a proportion of households increases rents by approximately 0.8 per cent.

- Policies implemented by cities and provinces to regulate short-term rentals have significantly reduced Airbnb activity, though we find no evidence that these policies have resulted in lower rents. Restrictions limiting short-term rentals to a host's principal place of residence are associated with a nearly 50 per cent reduction in the number of Airbnbs.

Introduction

Rents across Canadian cities have increased since 2016, alongside an increase in Airbnb activity. At the same time, cities and provinces across Canada have implemented regulations for short-term rentals, including restrictions limiting short-term rentals to a host's principal place of residence in some locations.

Here we seek to answer two key questions:

- To what extent has this increase in Airbnb activity resulted in higher rents for long-term renters?

- Have policies regulating short-term rentals had any impact on Airbnb activity and/or long-term rents?

To address these questions, we leverage data on variations in Airbnb activity within and across markets between 2016 and 2022—the first study of its kind to use actual Airbnb booking data rather than information scraped from its webpage. Specifically, we identify the number of Airbnbs that are likely to be full-time short-term rentals and therefore most likely to be reducing supply in the long-term rental market; we then compare this figure to the number of households across 330 neighbourhoods in 19 of the largest cities in Canada. We also leverage variation in the location and timing of the implementation of polices regulating short-term rentals. This analysis focuses on the impact of Airbnb activity on rents. While housing affordability can refer to a wide range of issues—from the purchase price of a home, the ability to save up a typical deposit, and the burden of servicing a typical mortgage—the cost of renting has a more direct impact on household welfare than the purchase price of a dwelling.[1] Additionally, rental prices are more relevant to households on lower incomes that do not have the opportunity to purchase a house.[2]

1   Molloy, Nathanson, and Paciorek, Housing Supply and Affordability.
2   Statistics Canada, *Canadian Housing Statistics Program*, 2019 and 2020; Statistics Canada, Housing Experiences in Canada.

What are neighbourhoods?

Neighbourhoods are sub-municipal geographical units defined by the Canada Mortgage and Housing Corporation. The boundaries of neighbourhoods are defined by groupings of Statistics Canada–defined census tracts and are smaller than census subdivisions.[3] For context, a neighbourhood in our sample of cities will usually include several three-digit postal codes, or forward sortation areas.

Sources: Canada Mortgage and Housing Corporation; Statistics Canada.

Airbnb activity in Canada

Airbnb activity is concentrated in major cities in Canada.[4] Based on property-level booking data from Airbnb, short-term rental activity has increased three-fold over the past six years in Canadian cities. (See Chart 1.) In this analysis we focus on high-use, or full-time Airbnbs, because these are the properties more likely to be putting upward pressure on rents by reducing long-term rental market supply, as opposed to Airbnbs that are a host's principal place of residence and only listed occasionally. We do not know whether an Airbnb listing is a full-time short-term rental, but we can infer this based on how frequently it is rented out in a given period. (See Table 1.) Several studies—though none focusing on the Canadian market—have suggested that an increase in Airbnb listings, and particularly high-use listings, are causally related with an increase in rents in the long-term rental market.[5]

4   Combs, Kerrigan, and Wachsmuth, *Short-Term Rentals in Canada*.
5   Horn and Merante, "Is Home Sharing Driving Up Rents?"; Duso and others, *Airbnb and Rental Markets*; Barron, Kung, and Proserpio, "The Effect of Home-Sharing on House Prices and Rents."

3   Canada Mortgage and Housing Corporation, "Housing Market Information Portal."

Chart 1

The number of active Airbnbs in Canadian cities has increased nearly three-fold since 2016

(Airbnb properties per month, index, 2016 to 2022 average = 100; share that are high-use, per cent)
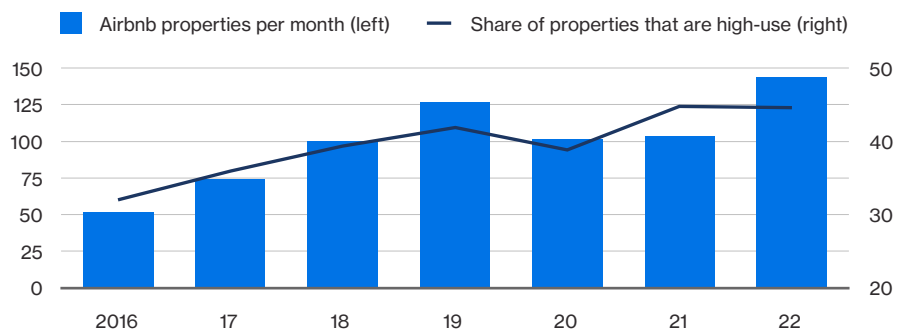
Note: Includes active entire home or apartment Airbnb properties across the 18 largest census metropolitan areas in Canada; yearly average.
Sources: Airbnb; The Conference Board of Canada.

Table 1

Key terminology and definitions

High-use Airbnb	An entire home or apartment that has been rented out for more than 30 nights in the previous three months, and likely to be a full-time short-term rental and therefore unlikely to be a host's principal place of residence.*
Occasional Airbnb	An entire home or apartment that has been rented out for 30 nights or less in the previous three months. While some of these properties may be full-time short-term rentals, at this level of utilization, short-term renting is unlikely to be as profitable as long-term renting.
Short-term rental	A rental property that is rented out for a continuous period of less than one month.
Long-term rental	A rental property that is rented out for a continuous period longer than one month.

*This definition aligns with "very-frequently rented entire homes" in other research. It is a conservative definition in that it is unlikely that we are undercounting the number of full-time Airbnbs based on the booking rate required to break even relative to long-term renting. In New York City, for example, the break-even rate was approximately 50 nights per quarter. Overall, our findings are consistent using more- and less-conservative definitions of high-use Airbnbs.
Sources: Combs, Kerrigan, and Wachsmuth; Coles and others; The Conference Board of Canada.

We observe the following trends and relationships in our data (see Appendix A for a full description of the data used in this analysis):

- The majority of entire home or apartment Airbnb listings are occasional, though the share of Airbnb listings that were high use has increased over time. This shift toward more intensely booked Airbnbs has seen the number of nights booked in entire homes increase by even more than the number of active Airbnb properties. The share of Airbnb nights stayed in rooms, rather than entire properties, declined from around 30 per cent to just over 15 per cent, with a sharp and persistent decline during the pandemic.

- The number of high-use Airbnbs relative to the number of households in a given neighbourhood is generally low, though it does vary both within and between cities in our sample. Even at the peak level of Airbnb activity in 2022, in 16 of the 19 cities in our sample, high-use Airbnb rentals accounted for less than 0.5 per cent of households for the median neighbourhood.

- Rents and Airbnb activity are positively correlated—neighbourhoods that have higher concentrations of Airbnb tend to also have higher rents. For example, there is a statistically significant and economically meaningful relationship between rents and the share of Airbnbs at the neighbourhood level—in our sample a one percentage point increase in the share of Airbnbs is associated with a 2.3 per cent increase in rents. (See Chart 2.)

Chart 2

Airbnb activity is positively correlated with rents at the neighbourhood level

(normalized log rents; percentage share of high-use Airbnbs, annual, 2016 to 2022, by neighbourhood)
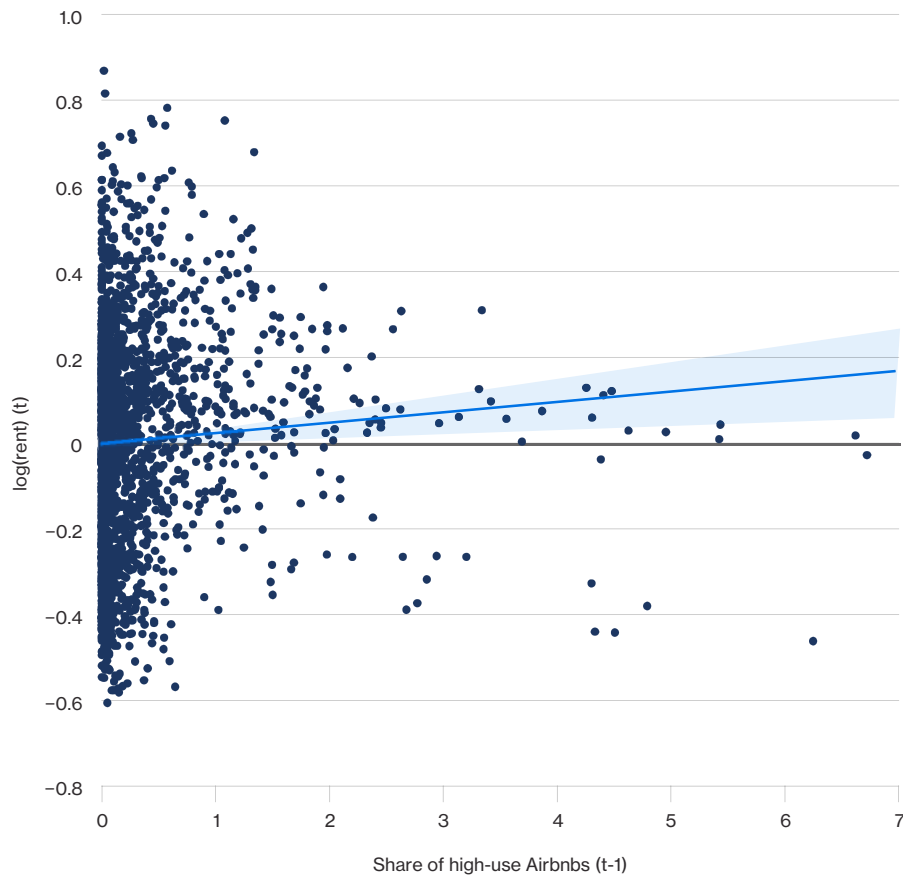
Note: Rents normalized by average rents across Canada each year.
Sources: Airbnb; Canadian Mortgage and Housing Corporation; The Conference Board of Canada.

The key question is whether higher Airbnb activity is *causing* higher rents in Canada and contributing to a worsening of rental affordability, or if both higher rents and higher Airbnb activity are driven by other factors, such as proximity to amenities like restaurants, public transit, and parks, which would increase desirability for both long- and short-term renters. Although we cannot test for causality directly, we can apply a "difference-in-difference" analysis, which compares how rents evolved in different neighbourhoods within cities and how this was affected by the level of Airbnb activity in each neighbourhood. This empirical approach assumes that while the level of rents differs across neighbourhoods, in the absence of Airbnb, the change in rents for neighbourhoods within the same city would have been the same over time. (See Appendix B for a detailed explanation of the methodology.)

The estimated effect of Airbnb on long-term rental markets in Canada

Using a difference-in-difference analysis, we fail to uncover compelling evidence that Airbnb activity is having a significant impact on rents in the largest cities across Canada. (See Chart 3 and Appendix C.) We confirm the robustness of these results through a variety of sensitivity analyses, including:

- testing different measures of Airbnb activity, including different thresholds for high-use Airbnbs;

- testing for lagged effects of Airbnb activity;

- testing the results in specific years to eliminate the impact of year-to-year variations in Airbnb activity;

- restricting the sample to before 2020 to abstract from pandemic-related effects;

- excluding the neighbourhoods in the top quartile of Airbnb activity to abstract from potential biases specific to high-Airbnb activity neighbourhoods;

- estimating the effect of Airbnb activity only on one- or two-bedroom rents;

- allowing for all neighbourhoods to be compared across all cities (i.e., comparing all neighbourhoods, not only those within the same municipality).

Chart 3

The estimated effect of Airbnb activity on rents in most specifications is not statistically different from zero
(coefficient estimates and 95 per cent confidence intervals)
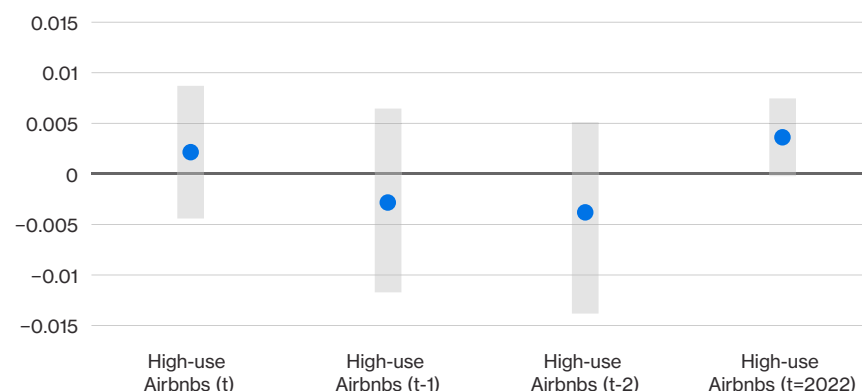
Note: Regression log of rents on the share of high-use Airbnbs, standard errors clustered by municipality.
Sources: Airbnb; Canadian Mortgage and Housing Corporation; The Conference Board of Canada.

It is important to note that our finding of no evidence of a meaningful effect of Airbnb on rents is not driven by statistical uncertainty. Even our largest estimate, where we hold Airbnb activity fixed at 2022 levels, suggests that a one percentage point increase in Airbnb activity increases rents by only 0.4 per cent. This effect is a little smaller than previous research identified in the City of Boston.[6] The magnitude of this effect is not economically meaningful at current levels of Airbnb activity. Even if we were to assume all the neighbourhoods in our sample had the same level of Airbnb activity as the neighbourhood at the 95th percentile, Airbnb would still only account for less than one percentage point of the 30 per cent increase in rents observed on average across the neighbourhoods in our sample between 2016 and 2022. (See Appendix C for the full set of results across all specifications.)

If we allow the effect of Airbnbs to vary by province, our results suggest small but generally not statistically significant effects of Airbnb activity on rents. We detect a positive and statistically significant relationship between Airbnb and rents only in Quebec, where a one percentage point increase in the share of high-use Airbnbs increases rents by approximately 0.8 per cent. (See Chart 4). At the average concentration of Airbnbs to the number of households in each neighbourhood in Quebec, this implies around a $4 increase in monthly rents from Airbnb activity compared with an overall increase in average monthly rents of $234 between 2016 and 2022. For the neighbourhoods with the largest concentration of Airbnbs, the effect on rents may be more economically meaningful. For example, in Saint-Roch in Québec City, where the number of high-use Airbnbs was equivalent to 7.5 per cent of the dwelling stock in 2022, our results suggest the presence of Airbnbs has increased rents by just over 6 per cent, or $55 per month, which is around a quarter of the total increase in rents in that particular neighbourhood between 2016 and 2022.

6   Horn and Merante, "Is Home Sharing Driving Up Rents?"

Chart 4

Airbnb activity is associated with relatively higher rents only in Quebec
(coefficient estimates and 95 per cent confidence intervals)
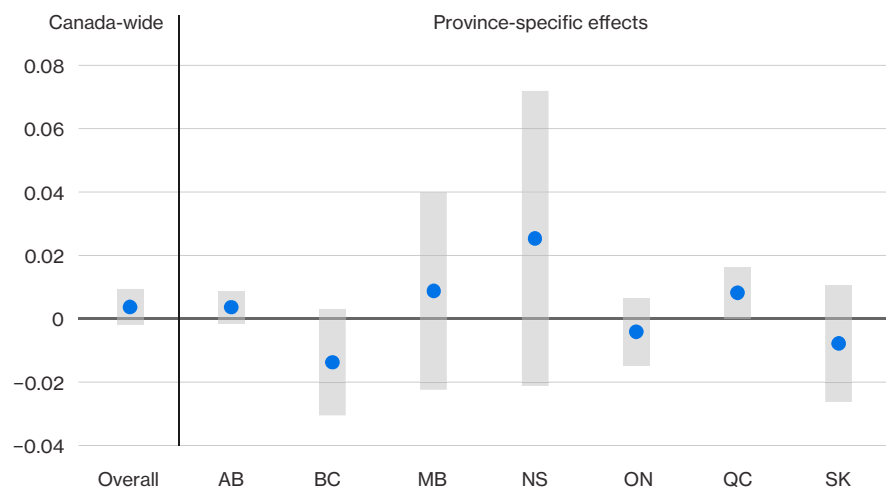
Note: Regression of log of rents on the share of high-use Airbnbs in 2022; standard errors clustered by municipality for Canada-wide model, heteroskedasticity-consistent standard errors for province-specific effects model
Sources: Airbnb; Canadian Mortgage and Housing Corporation; The Conference Board of Canada.

Caveats and limitations

Our finding that Airbnb has not had a meaningful effect on rents in Canada may be surprising given commonly voiced concerns that Airbnb activity is reducing housing supply and worsening rental affordability.[7] While we have tested a wide range of specifications that give us confidence in our findings, which are also broadly in line with other research, there are several caveats to this analysis.

First, our results hinge on the assumption that rents across neighbourhoods in the same city would have evolved in the same manner absent the existence of Airbnb. This is the core assumption of the difference-in-difference empirical framework. If this assumption is violated, if for example neighbourhoods with relatively fewer Airbnbs would have experienced faster rental growth than those with more Airbnbs, then we may find a null result where the true effect is positive.

Second, our measure of rents from the Canada Mortgage and Housing Corporation (CMHC) annual Rental Market Survey captures the average rent paid by households in new and existing purpose-built rental accommodation. This differs from the marginal rent paid by households entering into new leases used in other studies of the effect of Airbnb on rents.[8] Since some portion of average rents are fixed, average rent changes more slowly than currently offered or advertised rents.

7   Coles and others, *Airbnb Usage Across New York City Neighborhoods*.
8   Horn and Merante, "Is Home Sharing Driving Up Rents?"; Duso and others, Airbnb and Rental Markets; Barron, Kung, and Proserpio, "The Effect of Home-Sharing on House Prices and Rents."

Unfortunately, there is no dataset on current rental offer prices containing the geographic detail of the CMHC Rental Market Survey (specifically rents for sub-municipal local housing markets) upon which our difference-in-difference analysis relies. To account for the slower reaction of average rents, we estimate the effect of Airbnb activity on rents up to two years in the future and still find no significant impact. In addition, we would expect that neighbourhoods with higher Airbnb activity also experience higher churn in the long-term rental market and thus any impact on rents to be reflected more rapidly in such neighbourhoods. The upside of using average rents is that it accounts for cases where the contract rent is not equal to advertised rent; captures affordability in aggregate across all renting households; and is more consistent with consumer price index measure of rents, which is useful for policy-makers.

Additionally, because our measure of rents covers new and existing purpose-built rental properties, changes in this measure over time will i) in part reflect compositional change, and ii) not capture rents paid by long-term tenants in other properties not purpose-built as rental accommodation.[9] On the first point, if compositional change is correlated with Airbnb activity this could bias our estimates—we attempt to determine whether this could be driving our results by estimating the effect of Airbnb activity on only some segments of the rental market (e.g., one- and two-bedroom apartments only, neighbourhoods excluding the top and bottom quartiles by Airbnb activity) and find consistent results. In any case the effect of compositional change is likely small over our sample period. In the Toronto census subdivision, compositional change on average resulted in a one-quarter per cent higher annual average rent growth between 2010 and 2022, compared with average overall growth of 4 per cent. On the second point, the purpose-built

rental market accounts for a substantial share of rental properties and is likely to be representative; in 2016 the universe of purpose-built rental accommodation in Canada was just over two million dwellings and in the 2016 Census[10] there were just under 4.5 million households that were renting.

Finally, our conclusion regarding the absence of an effect on rents is limited to current levels of Airbnb activity. We make no claim that were Airbnb activity to increase further, it would not cause rents to increase. Indeed, our main explanation for why we find no meaningful impact of Airbnb on rental prices is that Airbnb's share of housing stock is too small to have a material impact on prices. If Airbnb's share of housing stock were to increase, we would expect this result to change.

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9   Canada Mortgage and Housing Corporation, "Methodology for Rental Market Survey."

10 Statistics Canada, "Housing Highlight Tables, 2016 Census".

The effect of regulations on Airbnb activity and rents

Despite having a significant effect on the number of active high-use Airbnbs, regulations restricting short-term rentals to a host's principal place of residence did not lead to lower rents in the jurisdictions in which they were implemented—this result holds even when limiting our analysis to provinces where we find a positive relationship between Airbnb activity and rents. This is consistent with our finding that Airbnb activity has not had a significant effect on rents in Canada. We do however find that the neighbourhoods located in cities that implemented principal residences restrictions tended to have higher rents—suggesting that these cities may have been motivated to introduce Airbnb restrictions as a means to address broader rental affordability concerns.

Regulating the short-term rental market is challenging given the spectrum of different host types. They range from casual and unsophisticated hosts looking to rent out part of their dwelling on an occasional basis through to professional short-term rental businesses. The nature of the short-term rental market also differs by jurisdiction.[11] In our sample, 15 cities, 16 boroughs in Montréal, and four provinces introduced new, or modified existing regulations, to cover the growing short-term rental sector between 2016 and 2022. (See Chart 5.)

11   Tedds and others, *Why Existing Regulatory Frameworks Fail in the Short-Term Rental Market.*
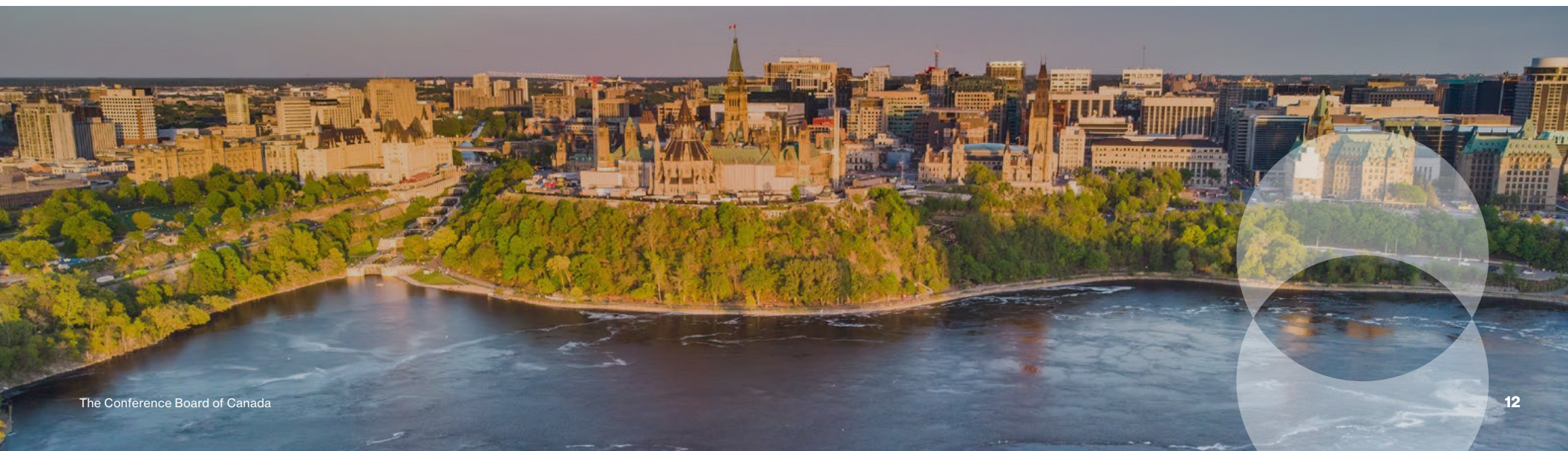
These regulations fall into two categories: i) regulations that restrict short-term rentals to a host's principal place of residence, and ii) other regulations (excluding principal residence restrictions) requiring hosts to register their properties, pay a licensing fee, and comply with other safety or occupancy requirements.

Chart 5

Many cities and provinces have introduced short-term rental market regulations
(number of census subdivisions implementing short-term rental regulations, by province, annual)
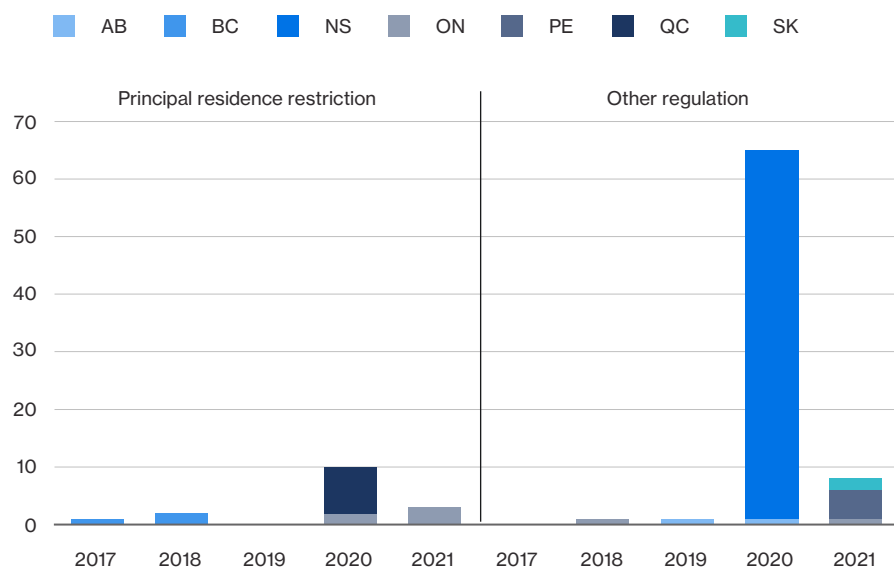
Source: The Conference Board of Canada.

Using variation in the dates that these policies were announced and implemented at the census subdivision level, we find:

- the number of high-use Airbnbs declined by nearly 50 per cent following the implementation of principal residence restrictions. Around one-third of this decline occurred when the policy was first announced but before it was implemented. Other regulations had no effect on the number of high-use Airbnbs;

- the number of occasional Airbnbs were similarly affected by principal residence restrictions, declining by nearly 50 per cent, despite not being the target of the policy. The number of occasional Airbnbs also declined by a little under 20 per cent when other restrictions were announced, with no further fall after other restrictions were implemented;

- unsurprisingly given the decline in the number of both high-use and occasional Airbnbs, nights stayed in entire homes also declined significantly, by a bit over 50 per cent when principal residence restrictions were implemented. Unlike the number of properties however, the majority of this decline occurred when the policies were announced. Other regulations also resulted in a nearly 50 per cent decline in the number of nights stayed;

- the number of nights stayed in private, shared, or hotel rooms on the Airbnb platform also declined significantly, by between 40 and 50 per cent, when either principal residence or other regulations were introduced.

Despite having a clear impact on Airbnb activity, these regulations did not lead to lower rents in the jurisdictions in which they were implemented.

These results were robust to different thresholds for defining high-use and occasional Airbnbs, as well as excluding Quebec and Nova Scotia, where regulations were implemented in 2020 during the peak of the pandemic. (See Appendix C for detailed estimation results.)

Variation in the number of high-use Airbnbs across the Greater Toronto Area (GTA) clearly demonstrates the effect of the City of Toronto's principal residence restrictions. Compared with both neighbouring and outer GTA census subdivisions, the number of high-use Airbnbs in the City of Toronto declined by more than other areas when the city's principal residence restrictions were announced, and then remained broadly flat after the restrictions were implemented compared with a significant increase in both neighbouring and outer GTA census subdivisions. (See Chart 6.)

Chart 6
Principal residence restrictions significantly reduced Airbnb activity in the City of Toronto relative to neighbouring areas
(number of Airbnb high-use properties per month, index, 2016 to 2022 average = 100)
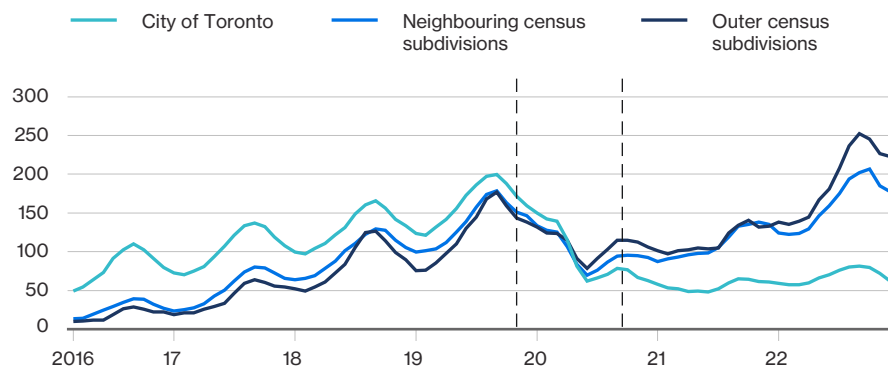
Note: Includes all Greater Toronto Area census subdivisions; dashed lines indicate date Toronto principal residence policy was announced and date registration requirements commenced
Sources: Airbnb; The Conference Board of Canada.

Conclusion

Airbnb activity, at its current levels, has not resulted in an economically meaningful increase in rents across 19 of the largest Canadian cities. At the provincial level there is evidence that Airbnb activity has put some upward pressure on rents in Quebec. Policies introduced by municipalities and provinces regulating Airbnb activity have not been successful in reducing rents, though they were associated with a significant reduction in Airbnb activity.
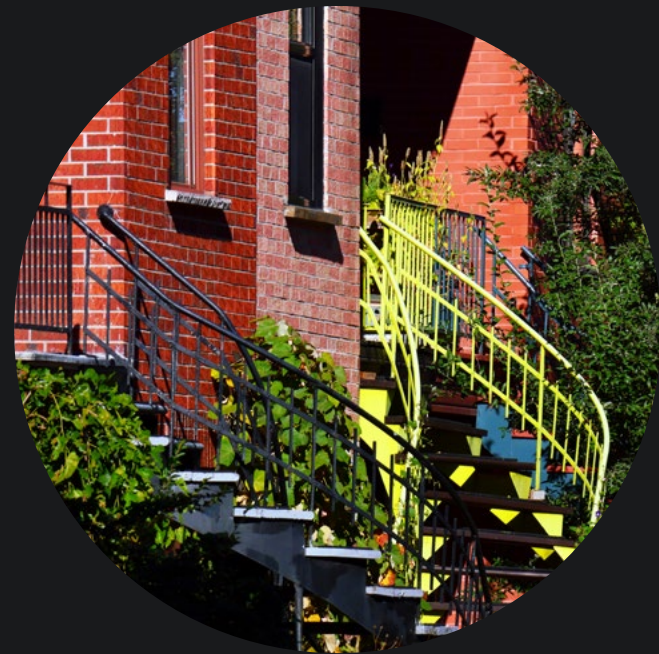
Appendix A

Data

The Airbnb data used in this analysis are at the individual Airbnb property level. For each property, from 2016 to 2022, we observe the number of nights the property was rented out for a given month, the forward sortation area (FSA) and province in which the property was located, and the type of property—entire home or apartment, private room, shared room, or hotel room.

The rental market data are from the CMHC annual Rental Market Survey, which surveys owners, managers, or building superintendents in the first two weeks of October of each year and captures the average rent across new and existing structures. These data are available down to the census tract level, but we elect to use one level higher aggregation, at the neighbourhood level, due to the number of missing or suppressed observations at the census tract level.

Our sample includes 19 cities: Calgary, Edmonton, Gatineau, Halifax, Hamilton, Kitchener, London, Montréal, Oshawa, Ottawa, Québec City, Regina, Saskatoon, St. Catherines, Toronto, Vancouver, Victoria, Windsor, and Winnipeg.

To match the FSA-level Airbnb data to the CMHC neighbourhood-level rental market data, we use the centroids of the FSAs and the boundaries of the neighbourhoods; if the centroid of the FSA lies inside the boundary of the neighbourhood, it is mapped to that neighbourhood. Exhibit 1 shows how the FSAs (circles) are mapped to neighbourhoods (shaded areas). If more than one FSA belongs to the same neighbourhood, the FSAs are aggregated up to that level.

We define two types of short-term rental regulations: i) restrictions limiting short-term rentals to a host's principal place of residence only, and ii) other regulations excluding principal residence requirements, but requiring hosts to register their properties (and pay a licensing fee) and comply with other safety or occupancy requirements. For each of the two types of policies, we define two dummy variables—the first takes the value one from the date that the policy was announced and second takes the value one from the date the policy was implemented. This information is collected from primary sources, including city and provincial websites and news reports. We define the announcement date as the first date that the policy was reported in the media, based on Google News search results. The implementation date is defined as the date that the policy took effect.

The universe of jurisdictions subject to policy changes over our sample and the distinction between principal residence and other restrictions are consistent with those analyzed in other research.[1]

Airbnb activity relative to the number of households in each neighbourhood is constructed using 2016 Census data. We employ two different measures of Airbnb activity: i) the number of high-use Airbnbs divided by the number of households; and ii) the number of nights rented in entire homes or apartments in October, divided by 31 days, divided by the number of households.

Exhibit 1
Postcodes are mapped to neighbourhoods using their geographic location
(FSA centroids and neighbourhood boundaries for Montréal)
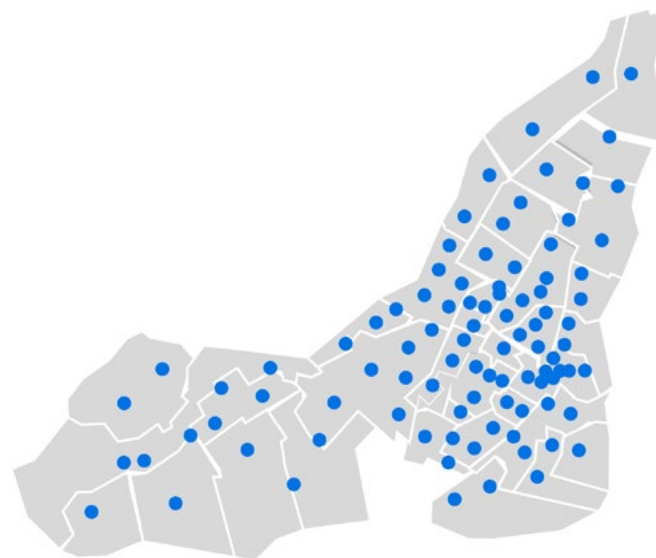
Sources: Canadian Housing and Mortgage Corporation; Statistics Canada; The Conference Board of Canada.

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1   Cameron, Khanal, and Tedds, "Managing Airbnb."

Methodology

To isolate the effect of Airbnb activity on rents, we estimate the following regression on annual data from 2010 to 2022:

$$\ln(rent_{nt}) = \beta\, airbnb\ share_{nt} + \eta_n + \tau_{ct} + \mu_{nt}$$

Where the dependent variable $rent_{nt}$ is the average monthly rent for neighbourhood n in year t and the independent variable $airbnb\ share_{nt}$ is the number of high-use Airbnbs scaled by the number of households in that neighbourhood. The regression includes neighbourhood fixed effects, η_n, and year by municipality fixed effects, τ_{ct}. In order to detect statistical significance, we cluster our standard errors by municipality. For all regressions, we also computed heteroskedastic-robust standard errors, which did not change our conclusions with respect to statistical significance.

In order for β to represent the true effect of Airbnb activity on rents, this empirical approach assumes that while the level of rents differs across neighbourhoods, in the absence of Airbnb, the change in rents for neighbourhoods within the same city would have been the same over time. This assumption is known as the parallel trends assumption. We cannot prove whether this assumption is satisfied, but it is more likely to hold at the neighbourhood level within the same city compared with between cities.

We also estimate multiple variations of the above specification with different independent variables, dependent variable, and samples, and find consistent results. (See Appendix C.)

In addition, we estimate a model where the effect of Airbnb activity is allowed to vary by province:

$$\ln(rent_{nt}) = \beta_p\, airbnb\ share_{nt} \times \rho_p + \epsilon_n + \eta_{ct} + \mu_{nt}$$

This specification estimates the relationship between Airbnb activity and rents for each province. This assumes, as in the previous model, that in the absence of Airbnb, the evolution of rents across neighbourhoods belonging to the same municipality would have remained parallel.

Results

Effect of Airbnb activity on rents

Table 2 shows estimates for β, the effect of the share of high-use Airbnbs on the log of rents. Our baseline specification (I) estimates the contemporaneous effect of the share of high-use Airbnbs on the log of rents and suggests that a one percentage point increase in share of the number of high-use Airbnbs to the number of households in a neighbourhood is associated with, on average, an increase in rent by 0.2 per cent. This result is not statistically significant. We also test a more conservative definition of high-use Airbnbs (60 days over the past six months) and a less conservative definition (15 days over the past three months) and find consistent results.

The second column allows for comparison across neighbourhoods, even if they do not belong to the same municipality, by replacing the municipality by year fixed effects with year fixed effects. The estimated effect is not statistically significant (and the sign is negative). Specifications III and IV allow for the true impact of Airbnb on rents to occur after a lag of one or two years; again, the effect is not statistically significant. Specifications V and VI fix the share of Airbnb relative to households as at 2016 and 2022 levels; the estimated effect using $airbnb\ share_{n,2022}$ is the largest positive and only statistically significant result, and suggests that a one percentage point increase in share of the number of high-use Airbnbs to the number of households is associated with, on average, a 0.4 per cent increase in rent.

Table 2
Regression of log of average rents on high-use Airbnb share
(annual; 2010 to 2022)

	I	II	III	IV	V	VI
Airbnb share	0.0020 (0.0033)	−0.0076 (0.0076)				
Airbnb share$_{t-1}$			−0.0024 (0.0046)			
Airbnb share$_{t-2}$				−0.0042 (0.0048)		
Airbnb share$_{2016}$					−0.0045 (0.0051)	
Airbnb share$_{2022}$						0.0037* (0.0020)
Fixed effects						
Neighbourhood	Yes	Yes	Yes	Yes	Yes	Yes
Year · City	Yes	No	Yes	Yes	Yes	Yes
Year	No	Yes	No	No	No	No
Observations	4,069	4,069	4,069	4,069	4,069	4,069
R^2	0.96496	0.94003	0.96496	0.96498	0.96497	0.96498

Note: Standard errors in parentheses, clustered by city. As a robustness exercise, we rerun specification VI 19 times, dropping one municipality at a time. The magnitude and statistical significance of the results make us confident that our results are not driven by a municipality outlier.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Sources: Airbnb; Canadian Mortgage and Housing Corporation; The Conference Board of Canada.

Table 3 reports the results when regressing rents on the number of nights rented in entire homes or apartments in October, divided by 31 days, divided by the number of households. This is to ensure that our results are not sensitive to our definition of high-use Airbnbs and to allow for the possibility that occasional Airbnbs also put upward pressure on rents. The results are broadly consistent with Table 2; we find no statistically significant effect on rents.

Table 4 reports the estimated effect of the share of high-use Airbnbs on average rents when the slope of the Airbnb effect is allowed to vary by province. We find a positive and statistically significant estimated effect for Quebec.

Short-term rental regulations did not lead to a reduction in rents in the jurisdictions in which they were implemented. Table 5 reports the results when regressing average rents on the share of high-use Airbnbs, a policy dummy variable that equals one from the date when regulations were implemented, and an interaction term between the policy dummy and the Airbnb share.

This specification allows us to confirm that our conclusion that Airbnb activity is not having a meaningful impact on rents is not driven by the ability of these policies to reduce rents relative to other neighbourhoods where they were not introduced. If this was the indeed the case, our null results in Table 2 would be the consequence of two opposite forces cancelling each other out; specifically in Table 5 we would observe that the coefficient for Airbnb share was positive and significant, and the interaction term was negative. Instead, both are precisely estimated zeros. We do find a positive correlation between policy implementation and rents which is consistent with the fact that these policies targeted areas with higher rent increases.

Table 3
Regression of log of average rents on Airbnb nights stayed in entire homes or apartments
(annual; 2010 to 2022)

	VII	VIII	IX	X	XI	XII
Airbnb share	0.0032 (0.0050)	−0.0124 (0.0104)				
Airbnb share$_{t-1}$			−0.0021 (0.0065)			
Airbnb share$_{t-2}$				−0.0049 (0.0071)		
Airbnb share$_{2016}$					−0.0051 (0.0071)	
Airbnb share$_{2022}$						0.0049 (0.0031)
Fixed effects						
Neighbourhood	Yes	Yes	Yes	Yes	Yes	Yes
Year · City	Yes	No	Yes	Yes	Yes	Yes
Year	No	Yes	No	No	No	No
Observations	4043	4043	4069	4069	4053	4053
R^2	0.96496	0.94000	0.96496	0.96497	0.96498	0.96499

Note: Standard errors in parentheses, clustered by city
* p < 0.10, ** p < 0.05, *** p < 0.01
Sources: Airbnb; Canadian Mortgage and Housing Corporation; The Conference Board of Canada.

Table 4

Regression of log of average rents on high-use Airbnb share in 2022
(with heterogenous Airbnb effects by province annual; 2010 to 2022)

	XIII
Airbnb share$_t$ · Alberta	0.0037 (0.0026)
Airbnb share$_t$ · British Columbia	−0.0137 (0.0086)
Airbnb share$_t$ · Manitoba	0.0088 (0.0159)
Airbnb share$_t$ · Nova Scotia	0.0254 (0.0238)
Airbnb share$_t$ · Ontario	−0.0040 (0.0054)
Airbnb share$_t$ · Quebec	0.0082** (0.0035)
Airbnb share$_t$ · Saskatchewan	−0.0077 (0.0094)
Fixed effects:	
Neighbourhood	Yes
Year · City	Yes
Observations	4069
R^2	0.9651

Heteroskedasticity-consistent standard errors in parentheses
* p < 0.10, ** p < 0.05, *** p < 0.01
Sources: Airbnb; Canadian Mortgage and Housing Corporation; The Conference Board of Canada.

Table 5

Regression of log of average rents on short-term rental policies and Airbnb share
(annual; 2010 to 2022)

	XIV	XV	XVI	XVII
Airbnb share$_t$	−0.0059 (0.0052)			0.0021 (0.0060)
Principal residence restriction (PRR)$_t$	0.0665** (0.0310)			
Airbnb$_t$ · PRR$_t$	0.0115 (0.0130)			
Airbnb share$_{t-1}$		−0.0065 (0.0056)		
PRR$_{t-1}$		0.0623* (0.0316)		
Airbnb$_t$ · PRR$_{t-1}$		0.0088 (0.0138)		
Airbnb share$_{t-2}$			−0.0050 (0.0062)	
PRR$_{t-2}$			0.0678** (0.0280)	
Airbnb$_t$ · PRR$_{t-2}$			−0.0135 (0.0115)	
Other restriction$_t$				−0.1330*** (0.0239)
Airbnb$_t$ · Other restriction$_t$				−0.0015 (0.0061)
Fixed effects:				
Neighbourhood	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
Observations	4069	4066	4062	4069
R^2	0.94367	0.94246	0.94152	0.9477

Note: Standard errors in parentheses, clustered by city
* p < 0.10, ** p < 0.05, *** p < 0.01
Sources: Airbnb; Canadian Mortgage and Housing Corporation; The Conference Board of Canada.

Our results are not sensitive to using different measures of Airbnb activity or rents, or restricting our estimation sample. (See Table 6.) The estimated effect on rents is not statistically significant or economically meaningful when using nights stayed in all Airbnb types, rather than just entire homes or apartments, as the independent variable (XVII) or when using the total number of entire home or apartments as a share of the number of households, not just high-use Airbnbs (XIX). Regressing average rents of only one- or two-bedroom apartments on the share of high-use Airbnbs also produces consistent results (XX and XXI). To rule out the possibility that housing preference shifts during the pandemic are biasing our results, we exclude observations from 2020 to 2022 and find consistent results. Our results are also consistent when the top quartile of neighbourhoods by the share of high-use Airbnbs are removed (XXIII).

Effect of short-term rental regulations on Airbnb activity

While our results show that short-term rental restrictions had no effect on rents, these policies did have a large and statistically significant effect on both the number of high-use and occasional Airbnbs and the number of nights stayed in both entire dwellings and rooms. These results are consistent when Quebec and Nova Scotia are excluded (last columns of Tables 7 to 10); in these provinces the implementation of short-term rental regulations coincided with the peak of the pandemic.

Table 6
Robustness checks
(annual; 2010 to 2022)

Dependent variable	XVIII	XIX	XX	XXI	XXII (excluding post-COVID period)	XXIII (excluding top quartile by Airbnb share)
	Average rent (all units)	Average rent (all units)	Average rent (one bedroom)	Average rent (two bedrooms)	Average rent (all units)	Average rent (all units)
Airbnb activity$_t$ (entire homes and rooms)	0.0014 (0.0046)					
Airbnb share$_t$ (high-use and occasional)		0.0005 (0.0018)				
Airbnb share$_t$ (high-use only)			−0.0006 (0.0044)	0.0025 (0.0033)	0.0007 (0.0036)	−0.0036 (0.0203)
Fixed effects:						
Neighbourhood	Yes	Yes	Yes	Yes	Yes	Yes
Year · City	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4043	4043	3908	4001	3127	3515
R^2	0.96496	0.96495	0.97045	0.9679	0.9715	0.96685

Note: Standard errors in parentheses, clustered by city
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Sources: Airbnb; Canadian Mortgage and Housing Corporation; The Conference Board of Canada.

Table 7

Regression of the log of the number of high-use Airbnbs on short-term rental regulations

(monthly; 2016 to 2022)

	XXIV	XXV	XXVI	XXVII (lower threshold for high use)(a)	XXVIII (excluding Nova Scotia and Quebec)
Principal residence restriction announcement$_t$	−0.0532 (0.0781)	−0.1805* (0.1000)	−0.1803* (0.1000)	−0.2233** (0.0891)	−0.171 (0.1282)
Principal residence restriction implementation$_t$	−0.5558*** (0.1035)	−0.4168*** (0.1253)	−0.4168*** (0.1253)	−0.3898*** (0.1194)	−0.4057** (0.1768)
Other regulation announcement$_t$			0.0891 (0.1196)	−0.0839 (0.0925)	0.0892 (0.1198)
Other regulation implementation$_t$			−0.0003 (0.0961)	−0.0243 (0.0868)	−0.0003 (0.0963)
Fixed effects:					
Census subdivision	Yes	Yes	Yes	Yes	Yes
Month	Yes	No	No	No	No
Province · Month	No	Yes	Yes	Yes	Yes
Observations	63,304	63,304	63,304	63,304	43,050
R^2	0.88535	0.89702	0.89703	0.91733	0.90889

Note: Standard errors in parentheses, clustered by census subdivision

(a) high-use defined as more than five nights stayed per month on average over the past three months, compared with 10 nights for the other specifications in this table

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Sources: Airbnb; The Conference Board of Canada.

Table 8

Regression of the log of the number of occasional Airbnbs on short-term rental regulations
(monthly; 2016 to 2022)

	XXIX	XXX	XXXI	XXXII (lower threshold for high-use)(a)	XXXIII (excluding Nova Scotia and Quebec)
Principal residence restriction announcement$_t$	−0.2583*** (0.0679)	−0.2368*** (0.0772)	−0.2372*** (0.0772)	−0.2311*** (0.0883)	−0.2780*** (0.0876)
Principal residence restriction implementation$_t$	−0.4428*** (0.1104)	−0.3409** (0.1179)	−0.3410*** (0.1179)	−0.3377*** (0.1259)	−0.3892** (0.1579)
Other regulation announcement$_t$			−0.2062** (0.0862)	−0.1544* (0.0822)	−0.2066** (0.0864)
Other regulation implementation$_t$			−0.0563 (0.1094)	−0.0565 (0.1121)	−0.0565 (0.1096)
Fixed effects:					
Census subdivision	Yes	Yes	Yes	Yes	Yes
Month	Yes	No	No	No	No
Province · Month	No	Yes	Yes	Yes	Yes
Observations	63,304	63,304	63,304	63,304	43,050
R^2	0.91987	0.92758	0.92763	0.91422	0.93108

Note: Standard errors in parentheses, clustered by census subdivision
(a) high-use defined as more than five nights stayed per month on average over the past three months, compared with 10 nights for the other specifications in this table
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Sources: Airbnb; The Conference Board of Canada.

Table 9

Regression of the log of the number of nights stayed in Airbnb entire homes or apartment properties on short-term rental regulations

(monthly; 2016 to 2022)

	XXXIV	XXXV	XXXVI	XXXVII (excluding Nova Scotia and Quebec)
Principal residence restriction announcement$_t$	−0.3969*** (0.1131)	−0.4396*** (0.1398)	−0.4407*** (0.1398)	−0.5080*** (0.1542)
Principal residence restriction implementation$_t$	−0.6350*** (0.1448)	−0.3417** (0.1621)	−0.3420** (0.1621)	−0.4256** (0.1919)
Other regulation announcement$_t$			−0.3877*** (0.1368)	−0.3883*** (0.1372)
Other regulation implementation$_t$			−0.2475** (0.0992)	−0.2478** (0.0995)
Fixed effects:				
Census subdivision	Yes	Yes	Yes	Yes
Month	Yes	No	No	No
Province · Month	No	Yes	Yes	Yes
Observations	64,848	64,848	64,848	44,100
R^2	0.86989	0.88146	0.88157	0.89159

Note: Standard errors in parentheses, clustered by census subdivision
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Sources: Airbnb; The Conference Board of Canada.

Table 10

Regression of the log of the number of nights stayed in Airbnb private, shared, or hotel rooms on short-term rental regulations

(monthly; 2016 to 2022)

	XXXVIII	XXXIX	XL	XLI (excluding Nova Scotia and Quebec)
Principal residence restriction announcement$_t$	−0.1065 (0.1275)	−0.2254** (0.109)	−0.2262** (0.109)	−0.1381 (0.1183)
Principal residence restriction implementation$_t$	−0.6085*** (0.1421)	−0.4008*** (0.1212)	−0.4011*** (0.1212)	−0.2918** (0.1368)
Other regulation announcement$_t$			−0.3454* (0.1819)	−0.3447* (0.1821)
Other regulation implementation$_t$			−0.1687 (0.1517)	−0.1683 (0.1521)
Fixed effects:				
Census subdivision	Yes	Yes	Yes	Yes
Month	Yes	No	No	No
Province · Month	No	Yes	Yes	Yes
Observations	64,848	64,848	64,848	44,100
R^2	0.82306	0.83309	0.83317	0.85507

Note: Standard errors in parentheses, clustered by census subdivision
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
Sources: Airbnb; The Conference Board of Canada.

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