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Quarterly Rent Statistics: Technical Report on Methodology and Assumptions

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1 Preface

This report outlines the methodology behind the Quarterly Rent Statistics (QRS) program. It covers data sources, the target universe, key concepts, data processing procedures and techniques used to produce experimental asking rent estimates for Canadian census metropolitan areas (CMAs). It also explains the rationale behind the selection criteria and the limitations of asking rent data, as well as the approaches used to mitigate selection bias through advanced weighting strategies.

2 Introduction

Statistics Canada, in partnership with the Canada Mortgage and Housing Corporation (CMHC), established the QRS program to produce experimental data on the rental market—that is, the rents asked for advertised rental units—across all CMAs. The program's first estimates were released in June 2025 and covered the period from the first quarter of 2019 to the first quarter of 2025. It focuses on rental apartment dwellings, as well as rooms, listed on major rental platforms in Canada.

The QRS program is based on the **admin-first** paradigm (Rancourt, 2018), which prioritizes the use of administrative or secondary data sources before turning to traditional probability surveys that impose response burden. In this framework, online rental listing data are used for statistical inference and complemented, when necessary, by probability-based data from the Labour Force Survey (LFS) rent module. This integration enhances the representativeness of the estimates while reducing response burden and the costs associated with traditional survey collection (Beaumont, 2020).

The program complements existing statistical measures of rents in Canada. The Consumer Price Index rent component reflects the contractual rents actually paid by sitting tenants, while CMHC's Rental Market Survey (RMS) focuses on rents in purpose-built rental stock. In contrast, the QRS program captures **asking rents**—the advertised prices faced by prospective tenants—providing a quarterly view of rental market affordability and market entry conditions across regions.

This document presents the concepts, data sources and methodological procedures used to produce the quarterly estimates of asking rent, as well as the quality assessment measures implemented to ensure their reliability and interpretability.

3 Data sources

The QRS program relies primarily on administrative extracts of active listings from major rental platforms in Canada, such as the **Rentals.ca Network** and **Zumper**. These data are reviewed and standardized before being used for estimate production, to ensure they conform to Statistics Canada's conceptual and quality frameworks.

The combined platform data are linked to the Statistical Building Register to improve coherence and quality. This linkage allows key information to be validated, helps to remove duplicate listings and provides access to auxiliary variables used in estimation.

Since online listings may contain erroneous or extreme rent values, a statistical outlier detection process—the Sigma-gap method (Bernier and Nobrega, 1998)—is applied by dwelling type and number of bedrooms. Parameters are selected after examining the rent distribution, ensuring genuine highly priced rental listings are preserved. Records identified as outliers are excluded from subsequent weighting and estimation steps.

The LFS data used as a reference distribution to produce the weight also undergo a rigorous verification and imputation process (see Statistics Canada 2025).

4 Target universe

The target universe consists of rental dwellings advertised for long-term rental—rental apartment dwellings or rooms intended for rentals for six months or longer—located within CMAs. To be considered in scope, a unit must have been advertised for rent during at least part of the reference quarter.

The universe excludes lease transfers, short-term rentals and non-residential units. The reference period covers three-month quarters, and the main estimate of interest is the average monthly asking rent for the quarter.

5 Concepts

In the context of the QRS program, **asking rent** refers to the rental price publicly advertised by landlords, property managers or tenants seeking roommates when a dwelling or room is listed. Asking rent differs from the actual rent paid, since it reflects the offered lease agreement rather than the contractual lease agreement signed.

It is important to distinguish asking rent from related measures of rent:

- Consumer Price Index rent reflects changes to the rents actually paid by tenant households—including continuing and new leases—and employs a hedonic (characteristics-based) modelling approach to adjust for observable differences in dwelling attributes, such as number of bedrooms, included services, building type, building age and location. Its universe covers rents in all types of rented dwellings occupied by tenants, while excluding subsidized units, institutional residences or units used for business purposes (see Lehto 2023).
- CMHC's RMS measures the rents in the primary (purpose-built) rental market. It provides information on sitting tenants and their rental agreements, as well as asking rent for vacant dwellings. Its universe covers rents in all urban areas with populations of 10,000 or more and targets only privately initiated structures with at least three rental dwellings. Social and affordable housing units are excluded (see Canada Mortgage and Housing Corporation 2024).
- CMHC's Secondary Rental Market Survey targets rental dwellings outside the primary market, including condominium apartments and other secondary units, such as rented houses, duplexes or accessory suites. Its coverage extends to rental units not included in the RMS, across 17 CMAs (see Canada Mortgage and Housing Corporation 2022).

The QRS program's asking rent captures the advertised prices that prospective tenants face when entering the market, whether in purpose-built or secondary market rental units, in all 42 CMAs. This makes it a leading indicator of affordability pressures, since it reflects the market entry point rather than rents already established in contracts.

Several caveats should be considered when interpreting asking rent:

- Incentives or concessions (e.g., one month free) are not captured.
- Asking rent represents the initial advertised price and may differ from the final lease amount.
- The comparability of different regions or over time may be affected by differences in what is included, such as utilities, furnishings or parking.

6 Data cleaning

Key variables, such as unit type and bedroom count, are validated against information found in the listing's title and description, as extracted from the data provider classification. When inconsistencies are identified, records are corrected or excluded.

Listings removed from the analytical file include

- non-residential listings (e.g., offices, commercial premises, parking, lockers)
- short-term rentals (lease terms under six months)
- out-of-scope dwelling types (e.g., mobile homes)
- listings with missing or invalid rent or bedroom information
- listings with missing geocoding or located outside CMAs.

Duplicate listings within or across platforms are also removed. Outlier detection, as described in Section 3, is applied at the CMA level. Approximately 40% of collected listings are excluded through these combined validation and cleaning steps.

7 Weighting and estimation

7.1 Overview

The QRS program combines non-probability data from rental platforms with probability data from the LFS to achieve reliable estimates. Non-probability data lack a known selection mechanism, which can introduce selection bias, while probability samples such as the LFS are designed with known inclusion probabilities. Integrating these two components allows the QRS program to leverage the extensive coverage of online data and the inferential rigour of a probability reference.

To mitigate selection bias, the QRS program employs inverse probability weighting (IPW), described by Chen et al. (2019). This method assigns weights based on the inverse of estimated inclusion probabilities—the likelihood that a rental unit appears in the sample of online listings. These probabilities are estimated using a logistic regression model incorporating a set of relevant variables. Variable selection follows the modified Akaike information criterion approach described by Beaumont et al. (2024).

The resulting weights adjust the distribution of observed listings to more closely represent the full rental universe. It should be noted that the LFS rent module provides the distribution of occupied (rented) dwellings, which differs conceptually from the universe of available dwellings targeted by the QRS program. Given these considerations, the LFS distribution is used as a proxy reference to rigorously estimate the selection probabilities rather than as an exact representation of the universe of interest. However, because "room" is not a dwelling type captured in the LFS, the doubly robust method could not be consistently applied across domains. Consequently, room listings could not be weighted and were excluded from the benchmarking exercise.

7.2 Benchmarking and evaluation

Several weighting strategies were tested—post-stratification, doubly robust estimation and IPW—to evaluate bias reduction performance. Weighted estimates were compared with one-year mobility data from the 2021 Census, which captures rents associated with recent lease agreements—specifically, for people who moved from May 2020 to May 2021.

Results showed that both IPW and doubly robust methods reduced bias relative to unweighted averages. However, the benchmark period coincided with the COVID-19 pandemic, during which mobility and rental behaviours were atypical, reducing the stability of predictive models used in doubly robust estimation.

Given these factors, combined with IPW's operational simplicity and strong empirical performance, IPW was adopted as the standard estimation approach for the QRS program.

7.3 Published estimates

The published data tables include weighted estimates for rental apartment dwellings.

Room-level estimates are released in unweighted form, since no suitable reference universe exists in the LFS and many room listings lack complete auxiliary information. Applying weights to these records would lead to excessive suppression and limited reliability, so unweighted figures are published to preserve transparency and coverage while acknowledging their methodological limitations.

8 Quality evaluation

The quality of the estimates was assessed through multiple validation steps. Comparisons were made against external sources, such as CMHC's RMS and Secondary Rental Market Survey at CMA levels, where data permitted. Some comparisons were also made with rent statistics published in various reports by online listing platforms.

While methodological and reference-period differences posed challenges, these comparisons provided valuable alignment checks. Accuracy was evaluated using measures such as mean absolute error and mean absolute percentage error, complemented by distributional analyses of rental value patterns across market segments. Seasonal-Trend decomposition using LOESS was applied to assess trend stability and detect potential outliers.

This multifaceted validation framework demonstrates consistency across analytical lenses, strengthening confidence in the estimates, despite inherent cross-system complexities. Finally, while asking rents were adjusted for dwelling-type representation, no adjustments were made for unit quality (e.g., utilities, finishes, parking). This may explain some observed variations.

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