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Housing Statistics in Canada

A toolkit for understanding housing supply

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A toolkit for understanding housing supply

by **Florian Mayneris** and **Radu Andrei Pârvulescu**
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Overview

This article draws together a variety of publicly available data sources into a toolkit of indicators that can be used by researchers, practitioners and the public to describe housing dynamics from a supply-side lens. The article then leverages this toolbox to illustrate trends in housing prices, supply and key determinants of residential construction over the past 12 years in selected census metropolitan areas (Halifax, Montréal, Ottawa–Gatineau, Toronto, Edmonton and Vancouver). The purpose of this article is both to highlight the rich variety of public data sources available for supply-side analysis and to mark out areas where data gaps exist.

Highlights

- New data on vacant land show that the census metropolitan areas of Ottawa–Gatineau (Ontario part), Halifax and Toronto have more residentially zoned vacant land than Edmonton or Vancouver. In Toronto and Vancouver, almost all vacant land is located outside the CMA core.
- Building construction costs have increased in major Canadian cities, with a clear acceleration since the COVID-19 pandemic.
- Average wages in the construction industry have increased less than in the rest of the economy, except in Nova Scotia.
- The job vacancy rate for the building trades has rapidly increased in all provinces since the COVID-19 pandemic.
- Rich data are available on key components of housing supply—from the existence of residential vacant land to the availability of workers in the construction sector and the costs of building materials.
- Data gaps exist with regard to land assembly, zoning and permitting, land banking, development costs, and inspection and certification.

Introduction

Housing prices have increased in several Canadian cities, especially during the COVID-19 pandemic. Since the second quarter of 2022, housing unaffordability in Canada has reached levels not seen since the early 1990s (Bank of Canada, 2022). While 2023 has seen house prices decrease in some areas, housing affordability remains a major concern to both citizens and the various levels of government.

Housing prices and construction costs are jointly determined by the demand for and supply of housing, be it for use as lodging or as an investment vehicle. In the recent context of deteriorating housing affordability in Canada, insufficient housing supply has been proposed as one of the possible drivers of rising housing prices, sparking renewed interest in the determinants of housing supply (see, for example, CMHC, 2022). Academic research further highlights the “combination of strong and growing demand for housing in desirable areas in conjunction with tight long-term supply constraints” (Hilber and Schöni, 2022).

This article begins with the context of recent trends in housing prices, and then describes housing supply and several factors important for residential construction, for selected Canadian cities. One important takeaway is that conditions vary widely across the country, with few truly national trends. The article draws together a variety of publicly available data sources into a toolkit of indicators that can be used by researchers, practitioners and the general public to describe housing dynamics from a supply-side lens. The present article also points at data gaps that prevent drawing a fuller picture of housing supply. It is hoped that this toolkit will facilitate analysis of the

numerous factors affecting housing supply in various Canadian cities and will contribute to identifying avenues for expanding the range of indicators available to stakeholders, citizens and researchers.

All indicators are presented on a yearly basis from 2010 onwards for six census metropolitan areas (CMAs): Halifax, Montréal, Ottawa–Gatineau, Toronto, Edmonton and Vancouver. Together, these CMAs contain almost half (44.6%) of the Canadian population, according to the 2021 Census of Population.[1] That said, the frequency and geographic coverage of these indicators vary significantly; see Appendix A for details and links.[2]

1 Housing price context

House prices are central to housing affordability, since the cost of acquiring a home (through a purchase or renting) is typically the largest component of shelter costs, which include elements—such as utilities and interest payments on a mortgage—that are not considered here. Moreover, the selling price of a house is important for property developers and builders, who typically enter a housing market only when the price is high enough to accommodate their desired profit margin. It is therefore important to first survey the evolution of several housing price indicators, as this will give context in which other measures—such as the volume of new dwelling units or changes in the price of construction materials—may be interpreted.

Four publicly available indicators capture the evolution of housing prices in different segments of the housing market. The Teranet–National Bank House Price Index (TN-HPI) uses information from land registries and a repeat sales methodology to capture price changes in the existing stock of properties. The New Housing Price Index (NHPI), provided by Statistics Canada (StatCan), captures selling prices for new residential houses via a questionnaire sent out to a sample of residential builders.[3] The New Condominium Apartment Price Index (NCAPI), also produced by Statistics Canada, complements the NHPI with information on developers' selling prices of units in new condominium apartment buildings. Finally, price changes in the rental market can be tracked via the Rental Market Survey (RMS) from the Canada Mortgage and Housing Corporation (CMHC).[4],[5]

Chart 1 below shows that the yearly evolution of these four indicators of housing prices—the TN-HPI (existing houses), the NHPI (new houses),[6] the NCAPI (new condo apartments)[7] and the RMS (rents)—are highly correlated, with pairwise correlations above 70%. Chart 1 confirms that these four indexes paint a consistent picture. There is an overall trend of price increases over the past 12 years in all six CMAs considered here, though both the magnitude and the timing of this evolution varied across cities.

Prices strongly trended upwards from 2010 to 2022 in Toronto (+184.8% for the TN-HPI, +50.9% for the NHPI, +39.1% for the NCAPI and +58.4% for the RMS) and Vancouver (+129.9% for the TN-HPI, +33.1% for the NHPI, +21.8% for the NCAPI and +67.1% for the RMS), compared with other CMAs.

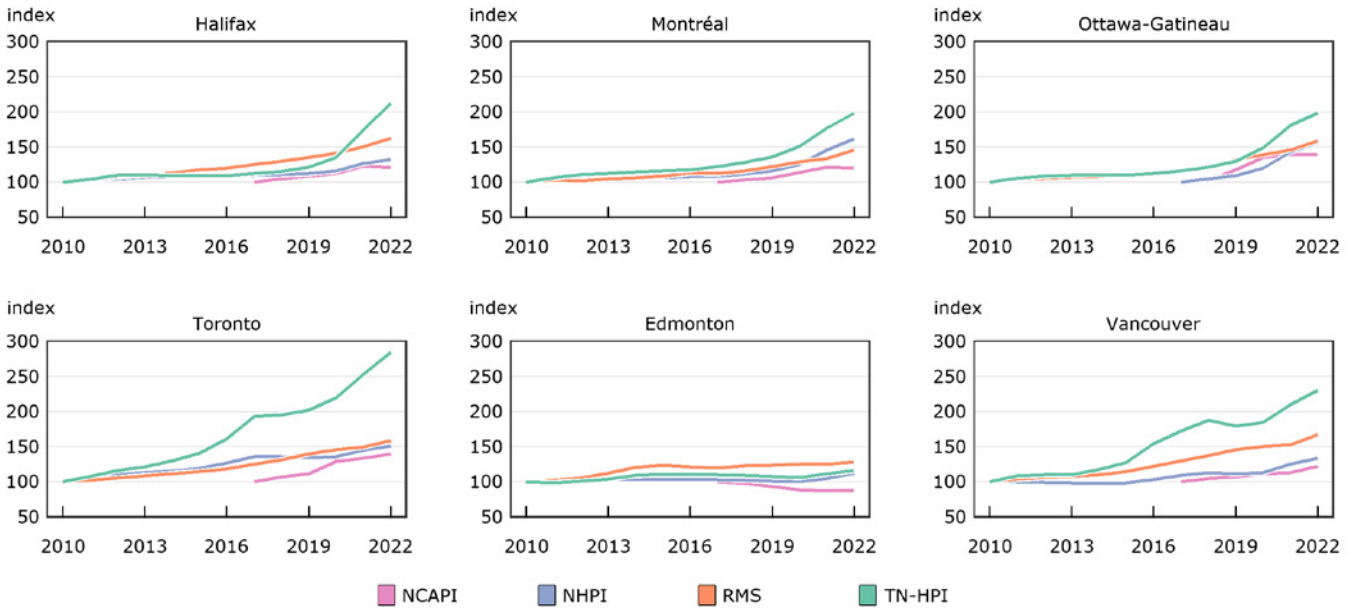
Resale house prices (TN-HPI) increased to a lesser extent in Halifax, Montréal and Ottawa–Gatineau. In these three cities, the rise in price indicators was concentrated from 2018 to 2022.

1. Data are also available for the CMA of Calgary, for all indicators except vacant land. Since trends in Calgary and Edmonton are generally similar, the results are presented for the latter only.
2. Most of the indicators discussed below are analyzed as indexes: their evolution is compared across cities and over time, but levels or absolute changes in dollars, number of dwellings or other such units are not studied here. The publicly available data used in this article (further described in Appendix A) were downloaded on September 1st, 2023.
3. The NHPI is a matched-model index and covers new single-detached homes, semi-detached homes and townhomes (row or garden).
4. The RMS provides a snapshot of vacancy, turnover rates and average rents in both new and existing structures primarily destined for the rental market. It focuses on privately initiated structures with at least three rental units that have been on the market for at least three months. The analysis here focuses on average rents in areas with 10,000 residents or more for two-bedroom units in row and apartment structures of three units or more. For more information on CMHC's methodology for the RMS, see its Rental Market Report. CMHC also runs the Secondary Rental Market Survey, which includes properties that are rented or contain rented units even though they are not primarily destined to the rental market.
5. Home sale statistics from the Canadian Real Estate Association are not used as they may feature sales of both new and old units. The TN-HPI, NHPI and NCAPI treat sales of existing and new stock in mutually exclusive populations, thus allowing for complementary analysis of housing prices.
6. NHPI figures are available for the Ottawa-Gatineau CMA (both Ontario and Quebec parts) from 2017 onward.
7. NCAPI figures are calculated from the base year 2017, the first year for which these data are available.

Finally, compared with the other five CMAs, prices were more stable in Edmonton (+15.5% for the TN-HPI, +11.9% for the NHPI, -12.3% for the NCAPI and +27.7% for the RMS).

Regarding rents, slower price growth partly reflects the fact that many jurisdictions have rules and regulations governing the amount of rent increases that landlords can impose on tenants. It is also worth noting that the price of existing homes (the TN-HPI) increased faster than the other three indexes, except in Edmonton. This does not imply that existing homes are generally more expensive than new builds, but rather that prices for existing stock have appreciated quicker. This may occur when rapidly increasing housing demand outpaces developers' ability to build and sell new houses.

Chart 1
House price indexes, 2010 to 2022, by CMA



Note: Data on the Ottawa-Gatineau CMA include both Ontario and Quebec parts, except for the NCAPI which includes only Ontario.
Sources: Statistics Canada and Canada Housing and Mortgage Corporation (CMHC), tables 18-10-0273-01, 18-10-0205-01, 34-10-0133-01 and Teranet-National Bank.

2 Data on housing supply and related factors

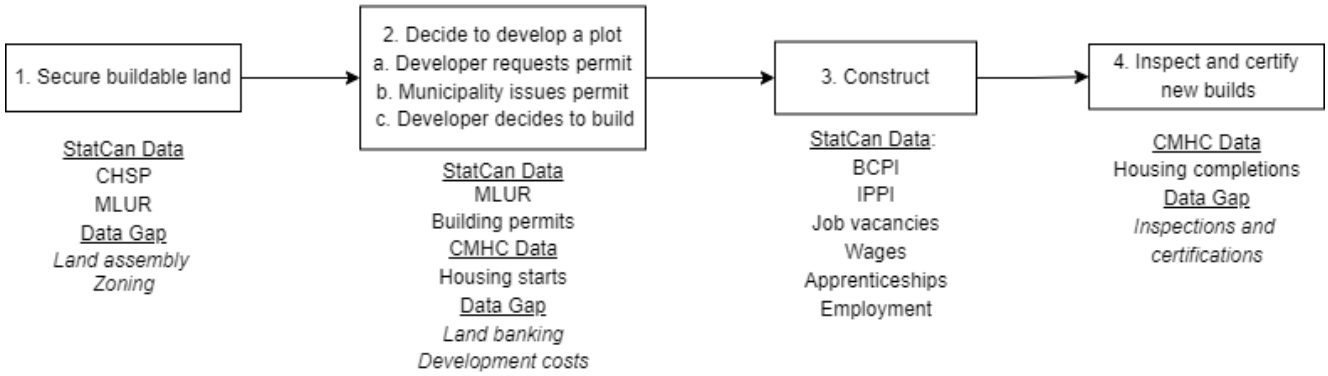
Housing construction costs and the volume of new residential builds are jointly determined by demand for and supply of housing, whether for use as lodging or as an investment vehicle. Housing demand is outside the scope of this article, which instead focuses on some of the determinants of the supply of new dwellings in selected CMAs. Before discussing trends, however, it is worth providing an overview of what can be measured with publicly available data and identifying where the data gaps are.

2.1 A wide range of publicly available data…

Determinants of housing supply

The development of new properties can be conceptualized as a sequence of different steps, each of which involves various factors that matter for the supply of new dwellings. Figure 1 provides a visual representation of these different steps and the way they will be discussed in the following section.

Figure 1
Sequencing of housing development, with associated data sources



Notes: Data gaps are italicized.
While logically distinct, in practice different steps of the housing development sequence may intermingle. For example, pre-sale results often precede a developer's decision to build condominium apartments and might motivate the development of adjacent lots.
Source: Statistics Canada, Canadian Housing Statistics Program (CHSP).

The first step in providing new housing supply (as described in Box 1) is to secure buildable land, namely the series of activities from ensuring that a plot is available, residentially zoned, and conforming with density limits and parking requirements, among other regulations. For the first time, the Canadian Housing Statistics Program (CHSP) at Statistics Canada is releasing preliminary information on residential vacant land in terms of the land area (in acres) that these vacant lots cover. The CHSP remains the first and only national source of information on the quantity of land readily available for residential construction in Canadian cities. Moreover, in the spirit of the Wharton Residential Land Use Regulation Index for U.S. cities, comprehensive data on local housing regulations—for example, on zoning and density requirements—have recently been collected in a joint initiative between Statistics Canada and CMHC for the largest Canadian CMAs, namely the Municipal Land Use and Regulation (MLUR) survey. Like the Wharton index, these new data are based on surveys of local governments and focus on their perception of processes and outcomes. A first analysis of MLUR data has already been undertaken by CMHC and reveals a higher regulatory burden in Vancouver and Toronto, cities also marked by high housing demand and a greater incidence of high-rise developments.

The second box concerns the decision to develop the land, a joint process between a property developer and municipal authorities. The developer starts by requesting a building permit; the municipality reviews and approves, rejects or suggests modifications to the application; and then the developer decides whether it will delay or begin construction, or sell the still-vacant plot. Three available sources of data provide information on this step. Information on building and demolition permits issued at the CMA level is available, where building permits measure **intended** construction projects approved by local authorities—as opposed to housing starts and construction investment that measure **actual** construction activity.[8] Housing starts are estimated via a CMHC survey that either asks builders about the state of construction projects or conducts on-site visits.[9] The MLUR survey mentioned above has also collected data on the process required to obtain development approvals or building permits.

Box 3 deals with the construction process, with available indicators (all from Statistics Canada) particularly focused on construction costs. The Building Construction Price Index (BCPI), in its residential part, measures change over time in the prices that contractors charge to construct residential buildings. It aggregates several dimensions of construction costs, some of which can be tracked with publicly available data.[10] Alternatively, for construction materials, the Industrial Product Price Index (IPPI) measures price changes for major commodities sold by manufacturers operating in Canada.[11] While this is only an approximation of the price paid by the construction

8. The number of new dwelling units approved by housing permits is used here. The value of building permits is also available. This indicator is a combination of changes in the number of permits, the size of building projects and building construction costs. The evolution of the dollar value of building permits is highly correlated with the evolution of the number of approved new dwellings. Since the focus is on the evolution of the quantity of housing supply, the number of new dwellings is used.
9. For more information on CMHC's Starts and Completions Survey, see the survey methodology.
10. Information on subcomponents of the BCPI is available from the first quarter of 2017 in Statistics Canada's Table 18-10-0276-01.
11. The IPPI tracks national-level prices and relies on the North American Product Classification System.

industry, the IPPI may nonetheless provide useful insights on the evolution of prices for specific building construction materials.[12] Data on the labour market for the construction trades provide information on construction costs via the availability of workers and wages. Data are available on the number of both apprentices and workers in the building trades, as well as on the vacancy rate of construction-industry jobs and the average hourly wages offered in this sector.[13] These indicators are available at the provincial level.[14]

The fourth and final box is on the completion and on the inspection and certification (e.g., to fire code) of new buildings. In the same survey as the one providing housing starts, CMHC provides estimates of the number of completed residential construction units (housing completions).

These data sources form the housing data toolkit at the base of this article's findings. Full descriptions of the data in terms of geographies available and time grain, as well as links, can be found in Appendix A.

2.2 …but also significant data gaps

Although the available data on housing prices and supply are rich, data gaps remain for several dimensions of the housing supply process identified in the literature. These gaps appear especially before and after the construction phase of the development process. At the beginning, there is a lack of data on when property developers assemble land, potentially apply for zoning, seek permits, begin or delay construction, or sell the plot. At the end of the process, data are missing on the inspection and certification process of newly built residential units. Regarding the securing of developable land, a first gap is land assembly. Developers often need to join adjacent parcels of land that are too small to host a construction project. Holdouts—i.e., property owners refusing to sell the parcels necessary for particular building projects (Brooks and Lutz, 2016)—may increase the cost of land, as well as the administrative costs of building projects. Little is known about land assembly and holdouts since tracking mergers and divisions of parcels requires tracking historical land titles over time.

The concrete application of municipal regulations is another area with insufficient data. Notwithstanding the recent data collection efforts undertaken by Statistics Canada and CMHC about perceptions of existing regulations, there remains a lack of information on how local development regulations are implemented—for instance, on the frequency with which the rezoning applications of developers are approved. There is also a relative lack of data on development costs, a common mechanism whereby municipalities charge developers for anticipated capital upgrades in the public infrastructure needed to support new housing, such as larger storm drains or expanded fire services.[15]

Information about land banking is also sparse. Land banking may occur when developers have acquired land but do not use it, as they wait for market conditions that will make it more profitable either to start building or to resell the parcels (Murphy, 2018; Murray, 2020). No publicly available data currently allow the extent of this phenomenon in Canadian cities to be measured.

Finally, regarding building inspections and certifications, new or renovated buildings may be inspected several times during construction to ensure they meet building codes. Often, residential buildings must receive a permit of occupancy before they can be inhabited. There is little research on the inspection and certification process, e.g., the associated costs and timeframes, and the frequency of delays.

Data gaps at the beginning of the development process are especially salient because public policy often aims to incentivize developers early on to make construction more likely. Public authorities may, for example, offer concessions from zoning rules, or property swaps with public lands.[16] Assessing the effectiveness of such policies therefore requires high-quality, longitudinal data on changes in land parcel boundaries, zoning (both as it appears in local regulations and as it is actually applied), permitting, or the use of developable land (in particular whether and how long it is kept empty).

12. The IPPI measures the factory-gate prices of Canadian producers, not wholesale or retail prices, and does not capture the price of imported materials. It will be a good approximation of wholesale and retail prices if changes in international and domestic prices are positively correlated, and if profit margins do not fully compensate for variations in factory-gate prices.
13. For apprentices, the following trades are considered to be related to the construction industry: carpenters; construction workers (other); electricians; exterior finishing; heavy duty equipment mechanics; heavy equipment and crane operators; interior finishing; plumbers, pipefitters and steamfitters; millwrights; refrigeration and air conditioning mechanics; and welders.
14. This is because the surveys from which these indicators are drawn are representative, for a given sector, at the province level only (except for employment, which is also available at the CMA level). For more details, see the Job Vacancy and Wage Survey.
15. One of the few studies to focus on development costs (also known as development charges or fees) came from CMHC and focuses on Toronto, Vancouver and Montréal. Ontario is the only province to have passed legislation on development charges, so it is difficult to assess the extent to which such charges vary across municipalities in other provinces.
16. Sometimes referred to as payments in lieu, such trades (for example, land swaps, or a developer commitment to fund a public park in exchange for an exemption from a certain density requirement) usually involve ad hoc negotiations between developers and municipalities. This makes systematic data collection efforts particularly challenging.

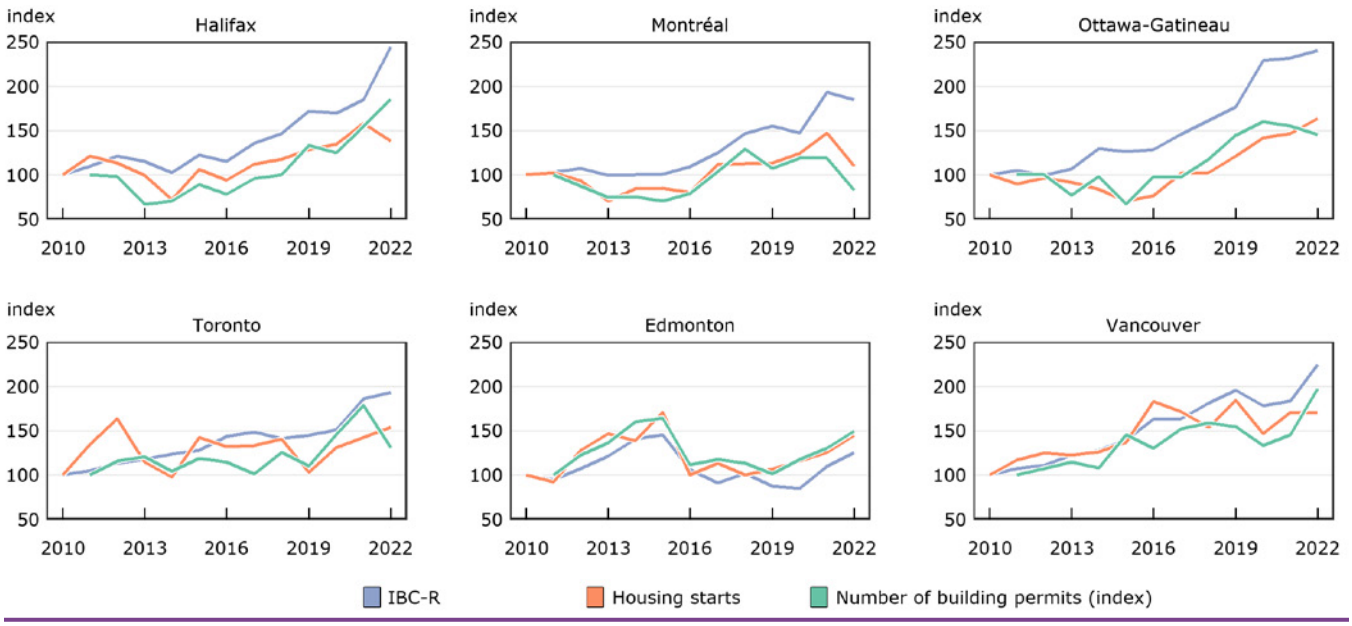
3 Recent trends in housing supply and its determinants

3.1 Housing construction and investment

In terms of construction activity, the investment in building construction (IBC) indicator, produced by Statistics Canada, captures the value spent by households, enterprises and governments for the construction of buildings, excluding the value of land. This paper presents the residential part of the IBC indicator (IBC-R), which is based on building permits, starts and completions, and administrative data that adjust the base value of construction investment to account for industry profit and other costs not normally included in the value of a building permit. Therefore, although all three indicators measure different things (e.g., not all building permits end up in new constructions), IBC-R, building permits and housing starts are highly correlated, as illustrated in Chart 2.[17] Hence they are here considered alongside each other.

It is more difficult to discern trends in housing construction and investment than in the housing prices surveyed earlier. Vancouver is the only CMA in which housing construction indexes exhibited a coherent upward trend over the past 12 years (+97.6% for the number of new dwellings in building permits, +70.3% for housing starts and +124.9% for the IBC-R). In Halifax (+85.3% for the number of new dwellings in building permits, +38.4% for housing starts and +144.6% for the IBC-R) and Ottawa–Gatineau (+45.8% for the number of new dwellings in building permits, +63.8% for housing starts and +140.9% for the IBC-R), the supply of new dwellings has also increased, albeit largely from 2016 onwards. Toronto (+31.0% for the number of new dwellings in building permits, +54.1% for housing starts and +93.5% for the IBC-R) and Edmonton (+49.6% for the number of new dwellings in building permits, +44.7% for housing starts and +25.6% for the IBC-R) also experienced an overall increase in the number of new housing units, but this growth is less pronounced and more irregular over the period under consideration. Finally, housing construction does not exhibit clear trends in Montréal, where construction also increased less than in the other five CMAs, especially when measured in terms of the number of permitted dwellings (-17.5%) and housing starts (+9.9%).

Chart 2
Residential construction indexes, 2010 to 2022, by CMA



Note: Data sources include both the Ontario and Quebec parts of the Ottawa-Gatineau CMA.
Sources: Statistics Canada and Canada Mortgage and Housing Corporation (CMHC), tables 34-10-0175-01, 34-10-0066-01, and 34-10-0156-01.

17. Compared with the number of approved units and with housing starts, the value of the IBC-R had a more consistent upward trend, for most CMAs. This is because the IBC-R partly reflects the evolution of prices. Since the latter increased regularly over the period in all six CMAs besides Edmonton, their evolution makes the trends of the IBC-R more consistent than the variations in the number of new dwellings approved and built.

3.2 Vacant land

Securing land is a crucial step in a housing development project. This is done either by demolishing existing structures to make way for new housing or by obtaining a plot of vacant land. The latter is typical for developers seeking to build subdivisions, and the use of vacant land for residential construction has been at the centre of debates on both housing affordability and urban expansion. It is therefore important to be able to measure how much vacant land is immediately available for construction.

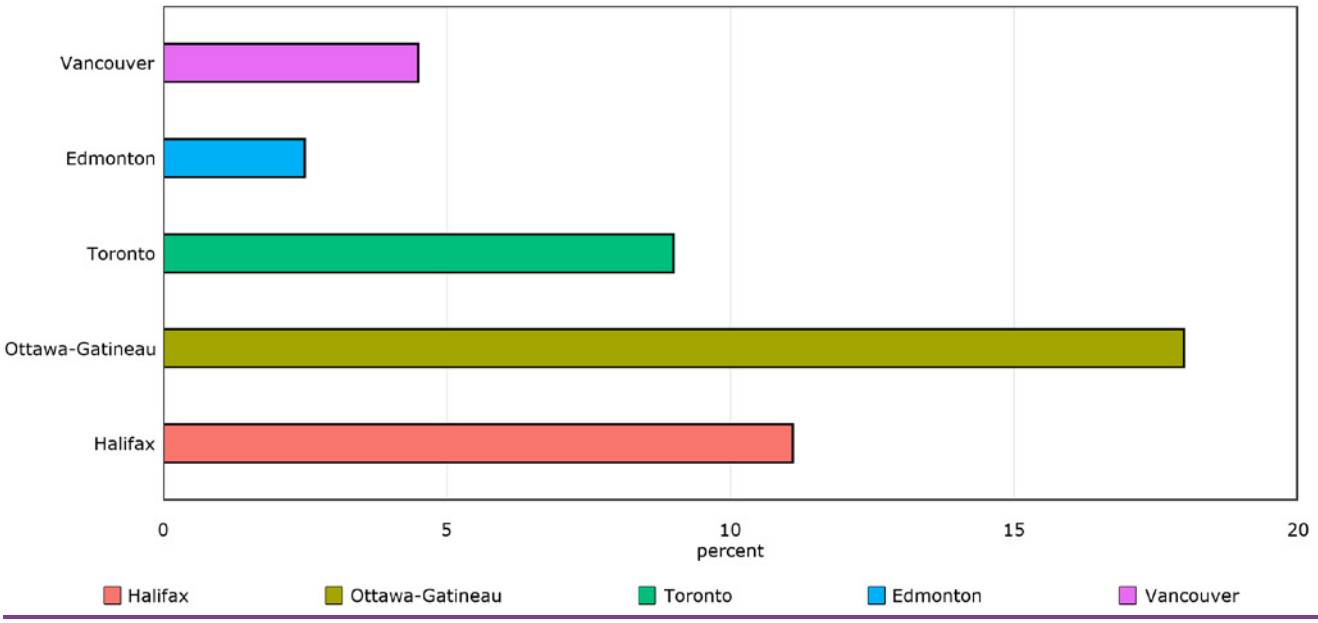
Chart 3 shows the residential vacant land area (in acres) as a share of a CMA's total land area for 2021. The Ottawa–Gatineau CMA (Ontario part) had the highest quantity of residential vacant land, both as a share of the CMA's overall land area (18.0%), and in terms of total acreage (162,000 acres). Land availability may therefore be less of a constraint on the housing supply in this CMA than that in Halifax (11.1% of CMA land area, 151,000 acres), Toronto (9.0%, 131,000), Vancouver (4.5%, 32,000) and Edmonton (2.5%, 59,000). These percentages should be interpreted with care, however, since the total surface area of CMAs varies widely. The CMA of Edmonton, for example, has a land area of 9,439 km^2, compared with 2,883 km^2 for Vancouver. It is therefore not surprising that residential vacant land lots should account for less of the total in the former, despite there being more acres of residential vacant land in Edmonton than in Vancouver.[18]

It is also possible to analyze the share of vacant land area in the core city of a CMA (such as the City of Toronto), [19] as opposed to the rest of the CMA, which often has a suburban or rural character.[20] Chart 4 reveals that a high percentage of vacant land area in both the Ottawa–Gatineau (Ontario part) (75.9%) and Edmonton (33.9%) CMAs was located within the limits of the core city in 2021, while the proportion in the cores was much more limited in the Toronto (2.1%) and Vancouver (0.3%) CMAs. The constraint of vacant land availability in the cores of Toronto and Vancouver is thus stronger than suggested by CMA-level statistics. These figures show that even if a CMA features large stocks of residentially zoned vacant land, these stocks may be almost entirely outside the CMA's core city.[21] This may have differing implications for housing supply, as it pertains both to the relative ease of developing previously built-over land ("greyfill"), as opposed to previously unbuilt parcels ("greenfill"), and to housing affordability.

Beyond the availability of vacant land, the ownership structure of those properties may also matter for housing supply. Additional information on the characteristics of vacant land is publicly available, such as whether vacant land is owned by a person or by a business or government. For example, a recent CHSP article reveals that in the Atlantic provinces, vacant land was more often owned by people who owned one or two pieces of vacant land in addition to their primary place of residence, compared with other provinces (Fontaine and Gordon, 2023).

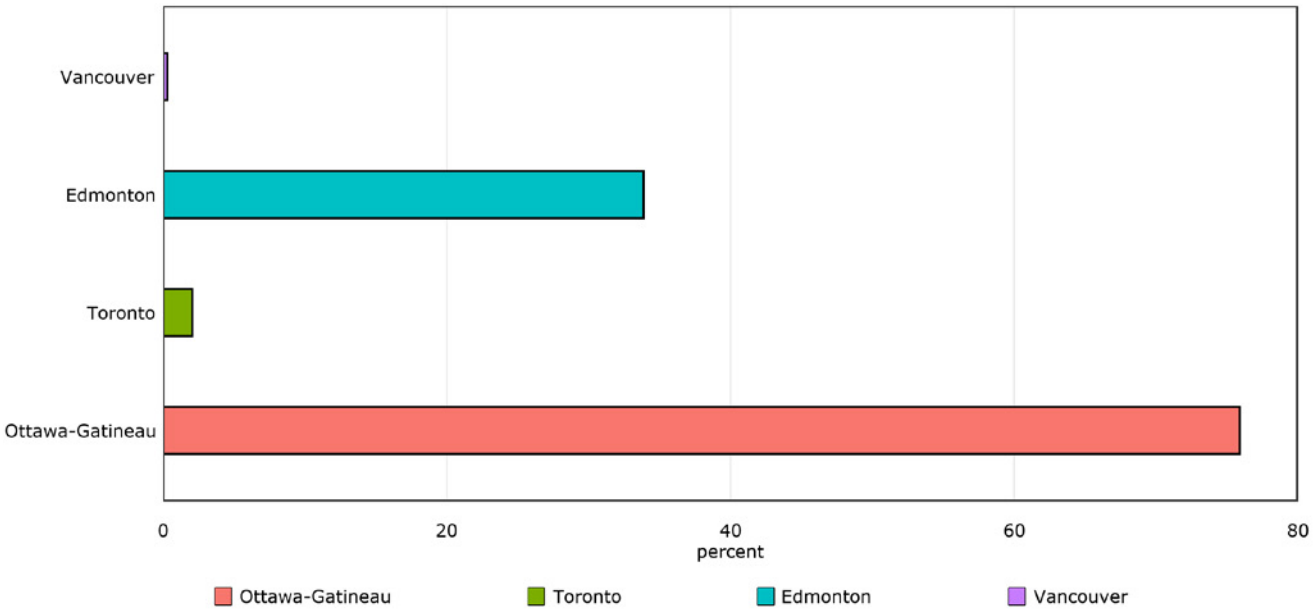
18. The figures for overall land area are based on the geographical boundaries from the Standard Geographical Classification 2016 and can be accessed in the Population and Dwelling Count Highlight Tables. Land area is measured as surface area minus hydrological features, such as lakes, rivers and oceans. Consequently, the figure includes both populated and uninhabited areas, which may be zoned for various purposes (e.g., commercial, military, residential) and under a variety of owners, such as individuals, businesses, or governments.
19. The core city of a CMA, for the purposes of this release, refers to the census subdivision within a CMA with the highest number of residential properties.
20. Comparisons between the core city and the rest of the CMA are not possible in Halifax since the CMA is almost entirely covered by one census subdivision, the Halifax Regional Municipality.
21. Deriving land use statistics that are comparable across geographies is made especially challenging by the fact that the total land area of both CMAs and core-city municipalities varies in idiosyncratic ways and is intimately connected to local histories of land settlement and urban expansion. Future releases of these data may feature other standard geographies, such as population centres.

Chart 3
Percentage of the total area covered by residential vacant land in 2021, by CMA



Note: CHSP data include only the Ontario part of the Ottawa-Gatineau CMA.
Source: Statistics Canada, Canadian Housing Statistics Program (CHSP).

Chart 4
Percentage of residential vacant land area situated in the core city in 2021, by CMA



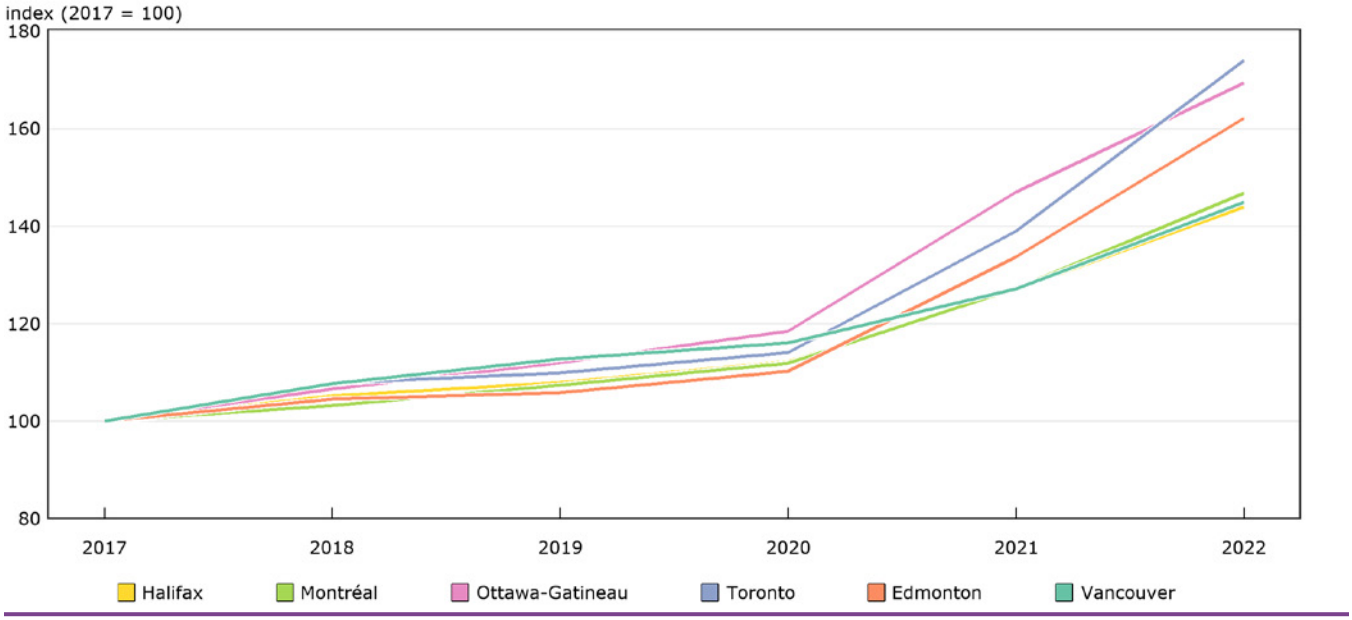
Note: CHSP data include only the Ontario part of the Ottawa-Gatineau CMA.
Source: Statistics Canada, Canadian Housing Statistics Program (CHSP).

3.3 Building construction costs

The evolution of building construction costs has been qualitatively homogeneous across cities in the past 12 years. Chart 5 shows that overall residential construction costs, as measured by the BCPI, have increased in the six CMAs, accelerating notably from 2020. This partly reflects supply-chain bottlenecks caused by the COVID-19 pandemic (Meyer-Robinson, 2022), as well as tightening labour shortages in the construction sector (Morissette, 2022). While the BCPI's evolution is qualitatively similar across the CMAs, the size of its growth varies, with Toronto (+74.0%), Ottawa–Gatineau (+69.4%) and Edmonton (+62.2%) standing out.

It is also notable that the price of key construction materials (as captured by the IPPI) has surged since the start of the pandemic, in particular that of lumber (+40.0% in 2020 and +61.7% in 2021), prepared asphalts (+7.9% in 2021 and +24.4% in 2022) and ready-mixed concrete (+11.5% in 2022).

Chart 5
Building construction price index (residential), 2017 to 2022, by CMA



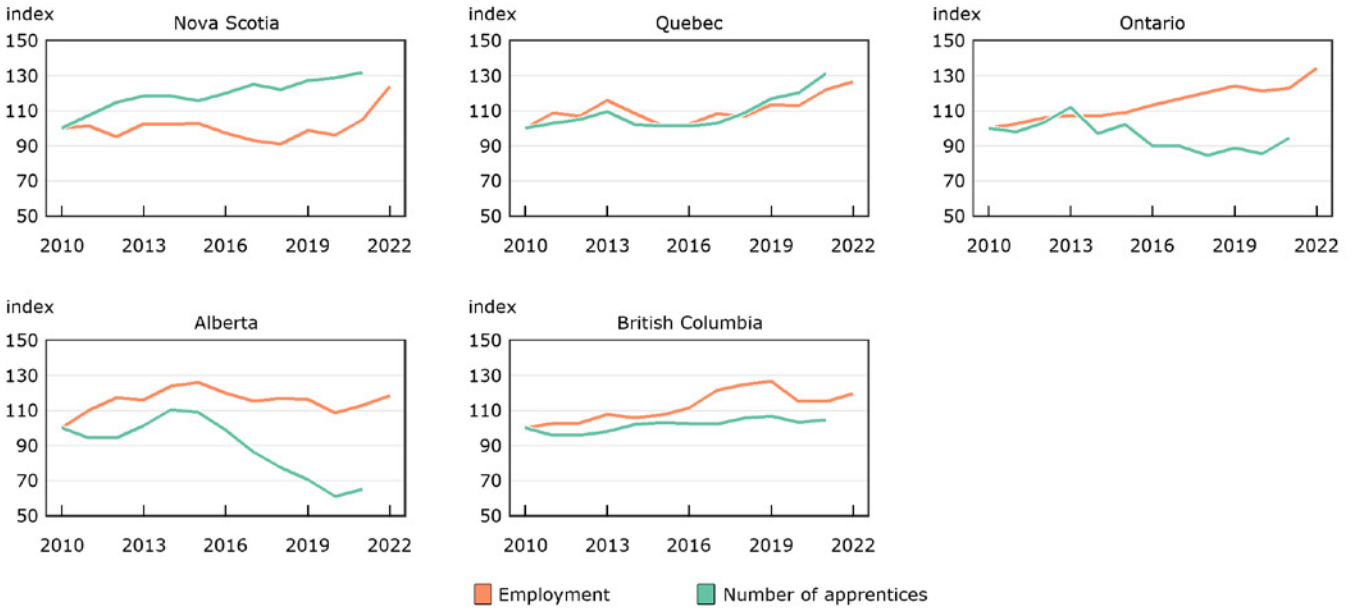
Note: BCPI data include only the Ontario part of the Ottawa-Gatineau CMA.
Source: Statistics Canada, table 18-10-0276-01.

3.4 Labour market determinants of housing supply

Housing supply is partly influenced by the labour market in the construction industry. Of particular importance are the availability of labour (both current workers and apprentices in the construction trades) and the level of wages in the construction sector.

Regarding the number of workers, Chart 6 shows that from 2010 to 2022, the growth rate of employment in construction was highest in Ontario (+34.3%) and Quebec (+26.7%). In terms of training, the number of apprentices remained largely stable (in British Columbia and Ontario) or decreased (-35.1% in Alberta) from 2010 to 2021, except in Nova Scotia and Quebec (where it increased by 31.9% and 31.2%, respectively).

Chart 6
Employment and number of apprentices in construction trades, 2010 to 2022, by province



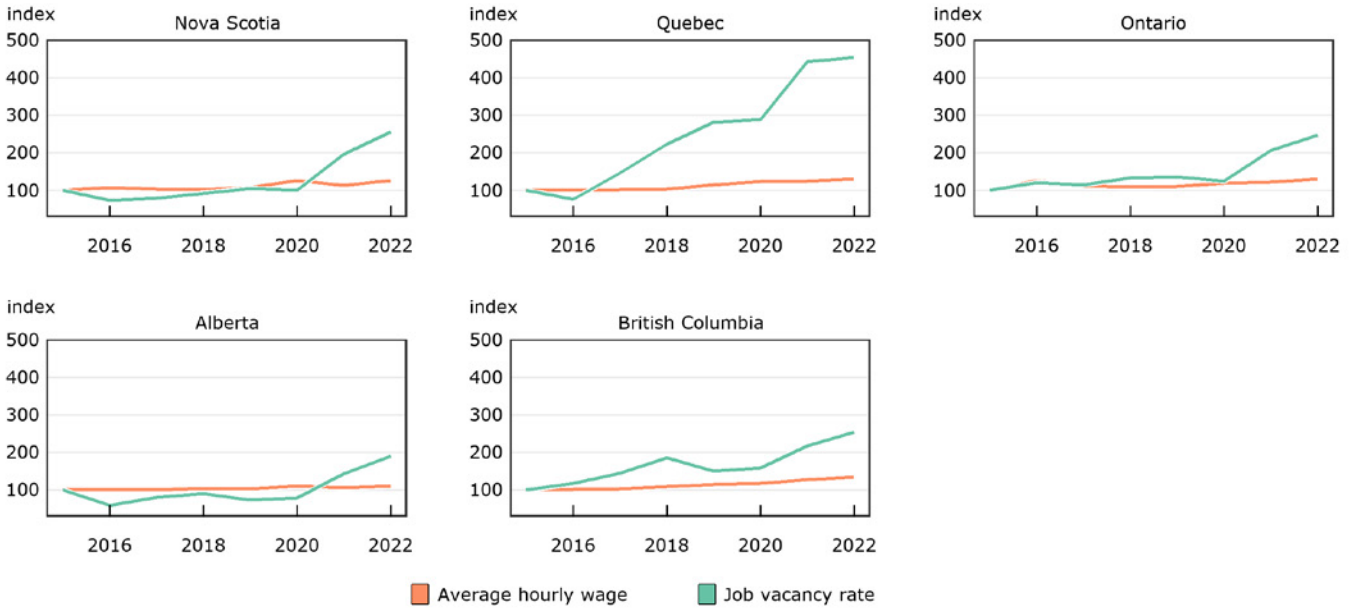
Source: Statistics Canada, tables 37-10-0219-01 and 14-10-0023-01.

Overall, these variations in the number of workers and apprentices have been insufficient to meet labour demand in the construction industry: the job vacancy rates for the building trades have rapidly increased in all the provinces since the COVID-19 pandemic, a trend that started even sooner in Quebec (see Chart 7 below). While labour shortages affect all sectors, the job vacancy rates rose more in the construction sector than in the rest of the economy.[22]

Despite the rapid increase in the job vacancy rate, the wages offered to construction workers witnessed a smaller increase between 2015 and 2022 than wages in the rest of the economy, except in Nova Scotia.[23] Wages in the construction sector may be slower to adjust to vacancy rates because, in several provinces, these are set by collective agreements that are only periodically renegotiated.[24]

22. See figures for the whole economy and by sector in Statistics Canada's Table 14-10-0326-01.
23. Idem.
24. The wages reported in these data sources are also expected to be less dynamic because information is not gathered on independent and self-employed construction workers, whose hourly rates may be more flexible than those of construction workers employed in organizations.

Chart 7
Average hourly wage and job vacancy rate in the construction sector, 2015 to 2022, by province



Source: Statistics Canada, table 14-10-0326-01.

4 Conclusion

The observed evolution of housing prices is the outcome of changes in both the demand for and the supply of housing. Thus, the raw relationships between these costs and each of the indicators discussed in this article should be interpreted as correlations, not as causal relationships.

To illustrate why simple causal analysis is not advised, it can be seen that there is a positive (but weak) correlation between the evolution of prices and the number of new dwelling units approved in building permits. However, this finding does not necessarily imply that more construction causes the price to rise. Rather, it reflects that although increasing housing supply should (all else equal) slow down price growth, new projects are generally launched where there is demand for them. In other words, property owners and builders generally apply for (and municipalities subsequently approve) building projects primarily when the demand for housing is already high. This may induce a positive correlation between house prices and the number of new authorizations.

To infer causal relationships, the indicators presented in this article should feed more elaborate econometric or quantitative general equilibrium models of local housing markets, keeping in mind that the main drivers of the changes in housing prices may change across cities and time periods (Saiz, 2010; Paciorek, 2013; Accetturo et al., 2021).

The suite of indicators highlighted in this article provides anyone interested in the analysis of housing supply a toolkit with which to describe local conditions relating to the housing supply process. It is hoped that this will facilitate ongoing research in housing affordability.

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Appendix A Details on Data Sources

Name	Link	Geographies	Frequency	First Availability
Building construction price index (BCPI)	https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1810027601	CMA	Quarterly	Q1 1981
Industrial product price index (IPPI)	https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1810026601	Canada	Monthly	January 1956
New condominium apartment price index (NCAPI)	https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1810027301	CMA	Quarterly	Q1 2017
New housing price index (NHPI)	https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1810020501	Canada, geographical region, province/ territory, CMA, Census agglomeration	Monthly	January 1981
Teranet-National Bank house price index (TN-HPI)	https://housepriceindex.ca	11 CMAs	Monthly	June 1990
Rental market survey (RMS)	https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3410013301	CMA, Census agglomeration, Census subdivision	Yearly	1987
Investment in building construction (IBC)	https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3410017501	Canada, province/ territory, CMA, Census agglomeration	Monthly	January 2010
Building permits	https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3410006601	Canada, province/ territory, CMA, Census agglomeration	Monthly	January 2011
Housing starts	https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3410015601	Canada, province/ territory, CMA	Monthly	January 1990
Apprenticeships	https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3710021901	Canada, geographical region, province/ territory	Yearly	1991
Employment	https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1410002301	Canada, province/territory	Yearly	1976
Job vacancy rate, and average offered hourly wage	https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1410032601	Canada, province/ territory	Quarterly	Q1 2015