Macroeconomic Consequences of Unaffordability and Core Housing Need

Research Report
November 2023

Canadian Centre for Economic Analysis

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About this Report

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This study was conducted for Canada Mortgage and Housing Corporation (CMHC) under Part IX of the National Housing Act. The analysis, interpretations and recommendations are those of the author(s) and do not necessarily reflect the views of CMHC. CMHC will have the document translated upon request. To get a translation of this document please email Housing_Knowledge_Centre@cmhc.ca

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EXECUTIVE SUMMARY

Housing affordability is a growing issue affecting households all across Canada. Statistic Canada estimates that every 1 in 10 households in the country experienced core housing need in 2021 with poor affordability (spending more than 30% of pre-tax housing income on shelter) being the primary driver[1]. Poor affordability, not only for households in core need, but for many other households spending more than 30% of shelter, may pose a significant obstacle to the financial stability, educational and professional opportunities, and mobility of households. Consequently, the economy may suffer from the increased vulnerability of the population to adverse economic shocks, restricted residential and labour mobility, and stagnant productivity growth.

This report investigates the macroeconomic consequences of poor affordability across Canada and its provinces. To this end, the economic effects arising from households if affordability pressures were reduced across Canada over the next 20 years. Three cohorts of households were considered: unaffordability is eliminated for households of all incomes, only for households below the 25th income percentile, and only for households below the 10th income percentile.

This study incorporates and controls for rich heterogeneity among households experiencing unaffordability. Given their characteristics and situations, households vary in their treatment of the additional disposable income generated by housing subsidies—while some may be more inclined to save, others might prefer to increase their consumption or address other essential needs. By capturing these differences, our analysis guarantees that the outcomes of affordability scenarios correctly reflect the varying shifts in expenditure patterns that result from the elimination of unaffordability.

This quantitative analysis is complemented by qualitative research findings on the effects of unaffordability on residential and labour mobility, aggregate productivity growth, savings, and educational, health, and child development outcomes. The objectives are to identify the potential channels through which benefits emerge from the elimination of unaffordability, and identify further socioeconomic benefits associated with ensuring adequate and suitable housing for Canadian households.

National Economic Impact

By reducing affordability pressures across the country, households could have $24B annually in additional discretionary income to spend and save over the next 20 year. Nationwide, this supports, on average, $22B in economic activity each year. Over 46% of these benefits nationwide are supported by the lowest 10% of the households who face the highest affordability pressures.

[1] Core housing need in Canada (statcan.gc.ca)

Metric (Annual Average) - All Tenures	All Households	25th Percentile	10th Percentile
Direct Additional Household Spending Available ($M)	$24,452	$19,699	$11,396
GDP ($M)	$21,988	$17,731	$10,266
Gross operating surplus ($M)	$9,596	$7,683	$4,420
Jobs	188,947	152,529	88,579
Labour income ($M)	$10,169	$8,211	$4,761
Tax Revenue ($M)	$5,101	$4,144	$2,382
% of GDP	0.8%	0.6%	0.4%

Magnitude of Impact: Findings indicate that housing unaffordability is associated with a total loss of $24.4 billion in disposable incomes. Given the characteristics of households in unaffordability, the elimination of unaffordability across the entire Canadian economy would result in a $22 billion increase in GDP, 189,000 additional jobs, and $5 billion in tax revenues. Although contributions decrease if attention was restricted to lower income brackets, the potential benefits in those cases are still significant.

Sectoral Impacts: In all affordability cases, the Manufacturing, Finance and Real Estate, and Accommodation and Food Services sectors would benefit the most from a move to affordability in terms of both GDP and jobs supported. The benefits incurred by Manufacturing and Finance and Real Estate are expected given the resulting economic expansion from the increased activity in the housing sector. The activity created in the Accommodation and Food Services sector reflects the changing expenditure patterns of affected households, which take advantage of their additional disposable income to increase their consumption of restaurant meals, for instance.

Provincial Impacts

Across the country, the largest economic benefits from addressing housing affordability arise in Ontario where the savings on shelter costs could support almost $11B annually in economic activity. However, the second largest beneficiary region is British Columbia, despite having a smaller population than Quebec.

Average Annual GDP Benefits			
Region	All Households (dollar amount, % of provincial/territorial GDP)	25th Percentile (dollar amount, % of provincial/territorial GDP)	10th Percentile (dollar amount, % of provincial/territorial GDP)
Atlantic	$489 M (0.3%)	$463 M (0.3%)	$298 M (0.2%)
British Columbia	$4,812 M (1.3%)	$3,559 M (1.0%)	$2,008 M (0.6%)
Ontario	$10,975 M (1.1%)	$8,570 M (0.9%)	$4,705 M (0.5%)
Prairies	$3,386 M (0.6%)	$2,947 M (0.5%)	$1,732 M (0.3%)
Quebec	$2,326 M (0.5%)	$2,191 M (0.4%)	$1,522 M (0.3%)

These regional difference reflect the relative levels of unaffordability across the country with Quebec being among the lowest with British Columbia and Ontario being among the highest.

CONCLUSIONS

As Canada faces a housing crisis marked by the prevalence of unaffordable housing especially among low-income households, this report provides a view of benefits associated with increasing housing affordability over the next 5 years for households in various income categories, relative to a baseline scenario in which affordability and expenditure trends continue over the next 20 years. We examine the economic impact, in terms of GDP, jobs, labour income, and tax revenue, of removing affordability for households of all incomes, only for households below the lowest income quartile, and only for households below the lowest income decile. All scenarios entailed significant economic benefits.

In addition, we present current household spending patterns and link them to our interpretation of the economic impacts of unaffordability. We note rich heterogeneity in the spending behaviour of households, which influences their response to the additional disposable income incurred by housing subsidies. The identified differences explain the extent to which the aggregate additional disposable income is translated into economic activity, thereby also providing estimates about the saving behaviour of affected households.

The sectoral impacts of unaffordability are also noted, with Manufacturing, Finance and Real Estate, and Accommodation and Food Services being the most impacted in all cases considered. However, we also identify widespread impacts across various sectors, perhaps evidencing improvements in aggregate productivity.

Our quantitative analysis is complemented by literature reviews on the channels through which housing affordability improves economic activity, and the educational, health, and child development impacts of addressing all facets of core housing need in Canada. We note evidence supporting that improving affordability, contingent on the form of subsidies offered, can increase residential and labour mobility, hence also improving aggregate productivity growth. Moreover, recent literature findings state that ensuring the adequateness and suitability of housing is linked to higher educational outcomes, lower risks of mental and physical health problems, and improved child achievements and behaviour.

1.0 INTRODUCTION

1.1 BACKGROUND

Housing affordability has become a critical issue in Canada, with Statistic Canada estimates suggesting that every 1 in 10 households in the country experienced core housing need in 2021 Among lower-income households, which possess fewer savings, disposable income, and access to credit then higher-income ones, housing affordability can pose a significant obstacle to their financial stability, educational and professional opportunities, and mobility. Consequently, the economy may suffer from the increased vulnerability of the population to adverse economic shocks, restricted residential and labour mobility, and stagnant productivity growth. In general, housing is unaffordable if associated costs exceed 30% of a household's pre-tax income.

In light of the above considerations, an investigation of the macroeconomic effects of housing affordability challenges is warranted. Understanding the channels and magnitude of these effects is essential for the improvement of economic outcomes through housing policy.

1.2 OBJECTIVE

This study examines primarily the macroeconomic repercussions of poor housing affordability. To this end, we seek to quantify the economic benefits of addressing unaffordable housing for households. We measure the effects through job availability, GDP, tax revenues, and household spending patterns and savings. Results are presented by province, age group, and household type, housing tenure, and income bracket. This quantitative analysis is complemented by qualitative research findings on the effects of affordability and core housing need on residential and labour mobility, aggregate productivity growth, and educational, health, and child development outcomes.

The analysis includes both renters and homeowners. For renters, housing spending is measured as the sum of rental rates adjusted for household size (i.e., accounting for the number of bedrooms) and utilities. For owners, it is measured as the sum of principal and interest of mortgage payments, utilities, and property taxes.

The approach is to compare the macroeconomic outcomes of a reference case, in which housing affordability and household expenditure patterns continue over the next 20 years, with the macroeconomic outcomes of three reduced unaffordability cases. These cases comprise scenarios in which housing spending is capped at 30% for households below the 10^{th} percentile of household incomes, for households below the 25^{th} percentile of household incomes, or for all households.

The means to improve affordability are not addressed in this analysis. However, beyond broad-based reduction in market housing costs, two other channels through which reductions in housing spending can be implemented are social housing (in which affordable units are made available by the government for rent/purchase) and government transfers to households (for housing use only). From solely a housing spending perspective, these all of these approaches are equivalent for a given households—they both

result in reduced housing spending and increased disposable income. However, these approaches generate differing outcomes regarding residential and labour mobility: transfers provide households with a wider range of affordable home choices, while the social housing approach is more restrictive limiting geographic choice of location and type of units. The implications of these differences are also discussed in our results.

This report is structured as follows. Section 2 details the methodology, analysis scenarios, and key assumptions. Section 3 presents our results in the form of baseline projections, economic impacts of each affordability scenario, and discussions of economic impact channels and additional economic benefits. Section 4 concludes.

2.0 METHODOLOGY

2.1 APPROACH

This study utilizes CANCEA's agent-based modelling platform to analyze the economic impacts of housing unaffordability. CANCEA's agent-based platform is a detailed socioeconomic simulation platform designed to analyze policy and infrastructure scenarios. It performs calculations on the level of individual people, households, firms, and governments, which are modelled based on extensive data inputs. For example, data inputs for individual households include, in addition to demographics, factors such as household structure, labour force participation, and finances. Businesses are modelled using a combination of Statistics Canada data and input/output tables at the local level. Importantly, the platform is geospatial and covers more than 56,000 dissemination areas across Canada.

By implementing longitudinal modelling of individual people, businesses, and governments, the methodology overcomes issues related to multi-regional demographic and economic analysis, such as inconsistency of data sources and risks of double counting.

The agent-based approach to modelling naturally enforces stock and flow constraints. Stock and flow dynamics are foundational to system dynamics and are employed across various sciences and disciplines, such as physics, economics to environmental science (Jacques, et al., 2023; Sahin, 2021; Nalin & Yajima, 2021; Muller, Hillty, Widmer, Schluep, & Faulstich, 2021). A stock is a quantity measured at one specific time, and flows depict the rates of change influencing these stocks. Adherence to stock and flow identities ensures logical consistency in models by guaranteeing that static quantities (such as a province's employment level at a given time) correctly reflect the effect of all flows affecting them (such as transitions of workers in and out of employment). Similarly relevant examples can be found in the markets for housing, goods and services, infrastructure, and public services, further elucidating the importance of this approach.

The combination of stock and flow modeling with agent-based modeling (ABM) offers a dynamic methodology that synergizes macro-level perspectives with micro-level intricacies. The platform offers a bottom-up perspective of individual interactions and behaviours. This integration consolidates the strengths of both methodologies, resulting in a comprehensive, flexible, and realistic approach to understanding complex economic and demographic systems.

Despite the robustness of agent-based modelling in illustrating economic dynamics and the granular impact on individual agents, there are several limitations in its ability to predict forward economic activity. The challenge of accurately calibrating models to complex real-world behaviors and interactions is both data-intensive and computationally demanding. The inherent unpredictability of agents' decision-making, economic and policy externalities, and the potential for emergent phenomena in response to externalities, make long-term forecasts particularly uncertain.

In this study, our platform is utilized to understand the economic outcomes of reducing affordability pressures on jobs, GDP, and tax revenues. The limitations of agent-based modelling to predict are less applicable in this this analysis as the platform is used to explain what economic activity could be at risk from

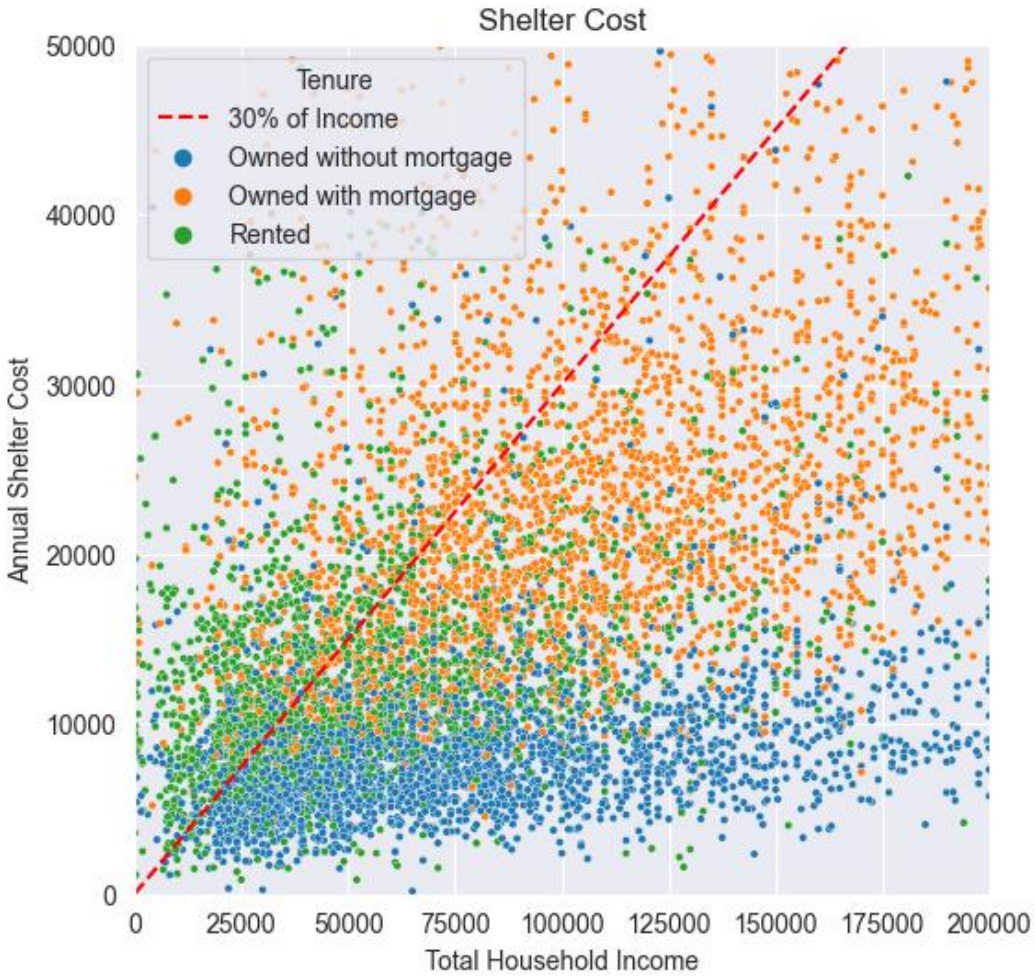
the unaffordability of housing for parts of the population, with the key driver of the outcomes being the underlying spending patterns of households.

CANCEA's platform incorporates data from many sources including Statistics Canada, CMHC, and the Bank of Canada, as well as municipal and private datasets. A list of data sources is included in Appendix C. However, data limitations still exist. In particular, this analysis does not include the Territories due to data gaps on affordability and spending patterns.

2.2 Spending Patterns of Households

All else being equal, a shift from unaffordability to affordability corresponds to a positive income injection allowing a household's spending patterns to shift. Therefore, in order to fully capture the economic impact of changes in affordability pressure, understanding households' spending patterns is paramount. However, the spending patterns of households vary widely depending upon its unique circumstances. Variations in spending patterns can be attributed to income, household type (couples, singles, and number of children), age of members, location, and dwelling type and tenure. In particular, the relationship between household income and shelter costs, shown in Figure 1, highlights the challenges faced by many households across the country for a representative sample of households. The red line shows the annual shelter costs that reflect 30% of the total household income. Households above the line are in an unaffordable situation spending more than 30% of the pre-tax household income on shelter. For renters, shelter costs include rent plus utilities, and for homeowners, they include mortgage payments, utilities, and taxes.

Figure 1 Household spending on shelter, by tenure

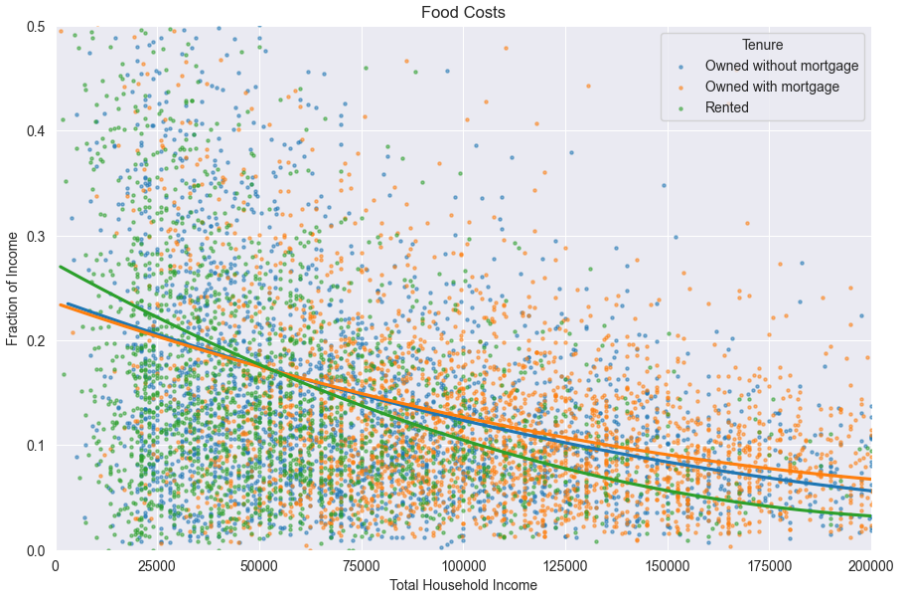


Unsurprisingly, owners without mortgages face the lowest affordability pressure overall with the bulk of the shelter costs arising from property taxes, while renter households tend to face higher pressures.

Figure 2and Figure 3 depict the fraction of income spent on shelter and food by total household income and tenure. Clearly, such necessities tend to be higher fractions of household spending among lower-income households. Note that spending can exceed income (resulting in fractions greater than 1) if the household is drawing down savings.

Figure 2 Households' fraction of income spent on shelter by tenure

Figure 3 Households' fraction of income spent on food by tenure

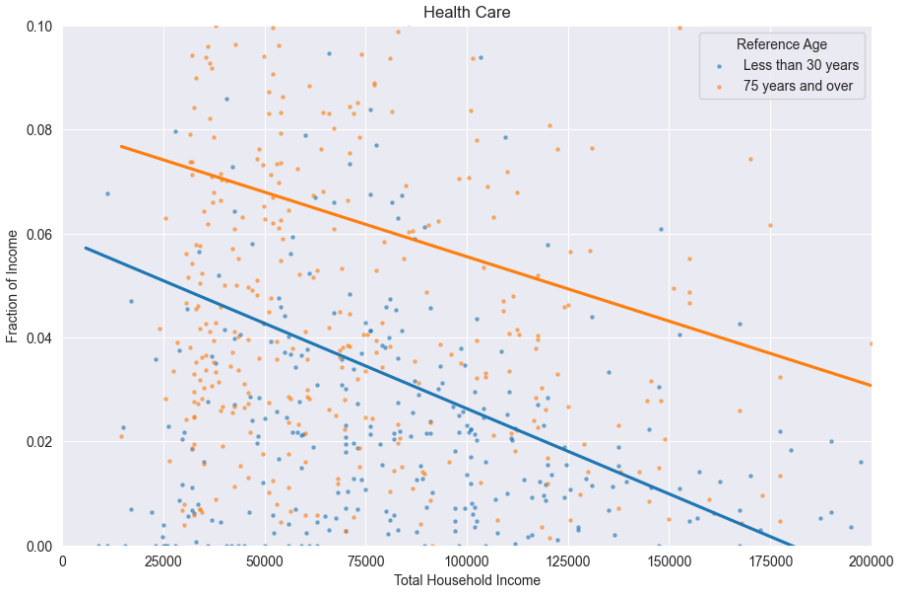


Because these costs can hamper lower-income households' spending on amenities and leisure activities, the additional disposable income generated by a reduction in shelter costs would not necessarily translate into higher savings among those households. This consideration will be important when analyzing the impact of unaffordability on household savings.

To further highlight the importance of accounting for the unique situations of households, same examples of how spending patterns differ across household types, ages, and geography are presented below. For

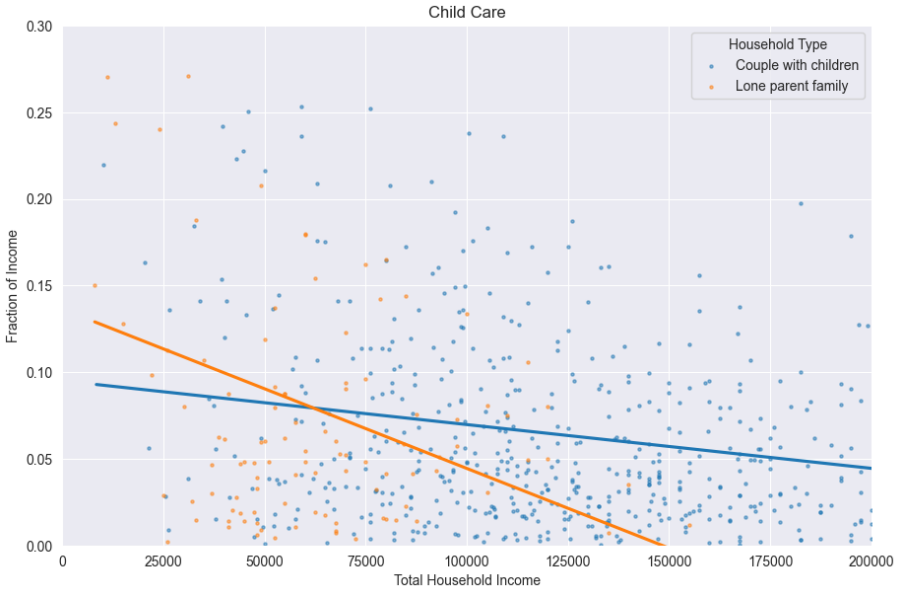
health care costs, for example, older households tend to spend more than younger households. (For clarity, only the youngest and oldest age groups are shown.)

Figure 4 Households' fraction of income spent on health care, by age group



A key expenditure which depends on household type is child care. Figure 5 shows fractions of income spent on child care by type of household. Couples with children tend to spend more on childcare than lone parent families among higher-income groups.

Figure 5 Households' fraction of income spent on childcare, by family type, among households which spend on child care

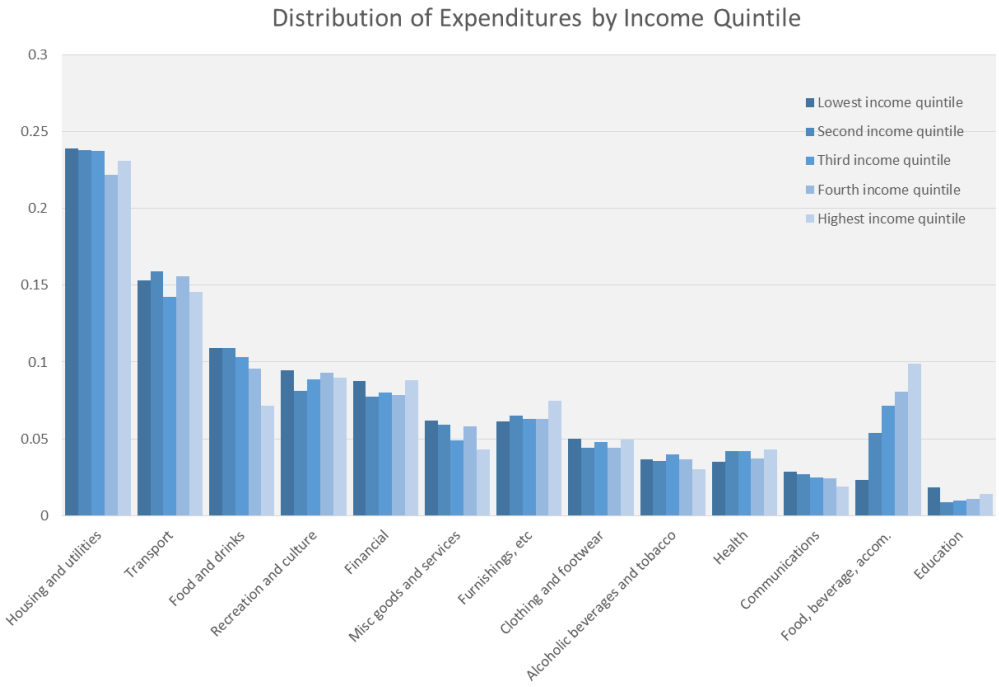


Spending patterns can also differ regionally across the country. As an example, spending on car insurance, shown in Figure 6, varies considerable by depending upon province. (While the analysis incorporates province-specific data for all provinces, only three provinces are shown to illustrate the differences.) This is a combination of both car ownership frequency, and the cost of insurance in each province. Quebec residents tend to spend less on this category than Alberta and Ontario residences across all income levels. Therefore, as affordability pressures change across the country, the response of households' spending patterns will depend upon their locations.

Figure 6 Households' fraction of income spent on car insurance, by province

Finally, Figure 7 depicts the distribution of household expenditures by income quintile and by spending category. For all quintiles, housing is, on average, the highest spending category, followed by transport and then food.

Figure 7 Distribution of household expenditures by income quintile



The observations made in this section suggest that the effect of improving affordability on household expenditures is subject to household heterogeneity. Depending on location and type of household, for instance, the additional disposable income generated by the reduction of affordability pressures may be translated into higher expenditure in other categories, and not necessarily savings.

2.3 Scenarios

The reference case in our analysis corresponds to the continuation of current housing affordability and household expenditure patterns and trends over the next 20 years. This scenario is contrasted with alternative scenarios in which housing unaffordability is reduced over the next 5 years.(Note that these years are included in the annual averages.) Three cohorts are studied who receive relief from the affordability:

- All households currently spending over 30% of their household income on shelter
- Households below the 25th percentile of total household income, and
- Households below the 10th percentile of total household income.

The reduction in unaffordability implemented in each of these groups takes the form of granting households the option to spend no more than 30% of their pre-tax income on housing. This formulation accounts for the fact that some households, such as asset-rich retirees and households with higher preferences for amenities and/or living space, may experience unaffordability by choice.

While the method to achieve affordability is not investigated, other than general decreases in market prices relative to income, two other methods for improving affordability are possible: social housing and transfers to households. The first method allows households to move from market to social housing, whose rental rates/purchase prices are consistent with a reduced spending on housing. The second method consists of government transfers to households to cover excess market prices. From the point of view of household finances, both are equivalent with the result of an increase in disposable income.

2.4 Assumptions

The following analysis of the macroeconomic effects of unaffordability is based on the following assumptions:

- Household income deciles are defined at the provincial level and are based on before-tax, total household income. Income deciles do not include any proposed transfers to reduce affordability pressure.
- When considering the social housing approach to unaffordability reduction, we assume the absence of constraints on the supply of social housing, which in practice may stem from labour, material, or zoning restrictions. This means that our estimates will correspond to an ideal scenario.
- Increases in housing prices and rents are assumed to stabilize in the future, so that unaffordability does not continue to worsen. Because increasing housing prices and rents would imply greater benefits form the elimination of affordability, our estimates are conservative.
- All alternative scenarios—those in which social housing or transfers are adopted to reduce unaffordability—are gradually implemented over 5 years.
- For each household, tenure type preference (rent, own with mortgage, own without mortgage) is maintained between the reference case and each of the alternative cases. That is, regardless of the housing subsidy adopted—government transfers or social housing—the distribution of tenure types remains the same.

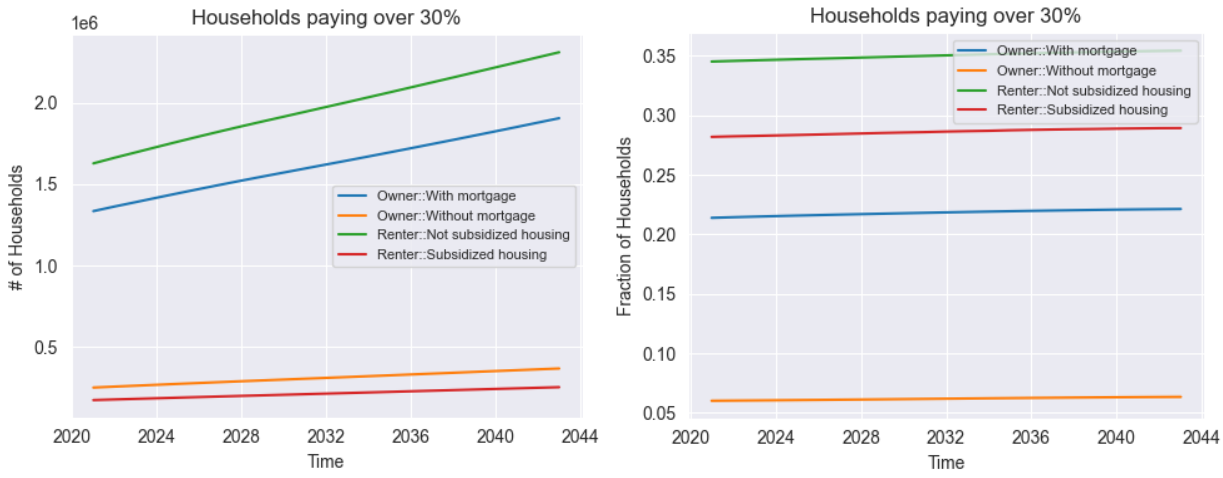
3.0 RESULTS

3.1 Baseline Projections

This section covers our baseline projections for the reference scenario in which current housing affordability and household expenditure patterns and trends continue over the next 20 years. They provide conservative estimates regarding the number of households in unaffordability by 2043 if no measure is adopted to reduce unaffordability pressures. These projections follow current trends in housing prices and rents relative to income, and thus assume that affordability does not worsen.

Figure 8 shows the number and fraction of households spending over 30% of their income on shelter between 2023 and 2043. Notably, by 2043, over 35% of market renters and 22% of homeowners with mortgages across Canada will be in unaffordability if current trends persist and the issue is not remedied.[2] This corresponds with an increase in aggregate excess shelter payments (the amounts in excess of the 30% threshold) from $24 billion in 2023 to $32 billion in 2043 (measured in 2022 dollars).

Figure 8 Number and fraction of households paying over 30% of their income on shelter, 2023-2043

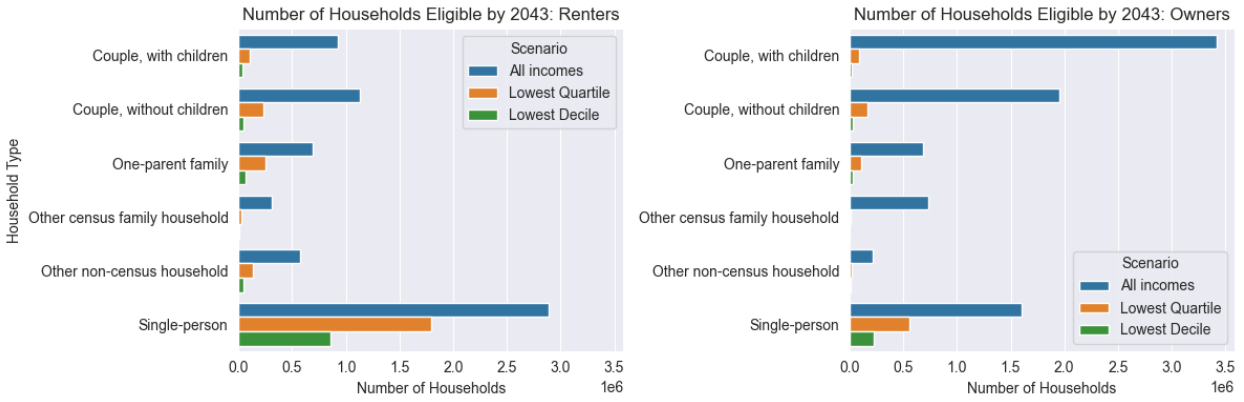


A breakdown of social housing requirements by 2043 in accordance with foregoing unaffordability projections are presented in Figure 9. The charts depict the number of renters and homeowners eligible for social housing depending on the eligibility threshold adopted.

Clearly, the adopted threshold strongly influences the distribution of eligible households. Single-person renters require the most subsidies regardless of the threshold adopted; however, in the case of homeowners, that is only true if either lowest quartile or lowest decile are adopted as income thresholds. For owners, if households in unaffordability across all income categories are eligible for social housing, then couples with children require the most subsidies. Nonetheless, these differences could simply reflect the predominance of single-person households among renters and couples with children among homeowners.

[2] Underlying calculations are done at the provincial level. The charts depict aggregated provincial estimates.

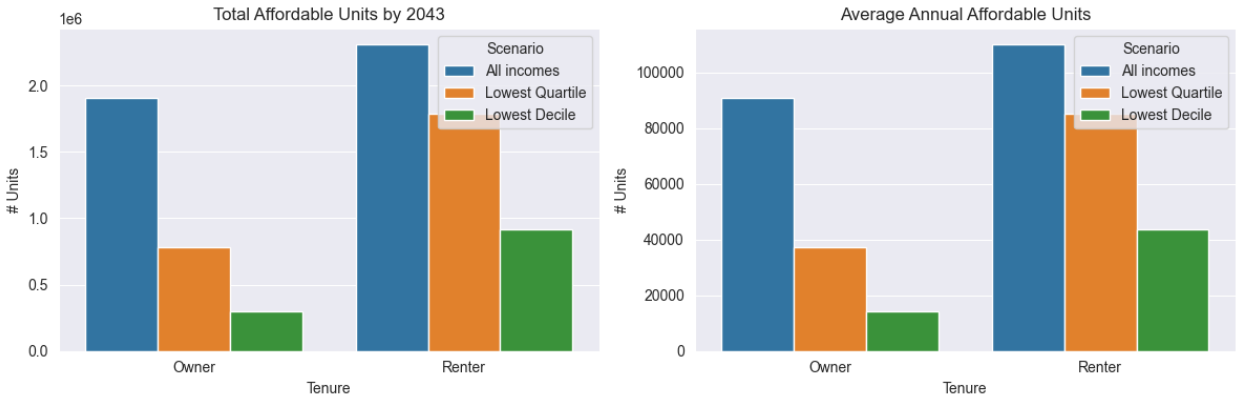
Figure 9 Number of households eligible for social housing, by tenure, eligibility threshold, and household type



Further, Figure 11 shows the total and average number of affordable units required by 2043 under a social housing program by eligibility threshold. If all households spending over 30% of their pre-tax income on shelter were eligible for affordable units, then 1.9 million new affordable ownership units (or 91,000 annually, on average) and 2.3 million new affordable rental units (or 110,000 annually, on average) would be required. Alternatively, if only households below the lowest income decile were eligible, then 290,000 affordable ownership units (or 14,000 annually, on average) and 920,000 affordable rental units (or 44,000 annually, on average) would be required.[3]

[3] The 2021 Census reports 579,000 subsidized rental households in Canada (98-10-0253).

Figure 10 Total and average annual number of new affordable units required by 2043, by eligibility threshold



3.2 Economic Impact

This section presents and discusses the macroeconomic impacts of addressing affordability challenges for each of the cohorts.

3.2.1 NATIONAL IMPACT

Nationally, the detailed impacts on GDP, gross operating surplus, jobs, labour income, and tax revenue are presented in Table 1. Expectedly, the greatest impacts are generated when subsidies are offered to all households in unaffordable situations. If only households in unaffordability below the 25th income percentile are offered subsidies, 80% of the economic benefits remain. Even if on the 10th income percentile threshold is adopted, over 46% of the economic benefits remain. This highlights how the lost economic opportunity associated with housing affordability challenges is highly concentrated in the lowest income households. In other words, addressing affordability challenges for the lowest income households is likely to have the greatest marginal return.

Table 1 Macroeconomic impacts of alternative scenarios for Canada

Metric (Annual Average) - All Tenures	All Households	25th Percentile	10th Percentile
Direct Additional Household Spending Available ($M)	$24,452	$19,699	$11,396
GDP ($M)	$21,988	$17,731	$10,266
Gross operating surplus ($M)	$9,596	$7,683	$4,420
Jobs	188,947	152,529	88,579
Labour income ($M)	$10,169	$8,211	$4,761
Tax Revenue ($M)	$5,101	$4,144	$2,382
% of GDP	0.8%	0.6%	0.4%

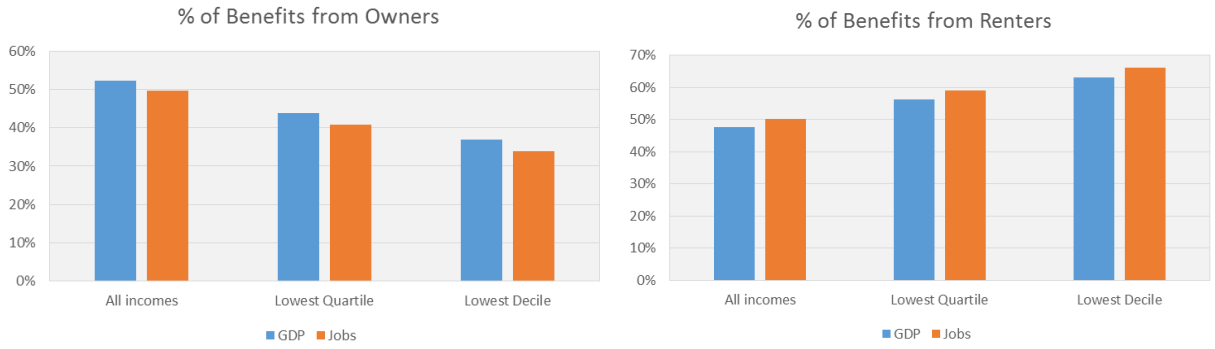
Notably, in all cases, the additional disposable income available generated by housing subsidies is not entirely translated into additional GDP. The differences arise from:

- Consumption taxes: Total consumption spending includes consumptions taxes (HST/PST) which do not directly contribute to economic activity, though these taxes are captured in the tax revenue metric in the results.
- Imports: Some goods and services purchased with additional disposable income have an import component, which does not contribute to GDP.
- Savings: Some spending is directed towards savings rather than consumption.

Further, Figure 11 presents the percentages of GDP and employment impacts incurred by renters and homeowners for each of the three proposed eligibility thresholds. As the income eligibility threshold is reduced, a greater fraction of GDP and employment impacts arise from reduced affordability pressures on renters. This reflects both that within the lower income categories, households in unaffordability tend to be renters rather than homeowners, and that unaffordability tends to be more pronounced for renters than homeowners.

Another interesting observation is that in all three cases, employment impacts are greater than GDP impacts for renters, while the opposite is true for homeowners. This arises from the differing profile of goods and services, and the corresponding labour requirements, between renters and homeowners. This highlights the importance of capturing the heterogeneity of households and their spending patterns when estimating these economic impacts.

Figure 11 Percentage of benefits incurred by renters and owners, by eligibility scenario for Canada



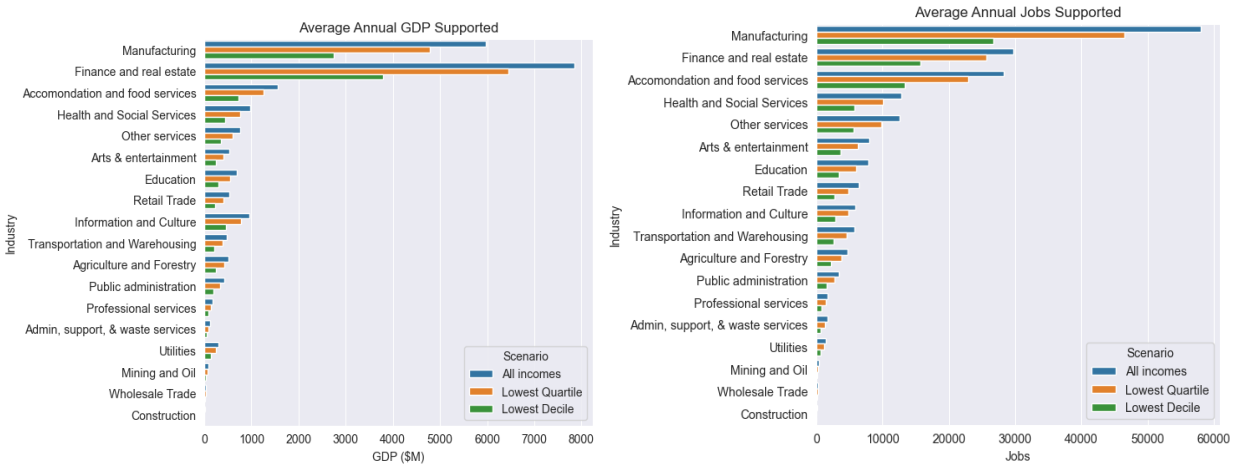
Next, Figure 12 shows the average annual number of jobs and GDP supported in each eligibility scenario by industry sector. In all scenarios, the Manufacturing sector benefits the most in terms of employment, followed by Finance and Real Estate and Accommodation and Food Services. In terms of GDP, these three sectors also benefit the most in all scenarios, with Finance and Real Estate being the greatest beneficiary.

The size of impacts incurred by the Manufacturing sector is expected, as the broader economic growth spurred by the elimination of unaffordability naturally boosts the demand for manufactured goods, including essential items like food and other common consumer goods. The benefits incurred by the Finance and Real Estate sector are similarly unsurprising, given that housing subsidies, either in the form of

increased housing supply through social housing or government transfers for housing use, generate direct economic activity in the sector. Finally, the activity created in the Accommodation and Food Services sector is likely a result of the changing expenditure patterns of affected households, which take advantage of their additional disposable income to increase their consumption of restaurant meals, for instance.

Interestingly, a variety of additional sectors also benefit from the elimination of unaffordability, albeit to lesser extents than the previously discussed sectors. This points to the capability of the initiative to produce ripple effects throughout the economy, which could be attributable to higher labour productivity and mobility, for example.

Figure 12 Average Annual GDP and Jobs Supported, by eligibility scenario and industry sector for Canada

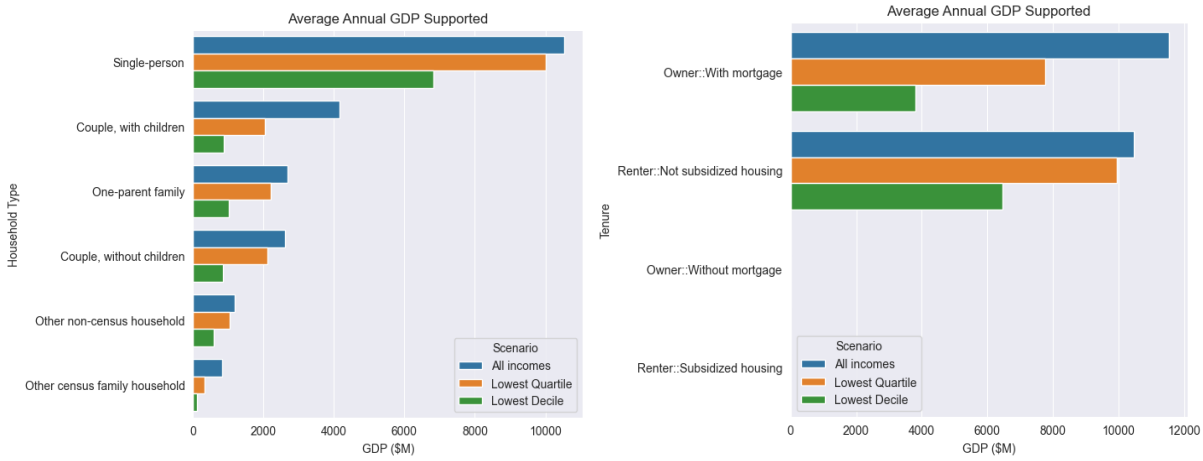


To complement the preceding discussion, Figure 13 depicts the average annual GDP supported in each eligibility scenario by household type and tenure[4]. Single-person households contribute the most to GDP in response to the initiative in all eligibility cases relative to households of other types. Among tenure types, if all households of all incomes are eligible for subsidies, then owners with mortgages contribute the most to GDP, while renters previously not in subsidized housing contribute the most in the other two eligibility cases.

Among household types, there are two drivers for the relatively large GDP contribution made by single-person households. First, this is simply a result of the predominance of this household type among households in unaffordability. Second, without dependents single-person households are more likely to directly translate their additional disposable income into economic activity rather than savings. For example, households include young students may be more likely to increase their consumption of goods and services in response to positive income injections rather than increasing their savings.

[4] Owners without mortgages, or those already in subsidized housing were not eligible for subsidies in any eligibility scenario.

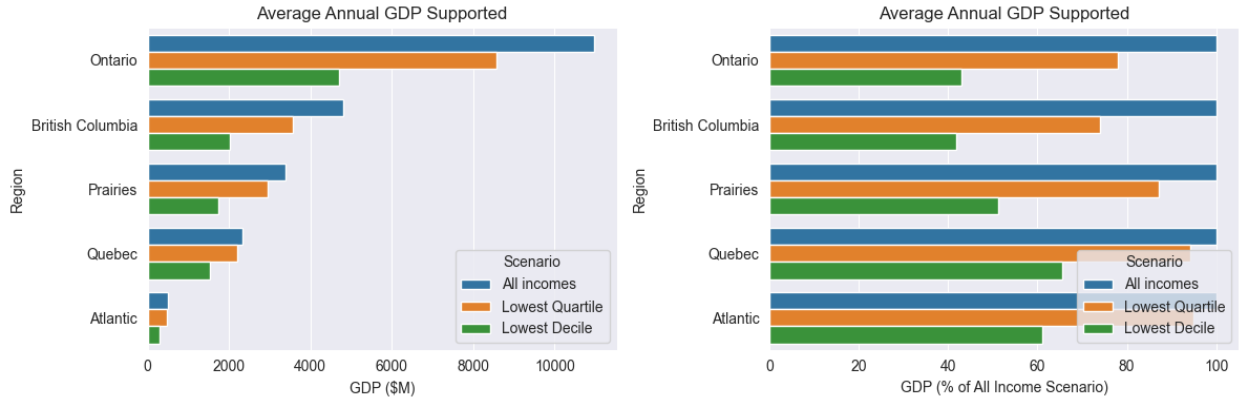
Figure 13 Average annual GDP supported, by household type, tenure, and eligibility scenario for Canada



3.2.2 PROVINCIAL IMPACTS

The economic benefits of addressing affordability challenges are naturally felt most in the largest province of Ontario. However, despite Quebec having the second largest population, the potential GDP benefits are significantly less than Ontario and British Columbia. This is due to the fact that affordability pressures are much less in the province with only about 6% of households in core housing needs, compared to over 12% in Ontario.

Figure 14 Provincial GDP impacts (left) and the relative size of the benefits relative to the 'All Incomes' cohort (right)



Nationwide, about 46% of the economic benefits arise from the lowest income decile. Across the country, this varies from a low of 41% in British Columbia, to a high of 65% in Quebec. This is another reflection of the relative affordability pressures in between region. In provinces where affordability challenges are concentrated among the lowest income households, there is less difference between the economic benefits for addressing unaffordability for all households, and those only in the lowest income deciles.

Appendix B includes detailed results for each of the provinces. Due to data gaps on affordability and spending patterns, results for the Territories are not able to be reliably estimated.

3.3 Additional Economic Impact Channels

The previous analysis examined the potential economic benefits from the elimination of unaffordability, highlighting how such benefits are distributed across industry sectors and household types. Complementing those findings, this section qualitatively presents the avenues through which these benefits are incurred, focusing on the effects of unaffordability on labour mobility and aggregate productivity.

3.3.1 Residential and Labour Mobility

Expectedly, housing affordability has been found to improve residential mobility. This is especially true when affordability is achieved through increases in the housing supply, driving down prices. This point is made in an OECD report (2011), which identified in a study of 25 OECD countries that residential mobility is positively associated with housing supply, lower housing transaction costs, and improved access to credit. These effects were highly significant, and among these, housing supply was found to be the most impactful, followed by access to credit and transaction costs. In addition, the effect of housing supply on residential mobility was found to be the most pronounced among younger households. Because residential mobility is tied to worker mobility (ease of residential movement can facilitate job transitions), this is an indirect channel through which increased affordability can increase worker mobility.

Moreover, Clark and Davies Withers (1999) found not only a relationship between worker mobility and residential mobility, but also that the mobility of households in response to job changes depends on household characteristics. For example, renters with job changes were more likely to move than homeowners with job changes, while one-worker households were more likely to move in response to job changes than two-worker households. Such a consideration substantiates the importance of accounting for household heterogeneity when assessing the effects of increasing affordability: lower housing costs can particularly support the labour mobility of one-worker and renter households, for instance.

However, it should be stated that social housing as a measure against unaffordability may be ineffective in improving residential mobility. If social housing is not widespread, but instead concentrated in certain geographic areas, households are restricted in their housing options if they are willing to avoid unaffordability. If the goal is to increase residential (and consequently labour) mobility, along with overall economic productivity, one must be careful to not lock residents into geographic region where residents may not be able to efficiently match skill across labour markets.

Furthermore, from a Canadian perspective, studies have identified heterogeneity in the choice of commute distance for individuals in Montreal. Manaugh, Miranda-Moreno, and El-Geneidy (2010) find that commute distance is higher for men and full-time workers, decreases with income and age, and is higher for single families. In a similar vein, e Silva, Morency, and Goulias (2012) find that commute distances tend to be higher for men and households with teenagers, and higher for younger, richer, and smaller households.

Because choice of commute distance is strongly tied to residential choice, increased residential mobility (generated, for example, by higher housing affordability) can have a greater effect on households who are more sensitive to commute times (and thus prefer to live closer to work).

Additionally, several studies have identified a positive relationship between labour mobility and aggregate productivity. For example, Stoyanov and Zubanov (2012) find for a Danish sample that worker mobility can generate productivity spillovers, particularly from the movement of workers from more to less productive firms. For instance, the authors found that if a firm hired 10 percent of its workers from 10 percent more productive firms, they experienced a 0.2 percent productivity gain in the year after hiring. Moreover, Stockinger and Wolf (2019) find for a German sample that since restricted worker mobility prevents productivity spillovers and selective matching of workers, increases in aggregate productivity are associated with worker movements, regardless of the direction of movement (from more to less productive firms or vise-versa). For example, their base model results indicate that, after controlling for labour and capital inputs and the shares of workers hired from more and less productive firms, an increase in the share of workers hired from less productive firms, when occurred as a result of selective worker matching, can increase firm productivity by 0.8 percent in the following year.

In addition, Brunello and Wruuck (2021), in their literature review on the determinants of skill mismatches between workers and firms in Europe and North America, find that restricted worker mobility has been found to be significantly related to skill shortages and labour mismatches. Complementing these findings, McGowan and Andrews (2015) find that for a sample of 19 OECD countries that skill shortages and labour mismatches negatively affect aggregate productivity, with efficient matching being associated with productivity gains of "above 9% in Italy, Spain and the Czech Republic; and between 5% and 9% in Germany Norway, Great Britain, and Austria."

These studies enrich the findings of the present analysis by illuminating the channels through which the elimination of unaffordability generates positive economic outcomes. In addition, they provide more evidence regarding the types of households who would be most affected by the elimination of unaffordability, as well as how they would respond to the initiative.

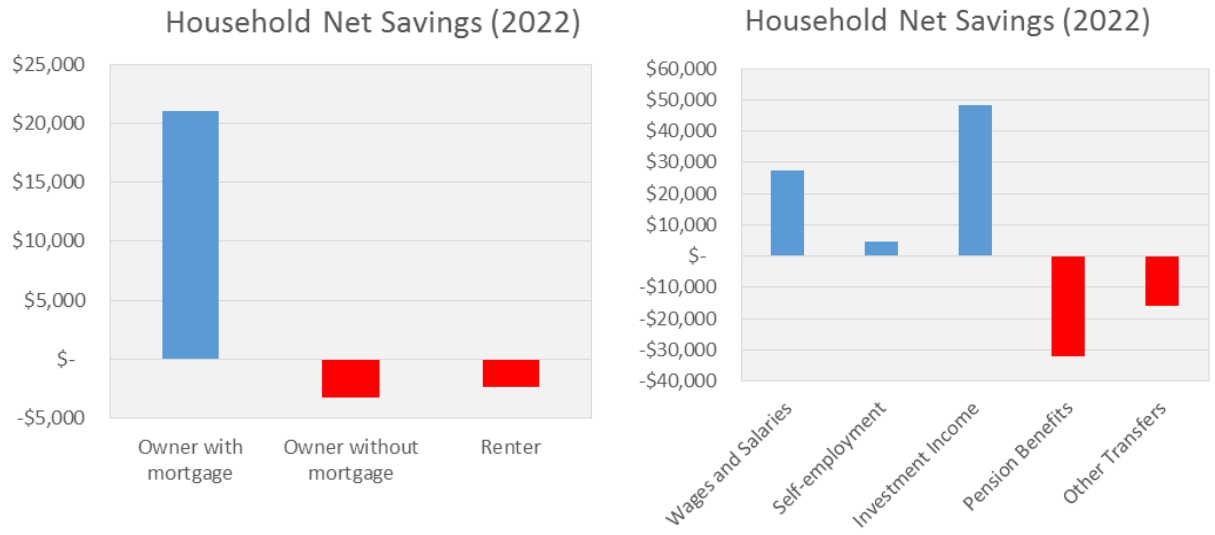
3.3.2 SAVINGS AND UNAFFORDABILITY

To complement the present analysis, this subsection directly examines household saving rates in 2022 by tenure and primary source of income. Figure 15 shows household net savings by these categories. While, in the aggregate, owners with mortgages had overwhelmingly positive net savings in 2022, owners without mortgages and renters had negative net savings. This difference is largely attributable to the fact that mortgage principal payments are part of savings. Because of this, in a scenario with decreased housing unaffordability, aggregate savings may be reduced if the savings among owners without mortgages and renters do not sufficiently increase to compensate for the fall in savings among owners with mortgages.

Further, we notice that while net savings are overwhelmingly positive for households whose primary source of income are wages or investment income, the opposite is true for the net savings of households whose primary source of income are pension benefits of other forms of transfers. Understanding the effect of

increased affordability on aggregate savings would necessitate understanding how the distribution of households by primary source of income would change.

Figure 15 Household net savings for all households in 2022, by housing tenure and primary source of income



Importantly, it should be noted that retirees may be in unaffordability and have negative annual net savings, but cover their expenses through savings (including drawing down pensions or other investments). Such households may choose to remain in unaffordability.

These points illustrate that unaffordable housing impacts the savings of different households differently. This makes it difficult to draw a general relationship between household savings rate and unaffordability, since this relationship depends on the unique characteristics and situations of households. We have seen that in some cases, reducing housing costs might lead to a reduction in the aggregate savings rate.

3.3.3 HEALTH AND EDUCATION

In addition to the potential economic benefits from the elimination of unaffordability presented in this analysis, the literature on the effects of CHN suggests that eliminating CHN (which encompasses not only eliminating affordability, but also ensuring adequate and suitable housing) can have positive effects health, educational, and child development outcomes in Canada.

For example, the World Health Organization (WHO)'s (2018) report "Housing and Health Guidelines" notes that inadequate housing, which is associated with housing unaffordability, is related to various negative health outcomes. Insecure and inaccessible housing can lead to elevated stress levels, isolation, and risks of injury. In addition, houses that are expensive to heat, for instance, can contribute to poor respiratory and cardiovascular outcomes, which is aggravated by indoor air pollution.

Moreover, Bryant (2009), in his study of the health implications of unaffordable housing in Canada, explains that affordable housing is related to various socioeconomic determinants of health outcomes. The author notes that adequate and affordable housing contributes to mental health outcomes by providing a platform for self-expression and identity. In addition, if housing costs are high, individuals have fewer resources available to support other determinants of health, which can lead to elevated stress levels and unhealthy means of coping such as substance abuse.

Fortifying the previous point, Gundersen and Ziliak (2015) and Davison, Gondara, and Kaplan (2017) explain that food insecurity is related to adverse health outcomes in Canada and the United States. Because food insecurity arises from limited money or other resources, housing unaffordability, which constrains individuals' disposable incomes, especially among lower-income groups, can be a direct contributor to food insecurity.

Furthermore, several studies point to the importance of affordable and adequate housing in the development outcomes of children and education in Canada. For example, Singh (2022) notes that housing unaffordability in Canada, especially among renters, is related to lower education levels, which is further aggravated by racial disparities and low incomes. Additionally, Gagné and Ferrer (2006) find that parental home ownership has a positive impact on children reading outcomes, while housing subsidies contribute to children behavioural outcomes. The opposite effect is found for housing requiring major and constant repairs, and housing instability.

The foregoing evidence suggests that affordable and adequate housing can contribute significantly to the mental and physical health and educational outcomes of individuals. In addition, among families with children, stable and affordable housing can increase child development. This is because unaffordability can be associated with inadequate living conditions, physical insecurity, inaccessibility, and lower disposable incomes. These factors contribute directly and indirectly to increased stress levels, food insecurity, risks of mental and physical illnesses, and instability.

The present report has not quantified the effects of eliminating CHN in Canada on the outcomes listed in this section. Nonetheless, they exemplify that the socioeconomic benefits of this initiative exceed the economic benefits presented in our findings. Increasing housing affordability, to the extent that it also improves access to adequate and suitable housing, not only contributes to economic activity, job creation, tax revenues, and incomes, but can also enhance the health and educational outcomes of Canadians.

4.0 CONCLUSIONS

As Canada faces a housing crisis marked by the prevalence of core housing need especially among low-income households, this report provides a view of the economic benefits associated with increasing housing affordability over the next 5 years for households in various income categories, relative to a baseline scenario in which affordability and expenditure trends continue over the next 20 years. We examine the economic impact, in terms of GDP, jobs, labour income, and tax revenue, of removing affordability for households of all incomes, only for households below the lowest income quartile, and only for households below the lowest income decile.

We find significant economic benefits in all scenarios. Improving affordability for households of all income brackets generates, on aggregate, $24.4 billion in additional disposable income, of which $22 billion is translated into increased economic activity. This scenario is also associated with the support of 189,000 jobs and $5 billion in tax revenues. If, instead, only households in unaffordability below the 25th income percentile are offered subsidies, then impacts are slightly lower than the former case. However, if the 10th income percentile threshold is adopted, over 46% of the economic benefits remain.

In addition, we present current household spending patterns and link them to our interpretation of the economic impacts of unaffordability. We note rich heterogeneity in the spending behaviour of households, which influences their response to the additional disposable income incurred by housing subsidies. The identified differences explain the extent to which the aggregate additional disposable income is translated into economic activity, thereby also providing estimates about the saving behaviour of affected households.

The sectoral impacts of unaffordability are also noted, with Manufacturing, Finance and Real Estate, and Accommodation and Food Services being the most impacted in all cases considered. However, we also identify widespread impacts across various sectors, perhaps evidencing improvements in aggregate productivity.

Our quantitative analysis is complemented by literature reviews on the channels through which housing affordability improves economic activity, and the educational, health, and child development impacts of addressing all facets of core housing need in Canada. We note evidence supporting that improving affordability, contingent on the form of subsidies offered, can increase residential and labour mobility, hence also improving aggregate productivity growth. Moreover, recent literature findings state that ensuring the adequateness and suitability of housing is linked to higher educational outcomes, lower risks of mental and physical health problems, and improved child achievements and behaviour.

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B. PROVINCIAL RESULTS

The following tables summarize the provincial results for each of the metric in the report.

Province/Metric	All Households	25th Percentile	10th Percentile
Alberta			
Direct Additional Household Spending Available ($M)	$2,899	$2,469	$1,427
Gross domestic product (GDP) at market prices ($M)	$2,647	$2,255	$1,304
Gross operating surplus ($M)	$1,254	$1,068	$616
Jobs	21,510	18,299	10,602
Labour income ($M)	$1,205	$1,025	$594
Tax Revenue ($M)	$501	$425	$245
British Columbia			
Direct Additional Household Spending Available ($M)	$5,322	$3,925	$2,210
Gross domestic product (GDP) at market prices ($M)	$4,812	$3,559	$2,008
Gross operating surplus ($M)	$2,327	$1,715	$966
Jobs	41,208	30,364	17,068
Labour income ($M)	$2,067	$1,527	$860
Tax Revenue ($M)	$1,094	$807	$454
Manitoba			
Direct Additional Household Spending Available ($M)	$503	$478	$304
Gross domestic product (GDP) at market prices ($M)	$404	$385	$245
Gross operating surplus ($M)	$184	$175	$111
Jobs	3,548	3,375	2,156
Labour income ($M)	$170	$162	$103
Tax Revenue ($M)	$95	$90	$57
New Brunswick			
Direct Additional Household Spending Available ($M)	$146	$144	$100
Gross domestic product (GDP) at market prices ($M)	$109	$107	$75
Gross operating surplus ($M)	$50	$49	$34
Jobs	1,067	1,054	737
Labour income ($M)	$45	$45	$31
Tax Revenue ($M)	$27	$26	$18
Newfoundland and Labrador			
Direct Additional Household Spending Available ($M)	$105	$95	$57
Gross domestic product (GDP) at market prices ($M)	$73	$65	$39
Gross operating surplus ($M)	$32	$29	$17
Jobs	649	583	353
Labour income ($M)	$34	$31	$19
Tax Revenue ($M)	$17	$15	$9
Nova Scotia			
Direct Additional Household Spending Available ($M)	$367	$346	$219

Gross domestic product (GDP) at market prices ($M)	$281	$265	$168
Gross operating surplus ($M)	$124	$117	$74
Jobs	2,874	2,717	1,731
Labour income ($M)	$126	$119	$76
Tax Revenue ($M)	$73	$69	$43
Ontario			
Direct Additional Household Spending Available ($M)	$12,044	$9,362	$5,122
Gross domestic product (GDP) at market prices ($M)	$10,975	$8,570	$4,705
Gross operating surplus ($M)	$4,557	$3,529	$1,927
Jobs	92,510	72,108	39,506
Labour income ($M)	$5,214	$4,074	$2,237
Tax Revenue ($M)	$2,591	$2,019	$1,104
Prince Edward Island			
Direct Additional Household Spending Available ($M)	$38	$37	$23
Gross domestic product (GDP) at market prices ($M)	$26	$25	$16
Gross operating surplus ($M)	$12	$12	$8
Jobs	287	279	177
Labour income ($M)	$11	$11	$7
Tax Revenue ($M)	$7	$6	$4
Quebec			
Direct Additional Household Spending Available ($M)	$2,602	$2,451	$1,701
Gross domestic product (GDP) at market prices ($M)	$2,326	$2,191	$1,522
Gross operating surplus ($M)	$895	$842	$581
Jobs	22,031	20,745	14,455
Labour income ($M)	$1,156	$1,088	$757
Tax Revenue ($M)	$628	$591	$409
Saskatchewan			
Direct Additional Household Spending Available ($M)	$426	$392	$233
Gross domestic product (GDP) at market prices ($M)	$334	$308	$183
Gross operating surplus ($M)	$161	$147	$87
Jobs	3,262	3,004	1,792
Labour income ($M)	$141	$130	$78
Tax Revenue ($M)	$70	$64	$38

C. DATA SOURCES

Key Statistics Canada CANSIM tables used in this analysis include:

- 98-10-0246 Acceptable housing by tenure: Canada, provinces and territories, census divisions and census subdivisions
- 98-10-0252 Shelter-cost-to-income ratio by tenure: Canada, provinces and territories, census metropolitan areas and census agglomerations
- 98-10-0255 Shelter-cost-to-income ratio by tenure including presence of mortgage payments and subsidized housing: Canada, provinces and territories, census divisions and census subdivisions
- 98-10-0368 First official language spoken by mobility status 5 years ago, place of residence 5 years ago, industry, highest level of education and employment income statistics: Canada, provinces and territories
- 36-10-0478 Supply and use tables, detail level, provincial and territorial
- 98-10-0134 Census family status and household living arrangements, household type of person, age group and gender: Canada, provinces and territories, census metropolitan areas and census agglomerations
- 98-10-0138 Household type including multigenerational households and structural type of dwelling: Canada, provinces and territories, census metropolitan areas and census agglomerations
- 98-10-0055 Household total income group by household characteristics: Canada, provinces and territories, census metropolitan areas and census agglomerations with parts
- 98-10-0253 Shelter cost by tenure including presence of mortgage payments and subsidized housing: Canada, provinces and territories, census metropolitan areas and census agglomerations
- 36-10-0001 Symmetric input-output tables, detail level
- 36-10-0595 Input-output multipliers, provincial and territorial, detail level
- 11-10-0012 Distribution of income by census family type
- 11-10-0019 Economic dependency profile of census families by family type and source of income
- 11-10-0033 Economic dependency profile by income and sex
- 11-10-0223 Household spending by income quintile,
- 11-10-0224 Household spending by household type,
- 17-10-0139 Population estimates, July 1, by census division, 2016 boundaries
- 36-10-0013 Input-output multipliers, summary level
- 36-10-0084 Symmetric input-output tables, summary level
- 36-10-0113 Input-output multipliers, provincial and territorial, summary level
- 36-10-0221 Gross domestic product, income-based, provincial and territorial, annual
- 36-10-0222 Gross domestic product, expenditure-based, provincial and territorial, annual
- 36-10-0438 Supply and use tables, summary level, provincial and territorial
- 36-10-0450 Revenue, expenditure and budgetary balance - General governments, provincial and territorial economic account
- 36-10-0478 Supply and use tables, detail level, provincial and territorial (x 1,000)
- 36-10-0587 Distributions of household economic accounts, income, consumption and saving, by characteristic
- 36-10-0595 Input-output multipliers, provincial and territorial, detail level

- 98-400-X2016120 Income Sources and Taxes (34) and Income Statistics (5A) for the Population Aged 15 Years and Over in Private Households of Canada, Provinces and Territories, Census Divisions and Census Subdivisions, 2016 Census - 25% Sample Data
- 98-400-X2016149 Family MBM Low-income Status (5), Economic Family Structure (9), Family Size of Economic Family (5), Ages of Economic Family Members (18) and Number of Earners in the Economic Family (6) for Economic Families in Private Households of Canada, Provinces and Territories, Census Metropolitan Areas and Census Agglomerations, 2016 Census - 25% Sample Data
- 98-400-X2016227 Age of Primary Household Maintainer (9), Tenure (4), Structural Type of Dwelling (10) and Household Type Including Census Family Structure (9) for Private Households of Canada, Provinces and Territories, Census Divisions and Census Subdivisions, 2016 Census - 25% Sample Data
- 98-400-X2016292 Industry - North American Industry Classification System (NAICS) 2012 (427A), Class of Worker (7A), Labour Force Status (3), Age (13A) and Sex (3) for the Labour Force Aged 15 Years and Over in Private Households of Canada, Provinces and Territories and Census Divisions, 2016 Census - 25% Sample Data
- 98-400-X2016358 Industry - North American Industry Classification System (NAICS) 2012 (425), Employment Income Statistics (3), Highest Certificate, Diploma or Degree (7), Immigrant Status and Period of Immigration (10), Work Activity During the Reference Year (4), Age (5A) and Sex (3) for the Population Aged 15 Years and Over Who Worked in 2015 and Reported Employment Income in 2015, in Private Households of Canada, Provinces and Territories and Census Metropolitan Areas, 2016 Census - 25% Sample Data
- 98-400-X2016390 Census Family Status and Household Living Arrangements (13), Household Type of Person (9), Age (12) and Sex (3) for the Population in Private Households of Canada, Provinces and Territories, Census Metropolitan Areas and Census Agglomerations, 2016 and 2011 Census - 100% data
- Census Profile 2016 (Census Divisions)
- Census Profile 2021 (Census Division)
- Survey of Household Spending (2019) Public use microfile
- Canadian Household Survey (2018, 2021) Public use microfile
- 34-10-0125 CMHC housing starts, under construction and completions in large urban areas, annual
- 34-10-0126 CMHC housing starts, under construction and completions, all areas, annual
- 34-10-0134 CMHC housing starts, under construction and completions, in selected CMAs, annual
- 34-10-0136 CMHC housing starts, by type of dwelling unit and market type in all centres of 10,000 and over for Canada and provinces