

HOUSING MARKET
INFORMATION

Canada's Housing Supply Shortages: Estimating what is needed to solve Canada's housing affordability crisis by 2030

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Context

CMHC exists to make housing affordable for everyone in Canada. To achieve our goal that everyone in Canada has a home that they can afford and that meets their needs, our data, research and analysis efforts will primarily focus on, but are not limited to:

- investments required for households in core housing need;
- market housing demand, supply gaps and affordability imbalances;
- racism and discrimination as a barrier to housing;
- the effects of climate change on housing;
- effectiveness of current housing policies and potential future policies; and
- working with First Nations, Inuit and Metis communities to understand their distinct housing needs.

This report looks at the supply gap relative to the housing system's overall affordability. We have taken initial steps to estimate how much additional housing supply is required—beyond current trends—to restore housing affordability by 2030. This type of analysis looks at the problem caused by the lack of supply but does not address all the complex issues that impact housing affordability. Further analysis will be required to build out our understanding of these issues.

As a trusted source of housing information, CMHC provides unbiased housing-related data, research and market information to help close knowledge gaps and deepen understanding of complex housing issues to inform future policy decisions.

Executive Summary

Housing affordability is a challenge for many living in Canada's large urban areas.

Today, a large portion of renters' and new homebuyers' incomes must be spent on a place to live because housing costs have exploded over the last decade. By deterring workers from moving to our urban centres that contribute so much to Canada's economic prosperity, high housing costs risk wider economic damage as well.

Previous CMHC analysis explored reasons behind escalating house prices. We found that demand for housing grew with higher incomes and population growth, and long-term declines in interest rates. Unfortunately, supply growth was weak to respond to this demand growth in some of Canada's large urban areas, resulting in the loss of affordability.

In this report, we ask how much more housing supply is required—beyond current trends—to restore affordability by 2030. Alternative approaches to curtail demand are not explored in this report.

We do this work so that Canadians can understand the scale of the challenge. To restore affordability, we need 3.5 million additional housing units beyond current projections!

The size of the number should make all of us who form part of the housing system realize that we have a large task in front of us. We need to work together—and change current practices—to meet this challenge.

Governments help by subsidizing housing costs for low-income Canadians. But achieving housing affordability for everyone in Canada will be done with increasing supply in the rental and homeownership market, and having this supply respond more quickly to greater demand.

Developers must become more productive and make full use of land holdings to build more housing while governments must make regulatory systems faster and more efficient. Working together, the number of housing units built can be increased dramatically.

There have been a multitude of reports on Canada's housing system over the last few years. Government panels have been struck and the answer is now clear: we need more housing supply.

We need to take drastic measures now to produce more housing—not more reports.

Our estimate of how much housing supply is required is based on deep economic analysis. This type of analysis has not been done before in Canada. To sum it up:

1. We estimate the level of income in 2030 given current economic and demographic trends, including expected immigration levels.
2. We estimate how much housing supply is needed so that house prices are consistent with affordability in 2030.
3. We compare this amount of housing supply with the amount of housing we project to be built by 2030 under a business-as-usual scenario.

We want to restore affordability to levels last seen in Canada in 2003-04 when the economy was stable and housing costs were a relatively low share of the economy. Targets vary across provinces because of the propensity to spend on housing tends to increase with provincial incomes.

Two-thirds of the 3.5 million housing unit gap are in Ontario and British Columbia. These two provinces have housing markets that are not affordable, and they have faced large declines in affordability.

Around 2003-2004, an average household would have had to devote close to 40 per cent of their disposable income to buy an average house in Ontario, and close to 45 per cent in British Columbia. In 2021, such a household would have had to devote close to 60 per cent of their incomes to housing. Restoring affordability levels in these provinces means cutting housing costs by between a quarter and two-fifths.

Additional supply would also be required in Québec. Historically, Québec has had an affordable housing system, but affordability has declined markedly over the last few years.

Other provinces remain largely affordable for a household with the average level of disposable income.

How will supply improve affordability? More housing units created in the housing market will create opportunities for households to move into housing that responds to their demands. In addition, this 'filtering process' likely frees up housing to improve housing affordability over time.

This filtering process improves affordability over time. More and diverse supply across the housing system enables households to better match with housing they want – and can afford, rather than stretching their budgets to bid for living spaces in limited supply.

Increasing housing supply to meet demands of middle-income Canadians means that house prices will move closer to their construction costs over time – and not driven by the cost of land.

A commitment by governments to increase housing supply across the spectrum and putting it into action will also change Canadians' perceptions of how much gains will come from house price appreciation so demand growth will slow. Must all these housing units be built? Perhaps not. There are other innovations possible as well.

Here's an example. It's possible that the rate of inter-generational families living together will increase with an increasingly elderly population. Also, it's possible that co-living (where separate households live together) will also rise.

Existing housing structures could also be redeveloped into multiple housing units. There also seems to be significant scope to redevelop existing industrial structures, including retail centres. The scale of these changes is uncertain, however.

Our approach differs from the current approach commonly used to project how much supply is needed, which estimates the amount of housing supply required by matching it to the growth in number of households only.

This approach does not take economic factors—particularly changes in income—into account. Relying solely on demographics mean that demand for housing will be underestimated and current patterns of unaffordability will be perpetuated. Delivering more housing supply, beyond predicted growth in the number of households, will enable better matching of households with the housing they want.

Our estimate of how much supply is required may also be more volatile. If the economy were to enter a prolonged downturn or economic growth does not match our forecast, then less housing supply would be required.

There are significant barriers to achieving this quantity of supply. Currently, skills shortages and supply-chain challenges are pushing up construction costs—meaning it can take more time to build.

Dramatically and suddenly increasing the supply of housing will put pressure on the costs of construction so planning on increased supply needs to take place now. But the construction sector needs to become more productive as well because its productivity growth has been low in relation to the rest of the economy.

These challenges in construction are layered on long-standing challenges of progressing through the regulatory system to get new housing built. It can take many years to obtain approval for new construction in some parts of Canada. Without any means of lowering Canadians' demand for housing, increased housing supply is the only means of achieving affordability.

Our approach to understanding affordability concentrates on housing costs for the average household. The term affordability has become conflated with 'affordable housing', which many define as housing subsidized by governments for low-income households.

We do not break down our results to look at government-supported housing in this report but concentrate on affordability for everyone in Canada. This is just one of many reports that we will be publishing over the next few years to deepen our understanding and close our knowledge gaps on Canada's housing affordability issues. To be clear, when we say affordability, we mean lowering the cost of housing for everyone in Canada.

In this report, we treat all of housing as a single entity—meaning increases in house prices pass through into increasing rents. Reality is far more complex. We need to separate the rental system from homeownership because increasing the supply of rental units will play a critical role in achieving affordability over the long term.

We'll look at provincial and national results, while knowing that housing challenges and policy solutions are more local. Moreover, affordability problems place greater pressures on low-income households, which our approach of looking at averages does not yet consider.

Affordability is affected by changes in the distribution of income, and we need to do more work to analyze this aspect. We intend to dig deeper and provide more results on affordability across the income distribution and at the level of our large urban areas.

There are other sizeable challenges for housing in Canada.

Climate change will cause rising sea levels or continuous fire hazard and risk of flooding that may render some housing uninhabitable. Plans to increase housing supply will need to take climate change into account, which we do not in this report.

Because of limited data, we do not project supply gaps in the Territories and for First Nations, Inuit and Metis communities. We fully recognize that they experience affordability problems as well as other challenges. CMHC is committed to partnering with these communities on further research to understand their needs.

Throughout 2022 and 2023, we will be publishing a series of reports to help deepen our understanding of housing supply challenges in Canada and to ultimately inform better policies and decision making. These include reports on demographic trends, productivity challenges in construction and the extent of government fees.

We recently published a new [Housing Supply Report](#), which provides insights on new housing supply in Canada's major cities and urban areas (CMHC, 2022).

Complementary technical reports on our demographic projections and economic modelling are also being released to ensure that we are fully transparent. We will continue to try to improve our approach to deliver more insights on the critical challenge of reaching housing affordability for Canadians.

In our endeavor to better understand housing affordability across Canada, we ask for any feedback to help improve our results. Suggestions on improvements will be gratefully received!

We have made many assumptions and we need to check their robustness. Our techniques were the best we could find, but we can improve them.

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1. Introduction

KEY POINTS

- Housing affordability has become a widespread problem over the last decade. Large-scale additional supply of housing will be required to restore affordability. Conventional planning approaches for long-term supply needs do not take affordability into account.
- Over the long-term, demand for housing increases with both a larger number of households and higher average incomes. Estimating the amount of supply required must consider both. Our approach does this, but much more analysis is needed to understand local impacts and effects across households.
- Increasing supply will be difficult. Critically, increasing supply takes time because the time to construct is significant, but so is the time to progress through government approval processes. This delay means that we must act today to achieve affordability by 2030.

Housing affordability has become a central concern of households in many parts of Canada, particularly in some of our larger cities.

Housing costs are often the largest cost item in a family's budget. With housing prices so high, how can families afford payments for a new home while maintaining their standard of living, spending on the things they enjoy and saving for retirement? Can children as they become adults afford a place to live in the city they grew up in?

And what about those in the rest of Canada who seek new opportunities in these cities? Will they be able to use their skills to their utmost, or will they be denied opportunities because housing costs prevent them from moving?

With Canadians' incomes growing and the number of households increasing, demand for housing continues to grow inexorably, and will continue to grow over the next decade. Unfortunately, supply of housing has not kept pace with this demand resulting in escalating house prices over many years.

Housing costs have always been a concern for disadvantaged Canadians and many government programs have been introduced to address their challenges. Now, more and more Canadians across the income spectrum struggle to afford housing costs. Debts accumulated when paying these high prices create risks to financial stability.

CMHC's aspiration is that by 2030 everyone in Canada has a home they can afford and meets their needs. Understanding and addressing Canada's housing affordability challenge is core to CMHC.

In 2018, CMHC published a report *Examining Escalating House Prices in Large Canadian Metropolitan Centres* (CMHC, 2018) demonstrating how weak supply responsiveness to higher prices led to higher prices and affordability challenges in some of Canada's large urban centres. In this report we dig deeper and tackle the question of how much more supply is required to re-establish affordability.

The need to change is clear. There is greater consensus that housing supply is a problem. Many other potential explanations to explain high house prices on the demand side have been advanced with policy actions taken to address them, but these measures have had little long-term impact on house prices and affordability.

It is time to act. It's time to increase housing supply in Canada.

We hope that publishing an estimate of how much housing supply we need is a call to action because the scale of the challenge is large. It is also getting larger—and by much more than current planning allows for.

Central to our approach is explicit modelling of how much housing supply it will take to achieve affordability. By looking at affordability in a province, we look at housing costs relative to income for everyone. To be clear—because many of the terms have become conflated—our work does not consider what must happen to “affordable housing”, by which many have taken to mean housing receiving some sort of government subsidy.

Our central case—and approach—is that with all else being equal, 3.5 million more housing units are needed by 2030

This estimate addresses both future demand increases and the current lack of affordability. In this approach, we target province-specific affordability ratios. Over two-thirds of the supply increase that Canada needs is in Ontario and British Columbia, where affordability has long been a challenge.

A fifth of the supply required is in Québec where prices have risen rapidly recently for a province that used to be affordable.

Smaller increases are required in other provinces. These are likely to be relatively straightforward to achieve as their housing supply systems have been responsive to higher house prices in the past.

The scale of these increases is large. Achieving these supply increases and establishing affordability in Canada will require concerted action by all of government and the private sector in partnership.

This report outlines progress we have made in estimating how much supply is required. We have had to generate new data, such as annual estimates of the stock of housing. We have introduced statistical techniques not used before in Canada.

The analysis is a “proof of concept” to demonstrate what can be done. We publish this report to be transparent about our approach and to seek help to improve it. We will begin consulting with interested parties as soon as this report is published, but we hope that our report is a further impetus for action.

In parallel, and to highlight the importance that CMHC attaches to housing supply, a new bi-annual report on the state of housing supply has been started (CMHC, 2022). We will be publishing more detail on our demographic projections and further research will be released over the coming year.

Despite the progress we have made, finer grained analysis is needed, particularly on the impacts across the income distribution and for urban areas.

So, we have not yet tackled many important questions, as outlined in Chapter 4.

- How many housing units do we need for Canada’s urban areas (Census Metropolitan Areas)?
- How much housing do we need for different households by income?
- How much do we need to address climate changes, and so forth?

These are critical questions. We want to work with partners to improve our approach so that we can address these important questions. The complexity in addressing these questions is significant.

In this report we discuss the state of affordability in Canada and the 4 largest provinces—Ontario, Québec, British Columbia and Alberta—to make charts easier to read. The scale of affordability challenges is much greater in Ontario and British Columbia, and increasingly Québec in comparison to Alberta.

Chapter 2 outlines our interpretation of key concepts and explains our approach.

Chapter 3 goes through our results in greater detail.

Chapter 4 gives a list of items we need to work on to provide a fuller set of results and Chapter 5 concludes.

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2. Background and concepts

KEY POINTS

- Affordability is the share of housing costs in income.
- Critical to understanding affordability then are the economic patterns of housing demand and supply. Having a method to project how much housing supply is required to achieve affordability means that we need to take all the factors driving housing demand into account.
- If the average household were to buy the average house on sale in 2021, they would be devoting 60% of their disposable income to housing costs in Ontario and British Columbia.

In this chapter we explore what we mean by affordability and why we need to understand economic drivers of demand and supply to target affordability.

Estimating what demand for housing will be in 2030 is critical to understanding how much housing supply is required. We outline our approach for doing this in this chapter and dig into the numbers in the next chapter.

Given the time it takes to approve and build new housing—which together is many years—having long-term plans of the appropriate amount of housing supply is essential to attain affordability. Aiming persistently at building too few housing units will result in lasting under-supply, which will lead to housing being consistently less affordable.

Affordability looks at both the cost of housing and income

Critical to understanding the challenge—and our approach—is the definition of affordability because it sets the target for how much housing supply should be built. We need to be very clear on what we mean by affordability and what targeting it represents.

First, we take an economy-wide view of affordability.

We aim to lower housing costs in proportion to income across the entire economy. In this report, we look at affordability in each province.

Second, we define affordability as the ratio of average housing costs to average income in a geographic area, a province in our case. We define these terms as:

- **Housing costs:** a range of costs of being in housing including mortgage payments, insurance, maintenance and so forth. Given that we are looking at averages in a province, housing costs will reflect the cost of buying the average home for purchase. We will expand this definition to the rental sector when we explore housing supply across the income distribution in the next phase of this analysis.
- **Income:** disposable or after-tax income, as this is the amount of money available to spend on housing. Looking at the proportion of after-tax income is appropriate in our context because tax burdens differ across provinces, and we present results at the provincial level.

We also need to be clear on what we don't mean when we use the term affordability. In particular, the term “affordable housing” has become associated with social housing or housing for low-income Canadians subsidized by governments. This is not what we mean in this report when we use the word “affordability”.

Social housing is an important means of achieving housing affordability by lowering the average cost of housing across the population, but it is not considered separately here.

As discussed in Chapter 4, finer grained analysis looking across the income distribution would yield more insights on how much social housing is required. Our intent in this work is to look at factors affecting affordability for the average household in Canada rather than low-income households.

The role of averages and pass-through of house prices into rents

In this report, we concentrate our results on averages in each province. We look at how much the average household would pay for an average house in the market.

In practice—particularly in some of the high-priced markets—the average household will not be able to afford the average house on sale today. This concept is theoretical and does not represent actual housing cost paid by the household with average income today.

Looking at the housing market in this way, we are effectively treating all the housing system as one market. Implicitly, we are assuming that increases in house prices will be passed on into the rental system over time.

We also cannot control for quality differences across housing at this stage. Over the last decade or so, prices have generally increased more for more expensive housing—such as single-detached housing.

Households have more income and search for housing with more space and better locations. This pattern also explains why caution is required in advocating for more low-cost housing alone as a means of solving affordability for the average household in Canada.

Such provision is important to ensure that housing is affordable to low-income households, but additional supply is also required to meet the demand from middle-income households. If there is no such supply, then these middle-income households will simply enter into more bidding competitions for the limited supply of housing they want, and affordability will continue to worsen.

We target different levels of affordability by province according to their histories

There is no research-based approach for targeting a particular level of affordability. A ratio of housing cost to pre-tax income of 30% has been commonly used, but there is no evidence to support choosing this ratio and applying it to the aggregate economy. This convention appears to be based on political debates in the 1970s in the U.S.¹

In our context, we also have no guidance on what the appropriate share housing costs should be in proportion to after-tax income to attain affordability.

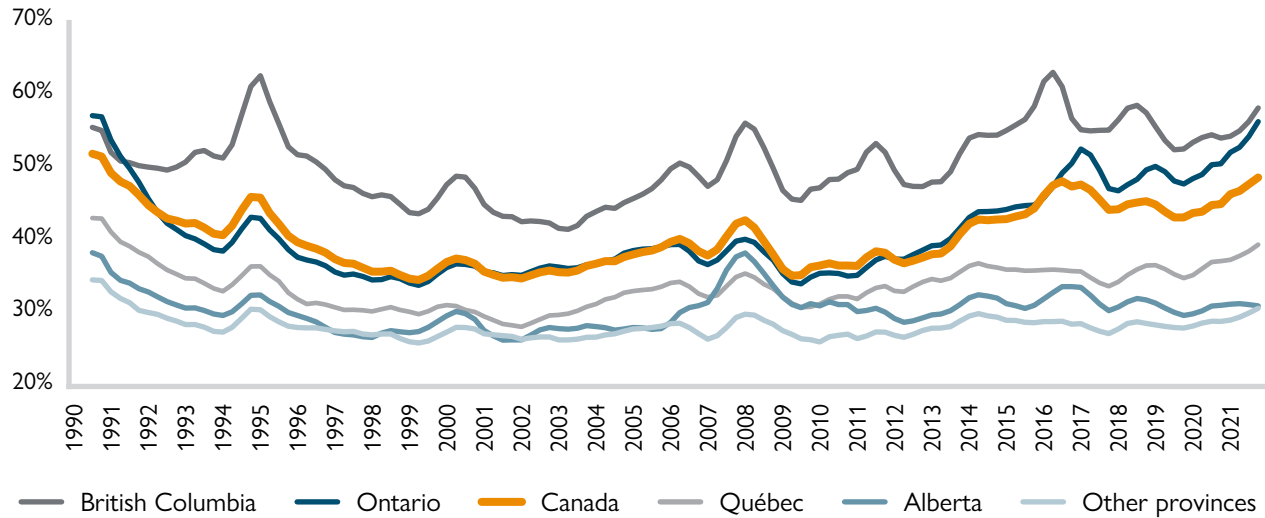
Figure 1 shows the ratio of average housing costs associated with the average house price as share of average after-tax income. This is based on data in each of the provinces and then averaged for Canada.

This is a theoretical construct to show what a household with average income would pay in shelter costs if it bought an average home. This calculation is based on several assumptions, such as the buyer paying the minimum down payment, which currently stands at 5%.²

¹ The origins of the 30-per cent housing costs-to-gross income appear to be based on conventions from the 1970s, as discussed in Herbert et al. (2018).

² This approach follows the general approach of Andrlje and Plašil (2019).

Figure 1: Shelter cost as a share of disposable income when the average household buys the average house (based on MLS® prices)



Source: CMHC calculations based on data from CMHC, Statistics Canada, Conference Board of Canada, CREA, Bank of Canada and Altus

Experiences differ across provinces. British Columbia has always been challenged by a lack of affordability. In recent history (back to 1990), our measure of affordability has not been below 40% of disposable income. That said, British Columbia's lack of affordability has declined even further over the last 2 decades.

Ontario had been relatively affordable until 2010. Since then, its affordability has worsened and now matches British Columbia's. As Canada's largest province, this has pushed Canada's affordability down as well.

Québec has traditionally had housing affordability, but it now faces affordability challenges given increases in house prices since the pandemic started.

In contrast, Alberta and the provinces not shown in the figure have been affordable over this period. The pattern in these provinces partly reflects relatively weaker economic growth over the long term, and partly the greater ease of building new housing in these provinces as compared to British Columbia and Ontario (CMHC, 2018).

Different experiences across provinces suggest that imposing a single Canada-wide affordability target may not be appropriate.

We target a reduction in this housing cost-to-income ratio as the way to achieve affordability for everyone in Canada. Based on Figure 1, the period in recent history in which housing costs—in proportion to average incomes—were relatively low were the years around 2003 and 2004. That was also a time when the economy was stable, not being in either a boom or a recession.

One option is to use affordability levels from this period as our target, which clearly differed from province to province. Hence, for the first scenario results (in the next chapter), we target affordability ratios of around 30% for most provinces but target 37% in Ontario and 44% in British Columbia.

The other option—which is our second scenario—is to indeed adopt a Canada-wide housing costs-to-disposable income ratio of 40% as our target for housing affordability in each province. This roughly corresponds to a ratio of housing costs being 30% of pre-tax (or gross) income.

We recognize that these targets are subjective, but we need to set logical targets. In general, our statistical results will show that the cost of housing will be higher in provinces with higher average incomes, but the cost of housing can still be lowered through action to increase supply.

Affordability is affected by supply and demand for housing

Affordability relates the cost of housing to income. It is driven largely by house prices, which are in turn determined in the housing market where demand for housing equals its supply.

The supply of housing comes from the stock of existing housing for sale in the resale market, the flow of new housing that is being built, and from old and new rental units. Demand for housing will increase over the long term if household numbers and incomes rise, and interest rates fall. Without an increase in housing supply to match this demand increase, house prices will rise, and affordability will worsen.³ Understanding the pressures on affordability requires understanding the patterns of demand and supply of housing.

Figure 2 shows trends in household numbers, disposable incomes and the housing stock.

The number of households and the housing stock closely track each other because a household is roughly defined as the people living in a housing unit. The charts highlight

that growth in disposable income is much greater than in the number of households. This will put upward pressure on house prices if it is not considered when planning for how much housing to build.

Our analysis shows that affordability is an inherent challenge in modern economies. As house prices grow, our statistical results show that demand for housing would decline only marginally across Canada.

In contrast, as incomes grow then demand for housing shows large growth. This combination of more demand as incomes grows but negligible decline in demand as prices grow will lead to affordability being an inherent challenge in a growing economy. Unless, that is, we have more housing supply.

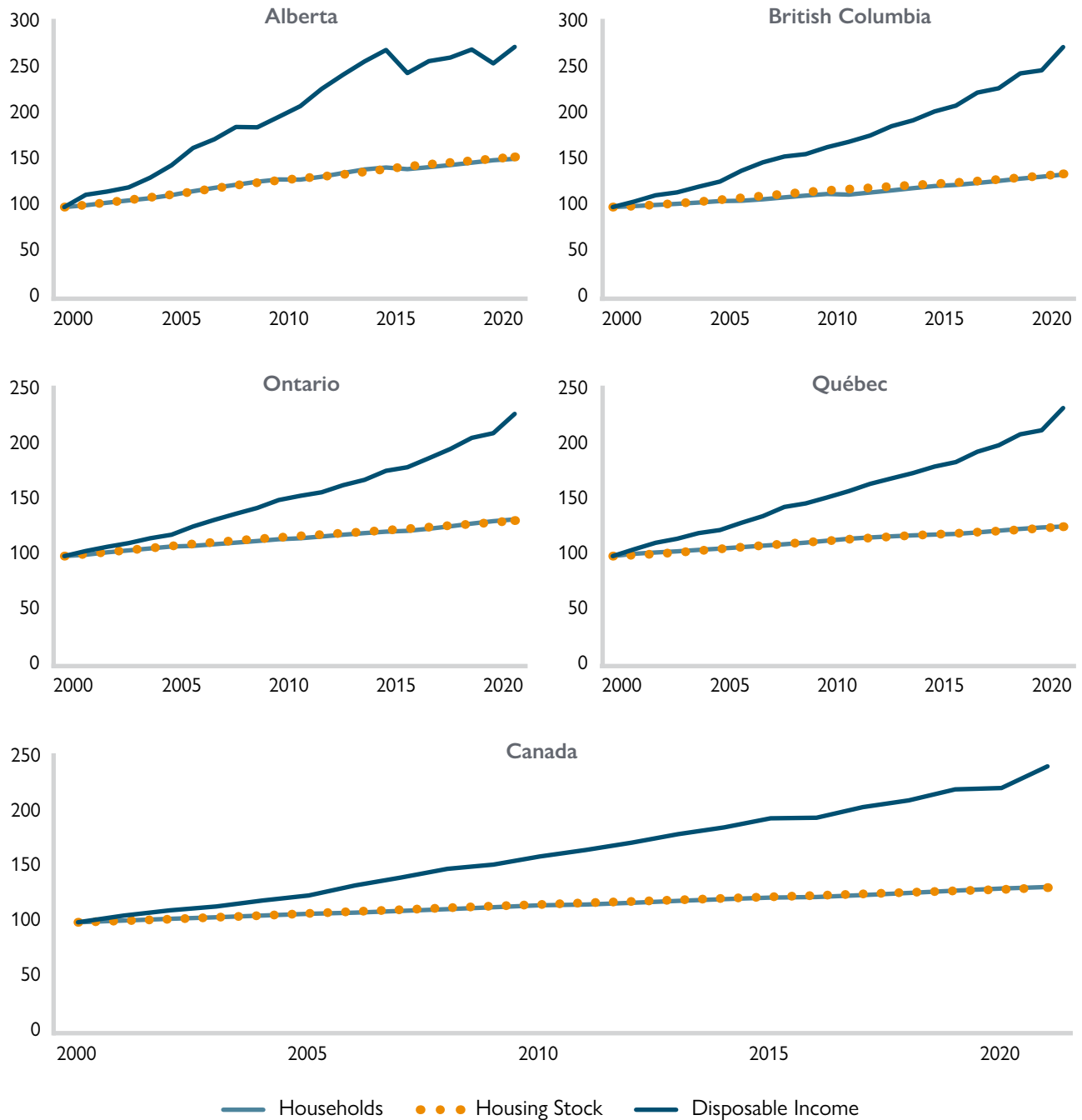
This situation is not unique to Canada. It also explains why shelter costs as a share of income tends to be higher in Canadian provinces with higher incomes. This effect can be counteracted by increasing housing supply as is done in Alberta.

Demand for housing also grows as households expect house prices to grow, an effect incorporated in our approach. Such expectations become ingrained given many years of persistently rising house prices in the face of insufficient supply growth.

With concrete and credible actions to increase housing supply, however, such expectations would decline and reduce growth in demand for housing. Such credibility could be enhanced by firm commitments to ambitious increases in housing supply and regular and transparent reporting on how much housing is in the process of being approved, planned and started.

³ For international evidence on these trends see, for example, Geng (2018).

Figure 2: Changes in disposable income, the housing stock and the number of households to 2021, indexed to 100 in 2000



Source: Statistics Canada, Conference Board of Canada, CMHC and CMHC calculations

How does demand differ from need?

We stress the importance of looking at demand for housing based on economics, but this differs from conventional approaches adopted by planning agencies. Instead, they rely on projections of household numbers, an approach often called estimating the “need” for housing. This approach argues that one additional household will require one additional housing unit.

This approach is inadequate for the following reasons:

1. The statistical analysis has showed rising house prices have reflected economic demand exceeding supply (e.g., CMHC (2018)). So, experience shows that past practices in planning for demand growth has proven inadequate.
2. Relying on supply meeting demographic projections will not take affordability into account explicitly. Building one additional unit for one additional household when there is widespread unaffordability implies that not enough housing units will be built.

Systematic historical under-provision of housing supply will be perpetuated.

3. Projections of household numbers for a region, such as a city, usually take past trends in the city’s household numbers and project them forward. These past trends reflect the costs of housing in those cities as well. In turn, this has led expensive cities to have historically slower growth in the number of households, relative to what demand would have been had housing been affordable.

High housing costs have deterred many from moving to these cities, or young adults in those cities from moving out of their parents’ home. All of which has held down growth in the number of households.

Looking to past trends only when making projections about the future will lead to an underestimate of how many households there would have been in those cities had there been housing affordability.⁴

4. Failing to consider that households will tend to move to higher-quality housing as their incomes increase will lead to affordability problems in a market.⁵ Our current approach ensures that affordability is attained on average in a market.

We model economics of housing markets as well as demographics

The task of estimating how much supply should be built is not easy. To first summarize our approach, we need to understand what the economy and demographic makeup will look like in 2030. Once we understand this, we can translate this into the demand for housing.

We need to estimate the number of housing units to meet demand in 2030, and this supply ensures that house prices are affordable. This task has not been done before in Canada. We compare the supply required to the amount of supply we think will be created.

Breaking that big picture down, we start by projecting what the number of households would be in 2030. For this we took population projections from *Statistics Canada* and transformed them into the number of households we expect to see in 2030. We need to estimate household numbers because demand for housing depends on household rather than population numbers. These projections include assumptions on the scale of immigration and how the population will change with population ageing.

Increasing the number of permanent immigrants beyond expected trends means that more housing will need to be built to accommodate them. This also presents challenges for the timing of bringing those dwellings – whether to own or rent – to market. Whereas increasing immigrant numbers can be done quickly, the time it takes to approve and build new housing takes years.

⁴ An approach to try to correct for this was developed in Moffatt (2021), which estimated an additional one million new homes would be needed in Ontario over the decade from 2021 beyond traditional household projections.

⁵ In technical language, the income elasticity of demand for housing services is positive. In micro-econometric literature the elasticity of demand for housing is greater than zero but less than 1. This implies that housing costs would do so at a less than proportionate rate than income. For discussion see, for example, Meen and Whitehead (2020). Cross-country studies tend to find higher income elasticities, as in Cavalleri *et al.* (2019).

Effective demand for housing will change with economic variables, particularly with households' disposable income and interest rates.⁶ Hence, our next step was to develop projections of disposable income and interest rates for 2030. Combining these with projections for the number of households tells us what effective demand for housing will be in 2030. Using aggregate data across provinces, our approach takes the entire housing system into account.

We then need to ensure that enough supply is produced to meet demand and that the housing is affordable. At this stage, we ask: given where we expect disposable income to be in 2030, what would the level of house prices need to be so that housing is affordable? We call this price the Maximum Affordable Price Level (MAPL). We take factors such as property taxes, insurance, utilities and other costs of owning a home into consideration when generating the MAPL.

Finally, we ask the model, what is the supply required so that demand is satisfied and house prices equal MAPL? We compare that amount to how much housing supply we project will occur by 2030.

To do this, we develop new estimates of the annual stock of housing in each province. By statistically estimating the relationship between demand and supply over time—and the housing prices that ensue—we get numerical estimates of how prices change with incomes, household numbers, the stock of housing and so forth.

How do we interpret the increase in supply required?

Our results show what must happen to attain affordability for the household with an average income that wants to buy the average house. The model therefore looks at affordability across the entire housing system because the person on an average income is likely to be looking at a home to buy rather than rent.

Increasing housing supply will have multiple roles in this context. It does not necessarily mean that the price of a specific house will decline. Instead, what our approach reflects is increased supply along the pattern of past housing supply increases, which includes increasing the supply of higher-priced housing as well.

Will the supply of housing in excess of growth in the number of households leave housing empty? The simplest way of interpreting requiring housing supply to be more than the number of households is that it allows the housing market to operate more freely. Increasing supply will allow better matching between households and the housing they want. Currently, tight housing markets imply households with greater ability to pay will overbid for any housing in limited supply.⁷

New supply of housing usually attracts households with relatively higher incomes because new housing has better amenities, more living space, is more energy efficient and so forth. Higher costs to build imply that such housing is bought by households with higher incomes. When they move into those new homes, they vacate their old homes. This frees up that dwelling for households with less income to buy, which leaves another dwelling free for a family to move into, and so forth. This *filtering* process leads to improved affordability over time since more supply lowers housing prices across the continuum of housing. This process has been found to work in other countries, and CMHC is exploring how efficient this process is in Canada.⁸

To put it another way, without more housing to meet demand from middle-income households, some of them will bid more and more for housing they want, pushing up the price of single-detached housing in better locations as we've seen over the last decade, for example. Others will be inhibited from paying such prices and stay put. But by staying put they will be reducing the supply of housing available through the resale market to those with less income. New supply facilitates this process. It does not need to come in the form of single-detached housing, but in housing that satisfies those households.

In short, failing to account for demand for better quality housing as income rises means that there will be too few structures in a dynamic system. In a market economy, supply equals demand rather than need; only matching supply to need will imply higher prices and ever worsening affordability.

Taking economic forces into account
will mean that more housing supply
will be required to reach affordability

⁶ Our approach to modelling the economic inter-relationships between these variables roughly follows DiPasquale and Wheaton (1994).

⁷ Some of these ideas are explored in the academic literature in papers such as Wheaton (1990), Head *et al.* (2014) and Piazzesi *et al.* (2020).

⁸ Evidence for the effectiveness of this approach in helping affordability for the U.S. can be found in Rosenthal (2014) and Mast (2021), and it is explored theoretically in Nathanson (2020).

Are there ways of meeting housing demand without additional construction?

Households could also make different choices to lower the amount of housing that needs to be built. With a larger number of elderly households, housing multiple generations in the same housing unit would lower demand for housing. Moreover, there is scope for co-living whereby different households share the same dwelling unit. These approaches are only feasible, however, if structures are available or can be redesigned with enough living space. The scale of this effect, however, may not be sufficiently large in the face of the overwhelming supply needed.

Increasing housing supply will take time, and there are cost and capacity challenges of increasing supply

The scale of the number of housing units required is large. Can these levels be achieved by 2030? These are questions beyond the scope of the current report. There are significant delays in the processes of approving new housing construction. Requesting approval today may not lead to those housing units starting to be built by 2030 in many places (CMHC, 2018). Hence, increasing the efficiency of regulatory processes while respecting social and environmental concerns will be important. These challenges are discussed further in the [Canada-British Columbia Expert Panel on the Future of Housing Supply and Affordability](#) (CBCEP, 2021) and the [Ontario Housing Affordability Task Force](#) (OHAF, 2022).

Recently, there have been significant pressures in the construction industry through cost inflation and supply-chain problems as well as pandemic-induced disruptions. Along with high land costs, there is a risk that new construction will come at significant cost.

But there may also be scope for significant innovation in the housing supply system among developers and builders. Productivity growth in the industry has been notoriously weak. Alternative materials and design hold out the prospect of lowering construction costs. Financial institutions, who are increasingly involved in financing new developments, should be pushing for more innovation.

Table 1 shows a simple measure of productivity, based on construction worker per housing units under construction, which suggests that the construction industry worked at peak efficiency in 2021 in three of the four largest provinces (a lower number is more efficient on this scale). This efficiency was significantly better than the 25-year average. The picture in 2021 shows what's possible, but this also came at a cost of significant delays in some construction. If the construction industry can improve its productivity in this way and there is increased timeliness and certainty in the regulatory process, then there is scope for significant action to increase housing supply.

Table 1: Productivity in Construction

Province	Construction worker per unit under construction		
	Historical average (1996-2021)	All-time low	2021
Ontario	6.6	3.8	3.8
Québec	10.2	4.5	4.5
Alberta	8.6	4.7	8.4
British Columbia	6.1	3.3	3.3

Notes: Unit under construction in current period is calculated as units under construction in previous period plus starts less completions in current period.

Source: CMHC calculations based on CMHC's Starts and Completions Survey and Statistics Canada's Labour Force Survey

The pandemic could alter our estimates

Our approach relies on extrapolating past trends and how households and businesses reacted to those trends.

The pandemic has had many impacts on our lives, including choices made about housing. The move towards working from home led many households to search for more living space further from city centres (CMHC, 2021).

A clear shift has taken place, but perhaps it is too early to say definitively whether these trends will last or their extent. To date, demand for single-detached housing in suburban locations has increased. Anecdotal evidence suggests that demand in more rural communities has increased as well.

There may not be as much need to increase housing supply in city centres. This effect is unlikely to have a significant impact on our results because we concentrate on provincial analysis in this report.

An aspect that could alter results is if there were significantly more households leaving expensive cities in British Columbia and Ontario and moving to provinces with lower housing costs. There is some evidence of this happening, but we have not yet incorporated it in our analysis.

The dynamics unleashed by the pandemic highlight the need to understand how the economy evolves and its impact on housing. This does imply the need for greater speed and flexibility in planning that isn't ingrained in current approaches recognizing that construction is a long-term process.

Some other countries have followed this analytical approach

Housing affordability has become a global concern as housing prices have risen beyond income growth, particularly in global cities. Perhaps it is a bit surprising that not more economic analyses have been done to understand the problem.

Numerous analyses have been done in England and we were inspired by the approach outlined in Meen and Andrew (2008) and the papers they cite. Many years of economic analysis in England led to their white paper entitled *Fixing our Broken Housing Market* (DCLG, 2017). Data availability and market dynamics in Canada made that approach difficult to adopt directly in our analysis.

Some of the insights from the England analyses were replicated in the *Canada-British Columbia Expert Panel on the Future of Housing Supply and Affordability* (CBCEP, 2021). The Panel recommended that when agencies were planning for future housing supply, they should use projections of the future

number of households that were adjusted by affordability factors to take income growth into account (see Appendix 4 of their report).⁹

Australia had also adopted a similar approach to ours. They distinguished between underlying demand driven by demographic change on the one hand, and effective or market demand on the other. A series of reports were produced to estimate the gap between supply and demand. As they point out, "In the short to medium term, estimated underlying or latent demand is primarily demographically driven, but over the long term inevitably it is also influenced by structural changes in the economy, changes in the distribution of income and wealth, urban development patterns, social and cultural change and, indeed, trends in the supply and affordability of housing."¹⁰

We have not modeled other factors that may affect affordability

As described in this chapter, the long-term price of housing—and affordability more generally—is the outcome of economy-wide trends in economic and demographic factors on the one hand, and the stock of housing and its composition and location on the other. This means that ensuring housing affordability will require taking all those forces into account.

In this report we have highlighted the roles of incomes and interest rates.

There is a myriad of other factors that affects and will affect affordability. These include:

- policies affecting the supply of housing or taxing its demand
- choices made by households on where to live and in what type of housing they will reside
- ageing of the population and trends to working from home

We do not and cannot consider all of these in our current approach, but we will explore their impacts in future work, as described in Chapter 4.

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⁹ This approach was also advocated in Amborski and Clayton (2021).

¹⁰ p. 112, NHSC (2013).

3. Millions more homes must be built to achieve affordability by 2030

KEY POINTS

- In our central scenario, targets for affordability differ across provinces to reflect their past experiences while in the other we adopt a Canada-wide target.
- We project household numbers will grow by over 2 million from 2021 levels to reach over 17.5 million in 2030. We project real incomes per household will grow by 17% by 2030 or about 2% annually. The 5-year fixed discount mortgage rate will be just over 5% in 2030.
- We project that the stock of housing will be close to 19 million housing units by 2030 if current rate of construction trends continues. But in our central scenario, we project that over 22 million units will be required to achieve affordability for everyone living in Canada.

In this chapter, we provide results from our analysis following the steps outlined in chapter 2. More technical details are provided in a companion report as is an extensive list of data sources.

Step 1: Project the economy of 2030

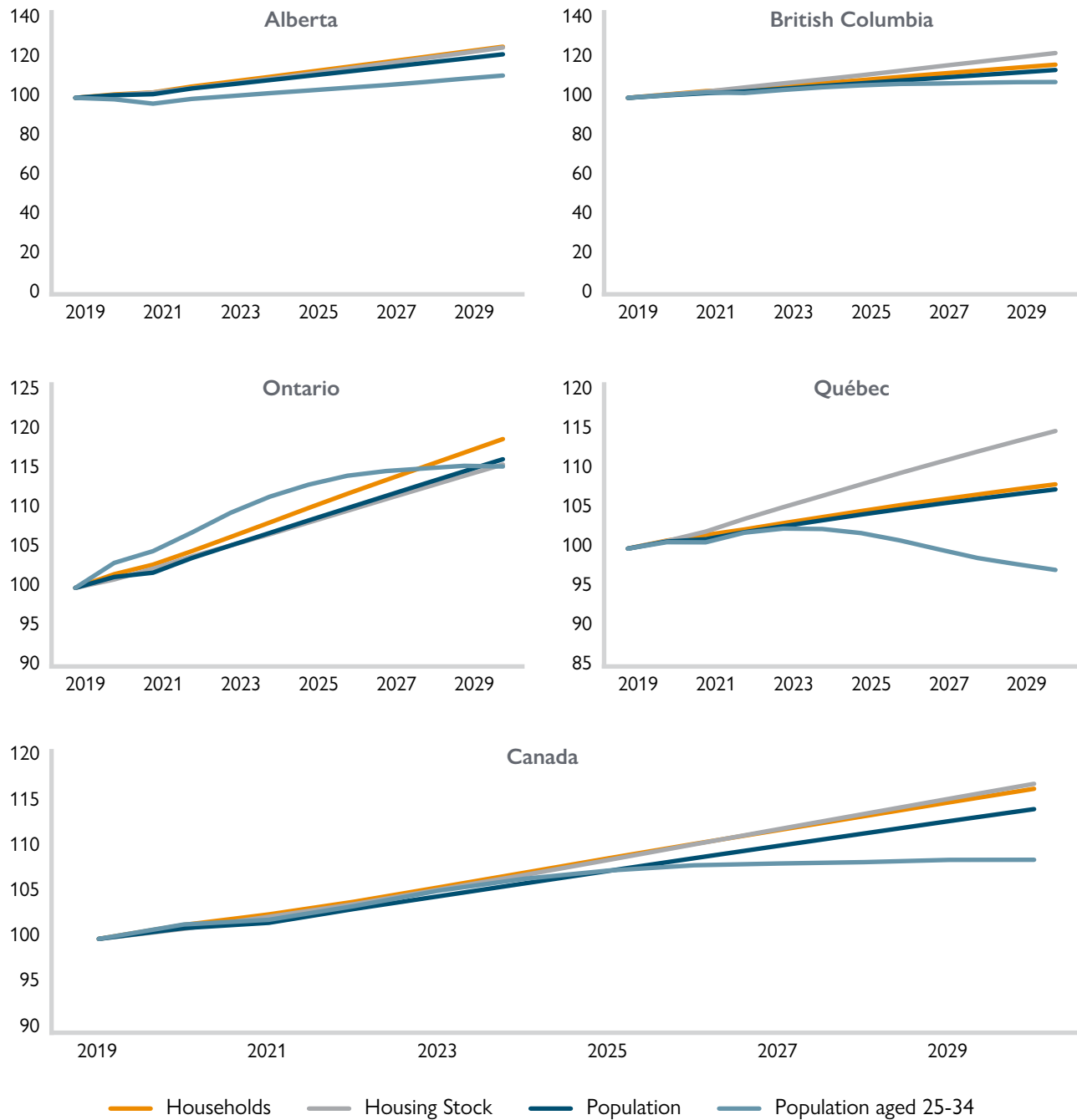
We first project the number of households to 2030 following a widely accepted methodology in demographics.

We begin by establishing population projections by age via the cohort-component method. Population projections are taken from Statistics Canada.¹¹ Then, we apply assumptions on headship rates to these population projections, which in turn gives us projections of the number of households. The headship rate is the ratio of the number of households to the number of adults in the adult population.

Figure 3 shows trends in housing and demographics to 2030 that are in our “business-as-usual” scenario for the 4 largest provinces and Canada. A business-as-usual scenario assumes that past trends continue and, importantly, there is no change in policy. There is greater growth in the total number of households compared to the total population while the 25 to 34-year-old population shows slower growth, particularly in Québec. This pattern reflects aging of the population.

¹¹ In the cohort-component method, the components of population change are projected separately for persons born in a given year (that is, a birth cohort). The components of population change include fertility, mortality, net migration, etc.

Figure 3: Demographic and housing projections to 2030, indexed at 100 in 2019



Source: CMHC calculations based on Statistics Canada population projections

Our projections for total income and interest rates are generated from a model that reflects these household-projection numbers. Our macroeconomic projections covering the components of GDP (consumption, business investment, government spending and net exports) are consistent with near-term projections of the Bank of Canada, the International Monetary Fund (IMF) and the Organization for Economic Coordination and Development (OECD).

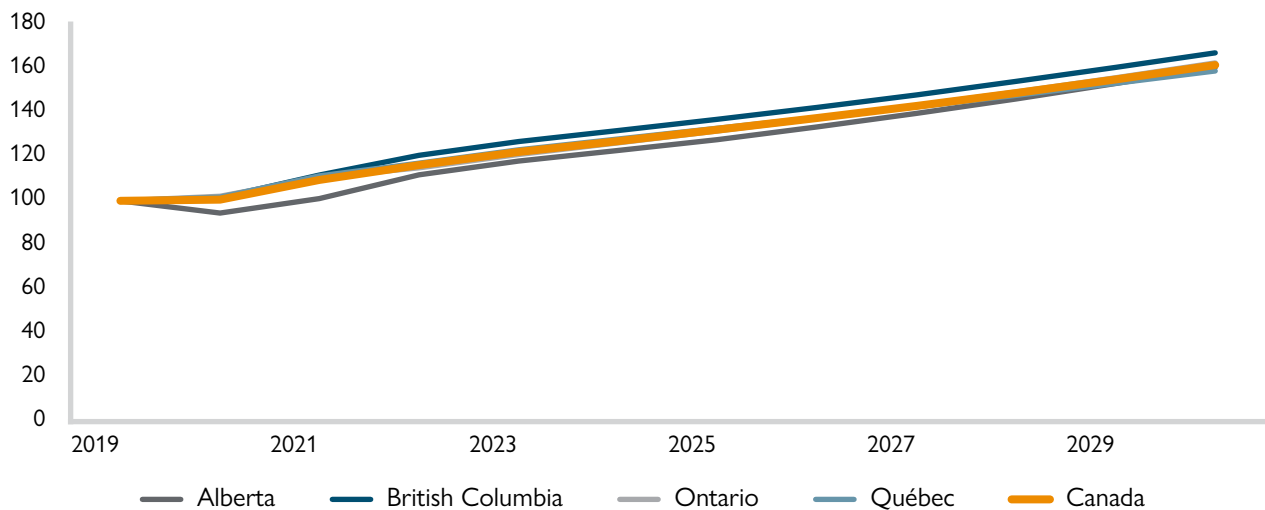
Expert judgement is applied to derive the income and interest rate projections. To the extent that these income growth projections are too high (or interest rates are too low), the model will over-estimate how much supply is required.

Income trends mostly match our long-term GDP forecasts.

As seen in Figure 4, Western provinces will have higher growth rates during the forecast period. Growth in the Prairie provinces is supported by having a younger population while British Columbia's growth will be supported by international migration.

Ontario will see faster growth in the latter half of the forecast period because of international migration, but also because its economy is more based on the financial and auto-manufacturing sectors which will be more resilient in a less carbon-intensive future. Income growth in Québec is expected to be slowed by an aging population.

Figure 4: Income-per-household trends to 2030 across four largest provinces and Canada, indexed at 100 in 2019



Source: CMHC calculations

Step 2: Project stock of housing

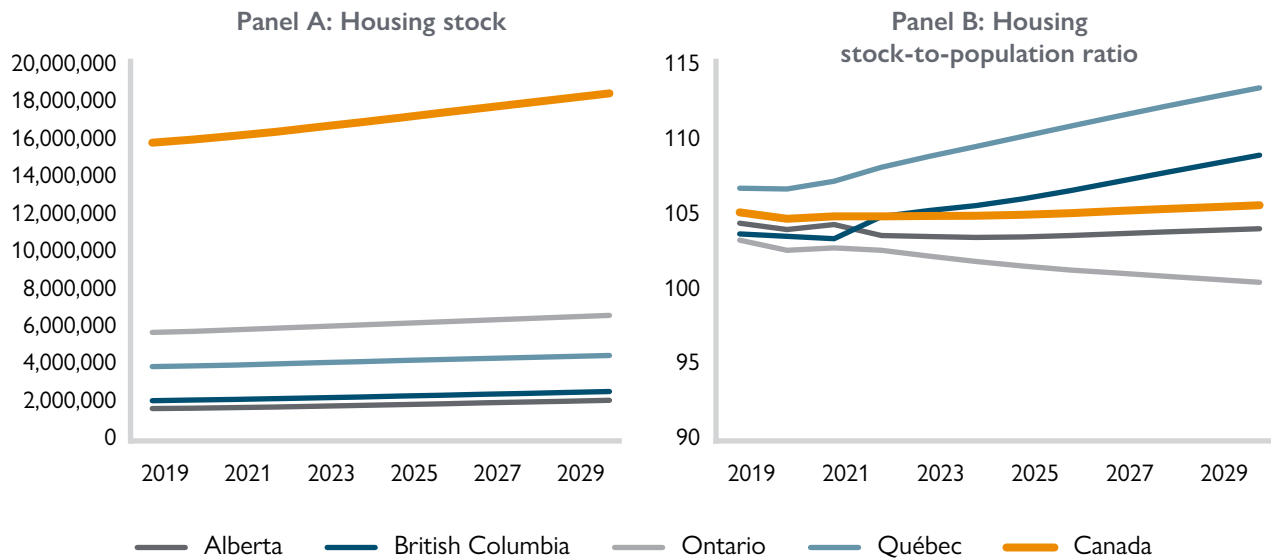
We project the flow of housing starts to 2030 based on historical determinants of housing starts, which gives us the stock of housing in 2030 based on existing trends. We call this the business-as-usual (BAU) scenario.

Housing starts tend to increase with house prices and changes in the cost of construction and financing. We also include the impact of long-term trends in the sales-to-new listings ratio to capture cyclical in housing construction.

Panel A of Figure 5 shows our projections for the housing stock across the largest provinces and for Canada. On current trends, the housing stock increases from about 16 million in 2019 to over 18 million by 2030 for Canada.

Panel B shows the resulting housing stock-to-household number ratio for the years to 2030. Of concern—according to our projections—is that Ontario's housing stock will not be keeping pace with its population growth, let alone chipping away at its affordability problem.

Figure 5: Projections to 2030



Source: CMHC calculations based on CMHC and Statistics Canada data

Step 3: Set affordability targets

We select two targets for affordability for 2030:

- **Scenario 1:** How many housing units are required to achieve affordability levels last seen in each province in 2003-2004, as we saw in Figure 1 in Chapter 2?
- **Scenario 2:** How many housing units are required to achieve a uniform affordability target in each province whereby housing costs for the average household are at most 40 per cent of disposable income?

Step 4: Establish Maximum Affordable Price Levels (MAPL)

We estimate what the price level should be so that housing costs for the average household are affordable given projected incomes (from Step 1), given our affordability targets for each province (Step 3).

We call this price the Maximum Affordable Price Level. Table 2 gives information on our targeted price level compared to today and the targeted levels of affordability that these price levels imply.

Step 5: Estimate how much supply is required to achieve affordability by 2030

Given

- where we want prices to be in 2030
- projected incomes
- projected household numbers, and
- projected interest rates

we estimate the demand for housing in 2030.

This is also the supply required in 2030 to hit affordability targets.

The gap between this level of demand or required supply and the supply we project if we continue business as usual (from Step 2), is our estimate of the supply gap.

Results

The targets and our estimates of how much supply is required to achieve them are laid out in Table 3.

In Scenario 1 with province-specific targets, Table 3 shows our affordability targets range from 30 to 44% where we impose a minimum of 30%. Many provinces either meet this minimum standard for average affordability already or will not find it challenging.

Large increases beyond what is currently projected will be required in Ontario and British Columbia. Action is required in these provinces because the size of the affordability challenge is so great.

Significant additional supply is also required in Québec. This is not so much because of current affordability conditions, rather, the deterioration in affordability has been large in a province where housing affordability was common in its history.

In Scenario 2 with a single cross-Canada affordability target of 40%, housing supply must increase, for the most part, in only 2 provinces:

- British Columbia
- Ontario

This highlights how the main affordability challenges in Canada are in Toronto and Vancouver and their surrounding regions.

Since the Scenario 2 target is less challenging for Ontario than Scenario 1, the amount of housing required is smaller. British Columbia, on the other hand seems to have always been an unaffordable province and so meeting a common Canada-wide target is tougher for it.

Table 2: Setting targets for affordability by province with prices in nominal terms

Province	Average price of home, 2021	Ratio of housing cost based on average price level to average income, 2021 (%)	Scenario 1		Scenario 2	
			Target level of affordability in 2030 (%)	Target for average price of home in 2030	Target level of affordability in 2030 (%)	Target for average price of home in 2030
Ontario	\$871,000	59	37	\$499,000	40	\$551,000
Québec	\$449,000	40	32	\$364,000	40	\$474,000
BC	\$929,000	60	44	\$679,000	40	\$607,000
Manitoba	\$332,000	30	30	\$336,000	40	\$481,000
Saskatchewan	\$300,000	27	30	\$364,000	40	\$524,000
Newfoundland & Labrador	\$270,000	28	30	\$260,000	40	\$379,000
Nova Scotia	\$358,000	36	31	\$305,000	40	\$421,000
Alberta	\$426,000	31	30	\$405,000	40	\$587,000
New Brunswick	\$247,000	28	30	\$274,000	40	\$400,000
P.E.I.	\$341,000	33	30	\$298,000	40	\$424,000


Source: CMHC calculations

Table 3: How much supply is required to achieve affordability

Province	Forecasted stock in 2030 in BAU*	Scenario 1: Province-specific target			Scenario 2: Common target		
		Target level of affordability in 2030	Incremental housing units required beyond BAU*	Difference	Target level of affordability in 2030	Incremental housing units required beyond BAU*	Difference
		%	Millions	%	%	Millions	%
Ontario	6.71	37	1.85	28	40	1.63	24
Québec	4.57	32	0.62	14	40		
BC	2.64	44	0.57	21	40	0.62	24
Manitoba	0.65	30	0.26	40	40		
Saskatchewan	0.56	30	0.10	17	40	0.02	4
Newfoundland & Labrador	0.28	30	0.06	22	40		
Nova Scotia	0.52	31	0.05	9	40		
Alberta	2.17	30	0.02	1	40		
New Brunswick	0.40	30			40		
P.E.I.	0.09	30			40		
Total	18.59		3.53	19		2.27	12

* Incremental housing supply shows the numbers of additional housing units required beyond those that are projected under the business-as-usual (BAU) scenario.

Source: CMHC calculations

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4. What are we missing in this analysis?

KEY POINTS

- We need to undertake analysis at the urban rather than provincial level and across the income distribution.
- Assessments of housing supply for First Nations, Inuit and Metis communities and the Territories are not included.
- Over time, some housing supply might be lost to physical effects of climate change (e.g., floods and wildfires). We do not have an assessment of the extent of this potential loss in this report.

This analysis demonstrates the feasibility of developing an estimate of how much housing is required to address affordability based on sound economic and statistical analysis. It is not perfect, and we have significant areas to improve. Nevertheless, the approach gives an appropriate order of magnitude of the challenge facing Canada and is the most comprehensive report to date in Canada. The report reflects the latest techniques and best practices used by academics to address this topic, given the data limitations we face.¹² More data currently being developed by Statistics Canada through enhanced economic accounts will help.

Further advances will require even more advanced analysis and development of even more data and original research. In this section, we outline some topics we will examine in future work.

The scale of affordability challenges is greatest in Canada's large urban areas.

We need to develop analysis to look at housing supply required in these areas—called Census Metropolitan Areas by Statistics Canada. For this work, we must develop more research on:

- the role of population mobility and its link to house prices
- differing regional economic conditions that alter the demand for housing

Population flows across geographic areas are more important to understanding demographic change at the urban than at the provincial levels. We have not taken them into account so far.

Lack of housing affordability has likely suppressed the rate of population growth in several cities, such as Toronto and Vancouver. Estimating how much housing supply is required means taking this effect into account.

Clearly, affordability challenges are more acute for those households with below median income. This analysis looks at the problem caused by the lack of housing supply and the supply required to ensure everyone in Canada has a home they can afford by 2030. The analysis reflects that more housing units created in the housing market will create opportunities for households to move into housing that responds to their demands and this 'filtering process' frees up housing to improve housing affordability over time.

¹² The latest econometric techniques are reviewed and discussed in Duca *et al.* (2021).

More work is required to understand:

- how housing supply patterns will improve affordability across households with different income levels
- whether some types of housing supply have faster effects while improving affordability for all

We have concentrated on what must happen in the market to housing supply on the assumption that what happens in the housing market passes through to rents over time. Combined with our intended work on different impacts across income groups, we need to understand more about the supply of rental housing separately.

Tackling the challenges of climate change and housing's role in it will have to become more ingrained in our analysis and thinking.

Housing supply has to increase in density and be more energy efficient to lower emissions and there may also be economic shifts across the country as we adjust to a zero-carbon future. For example, new and relocation of housing may be required due to climate change issues like:

- sea-level rise that will inundate coastal areas
- persistent fire or flooding hazards

Climate change also risks increasing the rate of depreciation on existing housing and increasing maintenance costs, so housing costs rise.

We concentrated our analysis on providing results across the provinces. There are significant challenges in First Nations, Inuit and Metis communities and the Territories. We currently lack data to replicate the methods developed here to address those important areas. Clearly, CMHC needs to support more work in this area.

CMHC has produced an inaugural, bi-annually [Housing Supply Report](#) (CMHC, 2022). We will also keep Canadians abreast of further analysis that we are doing on how Canada needs to meet its affordability challenges.

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5. Conclusions and implications of work

KEY POINTS

- We have taken initial steps to estimating how much additional housing supply is required to address affordability. Further analysis will be required to build out this picture.
- We welcome any feedback on our methodology, analyses that have been done and suggestions to further our planned work.

Three and a half million housing units—beyond current projections—will be required by 2030 to return to affordability to levels last seen in 2003 and 2004. Ontario and British Columbia need to supply most of these housing units.

These are big numbers, but the task of restoring affordability is also huge. Ensuring housing affordability for everyone in Canada is critical to Canadian families and the economy at large.

The federal government cannot achieve affordability for everyone in Canada on its own. We need partners. The private sector will be critical in addressing this supply shortfall. For their parts, governments can help by ensuring that the regulatory process is as efficient as possible while respecting important environmental and social concerns. Expert panels in both British Columbia and Ontario have come forward with recommendations on how to improve the regulatory process so that housing supply is more responsive to demand (CBCEP (2021) and OHATF (2022)).

Governments, including the federal government, also clearly have a role in ensuring that those without sufficient means have access to shelter.

The signal this gives to everyone about the scale of the challenge is more important than the exact number of housing units required.

There must be a transformation in the priority given to increasing supply of housing and that this increase is massive. Increasing supply of housing by a hundred here and a hundred there will simply not be sufficient.

Canada's approach to housing supply needs to be rethought. The evidence has been mounting for many years that the housing supply system is broken in many parts of Canada.

We will undertake further work to enhance the numbers produced in this report.

We will validate assumptions we've made and check their robustness.

We will provide more detail for Canada's urban centres and dig into affordability challenges across the income distribution.

We have not considered important housing challenges in the Territories and the impacts of climate change in this report.

We commit to making our analysis available and transparent to all Canadians.

We hope these results are a call to action to address affordability challenges and innovative approaches can be found.

We welcome any feedback on the methodology and suggestions for further analysis.

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Alternative text and data for figures

Figure 1: Shelter cost as a share of disposable income when the average household buy the average house (based on MLS® prices)

Year	British Columbia	Ontario	Canada	Quebec	Alberta	Other provinces
1990	55.6%	57.2%	52.0%	43.1%	38.4%	34.6%
	55.2%	57.1%	51.6%	43.1%	37.9%	34.6%
1991	52.2%	53.9%	49.4%	41.2%	35.7%	33.0%
	51.0%	51.6%	48.1%	39.9%	34.6%	32.1%
	50.8%	50.0%	47.5%	39.3%	34.2%	31.5%
	50.3%	48.1%	46.3%	38.4%	33.4%	30.5%
1992	50.1%	45.8%	44.9%	37.8%	33.0%	30.2%
	50.0%	43.9%	43.9%	36.9%	32.3%	29.9%
	49.7%	42.4%	43.1%	36.0%	31.7%	29.4%
	50.1%	41.6%	42.8%	35.4%	31.2%	29.0%
1993	50.8%	40.7%	42.4%	34.9%	30.8%	28.5%
	52.2%	40.3%	42.4%	34.8%	30.8%	28.5%
	52.4%	39.6%	41.8%	34.2%	30.4%	28.2%
	51.7%	38.8%	41.0%	33.5%	30.0%	27.6%
1994	51.4%	38.6%	40.8%	33.1%	29.8%	27.5%
	53.2%	39.8%	42.1%	34.0%	30.3%	28.1%
	57.3%	41.6%	44.2%	35.2%	31.3%	29.4%
	61.2%	43.2%	46.0%	36.5%	32.5%	30.6%
1995	62.7%	43.1%	45.9%	36.5%	32.6%	30.5%
	59.2%	41.5%	43.8%	35.4%	31.7%	29.6%
	56.1%	40.3%	42.4%	34.5%	31.0%	28.9%
	52.9%	38.8%	40.7%	32.9%	30.2%	28.3%
1996	51.8%	37.8%	39.8%	32.0%	29.8%	28.1%
	51.7%	37.4%	39.3%	31.3%	29.3%	28.0%
	50.8%	37.1%	38.9%	31.5%	28.9%	28.1%
	49.8%	36.6%	38.4%	31.3%	28.1%	27.9%
1997	48.4%	35.7%	37.5%	30.9%	27.4%	27.6%
	47.6%	35.3%	37.0%	30.5%	27.2%	27.5%
	47.3%	35.5%	36.9%	30.5%	27.1%	27.6%
	46.5%	35.1%	36.3%	30.5%	26.8%	27.2%

Year	British Columbia	Ontario	Canada	Quebec	Alberta	Other provinces
1998	46.1%	34.6%	35.8%	30.3%	26.7%	27.1%
	46.3%	34.7%	35.8%	30.6%	27.3%	27.2%
	46.1%	35.1%	35.9%	30.9%	27.7%	27.2%
	45.0%	34.8%	35.3%	30.5%	27.5%	26.6%
1999	43.9%	34.2%	34.8%	30.3%	27.4%	26.1%
	43.7%	33.9%	34.6%	29.9%	27.5%	26.0%
	44.4%	34.4%	35.2%	30.3%	28.1%	26.3%
	45.9%	35.4%	36.2%	30.9%	28.9%	26.8%
2000	47.7%	36.3%	37.1%	31.2%	29.7%	27.5%
	48.9%	36.8%	37.6%	31.1%	30.3%	28.1%
	48.8%	36.8%	37.4%	30.5%	30.0%	28.1%
	47.2%	36.5%	36.9%	30.2%	29.2%	27.9%
2001	45.0%	35.8%	35.8%	29.6%	27.7%	27.2%
	43.9%	35.6%	35.3%	29.1%	27.0%	27.1%
	43.4%	35.2%	34.9%	28.6%	26.4%	27.0%
	43.3%	35.4%	35.0%	28.4%	26.4%	26.9%
2002	42.6%	35.3%	34.8%	28.2%	26.4%	26.5%
	42.7%	35.8%	35.3%	28.7%	27.1%	26.7%
	42.7%	36.3%	35.7%	29.2%	27.8%	26.8%
	42.5%	36.6%	35.9%	29.8%	28.1%	26.8%
2003	41.7%	36.4%	35.7%	29.8%	27.9%	26.4%
	41.6%	36.2%	35.6%	30.0%	27.9%	26.4%
	42.1%	36.3%	35.9%	30.4%	28.0%	26.5%
	43.4%	36.7%	36.6%	31.0%	28.4%	26.8%
2004	44.0%	36.9%	36.9%	31.3%	28.2%	26.8%
	44.6%	37.2%	37.2%	32.0%	28.1%	27.1%
	44.5%	37.5%	37.2%	32.3%	27.8%	27.2%
	45.3%	38.3%	37.8%	32.9%	27.9%	27.6%
2005	45.8%	38.7%	38.1%	33.1%	28.1%	27.9%
	46.4%	38.9%	38.5%	33.3%	28.1%	28.0%
	47.2%	38.9%	38.7%	33.4%	27.8%	28.1%
	48.4%	39.2%	39.1%	33.7%	28.0%	28.3%
2006	49.9%	39.5%	39.9%	34.2%	28.8%	28.6%
	50.7%	39.5%	40.3%	34.4%	30.2%	28.7%
	50.1%	38.6%	39.7%	33.7%	30.8%	28.1%
	48.9%	37.3%	38.6%	32.7%	31.1%	27.3%

Year	British Columbia	Ontario	Canada	Quebec	Alberta	Other provinces
2007	47.5%	36.7%	38.0%	32.3%	31.5%	26.5%
	48.4%	37.4%	38.8%	32.5%	33.5%	27.0%
	51.0%	38.6%	40.6%	33.8%	36.0%	28.1%
	54.4%	40.0%	42.4%	35.0%	37.8%	29.5%
2008	56.2%	40.2%	42.8%	35.5%	38.3%	29.9%
	55.4%	39.8%	41.8%	35.0%	37.1%	29.8%
	52.8%	38.5%	39.9%	34.0%	35.5%	29.1%
	50.0%	37.4%	38.1%	33.4%	33.9%	28.6%
2009	47.0%	35.5%	36.1%	32.3%	32.3%	27.7%
	45.7%	34.4%	35.2%	31.4%	31.3%	27.2%
	45.6%	34.1%	35.3%	30.9%	30.8%	26.5%
	47.1%	35.0%	36.4%	30.9%	31.4%	26.4%
2010	47.3%	35.6%	36.6%	31.3%	31.1%	26.1%
	48.4%	35.6%	36.9%	32.0%	31.6%	26.8%
	48.5%	35.5%	36.6%	32.4%	31.2%	27.0%
	49.4%	35.2%	36.6%	32.4%	31.3%	27.2%
2011	49.8%	35.3%	36.6%	32.0%	30.3%	26.6%
	52.2%	36.3%	37.7%	32.9%	30.5%	26.9%
	53.4%	37.4%	38.6%	33.5%	30.7%	27.5%
	52.2%	37.9%	38.4%	33.8%	30.2%	27.5%
2012	49.7%	37.5%	37.4%	33.1%	29.4%	27.0%
	47.8%	37.5%	36.9%	33.0%	28.8%	26.8%
	47.5%	38.1%	37.3%	33.7%	29.0%	27.1%
	47.5%	38.7%	37.7%	34.3%	29.4%	27.7%
2013	48.1%	39.3%	38.2%	34.8%	29.8%	28.0%
	48.1%	39.4%	38.3%	34.5%	30.0%	28.0%
	49.5%	40.3%	39.2%	34.9%	30.4%	28.2%
	52.0%	41.7%	40.9%	35.7%	31.2%	29.0%
2014	54.1%	43.2%	42.4%	36.6%	32.2%	29.7%
	54.6%	44.0%	42.9%	36.9%	32.6%	30.0%
	54.5%	44.0%	42.8%	36.5%	32.4%	29.7%
	54.5%	44.1%	43.0%	36.3%	32.2%	29.5%
2015	55.2%	44.3%	43.0%	36.1%	31.4%	29.1%
	55.9%	44.7%	43.4%	36.0%	31.1%	29.1%
	56.7%	44.9%	43.7%	35.9%	30.7%	28.8%
	58.5%	44.9%	44.5%	35.9%	31.1%	28.8%

Year	British Columbia	Ontario	Canada	Quebec	Alberta	Other provinces
2016	61.9%	45.9%	46.3%	36.0%	32.0%	28.9%
	63.2%	47.5%	47.7%	36.1%	32.9%	28.9%
	61.2%	49.3%	48.2%	36.0%	33.7%	29.0%
	56.8%	50.6%	47.5%	35.9%	33.7%	28.6%
2017	55.3%	52.6%	47.8%	35.8%	33.6%	28.6%
	55.1%	51.8%	47.0%	35.0%	32.5%	28.0%
	55.2%	49.7%	45.7%	34.2%	31.3%	27.6%
	55.2%	47.2%	44.3%	33.8%	30.4%	27.3%
2018	56.6%	46.9%	44.3%	34.4%	30.9%	27.9%
	58.2%	47.7%	45.0%	35.3%	31.6%	28.6%
	58.6%	48.5%	45.3%	36.1%	32.1%	28.9%
	57.6%	49.8%	45.5%	36.6%	31.9%	28.6%
2019	55.7%	50.2%	45.0%	36.7%	31.4%	28.5%
	53.8%	49.5%	44.0%	36.1%	30.8%	28.3%
	52.5%	48.2%	43.2%	35.4%	30.2%	28.1%
	52.6%	47.8%	43.2%	34.9%	29.8%	28.0%
2020	53.5%	48.6%	43.8%	35.3%	30.0%	28.3%
	54.2%	49.1%	44.0%	36.2%	30.4%	28.7%
	54.6%	50.5%	44.9%	37.1%	31.0%	29.0%
	54.1%	50.6%	45.1%	37.2%	31.1%	28.9%
2021	54.4%	52.2%	46.4%	37.4%	31.3%	29.1%
	55.1%	52.9%	46.9%	37.9%	31.4%	29.5%
	56.4%	54.3%	47.8%	38.6%	31.2%	30.1%
	58.3%	56.4%	48.7%	39.5%	31.1%	30.7%

Source: CMHC calculations based on data from CMHC, Statistics Canada, Conference Board of Canada, CREA, Bank of Canada and Altus

Figure 2: Changes in disposable income, the housing stock and the number of households to 2021, indexed to 100 in 2000

Alberta

Year	Households	Housing Stock	Disposable Income
2000	100	100	100
2001	102	102	113
2002	105	105	117
2003	107	108	121
2004	110	111	132
2005	113	114	146
2006	117	117	165
2007	121	120	174
2008	124	124	187
2009	128	127	187
2010	130	129	199
2011	130	131	210
2012	133	133	229
2013	137	136	244
2014	141	138	259
2015	143	141	271
2016	141	144	246
2017	143	147	259
2018	146	149	263
2019	149	151	272
2020	151	153	257
2021	153	155	275

British Columbia

Year	Households	Housing Stock	Disposable Income
2000	100	100	100
2001	101	101	106
2002	102	103	113
2003	104	104	116
2004	105	106	122
2005	107	108	128
2006	107	110	140
2007	109	112	149
2008	110	114	155

Year	Households	Housing Stock	Disposable Income
2009	112	116	158
2010	114	118	165
2011	114	120	171
2012	116	121	178
2013	118	122	188
2014	121	124	195
2015	123	125	204
2016	124	127	211
2017	126	128	225
2018	128	130	230
2019	131	132	246
2020	133	134	249
2021	135	136	275

Ontario

Year	Households	Housing Stock	Disposable Income
2000	100	100	100
2001	101	102	105
2002	103	104	108
2003	105	105	112
2004	107	107	116
2005	109	109	119
2006	109	111	127
2007	111	113	133
2008	112	114	138
2009	114	116	144
2010	115	117	151
2011	116	118	155
2012	118	120	158
2013	119	121	164
2014	121	122	169
2015	122	124	178
2016	123	125	181
2017	125	126	189
2018	127	128	197
2019	130	129	207
2020	132	131	212
2021	133	132	229

Québec

Year	Households	Housing Stock	Disposable Income
2000	100	100	100
2001	102	101	106
2002	103	102	112
2003	104	103	116
2004	106	105	121
2005	107	107	124
2006	108	108	130
2007	109	110	136
2008	111	111	145
2009	112	112	148
2010	114	114	153
2011	116	115	159
2012	117	117	166
2013	118	118	171
2014	119	119	176
2015	120	120	181
2016	120	121	186
2017	122	122	195
2018	123	123	201
2019	125	124	211
2020	126	125	214
2021	127	127	235

Canada

Year	Households	Housing Stock	Disposable Income
2000	100	100	100
2001	102	101	106
2002	103	103	111
2003	105	105	114
2004	106	106	120
2005	108	108	124
2006	109	110	134
2007	110	112	141
2008	112	113	149
2009	114	115	153
2010	115	116	160

Year	Households	Housing Stock	Disposable Income
2011	116	118	166
2012	118	119	173
2013	120	120	181
2014	121	122	187
2015	123	123	195
2016	123	125	195
2017	125	126	205
2018	127	127	211
2019	129	129	221
2020	131	130	223
2021	132	132	242

Source: Statistics Canada, Conference Board of Canada, CMHC and CMHC calculations

Figure 3: Demographic and housing projections to 2030, indexed at 100 in 2019

Alberta

Year	Households	Housing Stock	Population	Population aged 25-34
2019	100	100	100	100
2020	102	101	101	99
2021	103	103	102	97
2022	106	105	105	99
2023	108	107	107	101
2024	111	110	109	102
2025	113	112	111	104
2026	116	115	113	105
2027	118	117	116	106
2028	121	120	118	108
2029	123	123	120	110
2030	126	126	122	111

British Columbia

Year	Households	Housing Stock	Population	Population aged 25-34
2019	100	100	100	100
2020	102	102	101	101
2021	103	103	102	103
2022	104	105	103	102
2023	106	107	105	104
2024	107	109	106	105
2025	109	112	107	106
2026	111	114	109	107
2027	112	116	110	107
2028	114	118	112	108
2029	115	121	113	108
2030	117	123	114	108

Ontario

Year	Households	Housing Stock	Population	Population aged 25-34
2019	100	100	100	100
2020	102	101	101	103
2021	103	102	102	105
2022	105	104	104	107
2023	106	105	105	110
2024	108	107	107	112
2025	110	108	109	113
2026	112	110	110	114
2027	114	111	112	115
2028	115	113	113	115
2029	117	114	115	116
2030	119	116	116	115

Québec

Year	Households	Housing Stock	Population	Population aged 25-34
2019	100	100	100	100
2020	101	101	101	101
2021	102	102	101	101
2022	102	104	102	102
2023	103	105	103	103
2024	104	107	104	102
2025	105	108	104	102
2026	106	110	105	101
2027	106	111	106	100
2028	107	112	106	99
2029	108	114	107	98
2030	108	115	108	97

Canada

Year	Households	Housing Stock	Population	Population aged 25-34
2019	100	100	100	100
2020	101	101	101	102
2021	103	102	102	102
2022	104	104	103	103
2023	105	105	105	105
2024	107	107	106	106
2025	109	108	107	107
2026	110	110	109	108
2027	112	112	110	108
2028	113	113	111	108
2029	115	115	113	108
2030	116	117	114	108

Source: CMHC calculations based on Statistics Canada population projections

Figure 4: Income-per-household trends to 2030 across four largest provinces and Canada, indexed at 100 in 2019

Year	Alberta	British Columbia	Ontario	Québec	Canada
2019	100	100	100	100	100
2020	94	101	102	102	101
2021	101	112	111	111	110
2022	112	121	115	117	116
2023	118	127	121	123	122
2024	123	132	126	128	127
2025	128	137	132	133	132
2026	133	142	137	138	137
2027	140	148	143	143	143
2028	146	154	149	148	149
2029	153	160	156	153	155
2030	160	167	162	159	161

Source: CMHC calculations

Figure 5: Projections to 2030

Panel A: Housing stock

Year	Alberta	British Columbia	Ontario	Québec	Canada
2019	1,729,710	2,150,130	5,799,129	3,972,219	15,940,752
2020	1,752,516	2,183,205	5,861,594	4,010,264	16,112,684
2021	1,776,210	2,217,385	5,940,610	4,058,253	16,315,535
2022	1,814,691	2,264,064	6,030,777	4,122,093	16,529,483
2023	1,855,257	2,308,541	6,112,156	4,181,820	16,778,392
2024	1,896,984	2,351,827	6,194,963	4,238,845	17,026,217
2025	1,940,811	2,397,938	6,280,921	4,296,634	17,283,845
2026	1,986,116	2,445,980	6,367,919	4,353,484	17,545,212
2027	2,032,168	2,494,610	6,454,499	4,408,756	17,805,803
2028	2,078,626	2,543,377	6,540,330	4,462,686	18,064,651
2029	2,125,370	2,592,158	6,625,439	4,515,303	18,321,442
2030	2,172,331	2,640,547	6,709,610	4,566,518	18,575,273

Panel B: Housing stock-to-population ratio

Year	Alberta	British Columbia	Ontario	Québec	Canada
2019	105	104	103	107	105
2020	104	104	103	107	105
2021	104	104	103	107	105
2022	104	105	103	108	105
2023	104	105	102	109	105
2024	104	106	102	110	105
2025	104	106	102	110	105
2026	104	107	101	111	105
2027	104	107	101	112	105
2028	104	108	101	112	105
2029	104	109	101	113	106
2030	104	109	101	114	106

Source: CMHC calculations based on CMHC and Statistics Canada data