# AN ASSESSMENT OF THE FIRST-TIME HOME BUYER INCENTIVE IN CANADA

**By**

**Sanjana Bhatnagar**

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## Abstract

The purpose of this essay is to assess the likely success of the forthcoming First-time Home Buyer Incentive announced by the Government of Canada in Budget 2019. The paper evaluates income and house price distributions across Canadian cities to estimate the number of households that will be helped by this policy. Using these results, the paper discusses where the program is likely to be most influential, similar programs introduced elsewhere and how the analysis can be expanded.

# *I. Introduction*

Housing affordability has been one of the main challenges faced by Canadians in recent years (RBC Economics, 2019). Large swings in house prices, limited supply of homes and recent regulatory measures around mortgages have challenged households' ability to purchase homes. The federal government has focussed on the issue of home affordability and introduced numerous schemes to support home ownership. These include the First-time Home Buyers' Tax Credit, Home Buyers' Plan and the GST/HST New Housing Rebate (CMHC). In March 2019, the federal government announced the forthcoming First-Time Home Buyer Incentive in its Budget. Under this incentive, the government will assist first-time home buyers by contributing up to 10% of a home's purchase value as equity, to be repaid at the time of resale or in 25 years, whichever comes first. The incentive amount is interest-free and, therefore, aims to assist first-time home buyers in purchasing a home without increasing their financial burden.

This paper aims to assess the effectiveness of the design of this incentive. Particularly, by analyzing house price and income distributions, this paper attempts to assess the likely success of the policy in improving home ownership among groups that it is designed to target. The analysis shown in this paper uses data on house price distribution from the Canada Mortgage and Housing Corporation (CMHC) and income distribution data from Statistics Canada for the years 2017 and 2018 to estimate the number of households that may be helped by the policy across Canada. The paper also discusses similar policies introduced in other countries as well as in Canada. Finally, the paper suggests specific policy changes that may enhance the effectiveness of the incentive in achieving the government’s objective of improving first-time home buyers' access to home ownership.

## *II. Background*

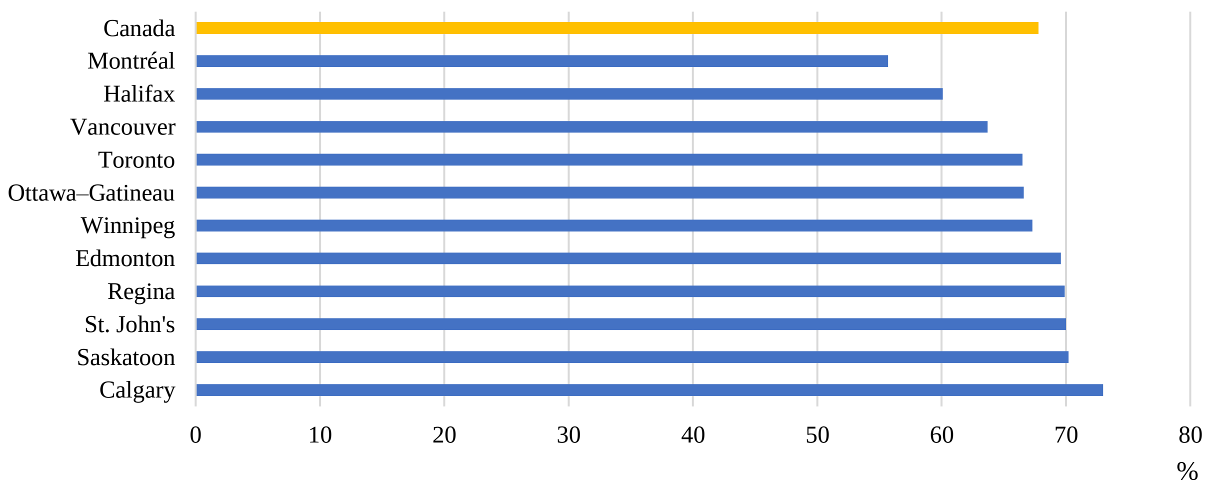
### *a. Housing Measures in Canada*

Governments across the Western world have introduced housing benefits to encourage homeownership. These policies are motivated by declining affordability and homeownership in developed countries, especially among first-time home buyers. Canada, too, has experienced a decrease in affordability and homeownership in recent years.

The Housing Affordability Measure represents the proportion of median pre-tax household income that would be required to service the cost of homeownership. The cost of homeownership includes mortgage payments (principal and interest), property taxes, and utilities based on the average market price for single-family detached homes and condo apartments and for an overall aggregate of all housing types. The higher the measure, the more difficult it is to afford a home. CMHC most commonly sets the affordability threshold at 30% of before-tax household income (CMHC, 2019). On aggregate in Canada, a household would currently need to spend more than half, 51.4%, of their pre-tax income on homeownership. The ownership costs of single-detached family homes are even higher, with 56.6% of household pre-tax income needed to cover the costs associated with owning a single-detached home. Affordability is particularly strained in markets like Vancouver, where 112% of pre-tax median disposable income is required to service single-detached homes, making it one of the least affordable regions in Canada along with Toronto and Victoria (RBC Economics, 2019).

Figure 1 shows homeownership rates in Canada and major Canadian cities. Building on poor affordability, homeownership rates in Toronto and Vancouver are lower than the Canadian aggregate of 67%, whereas Calgary, Saskatoon, St. John’s and Regina show the highest ownership rates in Canada. Further, homeownership rates are heterogeneously distributed across age groups with individuals aged 25 to 34 years 60% less likely to be homeowners than those aged 35 and over in 2016. 49% of first-time home buyers in Canada are millennials and, therefore, belong to this age cohort (CMHC, 2018). In Ontario, there has been a decline in the number of first-time home buyers in the condo as well as the non-condo market (Teranet, July 2019). Thus, young Canadians, who are likely to be first-time home buyers, continue to have the lowest homeownership rates.

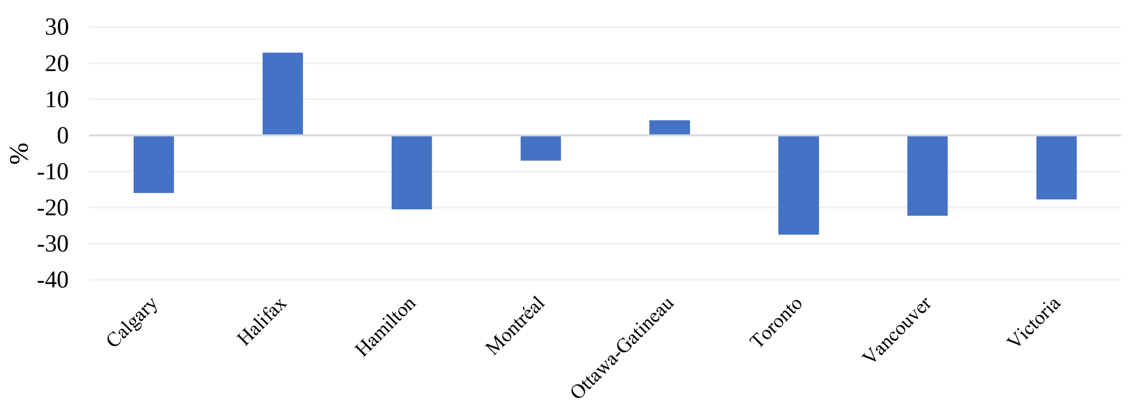
Figure 1: Homeownership Rates




Source: Statistics Canada, Census 2016

A range of federal and provincial regulatory policies, introduced to control a heated housing market, also contributed towards a decline in ownership by dampening housing demand. As per regulations introduced in 2016, high-ratio mortgages, with loan-to-value ratio greater than 80%, were subject to expanded stress tests to ensure that borrowers could still service their debt if interest rates increased (Bank of Canada, 2018). Under the stress test, a borrower’s debt-service ratio is calculated using a higher mortgage rate than the rate being charged by the lender, to determine the maximum loan value that the borrower would qualify for. This regulation was also extended to include all mortgages (Bank of Canada, 2018). Figure 2 shows the year-over-year change in the number of borrowers across Canadian cities after the implementation of stricter mortgage regulations. Toronto and Vancouver saw the largest decline in the number of borrowers as these are areas with some of the highest price-income ratios. Halifax and Ottawa-Gatineau are the only two regions that showed an increase in the number of borrowers after the implementation of mortgage rules.

Figure 2: Year-over-Year Change in Number of Borrowers, 2018Q2




Source: *The Impact of Recent Policy Changes on the Canadian Mortgage Market,* Bank of Canada

However, housing markets, especially in Toronto and Vancouver, were also subject to additional housing regulations imposed provincially. For example, the speculation and vacancy tax was introduced in British Columbia (B.C.) in 2018 to tax foreign and domestic speculators who own residences in B.C. but do not pay taxes, including vacant units. The government also increased the foreign homeownership tax from 15% to 20% and expanded the scope of the tax to include more areas outside Metro Vancouver. The provincial government's 30-point plan included comprehensive measures to stabilize the housing market, close loopholes and prevent tax fraud as well as invest in housing supply (Province of British Columbia, 2018). Thus, while stricter mortgage regulations have affected homeownership through their effect on borrowing, it is difficult to accurately assess the effect of individual policies when multiple policies and economic factors are in place.

### *b. Budget 2019 Housing Policies*

To address affordability and homeownership concerns, numerous measures have been introduced by the Federal government to target various aspects of housing. As outlined in the federal Budget for 2019, the long-term focus of the government is increasing housing supply to make renting as well as home ownership more affordable, especially in areas where new construction is insufficient to meet demand. In the 2019 Budget, the Rental Construction Financing Initiative was expanded by an additional $10 billion in funding to help build 42,500 new housing units across Canada, with a focus on areas with low rental supply. This boost helps to extend the program till 2027-28. In addition to improving supply, measures are put in place to protect the real estate market against tax non-compliance and money laundering. For example, the program aims to create four new real estate audit teams at the Canada Revenue Agency to monitor transactions in the real estate sector, especially in high-risk areas, like British Columbia and Ontario (Government of Canada, 2019). The CMHC Mortgage Loan Insurance Program is another program that helps home buyers enter the housing market. This policy enables home buyers to purchase a home with a minimum down payment of 5% from flexible sources. In addition to traditional sources, the policy allows down payment to be sourced from non-traditional sources for loan-to-value ratios between 90.01% to 95%. Traditional sources include savings, non-repayable gifts from relatives, sale of other property etc., whereas non-traditional sources include arms' length transactions, not tied to the property like unsecured personal loans. The CMHC mortgage loan insurance reduces the down payment that a prospective home buyer is required to pay, thus supporting home ownership (CMHC). For example, an individual purchasing a home priced at $750,000 is required to pay 20%, or $150,000, as conventional down payment. However, under this policy, the home buyer pays 5% on the first $500,000 and 10% on the remaining $250,000 as down payment. Thus, the individual’s down payment reduces from $150,000 to $50,000.

In addition to the aforementioned housing measures, the government focused on policies targeting first-time home buyers. Firstly, the tax-free withdrawal limit of the Home Buyers' Plan, which allows first-time home buyers to withdraw from their Registered Retirement Savings Plan, was increased from $25,000 to $35,000. This withdrawal can be used towards down payments and other costs associated with purchasing a home and reduce financial strain of first-time buyers.

The latest measure introduced by the government is the First-Time Home Buyer Incentive, directed at improving young Canadians' access to home ownership. Under the FTHBI, the Government of Canada will provide a 5% or 10% shared equity mortgage to first-time home buyers for the purchase of a resale or a new construction home, respectively. This will assist home buyers in reducing the mortgage amount they need to borrow and, consequently, monthly expenses for a given down payment. The incentive is a second mortgage on the title of the property with no regular principal payments, is interest-free and has a maximum term of 25 years. Since the incentive is a shared equity mortgage, the homeowner must repay the government's share of the property’s value in 25 years or at the time of resale, whichever comes first. The household is liable to repay the incentive share whether the property appreciates or depreciates in value. The program is set to launch on September 2, 2019 and is expected to provide $1.25 billion in funding to 100,000 households over three years. By stimulating housing demand, the policy also aims to boost supply in the form of new construction.

Households need to satisfy the following criteria to qualify for the FTHBI:

1. Meet minimum down payment requirements of 5% on the first $500,000 of the property value and 10% for value above $500,000;
2. Have a maximum qualifying household income of $120,000;
3. Have total borrowing up to a maximum of four times the income, including the incentive amount;
4. Obtain first mortgage with loan-to-value ratio greater than 80% and subject to mortgage loan insurance premium;
5. Occupy the purchased home as principal residence;
6. Be a first-time home buyer –
   a. Never purchased a home before,
   b. Break down of marriage or common-law partnership,
   c. Not occupied a home owned by the individual or a current spouse or common-law partner (Government of Canada, 2019).

Consider the scenario of a household with the maximum qualifying level of income $120,000 purchasing a new construction home. Under the incentive's debt-to-income specification, they are eligible to borrow up to a maximum of $480,000 which includes the incentive contribution equivalent to 10% of the property purchase price. Assuming the individual contributes the minimum required down payment of 5% and borrows the remaining amount, the maximum price of property they can purchase using the FTHBI is $505,000. Alternatively, assume that the maximum down payment allowed under the

FTHBI is 19.99% (i.e. just below 20%) to ensure that the first mortgage has a loan-to-value ratio greater than 80%. If the individual contributes the maximum permissible down payment under the incentive and borrows the rest, they can purchase a home priced just under $600,000. Therefore, the FTHBI is designed to cover homes valued between $505,000 and $600,000 and for households with maximum qualifying income of $120,000. This is an important condition of the incentive program and is central to determining the applicability of the program across Canada.

Table 1: House Price Cut-Offs Under FTHBI

| | **Dollars** |
|---|---|
| Maximum Qualifying Income | 120,000 |
| Maximum Permitted Total Borrowing (4*income) | 480,000 |
| House Price with Minimum Down Payment (5%) | 505,263 |
| House Price with Maximum Down Payment (19.99%) | 599,925 |

Further, assume that the household purchases a newly constructed home valued at $550,000 and receives $55,000 as 10% equity under the FTHBI. Suppose the value of the home increases to $600,000 at the time of resale or in 25 years, the household will pay back $60,000, or 10% of the current value of the home. Similarly, if the value of the home fell to $500,000, the household would still need to repay 10% of the current value, i.e. $50,000.

## *III. Related Literature and Similar Programs*

Macroprudential measures and housing policies have been an important focus of recent economic research because of their relevance to macro-financial stability since the global financial crisis. Canada has used macroprudential measures to impact the housing market and assist Canadians access homeownership. Han, Lutz and Sand assess the effect of the 2012 change in mortgage regulation, limiting mortgage insurance only to homes valued under $1 million. Using distribution regression and regression discontinuity methods, they conclude that the probability of a home selling for more than $1 million in Toronto fell by 0.35 percentage points in response to the mortgage insurance regulation (Han, Lutz and Sand, 2015). This highlights the strength of macroprudential housing measures in affecting one of Canada's largest housing markets during a period of housing boom.

In recent times, the relevance of shared equity products as a macroprudential tool has drawn more attention. The main reason for this is that house prices have been rising faster than incomes in a majority of industrialised countries, making it increasingly difficult for potential home buyers to enter the housing market. The relevance of shared equity program, therefore, stems from their ability to reduce entry costs to the housing market (Whitehead and Yates, 2007).

Caplin et al. present survey evidence from the U.S. in 2006 that well-designed Shared Equity Mortgages (SEMs) can improve housing affordability and increase homeownership rates (Caplin et. al, 2007). They find that renter households would prefer shared equity mortgage over interest-only and negative amortizing mortgages. The SEM relaxes potential home buyers' affordability constraint by introducing an additional source of funding when income constraints are binding, without increasing monthly costs. The authors estimate that among potentially interested homeowners, who make up 40 percent of the population, 25% would use SEMs, speeding up their transition to ownership by an average of 4 years. Overall, across potentially interested homeowners and renters, SEMs can contribute a 1.29% increase in the overall rate of home ownership in the U.S.

However, through their analysis of early shared equity programs in the U.K. and Australia, Whitehead and Yates (2007) find that interest in these programs comes more from high-income households aiming to balance their portfolio than from younger, income-constrained buyers.

Equity loan programs have been introduced across the Western world to support home ownership, especially for first-time buyers.

*United Kingdom*

The UK introduced the Help-to-Buy (HtB) Equity Loan program in April 2013 to assist home buyers in England (Homes England, 2018). The program was an extension of the "FirstBuy" initiative which was restricted to first-time home buyers (Cromarty et. al, 2017). Under the program, any individual is eligible to receive 20% as equity towards the purchase of a new construction home of up to £600,00, given they provide a minimum 5% of the property value as deposit. The equity contribution in London was increased to 40%, to account for the higher housing costs. Additionally, the mortgage and deposit are required to cover a combined minimum of 80% of the total purchase price (or 60% of total purchase price in London). There is no income cap constraint under this program.

Under the HtB loan program, after five years, the borrower is required to pay an interest fee of 1.75% of the equity loan amount at the time of purchase. This interest fee increases every consecutive year by the increase (if any) in the Retail Prices

Index (RPI) plus 1%. This is one of the main differences between the HtB program and the FTHBI to be introduced in Canada, which is interest-free. Additionally, the program comprises of a monthly management fee of £1 from the start of the loan until repayment. Another distinguishing feature of the HtB equity loan is that it is not exclusively designed for first-time home buyers. However, starting 2021, the program is set to last two years and will be restricted to first-time home buyers only (Help to Buy, 2019).

In June 2017, the program had supported the purchase of 135,000 homes valued at £32 billion. HtB loans were most used for semi-detached (30%) and detached homes (29%) and least for flats (15%). Three quarters of the respondents in a survey by Whitehead et. al, stated that they would not be able to enter the market at all in the absence of the HtB policy, especially the most constrained buyers like first-time, young and low-income buyers. In London, 90% of respondents acknowledged that they could not access home ownership without the HtB scheme. This is indicative of the ability of the equity loan program to improve buyers' access to home ownership in high pressure markets. In fact, the program has been particularly successful in assisting first-time buyers under 35 years of age, with first-time buyers comprising 81% of the scheme's users nationally in the U.K. and 96% in London (Whitehead et. al, 2018). Further, 60% of borrowers who have benefited from the program have an annual income under £50,000. In addition to access to homeownership, the HtB program has also improved borrowers' access to larger homes and property in a better area.

However, the HtB program has been criticized for potentially artificially inflating house prices, especially of new build homes, by enabling home buyers to purchase larger homes and taking on bigger loans. A Morgan Stanley report titled "The help to buy premium – and its unintended consequences”, concluded that the premium paid for new-build homes since the introduction of the HtB program has significantly increased, despite the increase in supply resulting from the scheme (Cromarty et. al, 2017). The general criticism is that the new build market is dependent on the HtB program and, in turn, benefits developers the most.

*Australia*

The Australian government has taken continuous measures to improve affordability of home ownership among first-time buyers. The First Home Owner Grant (FHOG) was introduced in 2000 to provide financial assistance to first-time home buyers by offsetting the effect of a goods and services tax on home ownership. The FHOG is a national scheme that is funded by state and territory governments and administered under their legislations (Government of Australia). At introduction, the grant was set at $7,000, provided to first-time home buyers for the purchase of new, substantially renovated or off-the-plan dwellings. However, states and territories supplement the grant amount with additional grants, resulting in varying grant amounts from state to state. In 2001, the grant was doubled to $14,000 on the purchase of new homes to stimulate housing construction but restored to $7,000 in 2002. Further, in an attempt to dampen the effects of the global financial crisis, the FHOG was boosted to provide $21,000 to households for the purchase of new homes and $14,000 for established homes between 2008 and 2009. This was referred to as the First Home Owner Boost (FHOB).

In its current form, the FHOG across most states and territories is exclusively for new homes and is either being replaced by or supplemented with other housing policies focused on first-time home buyers. For example, in the ACT, the FHOG will be replaced by the new Home Buyer Concession Scheme, which will provide a full duty concession for eligible applicants (Government of Australia).

Evidently, the most significant difference between the Australian first-time buyer assistance program and those of U.K. and Canada discussed above, is that the FHOG is a grant and does not need to be repaid as is the case for equity loans. Further, as in Canada, the grant does not set an income cap and, for most states, does not set a price cap on property either. Despite the differences in design of the grant compared to equity loans, there are important lessons to be learned from Australia about the impact of housing policies on demand-side and supply-side factors in the housing market.

The FHOG has been criticized for exacerbating demand-side pressure on the housing market by not targeting specific income groups under the grant. The Productivity Commission conducted an analysis on the benefit of incorporating price and income ceilings in the policy but concluded that the administration and complexity of changing the policy and adapting it to regional variations may eliminate any benefits provided by the scheme (Pinnegar, Randolph and Tice, 2012). However, while data for New South Wales suggested some "leakage" of the grants to middle- and upper-income households, low-income areas were the highest performing in terms of value and number of grants. The grant has also been criticized for being used to fund expensive properties in the absence of a price ceiling constraint in the policy design. However, although the use of the grant to fund properties above median values raises concerns regarding the efficient use of public resources, targeting with price ceilings may translate into first-time buyers being priced out of markets in large metropolitan areas (Randolph, Pinnegar and Tice, 2012).

The FHOG has been successful in supporting home buyers since its introduction in 2000. For example, in Victoria alone, 186,293 grants were used for new homes and 358,135 for established homes under the FHOG program between 2000 and June 2019 (State Revenue Office, Victoria). Lee and Reed conclude that the introduction of the FHOG improved affordability among first-time home buyers. They also find that the FHOG has a stabilizing effect on the housing market by reducing volatility in housing prices. Further, they do not find evidence of the policy artificially inflating house prices, potentially because first-time home buyers constitute a small share of the market (Lee and Reed, 2015).

*British Columbia*

Equity loan programs have previously been implemented in Canada, too. The province of British Columbia introduced the Home Owner Mortgage and Equity Partnership Program (BC Home Partnership Program) in 2016 to assist first-time home buyers with an equity loan of up to 5% of the property purchase value. The loan value was set to a maximum of $37,500. Under the program, households could obtain the equity loan for a 25-year term, interest free for the first five years (BC

Housing). The program was terminated in 2018 due to low participation rate. When introduced, the program was projected to assist 42,000 first-time home buyers over three years. But as of January 2018, fewer than 3,000 loans were approved under the BC HOME Partnership Program (BC Government News, 2018).

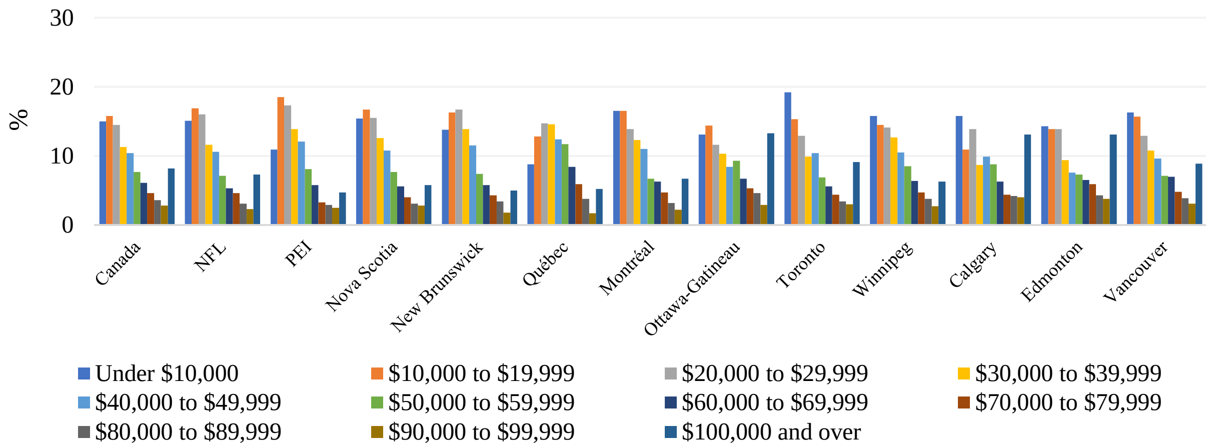
## *IV. Assessing the Success of the FTHBI in Canada*

As discussed in Section III, the FTHBI lists conditions on income and house price to determine eligibility and households' access to the program. Thus, it is important to analyze income and house price distributions in order to evaluate the scope of the FTHBI in assisting first-time home buyers. Doing so will provide more insight into the availability of affordable homes, individuals' capacity to purchase and the extent to which the FTHBI can be beneficial in bridging the gap between the two.

### *a. Income in Canada*

Figure 3 shows the percentage of individuals in Canada and major Canadian cities with total income ranging from under $10,00 to over $100,000. In 2017, the largest income group in Canada earned a total income between $10,000 and $19,999, representing 15.8% of those with income in Canada. In Vancouver and Toronto, the largest cities in Canada, the largest income group earned under $10,000 in total income, representing 19.2% and 16.3% of those with income. It is evident from Figure 3 that between 60% - 70% of those with income across Canada earn below $50,000.

Figure 3: Distribution of Household Total Income




Source: Statistics Canada, Table 11-10-0238-01

To be eligible for the FTHBI, households must have a maximum income of $120,000. As the data above indicate, households with income over $100,000 represented less than 10% of total income earning households across Canada. The only exceptions to this were Ottawa-Gatineau, Calgary and Edmonton.

Distributional assumptions can be made using data on distribution of total income of individuals to estimate the share of households with total income between $100,000 and $120,000. In 2015, $120,000 represented approximately the cut-off for the 95$^{th}$ percentile for individual total income (Statistics Canada, Census 2016). That is, about 5% of individuals in 2015 had an income above $120,000 across Canada. The following assumptions can be made using this data to estimate the distribution of households with total income up to $120,000 in 2017:

1. Income distribution has not changed significantly between the 2005 and 2015 Census (Statistics Canada, Census 2016). Therefore, distribution of income between 2015 and 2017 will be very similar.

2. The total income percentiles data for individuals is comparable for all other income groups shown in figure 3 to that of households. Therefore, total income distribution is similar for households and individuals.

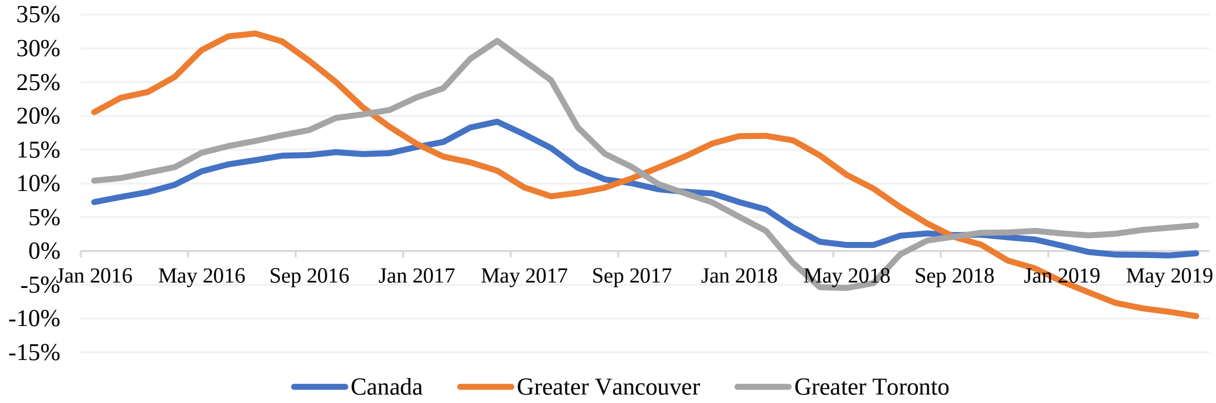
As shown in Figure 3, 8.2% of households with income earned a total income above $100,000 in 2017. Using this data and the assumptions stated above, it can be estimated that approximately 3.2% of Canadian households had a total income between $100,000 and $120,000 in 2017. Toronto, Vancouver, Montreal, Quebec, Halifax and St. John's also have similar figures (Statistics Canada, 2016).

As such, considering only income distributions, almost 95% of Canadian income-earning households could benefit from the FTHBI. However, this conclusion is premature without also considering prevailing house prices and the price ceiling specified under the incentive. In addition to income and house price constraints, it is important to acknowledge that the number of households benefitted by the FTHBI will also be affected by households' wealth constraints and ability to meet down payment requirements.

*b. House Price Distribution in Canada*

Since 2016, the significant and consistent increase in house prices across Canada, and most markedly in cities like Toronto and Vancouver, has been one of the main challenges to affordability. As discussed in Section II, federal and provincial governments introduced various regulations around foreign homeownership and mortgage stress-testing in an attempt to address soaring house prices. Figure 4 shows that government measures were successful in controlling the increase in house prices across house types in 2018 across Canada as well as in local markets of Greater Vancouver and Greater Toronto. While it is not possible to isolate the effect of individual policies on house prices, overall, the increase in house prices was controlled between 2017 and 2018.

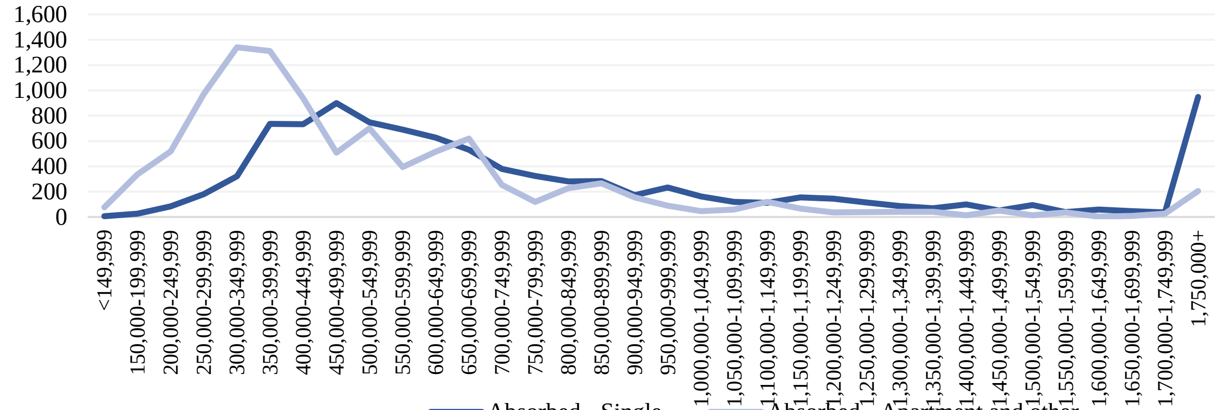
Figure 4: Year-over-year change in HPI




Source: CREA MLS HPI

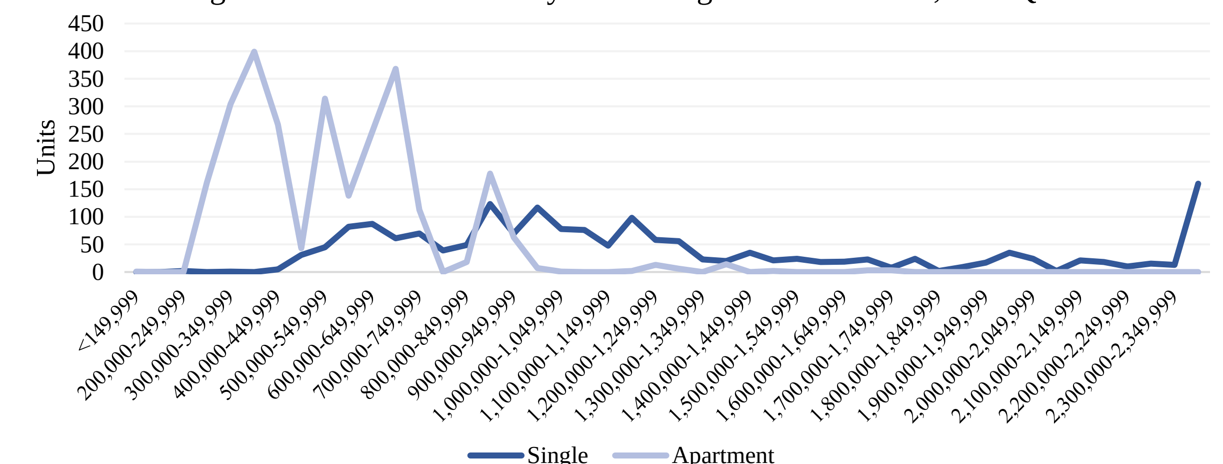
However, house prices are still at inflated levels, especially in Vancouver and Toronto. Figures 5 and 6 show the price distribution of apartments and single detached homes in Canada and in Toronto and Vancouver in 2019 Q2. The distribution of apartment prices is skewed to the left with apartments clustered under $1 million for Canada as well as Toronto and Vancouver. Single-detached homes are more evenly distributed above $500,000 for Toronto and above $1 million in Vancouver. On aggregate for Canada, single-detached homes were more affordable, with 76% of single-detached homes sold in 2019Q2 priced under $1 million.  55% of all single-detached units sold in Toronto and a striking 95% in Vancouver in the second quarter of 2019 were priced higher than $1 million. In comparison, apartments are much more affordable, with 44% of apartments in Toronto and in Vancouver priced under $500,000 in the second quarter of 2019.

Figure 5: Absorbed Units by Price Range - Canada, 2019Q2



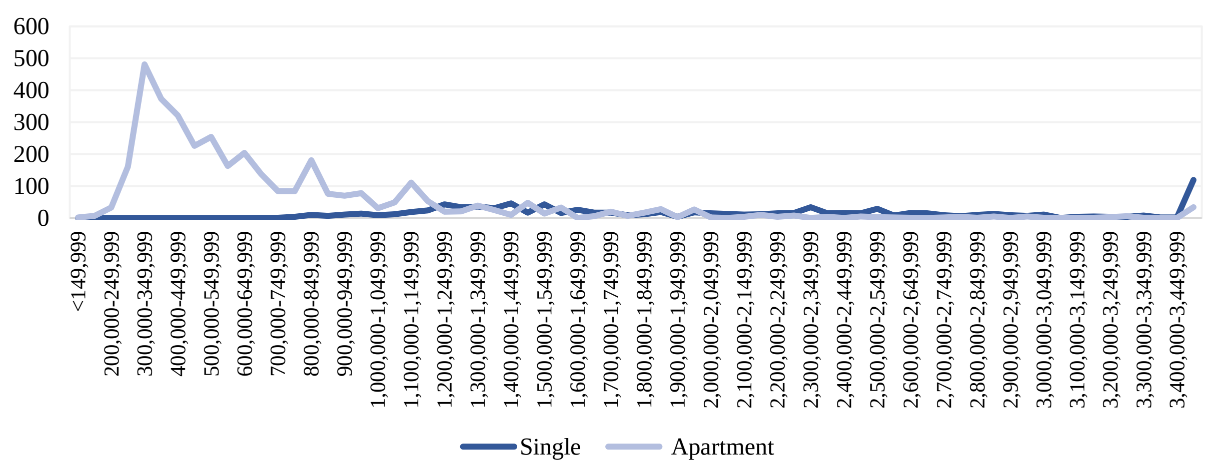
Source: CMHC Housing Market Data

Figure 6a: Absorbed Units by Price Range - Toronto CMA, 2019Q2



Source: CMHC Housing Market Data

Figure 6b: Absorbed Units by Price Range - Vancouver CMA, 2019Q2



Source: CMHC Housing Market Data

The house price distributions and income distributions shown above, highlight an important challenge faced by Canadian households, especially in the largest markets of Toronto and Vancouver. There is an evident disconnect between the income of households and the house prices that they are faced with. While approximately 88% of the population in Toronto had an income under $100,000, more than half of single detached homes sold in 2019Q2 were priced more than 10 times their total income.

## *V. Who will be helped by the FTHBI?*

As discussed in Section III, the FTHBI aims to assist 100,000 households over three years with a funding of $1.25 billion, given they have a maximum income of $120,000 and are purchasing a home of value up to $505,000 (with minimum down payment) or $599,000 (with maximum down payment). This section uses CMHC data on absorbed units by price range and type of dwelling from 2017 and 2018 to assess the number of households that may have qualified under the FTHBI over these two years. Analyzing house price distributions of properties sold in major Canadian cities provides insight into the availability of homes that fall under the scope of the FTHBI across Canada. In turn, for the purpose of this analysis, this can help estimate the number of households that may be helped by the FTHBI, which cities benefit the most from the incentive and whether the government's target of assisting 100,000 households over three years is achievable. The analysis below focuses on the following cities: Toronto, Vancouver, Calgary, Edmonton, Halifax, Montréal, Quebec, Ottawa, Regina, St. John’s and Winnipeg. These cities represent roughly 60% of total households with income in Canada and approximately 75% of total homes, of all types, sold in Canada in 2017 and 2018. Using house price distributions of each of these cities, this section determines the total units sold under

$500,000 and under $600,000 that would qualify for the FTHBI given they are valued under the FTHBI house price cut-offs for the maximum qualifying household income of $120,000. This eligibility is based solely on house prices and assumes that income, first-time home buyer and wealth constraints are met. The following sections evaluate income and house prices simultaneously, providing a more complete picture of the scope of the incentive.

*a. Toronto*

The distribution of units sold in the Toronto Census Metropolitan Area (CMA) by price range and house type in 2017 and 2018, respectively indicates that a total of 34,407 units were sold under $500,000 and 44,447 were sold under $600,000 in 2017 and 2018. Notably, units sold under $500,000 represented 49% of total units sold in 2017 and 2018 and 63% under $600,000. Apartments constituted the majority of these transactions - more than 70% of these sales - whereas only 4% of sales under $500,000 and 7% of those under $599,999 were single-detached homes. Therefore, in two years, 34,407 households would have qualified for the FTHBI if they provided the minimum down payment of 5% and 44,447 if they paid the highest down payment permitted under the FTHBI, while meeting the maximum income constraint. Additionally, the largest share of these households would qualify for apartment units rather than single detached homes by nature of the price distribution of dwelling types.

*b. Vancouver*

Over the two years 2017 and 2018, 38% of all units sold in Vancouver CMA were priced under $500,000 whereas 50% of total units sold were valued under $600,000. Therefore, in two years, 12,842 households would be benefited by the FTHBI as per the house price limit set under the scheme, if they paid the minimum down payment of 5%. If households paid the maximum permitted down payment under the FTHBI, 17,119 households could qualify for the incentive over two years in Vancouver. Like Toronto, between 85% to 92% of these units would be apartments, since the number of single-detached homes sold under $500,000 and $600,000 was negligible in Vancouver. This indicates that households looking to purchase single-detached homes may not successfully qualify under the FTHBI due to inflated prices.

### *c. Calgary and Edmonton*

The real estate market in Calgary has been slow since the oil price shock of 2015 and the additional effect of tighter mortgage rules, higher rates and low-income growth (Bank of Canada, 2018). Sales of all unit types in Calgary totaled 17,463 units in 2017 and 2018. 59% of total sales were under $500,000 and 73% were under $600,000 – significantly more than those in Toronto and Vancouver. Further, unlike the cities discussed above, 25% of all units sold under $500,000 and 36% of units sold under $600,000 over the two years, were single-detached homes. Thus, over 2017 and 2018, 10,271 households in Calgary would be eligible for the FTHBI with minimum down payment and 12,743 with maximum permitted down payment.

Like Calgary, Edmonton also saw low sales in 2017 and 2018, with a total of 16,256 units sold of all dwelling types. 70% of the total sales were for units under $500,000 and 77% were priced under $600,000. Unlike Toronto and Vancouver, where majority of the units sold under $600,000 were apartments, 51% of units sold under $600,000 in Edmonton were single detached homes. Therefore, like Calgary, households would have more access to single-detached homes under the FTHBI in Edmonton than in Vancouver and Toronto, because they are priced significantly lower. Over 2017 and 2018, 11,326 households could qualify for the FTHBI considering the house price distribution, with minimum down payment and 12,541 with the maximum down payment.

*d. Halifax*

The total units, of all dwelling types, sold in 2017 and 2018 in Halifax totaled 1,676 units. 78% of these units were priced under \$500,000 and 90% under \$600,000. The largest portion of all units sold was composed of single-detached homes and semi-detached detached homes. Therefore, most households in Halifax would have qualified for the FTHBI – 1,310 households with minimum down payment and 1,507 households with maximum down payment.

*e. Montréal and Quebec*

19,001 units were sold in Montréal in 2017 and 2018, with 86% of these units priced under \$500,000 and 92% under \$600,000. Similar to other big cities like Toronto and Vancouver, more than 60% of the units sold under \$500,000 and \$600,000 were apartments. However, more single-detached homes were a part of this range than in Toronto and Vancouver. In Montréal, 16,277 households would have benefited from the FTHBI with minimum down payment and 17,436 with maximum down payment in 2017 and 2018. While a major share of those assisted by the policy would qualify for apartments, more than 2,000 households would have been able to use the incentive for single-detached homes.

Of the 2,488 units sold in Quebec in 2017 and 2018, 95% were priced under \$500,000 and 98% were priced under \$600,000. Nearly 40% of these sales were semi-detached-detached homes. Evidently, most households would be able to benefit from the FTHBI in Quebec using the house price criterion. In 2017 and 2018, 2,370 households were eligible for the FTHBI with minimum down payment and 2,429 with maximum down payment.

*f. Ottawa*

In 2017 and 2018, 72% of the 10,129 units sold in Ottawa were priced under $500,000 and 86% under $600,000. More than 40% of these units were row houses, with apartments and single-detached homes constituting more than 20%. In the last two years, 7,322 households would have benefited from the FTHBI in Ottawa with minimum down payment and 8,708 households with the maximum permitted down payment.

*g. Regina*

Only 1,928 units were sold in Regina in 2017 and 2018, 72% of which were priced under $500,000 and 84% under $600,000. More than 40% of these units were single-detached homes. Therefore, using 2017 and 2018 data, 1,393 homes would have been eligible for the FTHBI with minimum down payment and 1,611 with maximum down payment permitted under the incentive. Additionally, a big portion of these households would be able to purchase single-detached homes.

*h. St. John's*

Units sold in St. John's in 2017 and 2018 totaled 1,175.[1] 87% of the properties sold in these two years were priced under $500,000 and 94% were priced under $600,000, indicating that a large percentage of home buyers would be able to benefit from the FTHBI. Further,

[1] It should be noted that there is no available data for apartments sold in 2018 in St. John's.

about 77% of these transactions were single-detached homes. Per the data, 1,026 households could be assisted by the FTHBI in St. John's in 2017 and 2018 with minimum down payment and 1,102 with maximum down payment. It is important to note that data for apartment units sold in St. John's in 2018 are unavailable and, therefore, not included in this analysis.

*i. Winnipeg*

84% of total units sold in Winnipeg in 2017 and 2018 were priced below $500,000 and 92% were under $600,000. This indicates that, using these data, more than 80% of home sales in Winnipeg met the house price range required for eligibility to the FTHBI. Further, more than 55% of these units were single detached homes. In 2017 and 2018, 4,731 households would have access to the FTHBI in Winnipeg with minimum down payment and 5,176 with maximum down payment.

## *VI. Discussion*

Evaluation of house price distribution of units sold across Canada's largest cities yields the following important considerations and conclusions:

1. Overall, 140,243 units, of all dwelling types, were sold under $500,000 and 169,980 were sold below $600,000 in Canada in 2017 and 2018. Approximately 75% of these sales were accounted by the cities discussed above - 103,275 units under $500,000 and 124,819 under $600,000. Therefore, focusing only on the house price criterion of the FTHBI, more than 100,000 home sales would have qualified for the FTHBI across Canada in two years. This would suggest that the government's target of assisting 100,000 households through the FTHBI over three years is achievable.

However, it is incomplete to consider the house price distribution in isolation of income distribution. Further, the house price cut-offs of $505,000 and $599,000, shown in the analysis above, correspond to the maximum qualifying household income of $120,000 under the FTHBI. However, as discussed in Section IV a, only about 5% of households with income in Canada as well as major cities earned $120,000 and above. Thus, it is important to evaluate the complete income distribution to assess the impact of the FTHBI.

2. Table 2 shows the house price cut-offs for different income brackets with the minimum down payment of 5% and the maximum down payment of 19.99%, permitted under the FTHBI.

Table 2: House Price Cut-offs to Qualify for the FTHBI for Different Income Levels

| Income | Maximum Borrowing | House Price (Min Down Payment) | House Price (Max Down Payment) |
|---|---|---|---|
| 10000 | 40000 | 42105 | 49994 |
| 20000 | 80000 | 84211 | 99988 |
| 30000 | 120000 | 126316 | 149981 |
| 40000 | 160000 | 168421 | 199975 |
| 50000 | 200000 | 210526 | 249969 |
| 60000 | 240000 | 252632 | 299963 |
| 70000 | 280000 | 294737 | 349956 |
| 80000 | 320000 | 336842 | 399950 |
| 90000 | 360000 | 378947 | 449944 |
| 100000 | 400000 | 421053 | 499938 |
| 110000 | 440000 | 463158 | 549931 |
| 120000 | 480000 | 505263 | 599925 |

- The largest income groups in Canada and all the listed cities earned less than $40,000 in total income per year (Figure 3). More than 16 million households across Canada earned less than $40,000, representing more than 50% of households with income in Canada in 2017. As shown in Table 2, with an income up to $40,000, the maximum value of a house that a household can purchase using the FTHBI is approximately $149,000. However, in 2017 and 2018, only 1,090 homes of all types sold in Canada were priced below $149,000. In Toronto and Vancouver, only 26 units were sold under $149,000 over two years, whereas approximately 4 million households in these cities had a total income under $40,000 in 2017. This suggests that first-time home buyers from the lowest income groups, representing more than half of income-earners, may not benefit substantially from the FTHBI across Canada's largest cities.

- 19 million households across Canada earned a total income below $50,000. The maximum value of a home they could purchase under the FTHBI is $250,000. Over the two years, 2017 and 2018, 12,368 units were sold under $250,000 in Canada.
- 3 million households across Canada with an income between $40,000 and $50,000 had access to approximately 6,000 homes priced under $200,000 and 2 million households earning $50,000 to $60,000 had access to 40,000 homes sold under $300,000 in 2017 and 2018. More than half of these homes were priced between $250,000 and $300,000.
- Of the 140,243 units sold under $500,000 in Canada over two years, more than 80,000 were sold in the range of $300,000 to $450,000 alone. This includes 69,000 units priced under $350,000 available to those with incomes of $70,000, 96,000 priced under $400,000 available to households with a total income of $80,000 and 121,000 units under $450,000 available to households with income $90,000. Evidently, the largest incremental benefits of the FTHBI, in terms of eligible units, are received by households with total income $70,000 and above. Further, these

income groups are comprised of a smaller number of households. In 2017, across Canada, 1.4 million households had a total income between $70,000 and $80,000, 1.1 million households had income between $80,000 and $90,000 and 831,908 had income between $90,000 and $100,000. About 26% of first-time home buyers in Canada have a household income between $60,000 and $90,000 and, therefore, fall roughly in this range (CMHC, 2018). Consequently, house price data analyzed in conjunction with income distribution data, suggest that the gains from the FTHBI may be skewed towards high income households because current house price levels are already inflated.

3. The discussion on access to homeownership and the FTHBI is incomplete without also considering wealth constraints. The most important qualification for the incentive is the ability to meet down payment requirements. The analysis so far assumes that households are able to meet this wealth constraint and supply the down payment necessary to qualify for the loan. In their analysis of macroprudential housing tools in Canada between 2005-10, Allen et. al (2016) find that on average households are more constrained by wealth (savings) than income (monthly cash flow) and that wealth constraints have the largest effect on the number of first-time home buyers entering the housing market and the amount of debt they take on (Bank of Canada, 2016). The share of first-time home buyers in Ontario's condo market with only one name on title decreased from 54% to 50% between 2016 and 2018, indicating that first-time home buyers are unable to purchase these properties on their own (Teranet, July 2019). Therefore, when assessing the scope of the

policy in helping first-time home buyers, it is also crucial to evaluate wealth constraints of households.

4. It is clear from the house price distribution of Vancouver and Toronto that any benefit of the FTHBI in these cities will be limited to apartment units. The price of single-detached units in these cities is too high to qualify for the FTHBI, suggesting that first-time home buyers are priced out of these markets for single-detached homes under the incentive. The cities that are likely to gain the most from the FTHBI are those in the Prairies and the Maritimes. More than 80% of homes sold over two years in St. John's, Halifax, Regina and Winnipeg were priced under \$500,000, enabling home buyers to access properties that qualify under the FTHBI. Montréal and Quebec also had more than 85% of their home sales valued under \$500,000 and more than 90% under \$600,000. Therefore, excluding the "heated" markets like Toronto and Vancouver, other major Canadian cities will largely fall under the scope of the FTHBI.
5. However, intervention in heated markets like Toronto and Vancouver can play an important role in controlling house price inflation by stimulating demand and consequently encouraging supply in these markets. Therefore, extending the scope of the FTHBI to include these cities can prove beneficial for home buyers. This can be achieved by temporarily increasing the qualifying house price in heated markets. Alternatively, the policy could have a different qualifying house price for single-detached homes. If the house price constraint in Toronto and Vancouver is increased approximately 1.5 times from \$505,000 to \$750,000, 12,565 more households will have access to the FTHBI. Nearly 70% of these gains would be in

Toronto, including for over 4,000 single-detached homes. Even with the change in house price constraint, approximately 100 more households would be able to qualify for single-detached homes under the FTHBI, given the inflated house prices. Following the example of the U.K. and the equity program from B.C., in order to fund this increase, the government can charge an interest on the equity loan for a limited term of the loan. Alternatively, using the HtB program in the U.K. as a model, the FTHBI can increase the share of equity provided in Toronto and Vancouver to incentivize first-time home buyers, while continuing to provide the current prescribed shares in other cities.

6. It is important to note that the house price brackets in the CMHC data used for this analysis are not exactly aligned with the house price cut-offs of $505,000 and $599,000. Additionally, the analysis focuses on 11 major cities and is, therefore, not complete.
7. The data available on first-time home buyers in Canada are limited. This restricts the ability to quantify the number of first-time home buyers in different income brackets that can access homes across price ranges. Therefore, it is difficult to definitively determine how many first-time home buying households will be helped by the incentive in three years.

## *VII. Conclusion*

Like most industrialized nations, Canada has focused on improving affordability and access to home ownership for Canadians. Macroprudential tools have been introduced at the aggregate as well as provincial level to ensure macro-financial stability in Canada. The forthcoming FTHBI is another step in this direction. The shared equity program aims to assist first-time home buyers enter the housing market while also encouraging new construction to fuel supply.

As discussed above, evaluation of income and house price distributions in isolation indicates that most first-time home buyers in Canada can be assisted by the incentive. However, when evaluated jointly, it is evident that the gains from the FTHBI may be restricted to certain regions and income groups. The qualifying specifications of debt-to-income and loan-to-value ratios under the FTHBI, given inflated levels of current house prices, limit the scope of the incentive. By nature of its design and current house price distribution, the incentive is likely to favour higher income individuals amongst those that qualify under the incentive, i.e. those with incomes over $70,000. Regionally, the most prominent impact of the FTHBI will be in the Maritimes and Prairies. In large markets, like Toronto and Vancouver, the scope of the incentive is limited mainly to apartment units because the prices of single-detached homes are too high to qualify for the FTHBI. The effectiveness of this policy can be improved by altering the income and wealth constraints specified under the incentive to adapt to inflated house prices, especially in heated markets like Toronto and Vancouver.

An important extension to the discussion presented in this essay is the evaluation of wealth distribution of households in conjunction with income and house price distribution. Studying wealth, especially among first-time home buyers, can augment the analysis to determine the proportion of households who cannot meet down payment requirements. In this case, some fraction of households that satisfy income and house price criteria under the incentive, may not benefit from the incentive because of wealth constraints.

The true success of the incentive in assisting first-time home buyers can be assessed once the policy takes effect and data is made available. With available data, empirical research can be extended to study the spillover effects of the incentive on affordability, house price volatility and the larger macro-financial conditions in Canada.

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