

2023 Canadian Foreign Buyer Ban: Price Dynamics in Big vs. Small Cities*

Keyi Fan[†]

October 2023

Abstract. At the end of 2022, facing housing affordability concerns, Canada passed the “Prohibition on the Purchase of Residential Property by Non-Canadians Act”, commonly referred to as the Canada’s foreign buyer ban. This paper delves into the multifaceted consequences of this legislation, examining its impact on housing prices from both demand and supply perspectives. Utilizing a quasi-experiment design, we found a significant, robust negative effect of the ban on housing prices, with a more pronounced impact in less densely populated regions. After the ban been amended to relieve the supply side constraints, we estimated a robust and modest increase on the house price. This study not only contributes to understanding the immediate effects of the ban but also address the challenges policymakers face in predicting both demand side and supply side reactions of the market to such interventions.

1 Introduction

In recent years, foreign speculation activities have faced scrutiny for their alleged role in driving up housing prices in Canadian cities like Toronto and Vancouver. Gordon (2020) has argued that certain loopholes in the Canadian tax system enable individuals with foreign income to acquire property in major cities while avoiding substantial income taxes. Additionally, Canada’s liberal immigration policies have contributed to increased housing demand in these urban centers. In 2021, more than 8.3 million people, or 23.0% of the population, immigrated or permanently resided in Canada. over 9 in 10 recent immigrants lived in one of Canada’s 41 census metropolitan areas (CMAs), which are large urban centres of over 100,000 residents. Given the economic opportunities offers by the large urban centres and the availability of developed immigrant social networks, Toronto (29.5%), Montréal (12.2%) and Vancouver (11.7%) are destinations for a half of those newcomers. Apart from the direct increase on housing demand from immigrants owning houses themselves, the immigrants also brings cultural ties and personal connections. These connections can stimulate foreign direct investment by reducing transaction costs related to language and information barriers, as argued by studies like Burchardi et al. (2017). While foreign investment can foster economic growth, when it primarily targets residential properties, it may contribute to market inflation, making homeownership unattainable for many Canadians. The rapid escalation of housing prices has prompted policymakers, economists, and the public to seek solutions that ensure a stable and accessible housing market for all Canadians.

In 2022, responding to these concerns, the Canadian government introduced the ‘Prohibition on the Purchase of Residential Property by Non-Canadians Act,’ commonly known as Canada’s foreign buyer ban, which took effect on January 1, 2023. This legislation restricts non-Canadians and certain foreign corporations from purchasing residential property in Canada for two years. In the same

*I would like to express my gratitude to Grant Benjamin and Sean Elliott for their invaluable guidance during the creation of my first econometrics paper. I am also thankful for the insightful instruction provided by Professor Courtney Ward and Professor Gustavo Bobonis in their econometrics courses. Any remaining errors in this paper are solely my responsibility. This essay serves as a course project for ECO375: Applied Econometrics at the University of Toronto. For updates of this article and access to the replication package, please refer to the repository [Link TBD].

[†]Keyi Fan, Fourth-year student at the University of Toronto, Department of Economics and Munk School of Global Affairs and Public Policy, Email: kyi.fan@mail.utoronto.ca

year, a RE/MAX Housing Market Outlook Report indicated that 54% of Canadians believed this ban would positively impact housing. This paper aims to make several significant contributions to existing knowledge. To begin with, it employs a quasi-experiment design to account for two distinct treatment periods: the initial ban period and the subsequent amendment. This methodological choice enables a nuanced understanding of the policy’s impact, including potential effects of the amendments, particularly on the supply side.

A notable aspect of this paper is its focus on the heterogeneous treatment effect of the ban on smaller cities. While previous studies such as Gordon (2020) and Hartley et al. (2021) have largely concentrated on major urban centers or neglected the heterogeneous treatment effect across smaller and larger urban areas, my research fills this gap in the literature by shedding light on overlooked and under-addressed regions. This question is crucial in understanding the demand composition in different real estate markets. By delving into housing policy, immigration trends, market dynamics, and broader economic implications, this paper seeks to uncover the true impact of Canada’s ‘Foreign Buyer Ban.’ It aims to provide valuable insights for policymakers, researchers, and stakeholders in the housing market.

1.1 Policy Context

The decision to introduce the foreign buyer ban was not made in isolation but based on the precedent policies, such as foreign buyer tax for residential properties in Ontario and British Columbia. In 2016, British Columbia implemented a 15% additional property transfer tax on foreign entities. Similarly, Ontario announced 15% Non-Resident Speculation Tax (NRST) in 2017, in addition to the general Land Transfer Tax (LTT). Similar to these policies, the 2023 foreign buyer ban had a twofold objective. First, it aimed to directly curb foreign investment in the housing market, which was perceived as a significant factor in driving up housing prices. By limiting foreign ownership, the government hoped to increase the availability of properties for Canadian residents. Second, the policy was seen as a tool to stabilize or potentially reduce property prices from the demand side, making home ownership more attainable for a broader segment of the population. However, this policy excluded areas with a population of fewer than 10,000. Michael Bourque, the CEO of the Canadian Real Estate Association (CREA), highlighted the broad parliamentary support for the ban, emphasizing its goal to target foreign speculators while exempting immigrants and housing developments crucial to Canada’s economy. Under the act, non-citizens, non-permanent residents, and foreign commercial enterprises are banned from buying Canadian residential properties. Violation of this act can result in a fine of \$10,000 for anyone who knowingly assists a non-Canadian.

The 2023 foreign buyer ban has been met with mixed reactions. Data indicates that foreign homeownership, even in urban hubs and “global cities” like Toronto and Vancouver, accounted for less than 6% of total ownership (Forbes, 2023). This statistic led to skepticism about the act’s potential efficacy in regulating housing prices. Hence, this ban faces challenges and unintended consequences. The broad definitions of “Canadians,” including exemptions for individuals with temporary work permits, refugee claimants, and international students, raised concerns about potential circumvention of the ban. Moreover, the act’s implications extended beyond its primary objective. Developers who traditionally depended on foreign pre-sales to fund new projects encountered financial challenges due to the anticipated decline in foreign investments, leading to project delays or cancellations (Storeys, 2023). In addition, the legislation’s broad terms inadvertently ensnared many commercial real estate ventures unrelated to housing, necessitating developers to seek legal advice on potential investors’ status under the ban. Furthermore, application of the act to census areas with populations as low as 10,000 raised concerns about potential economic repercussions on resort and recreational property areas, as decreased foreign investments could inflate prices. Rural representatives in Ontario’s “cottage country,” reports that the ban caused significant disruptions in foreign inquiries and stagnated new constructions (Mansion Global, 2023).

In response to these challenges, amendments were proposed to correct the unintended consequences. As a response On March 27 2023, CMHC announced four amendments to the foreign buyer ban regulations. The amendments to the Foreign Buyer Ban includes to increase the foreign control threshold from 3% to 10% and to enable more work permit holders to purchase residential properties. Additionally, the restriction on foreign entities acquiring vacant land or residential properties for development purposes was removed.

The “Foreign Home Ownership Ban” represents a significant intervention in the housing market, reflecting the government’s commitment to addressing housing affordability. However, understanding

its true impact requires a comprehensive analysis. We need to consider not just the immediate effects on housing prices but also the underlying mechanisms. An exploration of existing theory and model in the field is provided in the section below.

2 Literature Background

The relationship between foreign investment and housing prices has been a subject of considerable interest among economists, urban planners, and policymakers. Numerous theoretical (Favilukis et al., 2012) and empirical evidences (Wokker& Swieringa, 2016) (Gholipour et al., 2014) (Benson et al., 1997) have identified foreign investment one of the most significant driver of housing price inflation in major global cities. Additionally, Favilukis & Nieuwerburgh (2023) argue that negative welfare effects from foreign ownership arise because foreign buyers purchase properties and leave them vacant. The broader implications of rising housing prices on affordability have been well-documented (Barrett, 2023). As housing prices rise, home ownership becomes increasingly out of reach for many residents, particularly younger and lower-income groups. This has led to concerns about the long-term social implications, with potential consequences for community cohesion, intergenerational equity, and other welfare economics issues.

The influence of foreign buyers' capital – especially, Chinese capital, in Western residential property markets has led to regulatory changes in Canada, Australia, and New Zealand (Transparency International, 2019). Hartley et al. (2021) employed the synthetic controls method and founded that foreign buyer taxes have negative, large, and persistent effects on house price growth. Importantly, they estimated larger effects in locations with higher foreign buyer tax rates and with higher immigrant shares. In the Canadian context, studies such as Gordon (2020), Pavlov et al. (2023), and West & Botsch (2020) found a positive correlation between foreign investment and housing prices in cities like Vancouver and Toronto. They also investigated on the foreign buyer tax policy British Columbia and Ontario previously has implemented back in 2016. However, they estimated varied level of the act's impact. While these studies emphasize the role of foreign investment, others, like Nistor & Reianu (2018), suggest that factors such as supply constraints and local demand can be more influential. They comment that the policy might have had little effect on lowering house prices in Vancouver.

While the foreign buyer ban is a recent development in Canada, Australia implemented a similar ban several years ago excluding empty lands and dwellings from new buildings(Transparency International, 2019). New Zealand's foreign buyer ban, introduced to address the influence of foreign buyers amidst rising housing prices, has also been a subject of debate and analysis, Nistor & Reianu (2018) McArthur (2020), argue that such policies might have limited impact and could lead to unintended consequences. They suggest policy makers focusing on domestic supply and demand factors.

By studying the literature and the context of the Canadian housing market, we hypothesize the following:

1. The introduction of 2023 Canada foreign buyer ban will have a significant negative effect on housing prices, especially in smaller cities. This is based on the premise that foreign buyers have been contributing to the rise in housing prices, and their absence will lead to a decrease in demand and subsequently, a decrease in prices.
2. Major urban centers, despite being the primary targets of the ban, will not experience as pronounced a decrease in housing prices as smaller cities. This is because these urban centers have other strong demand factors, such as internal migration, urbanization, and local economic growth, that can counterbalance the absence of foreign buyers.
3. The amendments to the ban, which aim to correct unintended consequences, will lead to a rebound in housing prices. This is based on the assumption that the initial ban might have been too restrictive, and its relaxation will reintroduce some demand back into the market.
4. Control variables like the 5-year mortgage interest rate, expected housing price, and expected income will play significant roles in determining housing prices. Specifically, an increase in interest rates will lead to a decrease in housing prices, while positive future expectations about house prices and income will lead to an increase in current housing prices.

By testing these hypotheses, we aim to provide a comprehensive understanding of the impact of 2023 Canada foreign buyer ban and its subsequent amendments on housing prices across different regions in Canada.

3 Data

The data used in this study encompasses a wide range of economic, demographic, and policy indicators that provide insights into the housing market dynamics in the context of the 2023 Canada foreign buyer ban. The data is obtained from various sources including Statistique Canada, FRED and the Bank of Canada and we acknowledge the importance of proper data attribution and compliance with data usage agreements. Using the 2021 Census Tract Reference Map, we are able to link between different geographical identifiers and effectively merge different sources with preserving the granularity of the data. The data set mostly employed monthly data across various locations except for the quarterly expected income and quarterly expected house price variables. Therefore, our data provides a granular view of the market’s response to policy changes and economic shifts. The primary dataset include the House Price Index (HPI), benchmark prices. We also incorporate a range of control variables that account for economic conditions, expectations, and other relevant factors. The Table 1 about summary statistics are shown below.

Table 1: Summary Statistics for main variables

	mean	sd	min	max
HPI	317.73	63.27	204.5	508.5
Benchmark Price	609597.2	273627	211200	1555600
5-year-mortgage interest rate	5.25	.85	3.44	5.99
Initial Ban Period	.37	.48	0	1
Amended Ban period	.16	.36	0	1
Region is Town	.5	.50	0	1
Population Growth Rate Normalized	-1.43e-09	1	-1.39	3.34
GDP per Capita Normalized	1.22e-08	1	-1.12	2.95
CPI Normalized	7.35e-09	1	-2.20	1.43
Expected Income Normalized	0	1	-1.35	1.44
Expected House Price Normalized	2.01e-08	1	-1.44	1.70
Observations	1140			

3.1 MLS HPI data

The Multiple Listing Service (MLS) House Price Index (HPI) and bench price serves as the outcome variable in our analysis. We used the seasonal adjusted version accessed in September 2023^{1 2}. The index is based on a hybrid model that combines the hedonic price method(Rosen, 1974) and repeated-sales method(Clapp & Giaccotto ,1998a). The MLS HPI provides insights into the price movement of a representative property within specific regions. It stands as one of the most advanced and precise tools for gauging home price levels and trends. Comprising a suite of software tools, the MLS HPI is tailored to offer time-related indices on the residential markets of participating real estate boards in Canada. As the 2023 foreign buyer ban targeted all property types HPI specified, we exploit the composite HPI and benchmark price to include single family, two storey, one storey, townhouse and apartment home prices. The dataset’s mean HPI is 317.73, with a standard deviation of 63.27, highlighting the variability in housing prices across different regions and timeframes. In total, we accessed 60 series of HPI indices, capturing a broad spectrum of the property market. The HPI utilized January 2005 as the base month, where the index is set at 100. The HPI is generally more stable than average and median metrics, which can fluctuate significantly due to shifts in the sales of exceptionally priced homes between periods. The HPI derives its values from the preferences homebuyers attribute to different housing features. These preferences tend to change slowly over time,

¹For details in MLS’s seasonal adjustment methodology

²We used the revised methodology at Jun 2022 version

allowing for a consistent comparison of home prices regionally. The benchmark price is derived in the same methodology analogously to HPI. As it measures the price of a typical house in the region in dollar terms, comprehending the result would be more direct. While both metrics are valuable, some deviations were observed in practice, primarily due to the composite benchmark price’s sensitivity to the prices of one-storey and two-storey houses. In other words, the composite benchmark price series may represent the prices for larger houses sample more comparing to the composite HPI.

Our dataset encompasses a wide range of provinces. These include Ontario (ON), Quebec (QC), Nova Scotia (NS), New Brunswick (NB), British Columbia (BC), Prince Edward Island (PE), Saskatchewan (SK), Alberta (AB), and Newfoundland and Labrador (NL). One Manitoba (MB) region is also part of our dataset with only Winnipeg participates in the MLS HPI. However, some regions, such as the Northwest Territories (NT), Yukon (YT), and Nunavut (NU), are absent from MLS data partnerships. Yet, those data won’t impact our analysis as real estate transactions are limited given less internal and external demand, due to certain legislation and First Nation land reserves. Figure 1, Figure 2, and Figure 3 present a detailed set of graphs illustrating housing price trends across different regions and property types in our dataset.

3.2 Controls

To ensure the integrity and robustness of our analysis, we’ve incorporated a comprehensive set of control variables into the dataset. These variables have been sourced from reputable institutions such as Statistique Canada, FRED and the Bank of Canada. We normalized expected house price, expected income, population growth rate, CPI, GDP per Capita and New Non-Permanent Residents to a mean of zero using conventional method. This approach was drawn from Witkiewicz (2002) in constructing the real estate cycle indicator by macro data. It transformed our control variables series to a common amplitude level. These control variables play a crucial role in accounting for various economic, demographic, and market-related factors that may influence housing prices. Below, I provide a brief overview of each control variable, along with its source and relevance to my analysis.

Among the economic indicators, the 5-year mortgage interest rate retrieved from Bank of Canada encapsulates the cost of borrowing, significantly swaying housing demand. The data on expectations, including the expected house price and expected income are sourced from the Canadian Survey of Consumer Expectations. This survey provides valuable insights into consumers’ future income levels and their potential impact on housing affordability and demand (Benjamin et al., 2004). The metric also offer a glimpse into the market’s anticipations regarding future housing prices, considering real estate an alternative investment product (Hartman, 1972) (Antonides et al., 1990) (Hudson-Wilson et al., 2003).

On the demographic characteristics that correlates with housing prices, the dataset integrates metrics like GDP per Capita and Population Growth Rate. Both these variables have been calculated from two tables from 2021 Canadian Census: the Population estimates and Gross Domestic Product by census metropolitan area. In order to assign those data to the MLS HPI used geographical identifiers, The values are manually evaluated and matched to their geographically closest region. The normalized measures, represent the general economic prosperity or population income and population growth rate that drive the regional demand (Davidoff, 2006) (Eichholtz et al., 2014). Another demographic metric worth noting is the data on New Non-Permanent Residents. This could encompass figures related to refugee influx, a factor we assume may distinctly impact housing demand and potential foreign buyer interests in certain regions.

The inclusion of these control variables enables us to account for confounding factors and provides a more comprehensive understanding of the determinants of housing prices. By comparing the control variables to our independent variable, we aim to assess the robustness of our estimates and attempt to find potential causal relationships by ruling out the influence of these factors.

4 Empirical Methodology

Limited by the nature of the study and data, our empirical approach does not constitute to any of established statistical techniques such as the difference-in-differences (DiD) design. However, we manage to produce a indicator variable of small urban areas to divide the treatment group into two. By analyzing this heterogeneous treatment effect analysis, our result may be able to reveal how did foreign buyer ban impact housing prices. In other words, comparing the two treatment groups in nature may also benefit us in trying to establish the causality, subject to our control variables’

comprehensiveness. We also draw inspirations from Callaway & Sant’Anna (2021)’s DiD estimator for extended time periods, although our data does not have a control group to qualify for the DiD design.

4.1 Model Specification

The primary regression model is given by:

$$Y_{it} = \alpha + \beta_1 \text{Small}_i + \beta_2 \text{BanPeriod}_t + \beta_3 (\text{Small}_i \times \text{BanPeriod}_t) + \beta_4 \text{AmendmentPeriod}_t + \beta_5 (\text{Small}_i \times \text{AmendmentPeriod}_t) + X'_{it}\gamma + \epsilon_{it}$$

Where:

- Y_{it} represents the outcome variable for region i in period t .
- Small_i is a binary indicator that equals 1 if the region is a small urban area and 0 otherwise. The detailed constructions are found in section 5.
- BanPeriod_t and AmendmentPeriod_t are binary indicators representing the periods after the initial and amended bans, respectively.
- X_{it} is a vector of control variables.
- ϵ_{it} is the error term.

Our quasi-experiment design incorporates two time treatment indicators to separate the data to three time period: the pre-treatment phase, the initial ban phase and the subsequent amended ban phase. “Initial Ban Period=1” signifies the timeframe subsequent to the enactment of the initial ban, while “Amended Ban period=1” marks the period following the ban’s amendment. Notably, our model includes two interaction terms, denoted as $\text{Small}_i \times \text{BanPeriod}_t$ and $\text{Small}_i \times \text{AmendmentPeriod}_t$. These interaction terms capture the differential effects of the bans on small urban areas during the two distinct periods. The coefficients β_3 and β_5 are of primary interest, as they estimate the impact of the bans on smaller urban areas relative to other regions. They contrast the small or large cities with the initial and amended ban phases, respectively. We considered recommendations from Wolfers (2006) and Angrist & Pischke (2009) regarding time trend and unit fixed effect variables. For relative short period of time span by our data (2022 January to 2023 July), we decided to not to explicitly include the time effect but instead opted for time-varying controls in our model. Additionally, a unit fixed effect is included as one of the configurations of our models to account for unobserved regional heterogeneity..

Our model encompasses a comprehensive set of control variables, spanning economic and demographic determinants. These controls include the 5-year mortgage interest rate, anticipated house price trajectory, projected income, population growth metrics, CPI, GDP per capita, and the influx of new non-permanent residents. To further refine our analysis and address unobserved regional heterogeneity, the model’s estimation is executed both with and without fixed effects.

5 Identification Strategy

To characterize the Canadian regions we have MLS data available, we categorized locations as either “cities” or “smaller urban areas” based on a qualitative assessment of the Canadian real estate landscape. This assessment primarily considers the magnitude of the population, though it’s not the sole determinant. The sociopolitical significance of a location, such as whether it serves as the capital of a province, is also taken into account. Additionally, we evaluate the potential internal demand within the region’s economy.

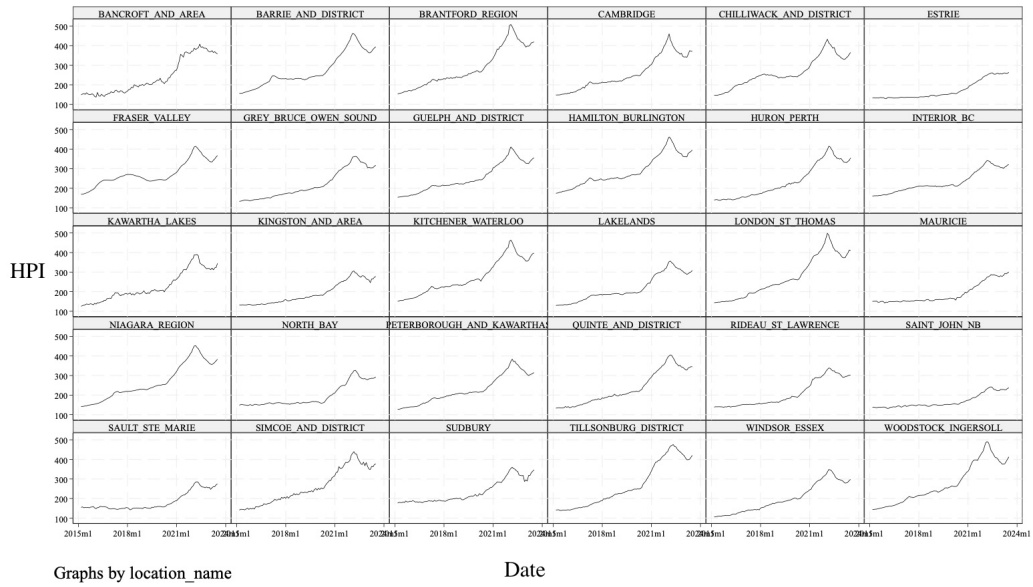


Figure 1: Housing Price Index Trends in “Smaller Urban Areas”

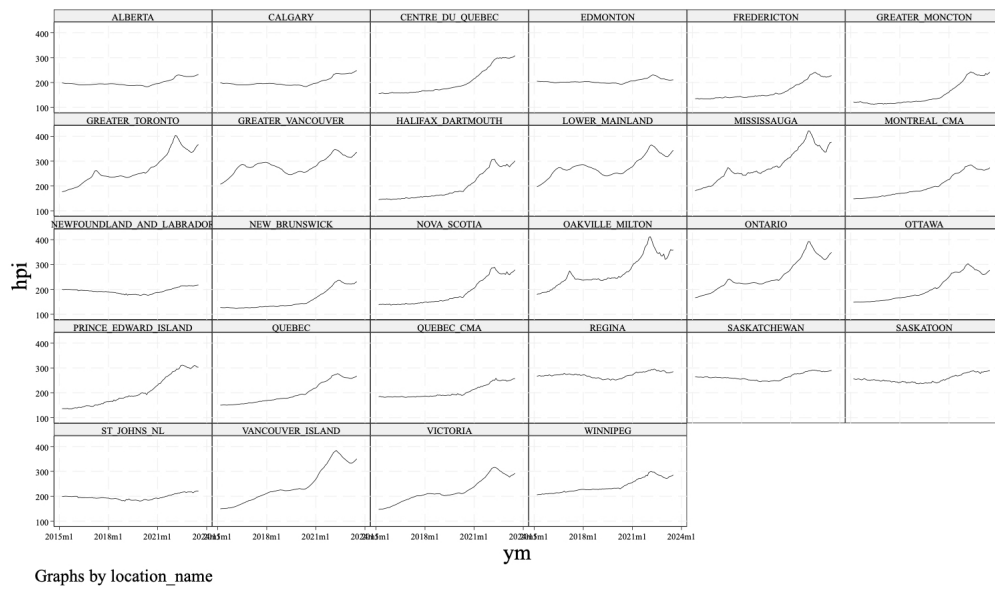


Figure 2: Housing Price Index Trends in “Large Urban Areas”

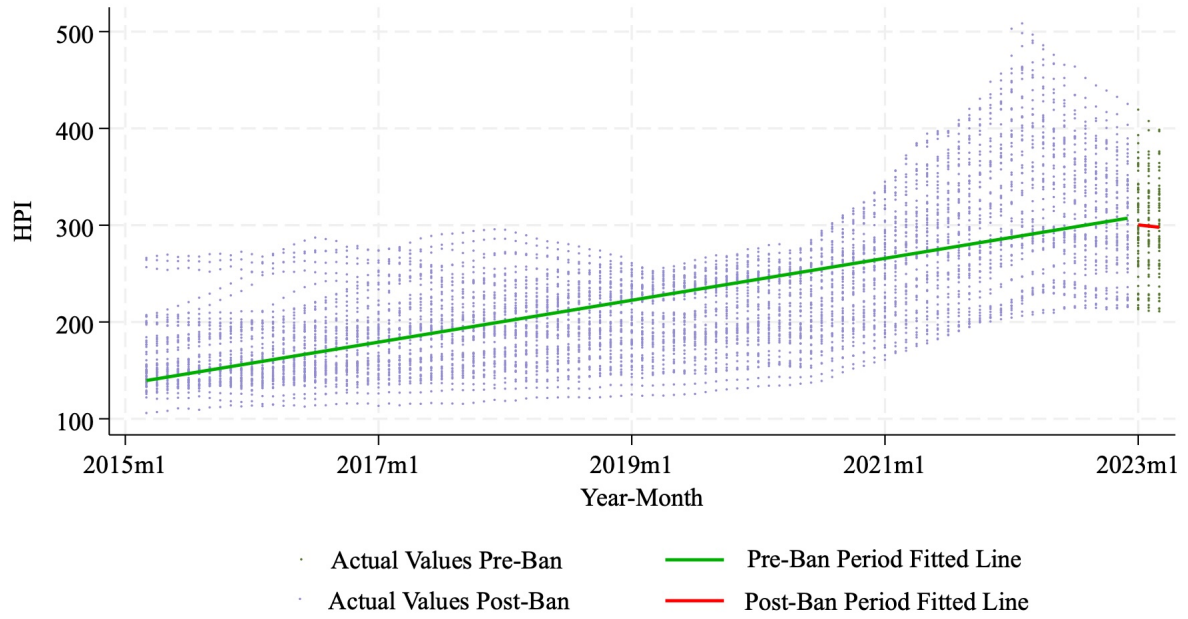


Figure 3: Housing Price Index in Pre-Post Periods Scatter plot

The trend graphs depicted in Figure 1 and 2 offer a visual representation of the evolution of the HPI over time in various small and large cities that were directly impacted by the housing policies under study. Each line plot represents a unique town or city, facilitating a comparative analysis of housing price trends across different regions. The black line in each graph traces the trajectory of the HPI, shedding light on periods of growth, stability, or decline in housing prices. A comparison between the two graphs reveals varied trends among the cities and more consistent trends among the smaller urban areas. This suggests that the smaller urban areas we've defined exhibit similar housing price trends, while the cities show variations, possibly due to differing restrictions or the presence of unique educational or career resources. Even if our categorization doesn't perfectly distinguish between two distinct groups, we still distinguish more independent, isolated smaller urban areas from complex, aggregated metropolitan areas with surrounding regional municipalities. For instance, we've classified Mississauga and even Oakville as cities because they are part of the Greater Toronto Area and are significantly influenced by the metropolitan region. The benchmark Ontario HPI is also largely influenced by the Greater Toronto Area. While our categorization may have some limitations, it highlights potential avenues for future research and consideration.

Figure 1, 2 and 3, referenced in this section, provide a visual reference for readers to understand the housing price trends and defined small versus larger urban areas discussed in the analysis. In the following sections, I will delve deeper into the quantitative analysis of these trends and their implications for the impact of housing policies.

Table 2: Pre-Trend Tests

	(1) HPI	(2) HPI
City is Small	63.11*** (13.56)	
Pre-treatment Period	2.951 (3.076)	2.940 (3.073)
Small x Pre-treatment Periods	0.867 (1.764)	0.884 (1.762)
Time Trend	10.61*** (2.161)	10.61*** (2.158)
5-year-mortgage interest rate	14.91** (5.874)	15.03** (5.868)
Expected House Price Normalized	13.63*** (1.179)	13.68*** (1.178)
Expected Income Normalized	-1.775 (1.279)	-1.768 (1.277)
Population Growth Rate Normalized	3.297 (6.793)	
CPI Normalized	-18.71*** (3.896)	-18.78*** (3.892)
GDP per Capita Normalized	8.511 (6.664)	
New Non-Permanent Residents Normalized	4.610*** (0.752)	4.609*** (0.751)
Constant	195.5*** (31.89)	226.4*** (30.47)
Fixed Effect	No	Yes
Controlled	Yes	Yes

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

The pre-trend analysis is a pivotal step in validating a difference-in-differences (DiD) approach, as it examines the parallel trends assumption. This assumption posits that, in the absence of the treatment (in our case, the foreign buyer ban), the treatment and control groups would have followed parallel paths over time. In Table 2, we apply this analysis to our study. Our model incorporates an pre-treatment period indicator and its interaction with the small urban areas indicator, aiming to assess the validity of this assumption.

Mirroring the primary analysis that will be detailed subsequently, this model accounts for a myriad of economic and demographic variables. We estimate the model in two configurations: one with fixed effects and another without. It's worth noting that in the fixed effects model, region-specific variables that remain constant over time are excluded. Especially, since our indicator "Small" is time-invariant, it is absorbed by the fixed effect term and subsequently dropped from the model. Both models estimate insignificant coefficients for the interaction term. This outcome validates the credibility of my study and supports our analysis. By conducting this pre-trend analysis, I strengthen the foundation for my subsequent analysis of the impact of housing policies on different regions. Furthermore, considering the relatively short period of time covered by our data, which rules out potential confounding factors such as shifts in consumer preferences or other events occurring over a longer term, we gain confidence in our ability to estimate the causal impact of the foreign buyer ban on housing prices.

6 Results

Table 3: Foreign Buyer Ban Effect on Housing Price

	(1) HPI	(2) HPI	(3) Benchmark Price	(4) Benchmark Price
City is Small	66.29*** (15.18)		-184.8 (78229.9)	
Initial Ban Period	-47.16*** (4.985)	-47.22*** (4.981)	-103138.8*** (10906.1)	-103140.0*** (10911.8)
Small x Initial Ban Periods	-19.28*** (2.073)	-19.27*** (2.072)	-23602.4*** (4535.5)	-23602.3*** (4537.9)
Amendment period	7.088*** (2.463)	7.096*** (2.461)	21627.1*** (5388.3)	21627.2*** (5391.1)
Small x Amendment Periods	1.246 (2.745)	1.241 (2.742)	-6238.0 (6004.3)	-6238.2 (6007.4)
5-year-mortgage interest rate	-22.11*** (4.906)	-22.08*** (4.902)	-43811.8*** (10731.5)	-43811.0*** (10737.1)
Expected House Price Normalized	18.98*** (1.225)	19.01*** (1.225)	38721.8*** (2680.8)	38722.6*** (2682.3)
Expected Income Normalized	19.44*** (2.056)	19.47*** (2.054)	39282.6*** (4496.9)	39283.1*** (4499.3)
Population Growth Rate Normalized	2.901 (7.368)		450.0 (37991.4)	
CPI Normalized	20.40*** (4.259)	20.39*** (4.256)	38917.9*** (9317.3)	38917.8*** (9322.2)
GDP per Capita Normalized	8.508 (7.043)		71014.8* (36314.2)	
New Non-Permanent Residents Normalized	-1.567* (0.909)	-1.574* (0.908)	-3345.6* (1987.5)	-3345.8* (1988.5)
Constant	422.3*** (29.43)	461.6*** (27.06)	894616.5*** (83979.4)	900280.1*** (59274.3)
Fixed Effect	No	Yes	No	Yes
Controlled	Yes	Yes	Yes	Yes

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3 delineates the primary regression outcomes, assessing the influence of housing policy shifts on the HPI and the benchmark price. The table is organized into four distinct specifications. Columns (1) and (2) emphasize the HPI, while columns (3) and (4) pivot towards the benchmark price. Columns (2) and (4) features region fixed effects.

The data from column (1) indicates a noteworthy observation: smaller urban areas witness an augmentation in the HPI by 66.29 units, an estimate that is statistically significant at the 1% threshold. However, from column (3) the regression on benchmark price shown an insignificant estimate. As we pointed out in Section 3.1, the potential reason for this difference is composite benchmark price accounts larger houses at smaller cities that would constitutes a higher price. This will converge to the bigger cities' price with smaller floor areas. Therefore, we would like to address the HPI more when we analyze the difference between the small cities and bigger cities as it controls for house characteristics better. We would treat the regression results on benchmark price with caution when interpreting the Small dummy and Small's interaction terms. The HPI is very robust and economically significant. We can interpret that small urban areas has experienced around 15% more growth than bigger urban areas in housing price from January 2005.

The introduction of the foreign buyer ban is associated with significant reductions in housing prices. For the HPI, this drop is quantified as -47.16 units in column (1) and -47.22 units in column

(2), both significant at the 1% level. For benchmark prices, this result is also economically and statistically significant. In columns (3) and (4), the benchmark price decreases by 103138.8 dollars and 103140.0 dollars, respectively. These results signify the ban reduced about 11.3% the housing price during its early phases.

The interaction term Small x Initial Ban Periods (between urban size and initial ban period) provides that in the initial ban phase, smaller cities experienced an additional drop in the HPI by -19.28 units column (1) and -19.27 units column (2), both statistically robust with a p-value less than 0.05. For the benchmark price, this additional decline is reflected as 23602.4 dollars column (3) and -23602.3 dollars column (4). The size of the negative effect estimated is around 3 to 5 % across different models.

Post the policy’s amendment, there is an evident resurgence. The HPI rebounds by 7.088 units column (1) and 7.096 units column (2), whereas the benchmark price witnesses a substantial surge by 21627.1 dollars column (3) and 21627.2 dollars column (4). These figures suggest that the housing market responded favorably to the adjustments made to the initial ban. Noticeably, our insignificant estimate suggests that the amendment didn’t have a differential effect on the town. Therefore, while less population dense suffered more from the initial ban, the amendments did not offset the damage more for them comparing to bigger cities. Several potential explanations can be posited for this rebound. Firstly, the amendments may have alleviated some of the industry’s initial concerns, restoring confidence among both domestic and foreign investors. The relaxation of certain restrictions, such as the increase in the foreign control threshold and the removal of constraints on acquiring land for development, could have reinvigorated interest and investment in the housing sector. Additionally, the expanded purchasing options for more work permit holders might have introduced a new segment of buyers into the market, further driving demand. It’s also plausible that the market had over-reacted to the initial ban, and the subsequent amendments simply facilitated a market correction. Lastly, external factors, such as global economic conditions, might have coincided with the amended regulations, contributing to the observed rebound.

Control variables offer a deeper dive into the intricacies of the housing market. The inverse relationship between the 5-year mortgage interest rate and housing prices is evident. A 1% increase in the rate leads to a decrease in the HPI by -22.11 units column (1) and -22.08 units column (2) in benchmark price by -43811.8 dollars column (3) and -43811.0 dollars column (4). Moreover, the positive coefficients of anticipated house prices and projected income emphasize the significance of future market anticipations in shaping present-day housing market dynamics. The new non-permanent resident population are significant at 10% level across all four models with an economically insignificant effect.

In conclusion, our findings highlight the substantial influence of government policies on the real estate market. The differential impacts observed across different policy phases and regions’ real estate markets provide insight into the underlying mechanisms of the ban’s impact on housing prices.

7 Conclusion

In summary, our study reveals compelling insights into the impact of the foreign buyer ban on Canada’s housing market. Our findings suggest that the introduction of the ban had a significant and negative effect on housing prices, particularly in smaller urban areas. This effect was more pronounced in small cities than in major urban centers, highlighting a region-based differential impact. However, during the amended ban period, we observed a rebound effect, with housing prices showing a significant increase. These results underscore the complexities inherent in housing market regulations and the challenges policymakers face in predicting the multifaceted reactions of the market to such interventions.

Nevertheless, our finding come with certain constraints that may affect the validity and precision of the estimated causal effect. Data limitations and restrictions on transaction-level or house-level data hindered a more granular analysis. Additionally, a transaction-level data would have potential for a better control on seasonality than our MLS HPI series. Future research could benefit from examining real estate prices at the urban region level, considering all listings and transactions. Additionally, the application of synthetic control methods could enhance the analysis. Future studies should also explore the broader impact of the ban on other aspects of the real estate market. The ripple effects of the ban extended to the rental market, property development, and even commercial real estate projects not directly related to housing. Investigating these interconnected aspects would provide valuable insights into the holistic impact of such policies. Our analysis of control variables, including

the 5-year mortgage interest rate, expected house price, and expected income, reaffirmed existing findings, such as the inverse relationship between interest rates and housing prices, and the influence of future expectations on current market conditions.

In conclusion, while the foreign buyer ban achieved some of its intended outcomes, including a reduction in housing prices, particularly in smaller urban areas, it also illuminated the challenges of regulating a dynamic and interconnected market. Policymakers must carefully weigh the immediate benefits against potential long-term repercussions and unintended consequences. As Dr. Diana Mok pointed out at the onset of the ban in her critique (Western News, 2023), “no single policy can address the housing affordability issue in Canada without introducing other challenges”. As the Canadian housing market continues to evolve, ongoing monitoring of these trends and adaptive policy measures will be essential to ensure a stable, accessible, and sustainable housing market for all Canadians.

8 References

- Angrist, Joshua D., and Jörn-Steffen Pischke. 2009. *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton University Press. <https://doi.org/10.2307/j.ctvcm4j72>.
- Antonides, Gerrit, and Nico L. Van Der Sar. 1990. “Individual expectations, risk perception and preferences in relation to investment decision making.” *Journal of Economic Psychology* 11 (2): 227-245.
- Barrett, Patrick. 2023. “Intersections between Housing Affordability and Meanings of Home: A Review.” *Kōtuitui: New Zealand Journal of Social Sciences Online* 18 (1): 27–44. <https://doi.org/10.1080/1177083X.2022.2090969>.
- Bank of Canada. 2023. “Canadian Survey of Consumer Expectations.” Accessed September 27, 2023. <https://www.bankofcanada.ca/publications/canadian-survey-of-consumer-expectations/>.
- Benson, Earl, Julia Hansen, Arthur Schwartz, and Gregory Smersh. 1997. “The influence of Canadian investment on US residential property values.” *Journal of Real Estate Research* 13 (3): 231-249.
- Burchardi, Konrad and Chaney, Thomas and Hassan, Tarek Alexander, Migrants, Ancestors, and Foreign Investments (May 3, 2017). Chicago Booth Research Paper No. 17-21, Available at SSRN: <https://ssrn.com/abstract=2711012> or <http://dx.doi.org/10.2139/ssrn.2711012>
- Branch, Legislative Services. 2023. “Consolidated Federal Laws of Canada, Prohibition on the Purchase of Residential Property by Non-Canadians Act.” <https://laws-lois.justice.gc.ca/eng/acts/P-25.2/page-1.html>.
- Callaway, Brantly, and Pedro H. C. Sant’Anna. 2021. “Difference-in-differences with multiple time periods.” *Journal of Econometrics* 225 (2): 200-230.
- Chai, Howard. 2023. “Inside the Industry Efforts to Amend the Foreign Buyer Ban.” STOREYS.
- Davidoff, Thomas. 2006. “Labor income, housing prices, and homeownership.” *Journal of Urban Economics* 59 (2): 209-235.
- Eichholtz, Piet, and Thies Lindenthal. 2014. “Demographics, human capital, and the demand for housing.” *Journal of housing economics* 26: 19-32.
- Favilukis, Jack, David Kohn, Sydney C. Ludvigson, and Stijn Van Nieuwerburgh. 2012. “International capital flows and house prices: Theory and evidence.” In *Housing and the financial crisis*, 235-299. University of Chicago Press.
- Favilukis, Jack, Pierre Mabilie, and Stijn Van Nieuwerburgh. 2023. “Affordable Housing and City Welfare.” *The Review of Economic Studies* 90 (1): 293–330. <https://doi.org/10.1093/restud/rdac024>.
- Gholipour, Hassan Fereidouni, Usama Al-Mulali, and Abdul Hakim Mohammed. 2014. “Foreign investments in real estate, economic growth and property prices: Evidence from OECD countries.” *Journal of Economic Policy Reform* 17 (1): 33-45.
- Gordon, Joshua C. 2020. “Reconnecting the Housing Market to the Labour Market: Foreign Ownership and Housing Affordability in Urban Canada.” *Canadian Public Policy* 46 (1): 1–22. <https://doi.org/10.3138/cpp.2019-009>.
- Hartley, Jonathan, Li Ma, Susan M. Wachter, and Albert A. Zevelev. 2021. “Do Foreign Buyer Taxes Affect House Prices?” https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3939611.
- Hartman, Richard. 1972. “The effects of price and cost uncertainty on investment.” *Journal of economic theory* 5 (2): 258-266.

- Hudson-Wilson, Susan, Frank J. Fabozzi, and Jacques N. Gordon. 2003. "Why Real Estate?" *Journal of Portfolio Management*, Suppl.Special Real Estate Issue (09): 12-27.
- Kaminer, Michael. 2023. "Forget the Ban, Foreigners Can (and Should) Still Buy Canadian Country Homes."
- McArthur, Jenny. 2020. "Somewhere to Live: Exploring Solutions to the Housing Affordability Crisis in Aotearoa New Zealand." <https://apo.org.au/node/275451>.
- McNutt, Lydia. 2022. "Canadian Real Estate Outlook (2023)." RE/MAX Canada. <https://blog.remax.ca/canadian-real-estate-outlook/>.
- Napoli, Grazia, Giulio Mondini, Alessandra Oppio, Paolo Rosato, and Simona Barbaro, eds. 2023. *Values, Cities and Migrations: Real Estate Market and Social System in a Multi-Cultural City*. Green Energy and Technology. Cham: Springer International Publishing. <https://doi.org/10.1007/978-3-031-16926-7>.
- Nistor, Adela P. and Diana-Gabriela Reianu. 2018. "Determinants of housing prices: evidence from Ontario cities, 2001-2011." *International Journal of Housing Markets and Analysis* 11: 541-556.
- Organization for Economic Co-operation and Development. 2023. Unemployment Rate: Aged 15 and over: All Persons for Canada. Retrieved from FRED, Federal Reserve Bank of St. Louis. <https://fred.stlouisfed.org/series/LRUNTTTTTCAM156S>.
- Pavlov, Andrey, Tsur Somerville, and Jake Wetzel. n.d. "Foreign Buyer Taxes And Housing Affordability."
- Rosen, Sherwin. 1974. "Hedonic prices and implicit markets: product differentiation in pure competition." *Journal of political economy* 82 (1): 34-55.
- Statistics Canada. n.d. "MLS® HPI." Accessed September 12, 2023. <https://www.crea.ca/files/mls-hpi-data/english/Briefing-on-changes-to-HPI-methodology-ENG.pdf>.
- Statistics Canada. 2022. Census Profile. 2021 Census. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released December 15, 2022. <https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E>
- Squires, Graham, Don Webber, Hai Hong Trinh, and Arshad Javed. 2022. "The Connectedness of House Price Affordability (HPA) and Rental Price Affordability (RPA) Measures." *International Journal of Housing Markets and Analysis* 15 (3): 521-47. <https://doi.org/10.1108/IJHMA-03-2021-0029>.
- TI, Edward Seng Wei. 2019. "Politics and Policy: Chinese Money and Its Impact on the Regulation of Residential Property in the West." *Conveyancer and Property Lawyer* 83 (3): 371-91.
- West, Isaiah, and Botsch Matthew. 2020. "Are Foreign Buyers Making Housing Unaffordable? Results from a Natural Experiment in Vancouver."
- Western News. 2023. "Western News - Expert Insight: Canada's Ban on Foreign Homebuyers Is Unlikely to Affect Housing Affordability."
- Witkiewicz, Witold, 2002. "The use of the hp-filter in constructing real estate cycle indicators", *Journal of Real Estate Research*(1-2), 23:65-88. <https://doi.org/10.1080/10835547.2002.12091070>
- Wolfers, Justin. 2006. "Did Unilateral Divorce Laws Raise Divorce Rates? A Reconciliation and New Results." *American Economic Review* 96 (5): 1802-1820. <https://doi.org/10.1257/aer.96.5.1802>.