## Foreign buyers and local affordability: Indications from Vancouver

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#### Abstract

With condominium construction paused despite severe housing affordability problems in Vancouver and particularly Toronto, attention has turned to the question of whether foreign buyer taxes may have overshot to the point of making affordability worse by making condo development unprofitable. A model that simplifies the foundational analysis in Favilukis and Van Nieuwerburgh (2021) shows that foreign buyers help or hinder domestic affordability depending on whether supply is elastic or inelastic, whether foreign buyers overpay for units in the same buildings as locals, how intense foreign demand is, and whether foreign buyers occupy units or instead rent them to locals or flip preconstruction contracts near building completion. Casual data analysis and back-of-the-envelope calculations suggest that absent empty home taxes, foreign buyers in Greater Vancouver and Toronto likely hindered local affordability, but in the presence of empty homes taxes, foreign buyer bans or taxes may plausibly worsen affordability for locals.

#### 1 Introduction

Taxes and restrictions on foreign purchases of residences have been implemented in multiple jurisdictions worldwide with the stated purpose of making homes more affordable for domestic residents. For example, in extending a ban on foreign purchases of Canadian residential real estate, a government press release (Finance Canada (2024)) stated: "For years, foreign money has been coming into Canada to buy up residential real estate, increasing housing affordability concerns in cities across the country, and particularly in major urban centres. Foreign ownership has also fueled worries about Canadians being priced out of housing markets in cities and towns across the country."

There are theoretical and empirical reasons to expect foreign buyer taxes to succeed in reducing local housing prices, many of which are detailed in a comprehensive study by Favilukis and Van Nieuwerburgh (2021). The disincentive to purchase homes should reduce the number of buyers considering purchasing properties and lower willingness to pay among remaining foreign buyers. This reduction in prices hurts landlords and incumbent property owners through lost property value and rents, but makes home ownership more affordable for locals who do not yet own homes. There may be an associated loss of construction jobs, and the analysis in Favilukis and Van Nieuwerburgh (2021) does not consider the effect of reciprocal taxes on domestic residents who may wish to purchase property overseas.<sup>1</sup>

In this paper, I analyze how taxes on foreign home buyers affect affordability for locals. A simple model shows that three key parameters determine the direction of that effect: the elasticity of housing supply with respect to price, the extent to which foreign buyers outbid locals, and the extent to which foreign buyers occupy homes. I gather evidence ont he magnitude of these parameters and then use the model and likely parameter values to analyze the conditions under which foreign housing taxes help or hurt affordability.

Existing studies of the impact of the entry and exit of foreign buyers on local home prices present estimated effects that are all positive and range from modest to quite large, as summarized in T. Davidoff and Zheng (2024). Li, Shen, and C. Zhang (2023), Gorback and Keys (2020), Pavlov and Somerville (2020), and Badarinza and Ramadorai (2018) find that within metropolitan areas, submarkets exposed to foreign buyers see larger price increases when the types of foreign buyers prone to buy in those submarkets face increased incentives to buy overseas. Dachis, Duranton, and Turner (2012), Best and Kleven (2018), Kopczuk and Munroe (2015), and I. Davidoff and Leigh (2013) find, as a general matter, that increasing transaction taxes on housing purchases leads to fewer transactions and lower prices. Hartley et al. (2022), Andolfatto and Rekkas (2024), Du, Yin, and L. Zhang (2022), and Pavlov, Somerville, and Wetzel (2023) collectively find that foreign buyer taxes in Australia, Canada, and New Zealand led to lower prices. Hilber and Schöni (2020) finds that banning second home construction in desirable second home locations in Switzerland did reduce the prices of primary residences and increased prices of second homes.

As Favilukis and Van Nieuwerburgh (2021) observe, foreign buyers may not leave homes empty, but rather rent them out to locals. In their calibration, this changes the social welfare effect of foreign buyers from negative to slightly positive. The positive supply effect of out of town buyers is moderate because local investors are highly price sensitive in their de-

<sup>&</sup>lt;sup>1</sup>It is not obvious that a target country would wish to reciprocate to disincentivize the host country's tax. For example, China, the source of most foreign buying in Canada prior to the recent spate of taxes (per, e.g. Matheson (2016)) has made efforts to discourage capital flight.

mand for rental properties, and out-of-town buyers represent a small share of overall capital investment. In this way, foreign buyers represent a slightly positive form of capital accumulation. This is a salient consideration, as British Columbia has imposed significant taxes on empty homes and vacation properties in urban areas while also imposing significant taxes on foreign buyers, and the Canadian federal government has both imposed taxes on empty homes owned by foreigners and has temporarily banned the purchase of single residences by foreigners.<sup>2</sup>

At the time of writing, the markets for condominiums in Vancouver and Toronto are so weak that construction has stalled, with many projects cancelled.<sup>3</sup> In these markets, condos are typically financed in part by preconstruction sales ("presales") that commonly take place several years prior to completion of the building. While indicative of falling prices, the ratio of condo ownership costs to incomes remains almost at record levels per RBC Economics (2024). And the lack of condo presales and hence starts has led some observers to suggest that the taxation of foreign buyers has overshot, leading to a negative supply response larger than the positive demand response on prices from foreign buying, such that locals have been adversely affected.<sup>4</sup> It is thus worthwhile asking whether there is empirical evidence supporting the idea that foreign buyers, particularly in the presence of empty homes taxes, may have positive welfare effects, and banning or taxing foreign buyers adverse effects on housing affordability for locals.

There are several channels through which foreign buyers could have positive affordability effects. First, per Favilukis and Van Nieuwerburgh (2021), foreign buyers may rent houses to locals, particularly in the presence of an empty homes tax. Second, foreign buyers may purchase condominiums in the presale phase of condominium development and then assign their contracts prior to completion. The presence of foreign presale purchasers would raise presale prices, encouraging the supply of condominiums, but with no increase in demand for built homes. The net effect of that form of investment should be positive for affordability for end users, with an adverse competition effect for locals who wish to occupy homes purchased through the presale channel.

A third way in which foreign buyers could have a beneficial effect on housing affordability for local apartment buyers if they have a relative preference for quality, and if there is a high degree of vertical differentiation within buildings. In that case, foreign buyers could make projects more profitable than they would otherwise be, increasing supply, but without

<sup>&</sup>lt;sup>2</sup>The currently very weak state of condo presales hints at a relatively modest supply of local capital. Overall residential supply has not declined by as much, likely due to significant investment from CMHC in purpose-built rental apartment finance.

<sup>&</sup>lt;sup>3</sup>Canada Mortgage and Housing Corporation (2025).

<sup>&</sup>lt;sup>4</sup>See, for example, Gold (2024).

crowding out local demand. This would be a positive "pecuniary externality." For example, it has been suggested that a non-trivial fraction of condo developer profits often come from lavish penthouse units commonly sold to international buyers. If 20 floors of condos become profitable only because the 21st floor penthouse is sold overseas, local buyers lose when the sale of that unit is banned. By contrast, if foreign buyers compete at the same price for the same units as local buyers, or if their purchases are concentrated in entirely different locations, that cross-subsidy does not arise. Even a relative taste for new construction among foreigners could improve afforability of older units for locals, consistent with Australia's policy of exempting new construction from foreign buyer taxes and bans.

Section ?? below reduces the considerations above into a single equation governing the direction of the affordability impact of foreign buyers. Section ?? reviews some available evidence on the extent to which the channels alluded to above are operative in the Vancouver housing market, building to some back-of-the-envelope conjectures on the net effect under different policy regimes.

### 2 Background: taxation and regulation of foreign buying and empty homes in Canada

In 2016, the Province of British Columbia imposed a 15% extra property transfer tax on foreign (those who are not citizens, permanent residents, or B.C. Provincial Nominees) buyers of residential property in Greater Vancouver. That rate was subsequently expanded to other metropolitan areas in B.C. and the rate increased to 20%. In 2017, a similar tax was imposed on foreign buyers in the Greater Golden Horseshoe area of Ontario.

B.C.'s foreign buyer tax legislation included a provision allowing the City of Vancouver to impose taxes on homes not used as primary residences, with the tax brought into effect in 2017. The tax rate has moved over time and currently stands at 3% of property value in each year of vacancy.<sup>5</sup> The Province of B.C. added a similar Speculation and Vacancy tax on metropolitan areas in the Province. That rate is higher on property owners who are foreign or earn most of their income overseas (currently 2%, transitioning to 3% in 2026) than on Canadian residents (currently .5%, transitioning to 1% in 2026).<sup>6</sup> These taxes have been matched elsewhere, including multiple jurisdictions in Ontario, and federally, with the 2022 Underused Housing Tax, a tax of 1% of value, only assessed on non-primary residences owned by foreign nationals.

 $<sup>^5</sup>$ https://vancouver.ca/home-property-development/empty-homes-tax.aspx.

<sup>&</sup>lt;sup>6</sup>See https://www2.gov.bc.ca/gov/content/taxes/speculation-vacancy-tax/how-tax-works/tax-rates.

Effective January 1, 2023, the federal government banned foreign nationals from purchasing residential property in Census Metropolitan Areas or Census Agglomerations with populations greater than 10,000. That ban, initially set to expire in 2025 has been extended to January 1, 2027.

# 3 A simple framework for evaluating foreign buyer effects on local housing affordability

Suppose that foreign buyers have infinitely elastic demand for housing units at a price of  $p_f$ , assumed in any relevant equilibrium greater than the equilibrium willingness to pay among locals that comes from the demand curve  $q_l(p_l)$ . The fraction of buyers that are foreign ( $\alpha$  in each building would be 100%, but is instead determined by a government policy, here assumed to be exogenously chosen.<sup>8</sup> I ignore the distinctions among the price per unit paid by locals  $p_l$  the "user cost" per year associated with that price, and market rent. Taxes and political preferences for one form of tenure or the other would affect these differently.

If  $\alpha > 0$  and  $p_f > p_l$ , developers charge different prices to foreign and local buyers. This could arise through at least two channels. First, foreign buyers might demand higher quality units, e.g. penthouses for which they have a much greater willingness to pay than locals, but have relatively little interest in lower-floor, ordinary units. Relative demand for new versus older units would have the same consequence over time. Second, developers might market a fraction of presale units overseas, and the law of one price might not force equality of pricing if foreign buyers are constrained in their ability to participate in ordinary presale or resale markets.<sup>9</sup>

The supply of housing units is given by a function  $q_s(\bar{p})$ , increasing in price.  $\bar{p}$  is the average price at which homes are sold,  $\bar{p} \equiv [1 - \alpha] p_l + \alpha p_f$ .

Some fraction of housing units purchased by foreign buyers are rented out to locals, and some presale buyers flip their homes prior to occupancy of buildings. Call z the fraction of units purchased by foreign buyers that are unavailable to locals. The magnitude of z might be taken as a measure of how important affordable home ownership is, beyond rental affordability. A large z value could thus indicate that local consumers renting from foreigners is seen as undesirable by policymakers, whereas z=0 might indicate that converting owner

<sup>&</sup>lt;sup>7</sup>See https://www.cmhc-schl.gc.ca/professionals/housing-markets-data-and-research/housing-research/consultations/prohibition-purchase-residential-property-non-canadians-act.

<sup>&</sup>lt;sup>8</sup>Favilukis and Van Nieuwerburgh (2021) allow foreign demand to be affected by the local price and by an time-varying exogenous factor,  $\alpha$  is akin to the latter.

<sup>&</sup>lt;sup>9</sup>An allegedly common practice, see, e.g. CityNews Staff (2017).

units to rental is not undesirable.<sup>10</sup>

Equating supply and demand for local buyers yields the following equation:

$$[1 - \alpha z] q_s ([1 - \alpha] p_l + \alpha p_f) = q_l(p_l). \tag{1}$$

Developers will supply more units the higher the average price per unit paid by locals and foreign buyers weighted by their share of all units built. Implicitly differentiation of equation (??) indicates that the effect on local prices of a small increase in the foreign buyer share depends is:

$$\frac{dp_l}{d\alpha} = -\frac{-zq_s + [1 - \alpha z] \, q_s' \, [p_f - p_l]}{[1 - \alpha z] \, [1 - \alpha] \, q_s' - q_l'}.$$
(2)

The denominator of the right hand side of equation (??) is positive as long as supply slopes up and local demand slopes down in price. The numerator of the right hand side of equation (??) is negative, so that price falls with an increase in the permitted foreign share, if:

$$\operatorname{sign}\left(\frac{dp_l}{d\alpha}\right) = \operatorname{sign}\left(1 - \underbrace{\frac{q_s'p_l}{q_s}}_{\text{supply elasticity}} \times \underbrace{\frac{p_f - p_l}{\bar{p}}}_{\text{Domestic occupancy intensity}} \times \underbrace{\frac{1 - \alpha z}{z}}_{\text{Domestic occupancy intensity}}\right). \quad (3)$$

Summarizing the analysis, allowing a little more foreign buying will improve affordability when:

- The supply of homes is highly responsive to prices.
- Foreign buyers pay much more than locals for apartments in the same buildings.
- Most units in new buildings are occupied by locals in a way that government appreciates, i.e. there are few foreigner owners ( $\alpha$  is low), or foreign owners commonly flip presale contracts near building completion or rent to locals and that arrangement is not viewed as objectionable (z is low).

<sup>&</sup>lt;sup>10</sup>Indeed, policymakers have implemented a range of policies designed to convert homes from owner-occupied to rental, such as favorable financing from crown corporation CMHC for rental housing and local zoning policies that allow more density for purpose-built rental apartments than for condominium buildings.

## 4 Some evidence on the determinants of foreign buyer affordability effects

We have seen that the affordability effect of foreign buyers depends on three key parameters: the elasticity of supply, the foreign buyer price premium, and the intensity of domestic occupancy of homes. I now review available evidence on these parameters to determine whether there are realistic circumstances under which foreign buyers do improve local affordability.

#### 4.1 How elastic is supply in foreign-buyer heavy markets?

Foreign buyers can improve affordability through their effective subsidy of new supply. That effect will be stronger in markets in which supply is responsive to prices. Paixao (2021) provides a list of Canadian CMAs by housing supply elasticity (estimated from one-year differences in prices and quantities), and Figure ?? plots that elasticity against non-resident ownership.<sup>11</sup> The non-resident ownership data is for the year 2018 and comes from the Canadian Housing Statistics Program (CHSP) table "Residency participation of residential properties, by property type and period of construction." The CHSP measure of the fraction of property owners who do not reside in Canada is an imperfect approximation of buyers who would be deemed foreign for tax purposes.

The absolutely and relatively modest supply elasticities in markets like Toronto and Vancouver, where foreign buying is concentrated, suggest that foreign ownership may have adverse affordability consequences if not paired with limits on empty homes (moving z towards zero in the context of equation (??)). This may reflect foreign buyers' concentration in large markets. It is worth remarking, though, that non-resident ownership was modest in all large Canadian CMAs as of 2018, with Vancouver by far the highest level at 6.3%.

#### 4.2 Do foreign buyers pay more for units in the same building?

Equation (??) suggests that foreign buyers can have a positive supply effect when the units in which they stimulate supply are largely occupied by locals (where  $\alpha z$  is close to zero). If foreign buyers pay higher prices than locals primarily because they occupy different buildings than locals, it is not easy to see a positive supply effect for locals, as these buildings will strain local contractors, increasing construction costs.

Foreign buyers might pay more than locals for units in the same building either by facing different prices for the same units, or by specializing in particularly luxurious units

<sup>&</sup>lt;sup>11</sup>As in Paixao (2021), two outliers with extremely high supply elasticities are omitted.

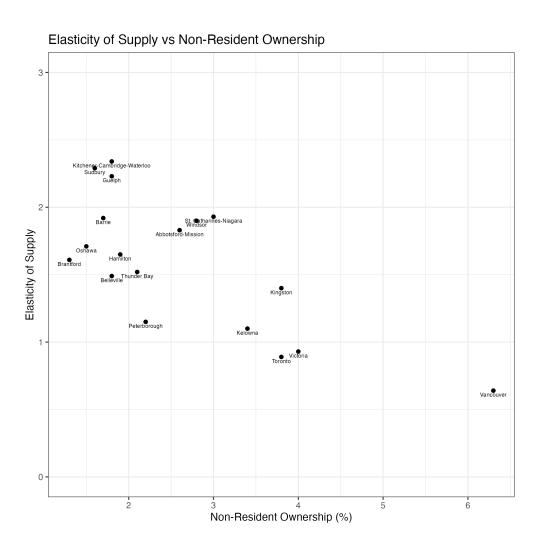


Figure 1: Non-resident ownership and housing supply elasticity in Canadian CMAs. Sources: Paixao (2021) and CHSP table "Residency participation of residential properties, by property type and period of construction" for 2018 estimates. (charted values of elasticities merged on CMA names by ChatGPT).

within buildings. We cannot observe whether the law of one price is violated, e.g. through differential presale pricing overseas.

There is some scope for answering the question of whether foreign buyers purchase higher quality units within buildings than local buyers with available data, at least for the resale market, if not for the critical presale market. Figure ?? uses data taken from condominium resales in Greater Vancouver between 2010 and 2023, provided by BC Assessment. The plot measures the year of transactions on the horizontal axis. On the vertical axis are measures of the variance of the natural logarithm of transaction prices by year. The red line plots the variance of all transaction prices. The green plots the variance of mean prices across buildings. The blue line plots the mean variance of log transaction prices within buildings.

The dashed vertical line in Figure ?? coincides with the imposition of the foreign buyer tax in July, 2016. Consistent with foreign buyers demanding more expensive units (as non-resident buyers do in the CHSP data), <sup>13</sup> the overall variance of prices drops sharply in the years after the tax, consistent with loss of an important luxury segment of the market. However, the reduction in price variance appears to be almost entirely driven by a reduction in price variance across buildings, rather than within buildings. This suggests that foreign buyers did not play a large role in within-building price variance.

Figure ?? restricts the analysis in Figure ?? to transactions in buildings less than five years old, as foreign buyers may have been concentrated in new buildings (as non-resident buyers surely are) and new building prices may be more salient to the presale pricing that presumably drives developer supply choices. Again, there is little support for the notion that removing foreign buyers reduced within-building price variation.<sup>14</sup>

Another indicator of within-building versus between price variation comes from CHSP data comparing assessed values of properties owned by resident versus non-resident owners. For the years starting in 2018, the Canadian Housing Statistics Program has used its access to ownership data on the universe of Canadian residences and their owners to publish statistics on ownership by residency status in Canada. Unfortunately, the stock measure is not readily available prior to 2018 and hence prior to the implementation of B.C.'s foreign buyer tax. Between 2018 and 2022, the number of non-resident owners in the Vancouver Census Metropolitan Area grew from 24,135 to 26,350, but fell as a share of all owners from 9.6% to 9.0%.

While we cannot observe building-level data, we can ask what fraction of price differences

 $<sup>^{12}</sup>$ If there were only one transaction for each building with a transaction in a given year, the red and green lines would coincide.

<sup>&</sup>lt;sup>13</sup>See also Gellatly and Morissette (2017).

<sup>&</sup>lt;sup>14</sup>In both figures, there is evidence of rising within-building price variation during the period prior to 2016 when foreign buying was likely growing, but no clear pivot around the time of the foreign buyer tax.

Figure 2: Variance decomposition of log resale transaction prices into total, between buildings, and within buildings, Greater Vancouver, 2010-2023. Vertical line marks implementation of B.C. foreign buyer tax in July 2016.

#### Variance Decomposition of Log Price

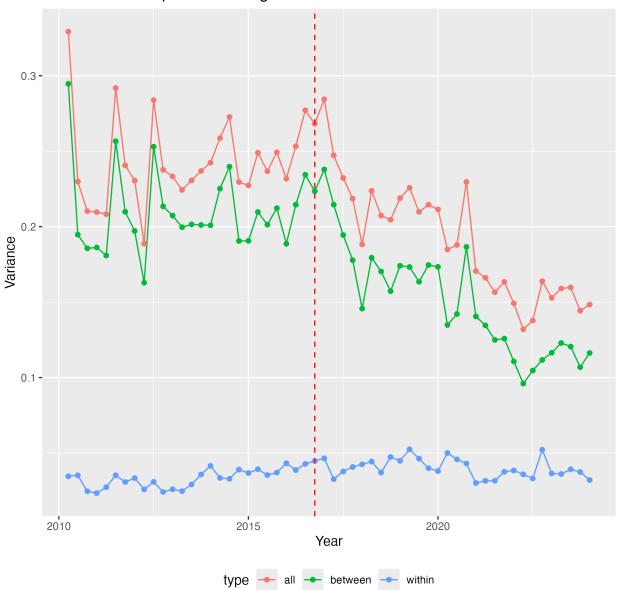
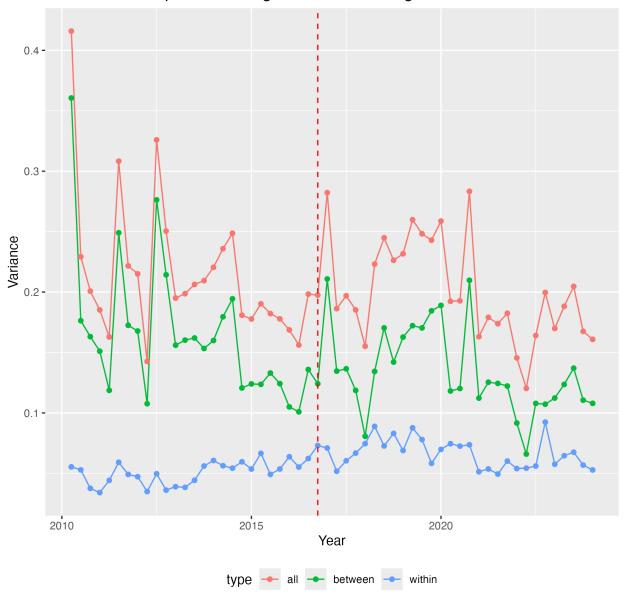


Figure 3: Variance decomposition of log transaction prices in Greater Vancouver, 2010-2023. Same as prior figure, but transactions in buildings less than five years old at time of sale (but resale transactions only) only.

### Variance Decomposition of Log Price New Buildings



in the value of units owned by non-residents versus residents is explained by variation across municipalities, versus within, and by non-residents' propensity to own newer homes. Overall, among condominiums in the Vancouver CMA, non-residents' in 2018 had a mean value of \$790,000 versus \$630,000 for residents of Canada, a difference of over 25%.

However, in a regression of log mean value by period of construction and municipality on dummies for municipality, so conditioning on broad location, the coefficient on non-resident owner versus resident owner is just .064, so the large majority of value is explained by location. Adding dummies for ranges of years in which buildings were completed reduces the estimated log difference between residents and non-residents to just .017. Thus, within buildings of the same age in the same general location, non-residents own units that are roughly identical in value to residents, leaving little scope for extra payment for fancier units (differences in price paid in preconstruction would not show up in these assessed values).

The fact that non-residents own newer units than residents might be seen as a form of differentiation in quality within buildings, in that if residents have less willingness to pay for new units than non-residents, non-residents may stimulate supply by paying more for new units that drive supply, leaving older units to resident buyers over time.<sup>15</sup>

Importantly, CHSP statistics are an approximation (possibly biased) of foreign ownership, because some owners who live overseas are Canadian citizens or permanent residents, and hence exempt from foreign buyer taxes. Also, some Canadian residents are not yet landed immigrants, and hence are subject to the foreign buyer tax.

#### 4.3 Stock and flow of foreign purchases in Greater Vancouver

When the share of foreign buyers  $\alpha$  is small, so that most homes are purchased (and occupied) by locals, any inducement to build by foreign buyers paying premium prices (possibly for premium apartments in less demand among locals) is likely to be positive for local affordability.

The apparent declining stock of foreign ownership as a share of all residences (as proxied by residency) is matched by a declining share of the flow into ownership. The B.C. provincial government started collecting data on the nationality of residential property buyers shortly before implementing the additional property transfer tax of 15% on foreign buyers in mid-2016. In the month (July) prior to implementation, 15% of purchases in Metro Vancouver involved foreign participation. For the years since, the fractions have been as shown in Table

<sup>&</sup>lt;sup>15</sup>A caveat is that some of the difference in age of property owned may be attributable to non-resident purchases growing over time. If the order of controls is reversed, in a regression of log mean value on just period of construction dummies, the coefficient on non-resident ownership is -.065, so the difference in condo age explains as much of the value difference as municipality, and is unlikely to be mostly explained by differential dates of purchase.

Table 1: Fraction of residential transactions in Metro Vancouver with foreign participation, per B.C. Property Transfer Tax data. Source: https://catalogue.data.gov.bc.ca

Year	Fraction of transactions with foreign participation
2017	3.7%
2018	2.9%
2019	2.0%
2020	1.4%
2021	1.1%
2022	1.3%
2023	0.9%
2024	0.9%

??. COVID and the national foreign buyer ban have likely contributed to the decline over time in foreign participation.

#### 4.4 Are foreign buyers' homes left homes empty?

The variable z in equation (??) represents the fraction of foreign-owned homes that are not occupied by locals, either because they are used as secondary residences by foreign buyers, or government puts low weight on housing for not-yet-landed immigrants. When this fraction is larger, foreign buying is less helpful to affordability. It is difficult to know what fraction of the stock represents primary residences for not-yet-landed immigrants, but the fraction of homes left empty most of the year is measured by nationality status by the B.C. Finance Ministry as part of administration of the Speculation and Vacancy Tax.

Owners of homes that are not primary residences are subject to extra taxes in certain jurisdictions in Ontario and B.C., and foreign owners of Canadian homes left vacant more than half of a year are subject to a federal "Underused Housing Tax." In Vancouver, there is a third, municipal empty homes tax. If these taxes are high enough, units will be rented or sold to locals (such that z is close to zero), or the tax revenue should be sufficient to leave local residents better off than if the unit were owned by a local. However, if empty home taxes are set at a sufficiently low level, foreign owners may leave homes empty, and the tax revenue may not be sufficient to compensate locals for the loss of housing stock.

In the presence of the B.C. empty homes tax regime, foreign, non-resident owners who retain their properties most commonly rent them out to locals. Per Speculation and Vacancy Tax Annual Mayors Consultation - Technical Briefing (2019), of 3,709 foreign owners deemed subject to the empty homes tax in 2018 in B.C., a large majority no longer held empty homes in 2019. 1,205 of these foreign owners subject to the Speculation and Vacancy tax transitioned to renting their homes out in 2019, 1,413 sold their property, 951 remained

subject to the tax, and 66 transitioned to using the home as a primary residence. Perhaps through "burnout" just over half of 1,308 foreign owners deemed subject to the tax in 2020 remained subject to the tax in 2021. Overall, for the 2021 tax year, roughly 5.5% of declared foreign owners homes' were deemed empty. Of the remaining 94.5%, it is not clear what fraction correspond to the non-local measure z: whether a non-permanent resident living a home regularly should be deemed part of the local demand curve is a political question.

## 4.5 Back-of-the-envelope calculations of foreign buyer effects on affordability

With a rough idea of plausible magnitudes of key parameters in equation (??) in hand, we can perform back-of-the-envelope calculations suggestive of the net effect of foreign buying on housing affordability for locals in the Greater Vancouver context. As described above, the magnitude of the product of three terms governs being greater than or less than one determines whether a small increase in foreign buying improves or worsens local affordability, per equation (??).

For Greater Vancouver, at Paixao (2021)'s estimate of a supply elasticity of .65, the product of the terms representing the premium paid by foreign buyers and domestic occupancy intensity in equation (??) would have to be roughly 1.5 or greater to yield a positive effect of foreign buyers on local prices. We do not know either of the components of that product, but there is evidence that the foreign buyer premium within buildings is not large on account of purchase of different units. Also, foreign buyers represented roughly 15% of the market over a sampled period prior to implementation of B.C.'s Foreign Buyer Tax. At a 10% foreign buyer premium and  $1 - \alpha = .85$ , the local occupancy of foreign-owned units z would have had to have satisfied:

Vancouver supply elasticity modest foreign price premium 
$$\times \underbrace{\frac{1 - .15z}{z}}_{\text{Domestic occupancy}} \ge 1$$
 (4)

$$z \le \frac{.65 \times .1}{1 + .65 \times .1} \approx .06 \tag{5}$$

Notably, even with the speculation and vacancy taxes in B.C., in 2021, roughly 5.5% of foreign-owned homes were deemed empty. Suggesting roughly zero local affordability effect of foreign buying at the pre-foreign buyer tax levels of investment, and a modestly positive effect with almost no foreign buying. This suggests that one, but not both of a foreign buyer tax or a vacancy tax is required to avoid adverse foreign buying impacts on local affordability.

#### 5 Conclusion

A simple model of foreign purchases reinforces natural intuitions that foreign buyers can act to stimulate supply, and thus enhance affordability for locals when the foreign buyers are a small part of the market, when they pay much more than local residents would for homes in the same buildings, when housing supply is elastic with respect to price, and when a large fraction of foreign-purchased homes are rented to locals or sold soon after buildings are constructed. In this framework, preconstruction purchases by foreign (or domestic) buyers followed by assignment to local buyers prior to completion should have purely positive affordability effects, so "flipping" taxes such as B.C.'s should presumably exempt presales.

Foreign buyers in Canada are concentrated in housing markets with relatively low supply elasticities, and most of the variation in the value of apartments owned by non-residents is explained by location and building age, not different unit quality. These facts suggest that in the absence of empty homes taxes, foreign buyers are unlikely to provide little affordability benefit to locals through a net supply channel, unless they face significant price discrimination in the preconstruction market. However, in the presence of empty homes taxes, the large majority of foreign owners appear to either use homes year round, rent them to locals, or sell. Empty homes taxes thus seem likely sufficient to avoid adverse affordability effects of foreign ownership and in their presence it is not out of the question that taxes or restrictions on foreign buying may harm affordability.

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