

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 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.”¹

There are theoretical and empirical reasons to expect foreign buyer taxes to succeed in bringing down 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.²

Existing studies of the impact of the entry and exit of foreign buyers on local home prices present estimated effects that range from modest to quite large, as summarized in **DavidoffZheng**. Li, Shen, and C. Zhang (2023), Gorback and Keys (2020), **pavlovImmigrationFlows**, 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 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), **andalfattoEstimatingEffectMetro2023**, 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.

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 effect of out of town buyers is moderate because local investors are highly price sensitive in their demand 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.

At the time of writing, the market for condominiums in Vancouver and Toronto are so

¹ (n.d.).

²It 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.

weak that construction has stopped. While indicative of falling prices, the lack of condo presales 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. 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 their taxation adverse effects on housing affordability for locals. QUOTE GOODMAN AND RENNIE HERE

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.³ 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 occupied space. 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 crowding out local demand. This would be a variant of the positive “pecuniary externality”

In the next sections, we review some available economic evidence on the extent to which the channels alluded to above are operative in the Vancouver housing market.

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

As discussed above, foreign buyers may or may not compete for the same units as locals, and may rent the homes they own to locals. A simple model provides a way to organize data to evaluate likely affordability effects of taxes and quantity restrictions on foreign buyers.

Suppose that there is a very large number of potential foreign buyers with infinitely elastic demand for housing units at a price of p_f , assumed always higher 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 α in each building is then determined by a government policy, here assumed to be exogenously chosen.⁴

Developers charge different prices to foreign and local buyers. This could arise through 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. Second, developers might market a fraction of presale

³This observation is echoed in the BC context in a policy brief, **Goodman**.

⁴**FavilukisVanNieuwerburgh** allow foreign demand to be affected by the local price and by an time-varying exogenous factor.

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.⁵

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 owned 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 prioritizing renters. 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 units to rental is not undesirable.⁶

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

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

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 (1) indicates that the effect on local prices of a small increase in the foreign buyer share depends is:

$$\frac{dp_l}{d\alpha} = - \frac{-z q_s + [1 - \alpha z] q'_s [p_f - p_l]}{[1 - \alpha z] [1 - \alpha] q'_s - q'_l}. \quad (2)$$

The denominator of the right hand side of equation (2) is positive as long as supply slopes up and local demand slopes down in price. The numerator of the right hand side of equation (2) is negative, so that price falls with an increase in the permitted foreign share, if:

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

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 (α is low), or foreign owners commonly rent to locals and that arrangement is not viewed as objectionable.

⁵An allegedly common practice, see, e.g. <https://vancouver.citynews.ca/2017/06/06/developer-intend-give-over>

⁶Indeed, 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.

3 Some evidence on the determinants of foreign buyer affordability effects

3.1 Supply elasticity

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 1 plots that elasticity against non-resident ownership.⁷ 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 (??)). 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%.

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

Equation (3) suggests that foreign buyers can have a positive supply effect when the units in which they stimulate supply are largely occupied by locals (where αz is close to zero). If foreign buyers pay higher prices than local primarily because they occupy different buildings than locals, it is not easy to see a positive supply effect for locals.⁸

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 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.⁹ 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-

⁷As in `paixao2022housing`, two outliers with extremely high supply elasticities are omitted.

⁸`FavilukisVanNieuwerburgh` account for the job creation effects of the supply effect when foreign buyers purchase homes.

⁹If there were only one transaction for each building with a transaction in a given year, the red and green lines would coincide.

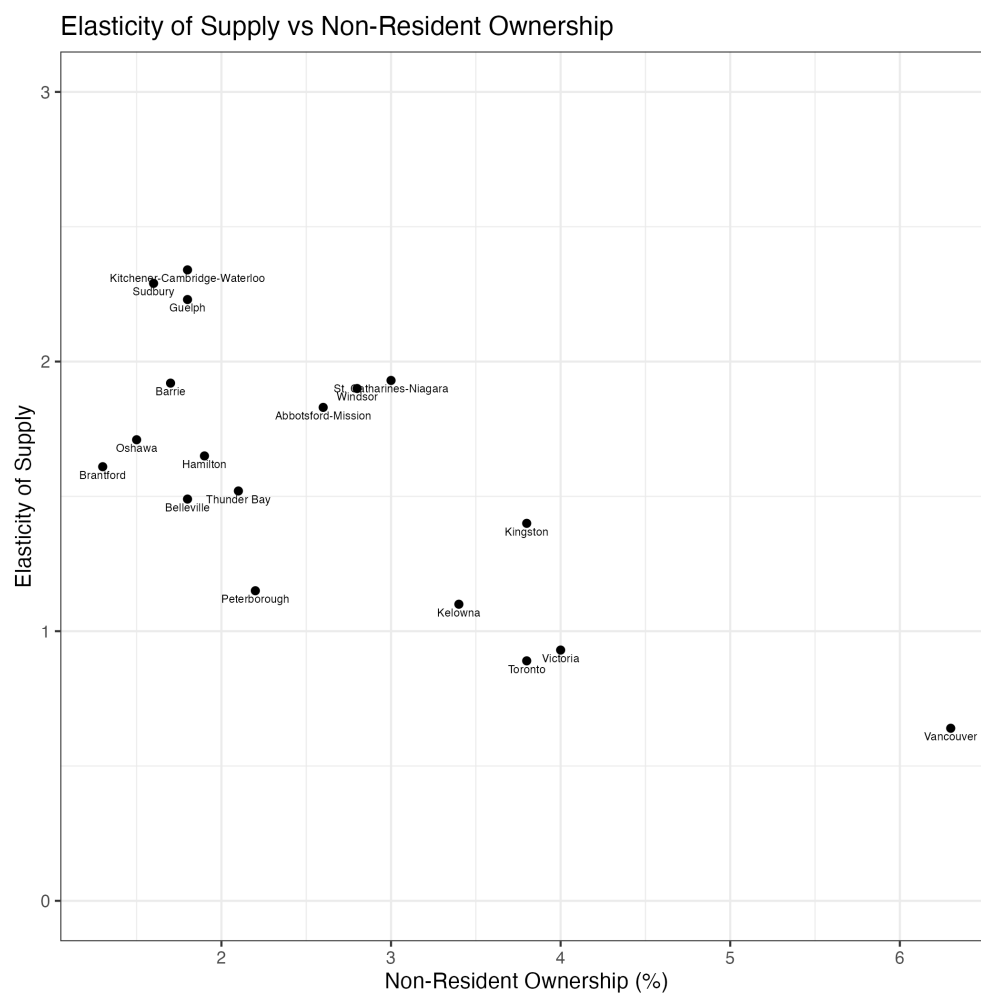


Figure 1: Non-resident ownership and housing supply elasticity in Canadian CMAAs. Sources: Paixao (2021) and CHSP table “Residency participation of residential properties, by property type and period of construction” for 2018 estimates. (charted values of elasticities merged on CMA names by ChatGPT).

resident buyers do in the CHSP data),¹⁰ 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 3 provides a bit more support for the notion that foreign buyers drive within-building price variation. There, data are restricted to 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. While there is not a clear effect of the tax *per se*, it is clear that the share of all price variation explained by within-building variance was growing prior to the implementation of the tax, at the same time that foreign buyers was likely growing.

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. While we cannot observe building-level data, we can ask what fraction of price differences 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' have 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.¹¹

4 Stock and flow of foreign purchases in Greater Vancouver

For the years starting in 2018, the Canadian Housing Statistics Program has used its access to ownership data on the universe of Canadian residences to publish statistics on ownership by residency status in Canada. This is an approximation of foreign ownership, because some

¹⁰See also

¹¹A 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.

Figure 2: labelfig:varianceDecomposition Variance decomposition of log resale transaction prices in Greater Vancouver, 2010-2023.

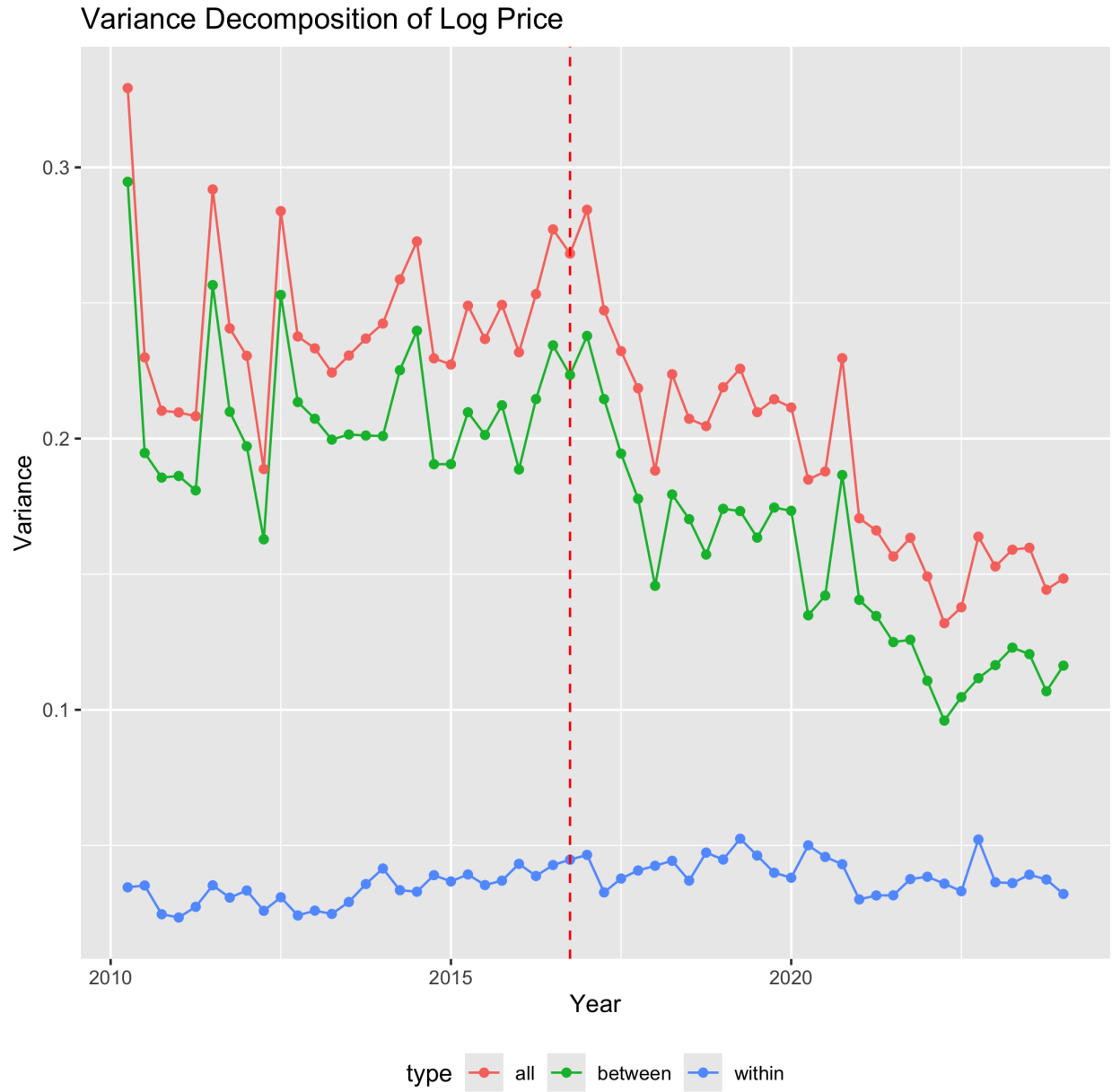


Figure 3: Variance decomposition of log transaction prices in Greater Vancouver, 2010-2023, transactions in buildings less than five years old at time of sale (but resale transactions only) only.



Table 1: Fraction of residential transactions in Metro Vancouver with foreign participation, per BC 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%

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. Thus CHSP represents an approximation of the stock of “foreign” ownership over time. Unfortunately, the stock measure is not readily available prior to 2018. 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%.

The apparent declining stock of foreign ownership as a share of all residences (as proxied by nationality) 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 1. COVID and the national foreign buyer ban have likely contributed to the decline over time in foreign participation.

5 Do foreign buyers leave homes empty?

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.” 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, 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.

5.1 Presale flips

Another politically unpopular group of housing investors ... that is British Columbia has implemented an additional tax on profits from capital gains on homes held for less than two years. That tax applies also to flipping presale contracts

6 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 more than 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-owned homes are rented to locals. 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.

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 likely to have little benefit to locals through a 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.

References

- (N.d.).
- Badarinza, Cristian and Tarun Ramadorai (2018). “Home Away from Home? Foreign Demand and London House Prices”. In: *Journal of Financial Economics* 130.3, pp. 532–555.
- Best, Michael and Henrik Kleven (2018). “Housing Market Responses to Transaction Taxes: Evidence From Notches and Stimulus in the U.K.” In: *The Review of Economic Studies* 85.1, pp. 157–193.
- Dachis, Ben, Gilles Duranton, and Matthew A. Turner (2012). “The effects of land transfer taxes on real estate markets: evidence from a natural experiment in Toronto”. In: *Journal of Economic Geography* 12.2, pp. 327–354.

- Davidoff, Ian and Andrew Leigh (2013). “How Do Stamp Duties Affect the Housing Market?” In: *The Economic Record* 89.286, pp. 396–410.
- Du, Zaichao, Hua Yin, and Lin Zhang (2022). “Foreign buyer taxes and house prices in Canada: A tale of two cities”. In: *Journal of Housing Economics* 55, p. 101807. ISSN: 1051-1377. DOI: <https://doi.org/10.1016/j.jhe.2021.101807>. URL: <https://www.sciencedirect.com/science/article/pii/S1051137721000620>.
- Favilukis, Jack and Stijn Van Nieuwerburgh (2021). “Out-of-Town Buyers and City Welfare”. In: *Journal of Finance* 76.5, pp. 2577–2638.
- Gorback, Caitlin and Benjamin Keys (2020). *Global Capital and Local Assets: House Prices, Quantities and Elasticities*. Working Paper 27370. NBER.
- Hartley, Jonathan S. et al. (2022). *Do Foreign Buyer Taxes Affect House Prices?* Tech. rep. Stanford.
- Kopczuk, Wojciech and David Munroe (2015). “Mansion Tax: The Effect of Transfer Taxes on the Residential Real Estate Market”. In: *American Economic Journal: Economic Policy* 7.2, pp. 214–257.
- Li, Zhimin, Leslie Sheng Shen, and Calvin Zhang (Aug. 2023). “Local Effects of Global Capital Flows: A China Shock in the U.S. Housing Market”. In: *The Review of Financial Studies* 37.3, pp. 761–801. ISSN: 0893-9454. DOI: 10.1093/rfs/hhad067. eprint: <https://academic.oup.com/rfs/article-pdf/37/3/761/56670052/hhad067.pdf>.
- Matheson, Darcy (2016). *Majority of foreign buyers from China, new real estate data reveals*. URL: <https://bc.ctvnews.ca/majority-of-foreign-buyers-from-china-new-real-estate-data-reveals-1.2977337>.
- Paixao, Nuno (2021). *Canadian Housing Supply Elasticities*. Staff Analytical Note 2021-21. Ottawa, Ontario, Canada: Bank of Canada. DOI: 10.34989/san-2021-21. URL: <https://www.bankofcanada.ca/wp-content/uploads/2021/09/san2021-21.pdf>.
- Pavlov, Andrey, Tsur Somerville, and Jake Wetzel (2023). “Foreign Buyer Taxes and Housing Affordability”. In: *Real Estate Economics* (). ISSN: 1540-6229. DOI: 10.1111/1540-6229.12468. (Visited on 12/28/2023).
- Speculation and Vacancy Tax Annual Mayors Consultation - Technical Briefing* (Dec. 2019). 2019 Tax Year. URL: <https://www2.gov.bc.ca/assets/gov/taxes/specialty-taxes/svt-annual-mayors-consultation-technical-briefing-2019.pdf>.