Residential Rental Tenure Zoning: The Economic Effect on the Delivery and Maintenance of Rental Housing

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Abstract

Multiple jurisdictions in BC are considering using Residential Rental Tenure Zoning (RRTZ) to protect tenants of older building from displacement for condominium redevelopment as well as to expand opportunities for new rental housing development. This study addresses three concerns regarding RRTZ: first, the destruction of land value from elimination of a condo redevelopment option through "spot" RRTZ of existing rental buildings might jeopardize property owners' ability to reinvest in older properties or finance the construction of new purpose-build rental properties. Second, "blanket" RRTZ might slow the pace of housing development where applied, and third blanket RRTZ might reduce the available proceeds from density bonusing.

1. Executive Summary

A tool like Residential Rental Tenure Zoning (RRTZ) does not appear to have ever been implemented anywhere else worldwide, therefore it is not possible to do a quantitative assessment of its effects over the long term. However, using financial analysis and available market statistics, it is possible to draw some conclusions about the likely impacts of RRTZ on various outcomes important to municipalities.

When RRTZ removes the option of redevelopment to condo, this can only reduce the profitability of redevelopment, thereby delaying the redevelopment of purpose-built rental (PBR) buildings. Delaying the wide-spread redevelopment of buildings leading to the displacement of tenants is a key rationale for spot RRTZ.

There are real and potential costs associated with RRTZ that municipalities need to monitor:

1. Removing the option to develop condos will both slow the pace of housing supply and reduce proceeds available to municipalities through the exchange of newly permitted density for community amenity contributions, density bonus charges, or the like.
2. Under RRTZ that prohibits condo redevelopment, delayed redevelopment of PBR until new rents get high enough could destroy up to 40% of a landowner's redevelopment value, especially if a property's age and location make it a prime candidate for redevelopment.
3. Delaying redevelopment creates incentives for landlords to invest in maintaining and improvements to their building, but cash-strapped or unscrupulous landlords may be incentivized to reduce maintenance so a building becomes unsafe to the point where major repairs are required. “Renoviction” could occur in these circumstances without tenant protections when a landlord seeks to ask higher rents of new tenants after displacing tenants for major repairs
4. We expect that RRTZ will not impact landlords' ability to pay for building improvements through mortgage financing except in special circumstances. However, depreciated buildings in desirable locations, those that RRTZ most aims to protect, should be monitored for signs of lost borrowing potential.
5. Spot RRTZ may well serve to protect incumbent renters in older buildings and, by extending the lifetime of existing rental buildings, RRTZ provides an increased incentive to perform maintenance. However, if the objective is to encourage development to create housing units and obtain revenue from density bonusing, blanket RRTZ may be counterproductive.

2. Introduction

In 2007, the Union of BC Municipalities passed a resolution to request the Province to give local governments the power to regulate residential rental tenure through zoning. In June 2018, the Province provided the power for municipalities to limit the form of tenure to rental within a zone or part of a zone in which multifamily is allowed. The legislation allows for the flexibility to apply across multiple properties, single properties, or to a specific number of units within a property.

New Westminster was the first municipality to apply RRTZ zoning. The city applied the zoning to six existing stratified rentals, resulting in strong backlash in the form of a lawsuit by the property owners. Burnaby has started to use RRTZ both to protect existing rentals and as a form of density bonusing, allowing additional units to be built within strata condominium (condo) projects, but with those additional units zoned for rental use. Other jurisdictions, including Richmond and Victoria are exploring the use of RRTZ.

A tool like RRTZ does not appear to have ever been implemented anywhere else worldwide, therefore it is not possible to do a quantitative assessment of its effects over the long term. However, using financial analysis and available market statistics, it is possible to draw some conclusions about the likely impacts of RRTZ on various outcomes important to municipalities.

There are two obvious rationalizations for RRTZ: to protect incumbent tenants in relatively affordable homes from displacement via redevelopment, and to ensure that some part of new supply is purpose-built rental (PBR) rather than stratified condominium (condo).

Both of these issues are real: a wave of evictions from older, relatively affordable rentals to make way for condos in Burnaby appears to have been an important political problem.[1] Older purpose-built rental stock is a relatively affordable form of private housing. However, it often exists in areas where redevelopment is likely to occur. Because condos have generally outbid PBR buildings for land in recent years, RRTZ may provide a way to make redevelopment less attractive thereby preventing or deferring the date at which it is profitable for owners to redevelop property and trigger tenant displacement.

CMHC data show that among units under construction in 2018 in Greater Vancouver, condos represented more than 3 times the number of PBR. The balance was close to even in Greater Victoria, however, and there has been growing interest in rental development around Vancouver as the condo presale market weakened through 2019.[2]

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[1]See, for example, "Burnaby renters declare victory: We evicted Derek Corrigan", Carlito Pablo, *The Georgia Straight*, October 24, 2018.
[2]"Units under Construction: By Intended Market" CMHC data table https://www.cmhc-schl.gc.ca/en/data-and-research/data-tables/units-under-construction-intended-market.

Section 2 of this study addresses concerns related to "blanket" RRTZ, imposed on entire neighbourhoods. Removing the option to develop condos will both slow the pace of housing supply and reduce proceeds available to municipalities through the exchange of newly permitted density for community amenity contributions, density bonus charges, or the like.

Section 3 study addresses a concern raised by some operators, that RRTZ may harm renters in two ways: first, by weakening rental building owners' ability or incentive to invest in improving or maintaining existing rental buildings while leaving tenants in place, and second by reducing operators' ability to use equity built up in operating properties to invest in new rental development.

This study does not address at length the question of whether RRTZ is the best tool available for the two goals of protecting incumbent tenants and guaranteeing that new buildings are PBR rather than condo. Whether alternative means of preserving existing units, such as Vancouver's "rate of change" regulations, or Burnaby's updated Tenant Assistance Plan are sufficient is an interesting question for future research. Similarly, we do not explore the merits of a preference for PBR over condo; of course without that objective blanket RRTZ would not be sensible.

Section 4 briefly notes a concern raised by both market landlords concerning the general business environment in B.C.

3. RRTZ and the timing and profitability of redevelopment

Summary

Delaying major redevelopment of buildings that leads to removal of tenants is a key rationale for spot RRTZ. If redevelopment is delayed, rental properties continue to generate revenue, but the potential to generate returns through redevelopment goes unrealized. Given that redevelopment takes time, and market rates can change during that time, waiting to redevelop becomes more attractive if the there is uncertainty about the future rate of return of redevelopment, especially if the return of redevelopment could go down.

RRTZ removes the option of redevelopment to condo, and hence can only reduce the profitability of redevelopment. The gap between the higher profitability of redevelopment to condo vs PBR depends on location and construction materials. The biggest gaps are found in desired locations for taller concrete buildings. The difference in profitability should not be taken for granted as fixed because it is subject to influence in favour of condo or PBR depending on provincial and federal support for rental construction, interest rates, rent control and taxation

It is expected that redevelopment will take place when the profitability of redevelopment is large enough to outbid the current use of PBR as a holding property. Applying RRTZ to a property is expected to delay redevelopment in a situation where profitability is large enough to trigger immediate condo redevelopment. Should the profitability of new rental outpace construction costs and existing net operating income (NOI), this should trigger redevelopment to PBR.

Under RRTZ that prohibits condo redevelopment, delayed redevelopment to PBR until new rents get high enough could destroy up to 40% of a landowner's value, especially if a property's age and location make it a prime candidate for redevelopment.

Whether or not RRTZ would consistently incentivize spending on PBR maintenance is unclear. Removing condo redevelopment as an option would delay redevelopment, which would provide an incentive to invest in maintenance improvements to maintain existing rents over an extended period of time. Conversely, under rent control in a market where rents have risen sharply and redevelopment has been delayed, an unscrupulous landlord could be incentivized to reduce maintenance so a building becomes unsafe to the point where major repairs require the removal of tenants, or renoviction, and higher rents can be asked from new tenants.

Analysis

Delaying major redevelopment of buildings that leads to removal of tenants is a key rationale for spot RRTZ. On the other hand, a risk with blanket RRTZ is that by making redevelopment less profitable, municipalities will see less new supply and less revenue from upzoning.

To see why RRTZ might postpone the date of development, note that the value of a property can be split into two components:

The present value of rents net of expenses and improvements from its current use through the date of redevelopment, plus

The value of the "residual" land value (value of redeveloped property minus construction and other costs) at the optimal redevelopment date discounted back to the present.

To provide an example, consider a property that has a current net operating income of $100,000 per year. If that income is expected to grow at 3% per year, and that income is discounted at a rate of 6% per year,[3] Suppose further that the property is expected to be

[3] Discount rates are greater than cap rates because the latter incorporates expected growth. Rent control does not affect the long-run rate of rental income growth, but a recent reduction in the growth formula for rent control will have adverse short-run effects on growth. A 6% discount rate combined with 3% conjectured growth would support a 3% cap rate.

redeveloped in 7 years to a floor space ratio (built square feet per land square foot, "FSR") of 2.5 in 10 years, with a total project cost (excluding land, but including soft costs and developer profits) of $500 per square foot and sales revenues of $1,000 per square foot, over a 20,000 square foot lot. The value of that property would be:

$$Value = \underbrace{\sum_{t=1}^{7} 100{,}000 \frac{1.03^t}{1.06^t}}_{\text{Present value current use rents}} + \underbrace{2.5 \times [1{,}000 - 500] \times 20{,}000 \times \frac{1}{1.06^7}}_{\text{Discounted value of future redevelopment}}$$

$$Value = \$625{,}082 + \$16{,}626{,}428 = \$17{,}251{,}513$$

Waiting to redevelop means that the first component of value, net operating income ("NOI") from the current use, is enjoyed for another interval of time. On the other hand, the second component of value, the residual land value from redevelopment, goes unrealized for another interval of time, during which it may rise or fall in value. Waiting to redevelop will be more attractive if there is greater uncertainty over changes in future redevelopment value, since there is the option of retaining the current use should conditions worsen. We thus expect the date of redevelopment occurs when:

$$\underbrace{\text{Current NOI} + \text{expected capital gains on land}}_{\text{Gain from waiting to redevelop}} \leq \underbrace{\text{discount rate} \times \text{residual land value}}_{\text{Cost of waiting to redevelop}} \quad (1)$$

These considerations are illustrated in Figure 1

3.1. Impact of RRTZ on the profitability of redevelopment

3.1.1. Value of condo versus PBR

RRTZ removes the option of redevelopment to condo, and hence can only reduce the profitability of redevelopment. How large the effect on residual land value is depends on the difference in value per square foot between PBR and condo and any differences in size between a new condo versus PBR building that may arise from profit and zoning considerations. The value of condo space per square foot can be measured by (pre-)sale prices. The value of PBR to developers depends on a conjectured rent per square foot as well as a "capitalization rate" or "cap rate", that follows the definition:

$$\text{Market value of PBR} = \frac{\text{NOI}}{\text{cap rate}}$$

(2)

A recent Coriolis report (Coriolis Consulting Group (2014) highlights the difference in profitability between condo and PBR redevelopment in Greater Vancouver given prevailing condo prices, rents, and developers' cap rate requirements. That difference is quite sensitive to context, but generally positive. For low-rise, wood frame buildings in Surrey, Coriolis estimates a strata sale price of $630 per square foot. Rental rates per square foot per year (inclusive of parking and net of expenses) are assumed to be approximately $23 per year at that lower end of the new housing spectrum. With the further assumption that developers require a 4% cap rate to invest, that equates to $\frac{23}{.04} = \$575$.

Figure 1: Redevelopment timing

Asset value =

Discounted net operating income (NOI) up to redevelopment	+	Discounted residual land value at date of redevelopment
Existing building maintained: NOI > (Highest and best use value minus redevelopment cost) × (discount rate – growth rate)		Redevelopment date: NOI = (Highest and best use value minus redevelopment cost) × (discount rate – growth rate)

The gap between the capitalized value of rents and condo prices is viewed as larger for more desired locations and taller concrete buildings. In the case of Kingsway, Burnaby,

Coriolis suggests condo prices of $1,150 per square foot versus per square foot versus annual net rent of $31.5 per square foot with a capitalized value of roughly $785.

It is not a certainty that capitalized per square foot PBR NOI will always be less valuable than condo square footage. In the U.S., a majority of multifamily construction is rental rather than condo. For example in Seattle, U.S. Census data reveal that more than 95% of units in new multifamily homes built in each year between 2012 and 2016 were rented. Here, the provincial and federal governments have invested considerable resources into spurring rental construction. Should interest rates increase, tax deductibility that exists for landlords but not owner-occupiers would rise as a balancing force. Rent control is a factor, too.

To see the sensitivity of the condo-PBR valuation spread to economic conditions, note that as of early 2019, Colliers Valuation and Advisory Group (2019) reported cap rates for high rise apartments as low as 2.25% in Vancouver, such that net rents of $31.5 would be

translated into values of $\frac{31.5}{.025} = \$1{,}260$ per square foot. On the other hand, a cooler market, Edmonton reported low rise cap rates between 5.25% and 6.25%. At a cap rate of 5.75%, the same $31.5 net income would correspond to a price of only $\frac{31.5}{.0575} = \$548$. As there is a lack of data on rents for newly completed buildings, transactions are not very common, and cap rates are known to be volatile, we must recognize considerable uncertainty over any case study comparisons. This is an important limitation to this and any other study anticipating the impacts of RRTZ.[4]

3.1.2. A model for redevelopment trigger values

Figure 2 plots on the horizontal axis the current net income of an existing property per square foot of land. This value is the product of the existing FSR and NOI per existing built square foot. The vertical axis plots price or capitalized NOI per built square foot. The dashed line plots the required value to trigger redevelopment to a 5 FSR concrete tower. The solid line plots the required value to trigger redevelopment of a 2.5 FSR wood frame building. Crucially, the option-adjusted discount rate net of expected growth is assumed to be 1.25% greater than the growth rate of net rents and prices.[5] For a larger discount rate, or lower expected rent growth, or lower option value to waiting, the trigger price would be lower. If discount rates are lower, expected rent growth is greater, or option value to waiting is greater, then the trigger price to redevelopment would be greater. Again, considerable uncertainty over these parameters must be recognized.

For higher (lower) allowable FSR, the dashed and solid lines would be shifted downwards (upwards), as with more (less) density, a lower (higher) trigger price is required for any given current NOI for redevelopment.

3.2. RRTZ and land lift

Figure 2 shows that if a site could not previously be redeveloped due to low density zoning, but gets rezoned to 2.5 (5) FSR the vertical distance between market value per built square foot and the dashed (solid) line should represent a land owner's willingness to pay per allowed square foot for the rezoning. For values under these lines, there will be no redevelopment, so willingness to pay would be zero. RRTZ will thus reduce charges available through selling extra density by the allowable density times the difference in value between PBR capitalized NOI per square foot and condo price per square foot.

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[4] The problem of real estate valuation in markets featuring low interest rates and high growth rates is discussed in Himmelberg, Mayer, and Sinai (2005). Small changes in assumptions driving cap rates will have very large effects on valuation in that case. Given treasury yields less than target inflation rates and a natural expectation that rents will rise in real terms, it is extremely difficult to pin down an appropriate valuation.

[5] Cap rates vary considerably across markets and reflect discount rates and expected growth. However, cap rates are not necessarily informative for the option value of waiting to develop due to uncertainty over prices. This is an important and unavoidable source of model uncertainty that plagues any similar analysis.

The Coriolis study provides some bounds. For example, the Surrey capitalized rental value of $575 would only provide land lift on properties where current NOI (or the annualized value of alternative use) is less than approximately $5 per square foot. To see this, observe that at a value of $575, redeveloping immediately is roughly as valuable as waiting for more favorable development circumstances and earning NOI of $5 per land square foot. This would be an unusual property in an urban or dense suburban setting such as Victoria, North Vancouver, or Richmond. On the other hand, even at a current NOI of $20 per unit of land area, a condo value of $1,000 per square foot would generate a lift of roughly $200 per buildable square foot from the right to build at 5 FSR, but would likely not be redeveloped at 2.5 FSR. In section 6 we enumerate some more detailed cases of changes in land lift arising from RRTZ.

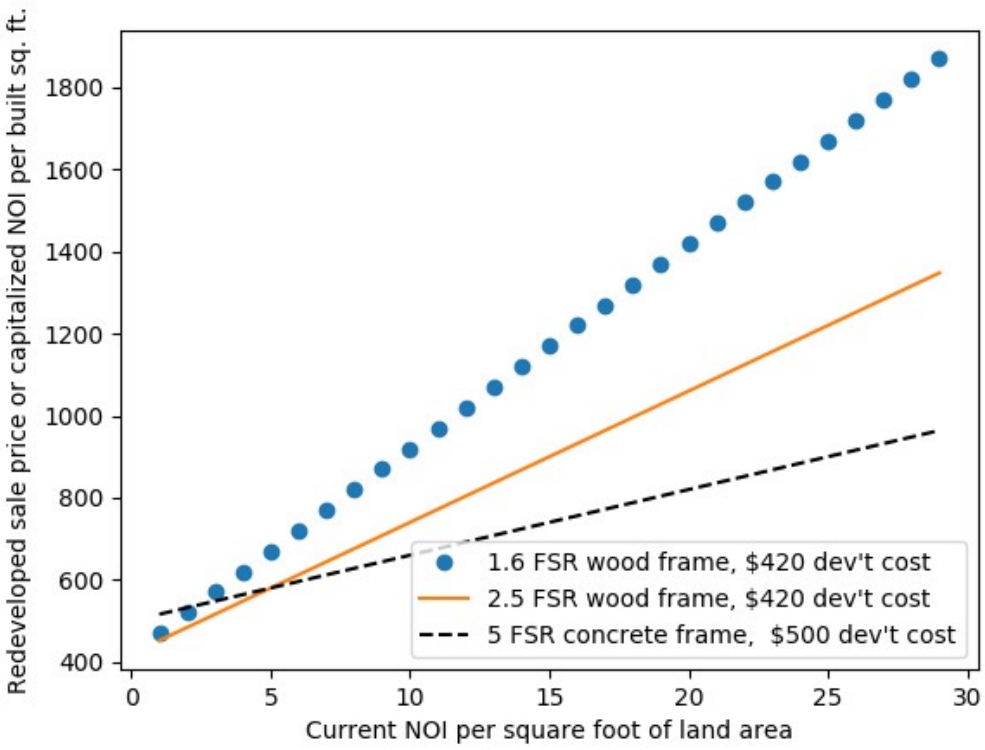
3.3. Impact of RRTZ on the timing and pace of redevelopment

Equation (1) and Figure 1 show that properties will be redeveloped when the profitability of redevelopment is large enough relative to current net operating income. If capitalized rents are less than new prices, as in the Coriolis examples, then capitalized rents may lie below the trigger value for redevelopment even if condo redevelopment would occur immediately. Under RRTZ, then, redevelopment will be delayed after enough time and if capitalized rents grow faster than construction costs and existing NOI. Those are likely conditions, but it is difficult to provide much certainty as to the timing of rental redevelopment when it is not currently profitable. Roughly speaking, we might expect redevelopment under RRTZ when capitalized rents equal today's breakeven value. For example, if condo prices equal a breakeven value of $900 and capitalized rents are $700 per square foot, and market rents grow at 2% above inflation with constant cap rates, development would be delayed until the date t when $700 \times 1.02^t = \$900$, or roughly 13 years.

All else equal, equation (1) will be satisfied and redevelopment will occur at an earlier date when the residual land value from redevelopment (on the right hand side of equation (1)) is greater. Because condos appear to outbid PBR for land, banning condo use on a site should delay redevelopment by reducing redevelopment value. In Figure 2, that will tend to push the date of redevelopment further to the right. A caveat to the conjecture that redevelopment will be delayed by taking condo off the table is that if condo prices are not only higher, but are expected to grow faster than rental buildings, then the gain to waiting to redevelop may be diminished by RRTZ.[6]

[6] For example, it is possible that rent control could render rental growth rates lower than condo growth rates. In a steady state, rent control does not affect rent growth, as the effect of replacing long-term tenants with large mark-to-market increases offsets the effect of lower rent growth among remaining tenants. For the next decade or so, though, the effects of the recent strengthening of rent control will lead to artificially low rental growth.

Figure 2: Required new construction value to trigger redevelopment of a property. Horizontal axis represents NOI per existing square foot of land (existing FSR × current NOI per square foot). Vertical axis represents value or capitalized NOI per newly built square foot. The dashed line represents the required new value to trigger redevelopment for a new 5 FSR concrete building that costs $500 all-in to develop per square foot. The solid line represents the required new value for a 2.5 FSR wood frame building at $420 in development costs per square foot. The dotted line represents the trigger valuations for redevelopment at a 1.6 FSR. Discount rate is assumed to be a 3.75% spread per year above a 10-year treasury yield of 1.75%, option-adjusted growth of NOI and prices assumed to equal inflation of 2% plus 2%.



3.4. Impact of RRTZ on property value

Revisiting the example above, where a property was to be held 7 years and then redeveloped to condo, suppose that with RRTZ, redevelopment will be delayed an additional 10 years, as capitalized rents catch up with condo prices. Retaining the assumed discount rate of 6% and rent growth of 3%, the value would now be:

$$Value = \sum_{t=1}^{17} 100{,}000 \frac{1.03^t}{1.06^t} + 2.5 \times [1{,}000 - 500] \times 20{,}000 \times \frac{1}{1.06^{17}}$$

Present value current use rents

Discounted value of future redevelopment

$$Value = \$1{,}325{,}923 + \$9{,}284{,}110 = \$10{,}610{,}034$$

In that case, there is a very large destruction of value of roughly 40% from the condo eligible value of $17,251,513. This, of course, is only intended as an illustrative example, but might not be atypical for properties very close to the end of their current lives and in prime redevelopment locations.

3.5. Incentive to spend on maintenance

Ignoring the changes to leverage capacity induced by RRTZ, there is a question of the economic incentive to maintain or improve a building with tenants in place. Some, e.g. Partners for Rental Housing (2019) argue that maintenance expenditures will be reduced due to diminished land values. A natural conjecture, however, is that by delaying the date of redevelopment the present value of net income increases from maintenance will be *greater* with RRTZ than without. The sooner a building is to be replaced, the less benefit there is from investment in that building. Improvements at the same cost are more valuable when they will last longer.[7]

Industry participants have pointed to an interesting complication to this intuition, however. Unscrupulous or cash-constrained rental property owners might find it advantageous to reduce maintenance to such an extent that the building becomes unsafe without major repairs that necessitate removing tenants for a long period. If jurisdictions do not have in place protections for tenants in that case, a substantially repaired rental building could then be rented to new tenants at market rates. A building that would be redeveloped within, say 5 years to condo, however, would not warrant such a strategy: major repairs to mark rents to market would not be worth the capital expense. However, with condo redevelopment off the table, the benefits of increasing rents to current market levels would be longer-lasting. This complication to the analysis of condition (1) could conceivably arise due to incentives generated by strict rent control in an environment in which rents have been rising sharply.

3.6. Delay of Redevelopment and Risk of Catastrophe

Industry interviewees pointed out that many of the older, more affordable buildings that spot RRTZ will likely aim to protect are in poor condition. While low-income tenants may

[7] This is a distinction between an "income" or "wealth" effect (diminished property value) versus a "substitution effect" (greater incentive to maintain with a longer life). With efficient capital markets (e.g. wealth-constrained landlords sell their properties to those with deeper pockets), businesses do not respond to income effects. Put differently, the income effect from RRTZ is a "sunk cost" faced by landlords.

benefit from what is unfortunately a good match for their ability to pay in Greater Vancouver as long as the units are inhabitable, the units may be unsafe. The delay in redevelopment from destroying value upon redevelopment could run the risk of fire or other catastrophe.

4. Mortgage debt capacity

Summary

The amount a lender will provide through mortgage financing to a landlord to improve their building is bound by two factors: the first is the total value of the property, and the second is the income-generating potential of a building. Whichever of these two factor is deemed to be lowest will affect the amount a lender is willing to provide. In the case of applying RRTZ to a PBR building, we find that the income generating properties of a building limits borrowing potential well before the loss of property value due to prohibited condo redevelopment. By extending the lifetime of existing rental buildings, RRTZ provides an increased incentive to perform maintenance. It is not obvious that landlords will lose the ability to leverage their properties for maintenance and investment purposes, because under current conditions, operating income, rather than property value, is the dominant constraint in borrowing.

We expect that RRTZ will impact financing only in special cases, such as a large landlord operating in multiple jurisdictions, or if major capital repairs are imposed for earthquake safety. However, it is reasonable to conclude that there is a limited risk of lost borrowing capacity on depreciated rental buildings in desirable locations ripe for condo redevelopment; the buildings that RRTZ most aims to protect. Municipalities should monitor buildings such as this for outcomes that discourage sustained maintenance.

Analysis

Landlords frequently finance improvements in their building through mortgage debt. Generally, the maximum available mortgage finance will be the lesser of:

1. A fraction (loan-to-value "LTV") of market value. The allowable LTV will vary by project and lender, but 75% is a natural baseline as suggested by some interviewed industry participants.

2. A loan amount with payments such that net operating ("NOI") income is at least a fixed multiplier of principal and interest payments. The multiplier (debt service coverage ratio "DSCR") is typically required to be at least 1.2. [8]

RRTZ will have two primary impacts on debt capacity:

1. Removing the option to redevelop to condo can only reduce land value. To the extent a building is nearing the end of its life, this could be a large impact. This means a smaller loan is available under the LTV test
2. Reduced property value should lead to reduced assessments for properties not eligible for non-profit property tax exemption.[9] BC Assessment staff have informed us that zoning is part of property valuation and " any reduction in property values that might arise from limitation a restriction in use will be reflected through market evidence, over time. " Lower property taxes *raise* net operating income, all else equal, and thereby can increase the loan available through the DSCR test.

Thus, if LTV tests tend to bind, but not debt coverage tests do not, then the destruction of redevelopment value through RRTZ will tend to reduce debt capacity. However, if debt coverage tests are more commonly binding than LTV tests, a reduction in property value could perversely increase borrowing capacity through reduced taxes and increased net operating income.

Formulaically, the ratio of the maximum loan available under the LTV test to the maximum loan available under the debt coverage test can be written as:

$$\frac{\text{Loan LTV}}{\text{Loan DSCR}} = \frac{\text{Maximum LTV} \times \text{loan constant} \times \text{minimum debt coverage ratio}}{\text{cap rate}} \tag{3}$$

In equation (3), "loan constant" is the ratio of the loan payment to principal (the interest rate plus the first year's amortization as a fraction of the loan), and "cap rate" is the ratio of net operating income to property value.[10]

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[8] This is suggested by interviewees and conforms with standard CMHC terms – see https://assets.cmhc-schl.gc.ca/sf/project/cmhc/pdfs/content/en/standard-rental-housing.pdf.

[9] Our understanding is that even many non-profit rental providers are not exempt.

[10] To see this, note that: $cap\ rate = \frac{NOI}{Market\ Value}$ (4)

The LTV test requires: $Loan \leq Value \times Maximum\ LTV$ (5)

$$Loan = NOI \times \frac{Maximum\ LTV}{cap\ rate} \tag{6}$$

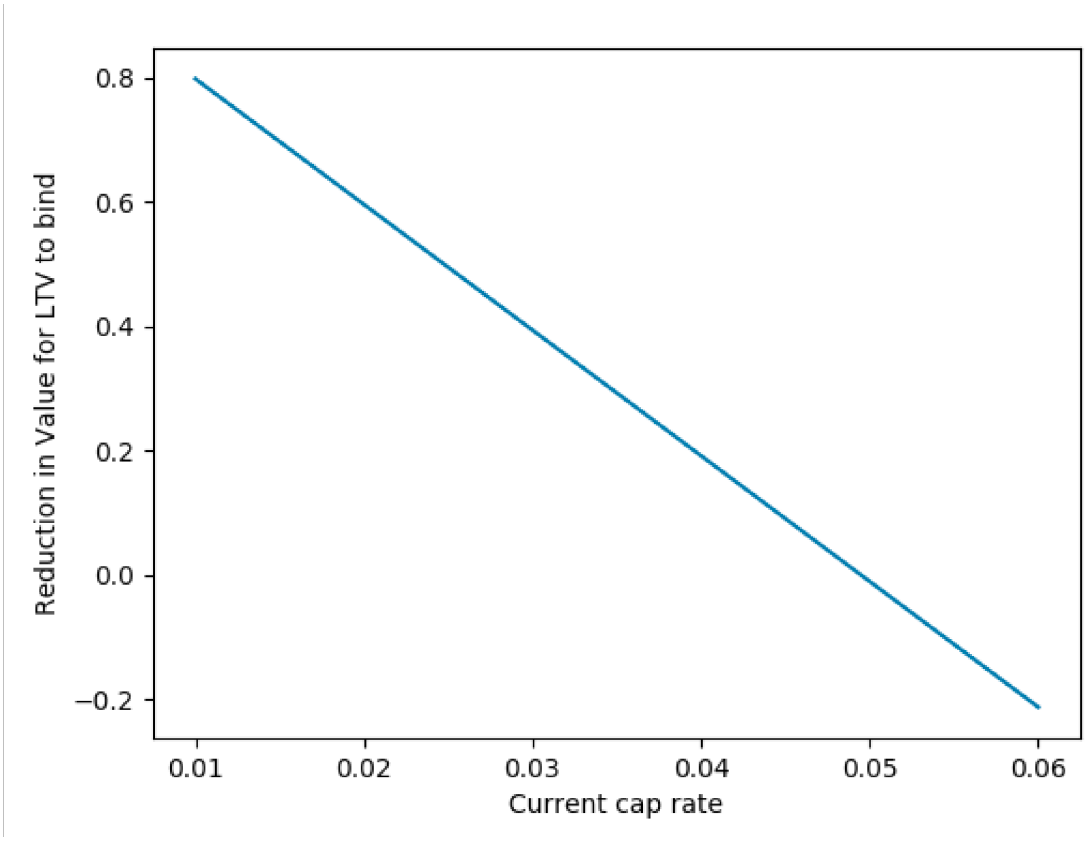
The DSCR test requires: $NOI \geq DSCR \times Loan \times constant$ (7)

$$Loan \leq NOI \times \frac{1}{constant \times DSCR} \tag{8}$$

Given prevailing values for the maximum LTV and minimum debt coverage ratio, the question of whether the LTV or debt service coverage ratio test is binding comes down to the ratio of the loan constant to the cap rate ($1.2 \times .75$ is close to one). If the loan constant is greater than the cap rate on a building, then a small change in value will not reduce borrowing capacity.

Figure 3 plots the required percentage reduction in property value required for the LTV test rather than the DSCR test to bind given a 1.2 DSCR, a .75 LTV, and a 5.5% loan constant.

Figure 3: Required reduction in property value for LTV test to bind and RRTZ to diminish debt capacity.



Current lending terms and apartment cap rates suggest that for most, but not all properties, the debt service coverage ratio test binds and not the LTV test. For a 25-year amortizing loan at an interest rate of 3%, the loan constant would be roughly 5.75%. Collier's estimates cap rates for multifamily properties around Vancouver between 2.25% and 4%

for Quarter 2, 2019. Collier's estimates cap rates of 4.5% for low rise buildings in Victoria.[11] For older properties, particularly in suburban areas, cap rates may be as high as 5.5% based on discussions with owners and lenders, although a high cap rate for an older building suggests limited redevelopment option value.[12] Developers in metropolitan Vancouver and Victoria both appear to plan for sales of new rental projects at cap rates of approximately 4% to 4.5%.[13] From our own conversations with landlords concerning their net operating income and BC Assessment valuations, we identified cap rates for class B properties of: 4% for a market building in North Vancouver, 5% for a Victoria market rental, and 5.5% for a Maple Ridge market rental. There appears to be a limited set of properties for which a *small* reduction in value through RRTZ's foreclosure of a condo redevelopment option would affect lending value. We consider cases in Section 6 below.

Could RRTZ, not compensated with an increase in allowable new rental density, increase cap rates enough so that LTV rather than DSCR tests bind, such that RRTZ reduces debt capacity for a large number of properties? This will depend greatly on context. Newly completed rental buildings are often bound by long operating agreements of up to 60 years, and there is no guarantee that the city would permit condo redevelopment without significant strings attached even after 60 years. In this setting, RRTZ adds little new protection to tenants, but would be unlikely to affect cap rates or debt capacity very adversely. On the other hand, for a highly depreciated building in a high value location, such as Metrotown, Burnaby, redevelopment value may be a very large fraction of value. A building with high operating expenses and low rents that is prime for redevelopment could have a cap rate very close to zero that could rise dramatically with a requirement that any replacement be a rental rather than condo building. Indeed Coriolis Consulting observes that construction costs alone may be very large relative to capitalized net rents, particularly for apartment buildings with tightly binding affordability requirements.[14] It is natural to expect that stricter rent controls would lead to lower cap rates, and the Colliers figures cited above could overstate current market valuations.

Consider the extreme land value case considered above, with NOI of $100,000 and value of $17 million reduced to $10 million by RRTZ. For that property, at a 5.5% loan constant and 1.2 DSCR, the maximum loan amount would be $\frac{100{,}000}{.055 \times 1.2} = \$1.5$ million. This is far below the LTV test value, even after RRTZ, suggesting that RRTZ will impact financing only in special cases. Two such cases are discussed below.

4.1.1. Portfolios of properties

Conceivably, LTV tests could matter in a portfolio of properties spanning multiple markets secured by cross-collateralized loans, even if local loans were bound only by DSCR tests.

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[11] *Canada Cap Rate, Second Quarter 2019*, Colliers International Research & Forecast Report.
[12] If discounted current rent is a large share of value, that indicates that near-term redevelopment would not be lucrative.
[13] See Corp (2019) and Partners for Rental Housing (2019).
[14] Corp (2019) Consulting Corp. (2019). *Reducing the Barriers of High Land Cost*

For example, a property owner with high cap rate rental buildings in Alberta and low cap rate buildings in B.C. might lose overall borrowing capacity if the value of the B.C. buildings fell.

4.2. Significant impairments due to capital repair needs

Some industry participants have raised the possibility that high cap rates could arise, particularly after RRTZ is imposed, by the need for major capital repairs. For example, recognition of a need to retrofit for earthquake safety could lead to a large reduction in property value. This would make the LTV test likelier to bind and in that way RRTZ could lead to diminished debt capacity at a time when that capacity is badly needed.

Summarizing, with low cap rates and binding DSCR tests, there are settings in which RRTZ would not greatly reduce landlords' ability to finance property maintenance, improvement, or development. Where RRTZ has significant impacts on redevelopment option value, cap rates could be sufficiently impacted that LTV tests could become binding and debt capacity might be significantly impinged, however, in those very cases, DSCR still tends to be by far the binding constraints. Both cap rates and mortgage rates have been remarkably low recently due to very low interest rates. Discussions with for-profit and not-for-profit rental owners indicated that almost everywhere DSCR is more commonly binding in most of Greater Vancouver and Victoria, but there is considerable uncertainty over how much RRTZ will increase cap rates. It is reasonable to conclude that there is a limited risk of lost borrowing capacity on the depreciated rental buildings ripe for condo redevelopment that RRTZ most aims to protect that should be monitored.

5. General Business Climate

Some members of UDI and other advocacy groups have cited a generally unfriendly business environment as a potential reason for developers' exit from BC markets. They view RRTZ, along with stricter rent control, taxes on foreign buyers of rental property, the Additional School Tax, vacancy taxes, stricter limits on fixed term leases, and other recent Provincial and local regulations as significant disincentives to investment here. Construction activity appears to have been strong in the first half of 2019 as well as in 2018, but the predicted exodus of investment could arise subsequently.

One suggestion brought forward by for-profit investors is to mix RRTZ with significant new density allowances for rental construction. This has been Burnaby's approach. While this does not solve the problem of tenant displacement by itself, preserving lucrative redevelopment options for rental construction would both avoid the net loss of PBR stock to condo and the risk that cap rates would rise sufficiently to jeopardize the availability of leverage for maintenance and investment in new stock.

6. Some examples of potential RRTZ impact

6.1. 520 Rithet Street, James Bay, Victoria

6.1.1. Current Use

This property is a low-rise apartment building with 36 rental units, built in 1969 with a lot size of roughly 24,000 square feet. BC Assessment deems the property to be worth $7.511 million as of mid-2018. Assuming net income of $850 per unit per month, this would be a cap rate of $\frac{800 \times 12 \times 36}{7{,}511{,}000} = 4.6\%$.[15] The NOI per square foot of land is thus estimated at $\frac{800 \times 12 \times 36}{24{,}000} = 14.4$.

6.1.2. Trigger price for redevelopment under different zoning scenarios

At a 1.6 allowable FSR under current R3-2 zoning absent any sort of density bonus, under the assumptions provided in Figure 2, a redeveloped value of over $1,000 per square foot is required to trigger redevelopment. As presale prices in Victoria appear to hover around $1,000[16], this property appears to be at limited risk of redevelopment should current market conditions persist, and under all of the discounting and growth assumptions described above under current zoning. However, at 2.5 FSR, and more so at 5, this property appears profitable for redevelopment as a condo.

BC Assessment deemed this property to have a land/structure value ratio of $4,580,000/$2,931,000 in 2019, but only $2,411,000/$4,137,000 in 2018. That jump in land value is consistent with a view that redevelopment is expected to come significantly sooner in 2018 than was anticipated in 2017, such that residual redevelopment land value is a much larger share of property value relative to the present discounted value of rents than in the prior year. However, with an NOI of $345,600, it would take roughly a decade of NOI earnings to justify the remaining structure value.

For a rental only scenario, Partners for Rental Housing (2019) proposes a capitalized rental value for wood frame buildings in Victoria of $685. This would not be sufficient to trigger redevelopment absent substantial density bonusing. Indeed, Figure 2 shows that $685 would be a marginal value to trigger redevelopment at a 5 FSR at the current NOI per land square foot of 14.4 and would not trigger redevelopment at a 2.5 FSR. For this property,

[15] Altus Group "Purchasing a Multi-Family Rental Building, New Construction vs. Older Existing", Vancouver, 2014 cites an operating expense ratio of 32% as typical for older apartment buildings in Vancouver. CMHC lists one-bedroom rents in the James Bay area for all apartments buildings as of 2018 as averaging roughly $1,200 in 2018.

[16] As of a December, 2019 search on rew.ca for condos with built dates 2020 or later.

even a modest reduction in appraised value would lead to reduced debt capacity, as the DSCR and LTV tests are not far apart at a 4.5% cap rate.

6.1.3. RRTZ and debt capacity

The cap rate of roughly 4.5% is less than prevailing loan constants, and thus a significant reduction in property value through loss of redevelopment value would be required for the loan to value test to bind and a value reduction cause a loss in debt capacity. Because redevelopment is marginal under current zoning, this does not appear to be a major risk absent a shock to property maintenance needs. A DSCR test for this property yields a loan under previously stated assumptions of: $\frac{800 \times 12 \times 36}{1.2 \times .055}$, or approximately $5.25 million. In this case, a relatively small reduction in property value in response to RRTZ to the prior year's assessment of $6.6 million would be sufficient to reduce borrowing capacity to $4.95 million.

6.2. 1067 Bank Street, Victoria

This property is a two-story, 5-unit rental building in the Gonzales single family zone. BC Assessment deemed it to have a total value of $1,079,000 as of 2018, decomposed into roughly 2/3 land and 1/3 structure. Assuming net income of $800 per unit monthly would imply a cap rate again of roughly 4.5% and net income of $800×12×5 = 48,000. Given a lot size of 4,000 square feet this is an NOI of $12 per square foot of land area. This property abuts a single story flower shop and thus could potentially form part of a small assembly along Oak Bay Avenue. This property is thus presumably at a bit more risk of imminent redevelopment than the property on Rithet Street described above. The BC Assessment of structure value suggests less than a decade of life remaining for the structure given the conjectured NOI. In this case, a condo project to replace this property would very likely be profitable at a 2.5 or 5 FSR, and marginally so at 1.6 FSR. A rental project, however, would not clearly be profitable even at the higher FSRs.

At 54 years old, the property is likely at risk of a need for considerable maintenance expenditure. The debt service covered by the conjectured $48,000 NOI is $\frac{48{,}000}{.005 \times 1.2} = \$727{,}000$. The loan to value test provides a value roughly 10% greater loan, so given the importance of land value in this case, RRTZ could significantly impact debt capacity.

6.3. 2701 Gosworth Road, Victoria

This property has 47 apartments on a roughly 28,000 square foot lot. Again assuming $800 net rents, the net operating income would be roughly $450,000 per year, or $16 per square foot of land. BC Assessment values this property at $12.4 million, with roughly $9 million of that attributable to the structure. That structure valuation suggests over a decade of remaining life at the conjectured NOI level. Absent a density bonus, at zoning of 1.6 FSR, Figure 2 indicates that redevelopment to condo would be marginally profitable, but at greater density would likely be profitable. At the current zoning, UDI's conjecture of

$685 in PBR value per built square foot would not generate profitable redevelopment. PBR redevelopment at higher densities appears marginal under the market assumptions.

An NOI of $450,000 on a valuation of $12.4 million is a cap rate of 3.6%. This supports a DSCR loan amount of $\frac{450{,}000}{.005 \times 1.2} = \$6{,}818{,}182$. An LTV test provides a $9 million loan, so in this case, the impact on borrowing capacity attributable to RRTZ would likely be modest, consistent with a structure value roughly equal to the LTV test amount.

6.4. Maple Ridge, per Corp (2019)

The Coriolis study proposes a typical older rental building in Maple Ridge as having an FSR of 0.5 and market value of $150,000 for each of 9 900 square foot units. At a cap rate of 5%, this would imply NOI per unit of $562 per month, or $7,500 per year and $8.33 per built square foot and $4.17 per land square foot. At that low current value, Figure 2 shows a trigger price for either a 2.5 FSR wood frame building or 5 FSR concrete building of roughly $600 per square foot. Coriolis suggests this would be a stretch for a new rental building, proposing a capitalized value per square foot of $456 per square foot. Condo valuations appear marginal at $540 per square foot per Coriolis. RRTZ would thus be moderately likely to inhibit construction: rental does not appear feasible given low capitalized values relative to construction costs for even small existing land value. However, for moderate existing land value at elevated construction costs, condo is not obviously profitable either. Given the high cap rate, any substantial impingement on land value would have some impact on debt capacity.

6.5. 161 17th Street East, City of North Vancouver

This 3-storey, 57 year-old walk up has 23 apartment units on an 18,553 square foot lot. BC Assessment deems almost all of the approximately $9 million 2018 value to be land, although net rents of over $800 for one bedrooms certainly seems plausible. At that value, NOI per land area would be roughly $12.50 per square foot. Assuming roughly Burnaby-level rents, cap rates, and prices, both capitalized PBR and condos appear sufficient to trigger profitable redevelopment given prevailing 2.5 or greater FSR, but only condo appears to trigger redevelopment at 1.6 FSR.

Given the property value is almost entirely land, the debt coverage ratio test is surely the binding constraint under current zoning. At NOI of $12.50 over 18,553 square feet, a 1.25 DSCR would permit mortgage payments of $185,530, enough to support a $3.73 million loan at a 5.5% loan constant. Assuming $750 per square foot capitalized PBR value and $420 development costs, at a 2.5 FSR, residual land value would be $[750 - 420] \times 2.5 \times 18{,}553 = \$15.3$ million. Thus PBR designation in that case would not impinge debt capacity. This case highlights an important distinction, even if residual land value for rental is quite positive, it need not trigger replacement of the existing structure.

Assuming redevelopment at 2.5 FSR, a roughly $250 dollar difference between condo and PBR value per square foot would translate to a difference in land value of $250×18,553×2.5, approximately $11.6 million, greater than the entire BC Assessment valuation. At an FSR of 5, that difference would be over $20 million. Those figures highlight the costs in terms of potential density bonusing revenue of RRTZ.

7. Conclusion and Discussion

In Seattle and the rest of the U.S., the overwhelming majority of recently constructed multifamily units are rented rather than owner occupied and PBR is the norm rather than the exception. That has not been the case recently in Greater Vancouver, to the chagrin of many in the housing policy community.

This study has shown that RRTZ can have significant impacts on the profitability and timing of redevelopment as long as capitalized PBR rents fall well short of condo prices. This means that spot RRTZ may well serve to protect incumbent renters in older buildings. In terms of Figure 2, if condo prices lie above the trigger lines, but PBR values below, spot RRTZ is likely to avoid evictions. This appears to be the case for several sampled properties under plausible zoning scenarios.

On the other hand, for the same economic reason that PBR redevelopment may be unprofitable when condo development is quite profitable, if the objective is to encourage development to create housing units and obtain revenue from density bonusing, blanket RRTZ may be counterproductive. Burnaby has used RRTZ to add rental density in combination with condo upzoning, allowing for large additions of units with complementary provision of new rentals. However, the replacement of condo with PBR appears able to reduce developers' willingness to pay for rezoning by a valuation difference of $200 per square foot, or $120,000 per 600 square foot unit.

Should municipalities proceed with RRTZ, we recommend that they closely monitor the behavior of affected landlords. By extending the lifetime of existing rental buildings, RRTZ provides an *increased* incentive to perform maintenance. It is not obvious that landlords will lose the ability to leverage their properties for maintenance and investment purposes, because under current conditions, operating income, rather than property value, is the dominant constraint in borrowing. However, the loss of debt capacity is a possibility. At cap rates around 4.5%, reductions of over 10% in property value can lead to LTV tests becoming the binding constraint on debt capacity. In high value markets where condo prices may be much greater than capitalized rents, RRTZ can lead to significant reductions in property value. The possibility of diminished incentive to maintain properties to accelerate the need for a major "renoviction," while seemingly reduced by RRTZ's destruction of redevelopment value, is worth considering, too.

Municipalities should also give thought to the transition of buildings that are becoming uninhabitable due to aging and where renovations that do not remove tenants at least temporarily may be infeasible.

8. References

Colliers Valuation and Advisory Group (2019). *Canada Cap Rate Report, Second Quarter 2019*. Research & Forecast Report.

Coriolis Consulting Group (2014). *CAC Policy and Housing Affordability*. Review. City of Vancouver.

Corp, Coriolis Consulting (2019). *Reducing the Barriers of High Land Cost*. Tech. rep. Metro Vancouver.

Himmelberg, Charles, Christopher Mayer, and Todd Sinai (Fall 2005). "Assessing High House Prices: Bubbles, Fundamentals and Misperceptions". In: *Journal of Economic Perspectives* 19.4, pp. 67–92.

Partners for Rental Housing (2019). *Making Rental a Reality: The Residential Rental Tenure Zoning Tool and its Implications for Land Use Planning*. Report. UDI, Landlord BC, et al.

9. Credits

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A. Python Code for Calculating and plotting redevelopment triggers

```
# rrtz_timing.py
# python to plot timing of redevelopment
# Tom Davidoff
# 12/19/19

import scipy as sp
import matplotlib
import matplotlib.pyplot as plt

a = [4,12,45,5]
b = [3,2,123,5]

# assumptions
noi = sp.arange(1,30) # thousands
development_small = 420 # source: Coriolis barriers
development_wood = 420 # source: Coriolis barriers
development_concrete = 500 # source: Coriolis barriers
treasury = .0175 # about right for 10 year
cpi = .02
growth = cpi + .020# nominal and optionality
spread = .035
discount = treasury + spread # source: cap rate of 4.5 in Coriolis, but other sources much lower
fsr_small = 1.6
fsr_wood = 2.5
fsr_concrete = 5
fsr_current = 1 # for simplicity

#trigger: fsr*current*noi = FSR_new*(X-construction)*(discount-growth)
#X = construction + fsr*noi/(FSR*(discount-g))
trigger_small = development_small + (fsr_current/fsr_small)*noi/(discount-growth)
trigger_wood = development_wood + (fsr_current/fsr_wood)*noi/(discount-growth)
trigger_concrete = development_concrete + (fsr_current/fsr_concrete)*noi/(discount-growth)
fig, ax = plt.subplots()
ax.plot(noi,trigger_small,"o",label= str(fsr_small)+" FSR wood frame, $" + str(development_small) + " dev't cost")
ax.plot(noi,trigger_wood,"-",label= str(fsr_wood)+" FSR wood frame, $" + str(development_wood) + " dev't cost")
ax.plot(noi,trigger_concrete,label= str(fsr_concrete)+" FSR concrete frame, $" + str(development_concrete) + " dev't cost",linestyle="dashed",color="black")
legend = ax.legend(loc='lower right')
plt.xlabel("Current NOI per square foot of land area")
plt.ylabel("Redeveloped sale price or capitalized NOI per built sq. ft.")
plt.savefig("Documents/rrtz/noi_trigger.png")

print(discount-growth)

# LTV vs DSCR
LTV = .75
DSCR = 1.2
constant = .055
cap = sp.arange(1,7)*.01
# Get LTV = DSCR for property with "1" NOI
# LTV/DSCR = DSCR*LTV*constant/cap = 1
# X*LTV/cap = 1/(constant*DSCR)
# X = cap/(constant*DSCR*LTV)
plt.clf()
plt.plot(cap,1-cap/(constant*DSCR*LTV),"-")
plt.xlabel("Current cap rate")
plt.ylabel("Reduction in Value for LTV to bind")
plt.savefig("Documents/rrtz/ltv_hit.png")
```

B. Partial list of interviewees

- David Sander,Director,Hollyburn Properties
- Patrick Mclaughlin, President, Kiwanis North Shore Housing Society
- Jordan Milne, President and CEO, GMC Projects
- Adam Cooper, Director of Development, Abstract Properties
- Kaye Melliship, Executive Director, Greater Victoria Housing Society
- Sandra Cawley, Principal, Burgess, Cawley, Sullivan and Associates
- Cynthia Jagger, Principal, Goodman Commercial
- Kira Gerwing, Manager of Community Investment, Vancity
- David Hutniak, Landlord BC
- David Ganong, ICI
- BC Assessment staff members
- UDI Vancouver ad-hoc membership group on RRTZ