



# TD Economics

## Housing Bubble Watch

November 29, 2005

### HOUSING MARKETS HEAT UP, BUT FEW SIGNS OF A BUBBLE

Canada's housing market gathered some momentum in the third quarter as existing home sales increased by 3.3 per cent from the previous quarter. Meanwhile, the supply of new listings struggled to keep pace, pushing the existing home market slightly deeper into seller's market territory. As a result, the annual rate of home price growth accelerated to about 10 per cent from about 8.5 per cent in the previous quarter. With residential construction activity also holding near historically high levels during the period, third quarter economic growth in Canada should enjoy another solid contribution from the housing market.

But even as house price growth intensified during the period, the risk of an emerging housing bubble in most major markets of the country (including Toronto's rapidly growing condo market, which is partly the focus of our special topic section on page 3) remains extremely low.

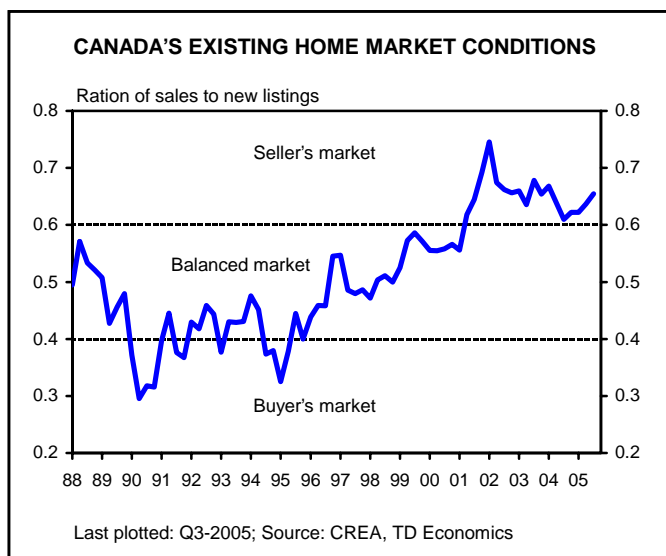
*This quarterly report monitors for the presence of a speculative housing bubble in local markets across Canada. In this regard, several indicators are used to look for generally agreed upon characteristics of bubble behaviour: i.e., whether the level of home prices are being bid up beyond what is consistent with underlying fundamentals and whether homebuyers are doing so with the expectations of future price increases. It is important to note, however, that it is, by definition, impossible to identify a bubble before it bursts, since rational investors would refuse to hold any asset whose price was certain to fall.*

That's because home prices continue to be driven by fundamental factors as opposed to broad-based speculation (see page 9). In particular, mortgage rates fell by seven basis points during the quarter and this, in tandem with a pick-up in income growth thanks to a historically tight labour market, helped to keep housing affordability in-check among most major markets in the country.

The only exception, however, continues to be the frothier markets of Vancouver and Victoria, where home prices continue to grow faster than even the robust fundamentals in British Columbia would seem to warrant. At least in terms of Vancouver, such frothy conditions appear to be emanating principally from the city's red-hot condo market (see page 3).

#### Regional Overviews

**Atlantic** – Although home prices grew slightly faster in the third quarter and resulted in a slight erosion of affordability during the period, any threat of a housing



bubble remains remote in Atlantic Canada. That's because the region still maintains one of best affordability rates in the country while its P/E ratio continued to remain range-bound near historical levels. As such, pricing growth does not appear to be driven by speculative activity.

**Montreal** – Home price growth picked up a bit of speed in the third quarter. However this was largely due to an increase in sales activity thanks to an improvement of affordability during the period. In addition, the annual pace of inflation-adjusted home price growth (currently at 5.3 per cent) is about half of what it was a year ago (10.6 per cent). On balance, these factors largely underscore a decline in the speculative activity that may have been present in the Montreal housing market over 2003 and 2004. As such, risks of a housing bubble in this city remain relatively low.

**Ottawa** – Home price growth continues to be well contained in the third quarter, exceeding the annual rate of inflation by just 2.2 per cent. Meantime, signs of irrational exuberance also remain remote with our indicator, which measures the ratio of home price growth to underlying supply and demand conditions, at the second lowest level among major markets in the third quarter. Slower price growth, along with a dip in mortgage rates during the period, also helped Ottawa's affordability rate to improve to 19.3, which is slightly better than the corresponding rate in the second quarter.

**Toronto** – The inflation-adjusted rate of home price growth picked up some speed in the third quarter to 4.7 per cent, largely reflecting a dip in mortgage rates that helped to stoke housing demand. Despite the pick-up, there is little evidence of a bubble in Canada's largest housing market. Much of Toronto's pricing pressure is coming from the single detached sector, where a dwindling supply of land continues to fundamentally push up prices of this dwelling type. But a growing condo market, where price growth has remained well contained, continues to be an affordable alternative for potential homeowners.

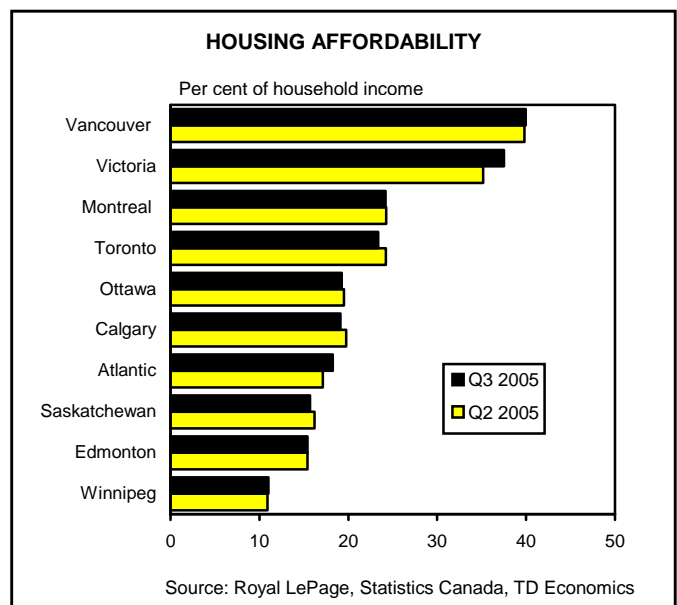
**Winnipeg** – Housing activity heated up in the third quarter, as the annual rate of home prices grew 10.8 per cent faster than the rate of inflation. That's up from 8.3 per cent during the same time last year. Nevertheless, the risks of housing bubble remains very low in Winnipeg, given an affordability rate that remains one of the best in Canada. Moreover, Winnipeg's low P/E ratio of 8.3 sug-

gests that this city's housing market also remains the most undervalued among major cities in this country.

**Saskatchewan** – Like other western Canadian regions, housing activity remains brisk in Saskatchewan during the third quarter. Inflation-adjusted home price grew 6.4 per cent from a year ago, which is slightly faster than the 4.5 per cent rate experienced the year before. However, a dip in mortgage rates in the third quarter along with strong income growth (thanks to the region's vibrant resource sector) helped to offset the impact of these higher prices. As a result, affordability improved to 15.7 per cent from 16.2 per cent the quarter before.

**Calgary** – Housing activity continued to heat up in Calgary during the third quarter. The inflation-adjusted annual rate of price appreciation increased to 8.4 per cent, nearly four times faster than the corresponding pace the year before. However, the risks of a housing bubble are minimal in Calgary since exceptionally strong fundamental factors (owing to a booming oil patch) have been the main catalyst for much of the city's home price growth. For example, even though prices are rising dramatically, strong income growth during the third quarter, together with a slight dip in mortgage rates helped to improve affordability to 19.1 per cent from 19.8 per cent the quarter before.

**Edmonton** – The risk of a housing bubble in Edmonton continues to be extremely low. The inflation-adjusted rate of home price appreciation is well contained at 4.9 per cent while our indicators suggest little evidence of ir-



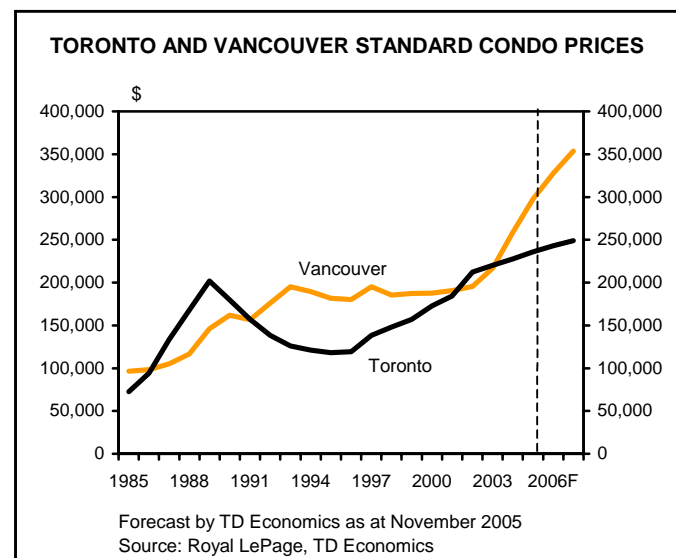
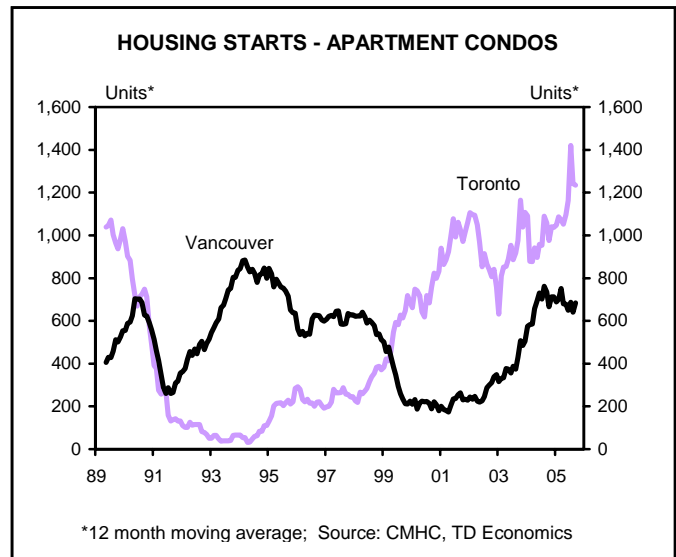
rational exuberance in this market. Furthermore, solid income growth along with a dip in mortgage rates during the third quarter helped to keep the city's affordability rate steady at an unthreatening 15.4 per cent.

**Vancouver** – Although mortgage rates fell slightly in the third quarter and a strong economy continued to generate robust income growth, it was not enough to offset the sharp increase in Vancouver home prices. As a result, affordability eroded to 40 per cent from 39.8 per cent in the previous quarter. While both single detached and condo prices have been appreciating dramatically, a dwindling supply of land could fundamentally justify some of the outsized price growth for the former dwelling type. However, there is little justification for the double-digit pace of condo price growth beyond speculation (see below) suggesting that these properties may be at the heart of a potential housing bubble in Vancouver.

**Victoria** – The risk of a price bubble continue to grow in this commonly perceived resort-market. Home price growth remains very intense (inflation adjusted prices grew by 16.8 per cent from a year ago in the third quarter), while our estimate of irrational exuberance is not only at an all-time high but is also at the highest level in the country (22.7). Meanwhile, strong price pressure resulted in further erosion of affordability to 37.5 per cent in the third quarter from 35.2 per cent in the previous quarter. This remains the second worst reading among major markets in the country.

### Special Focus: Is there a condo price bubble in Toronto and Vancouver?

With condos now accounting for more than 50 per cent of recent new home construction in Canada, much of the talk about housing bubbles has centred on this segment of the market. That's understandable given that the lower relative price of condos tends to open this market up to greater speculative activity than single family homes. Indeed, the condo market tends to attract much more interest from both small and large investors than single family homes, although even potential homeowners are capable of engaging in speculation. To this end, one of the best ways to answer whether there is a burgeoning speculative housing bubble in Canada is to directly address whether condo prices are rising faster than their fundamentals would warrant.



Before answering this question, it's important to emphasize that condo development in and of itself is not an inherently bad thing. In fact, as we noted in an earlier topic paper entitled *Bursting Aspects of the Housing Bubble Myth*, there are strong economic reasons for condo construction in large urban centres. In particular, as competition for scarce but highly accessible land heats up, it drives up the price of these sites, ensuring that it will be used more intensively, specifically through higher residential densities like condos. In effect, this helps to keep housing costs affordable for prospective homebuyers wishing to remain within close proximity to urban centres.

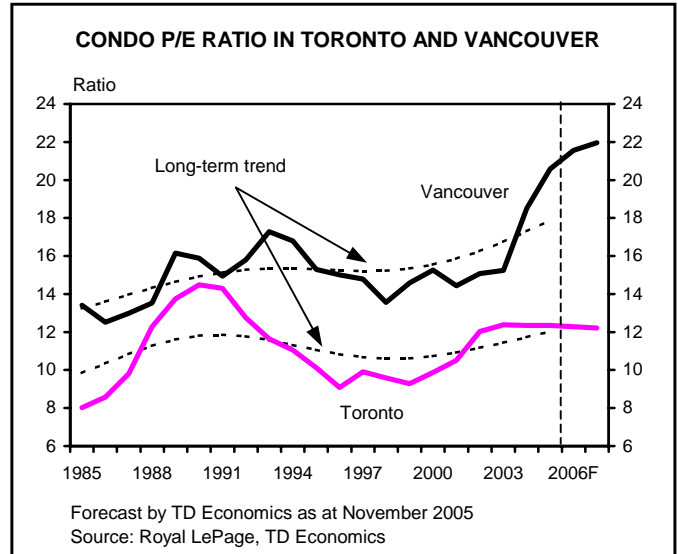
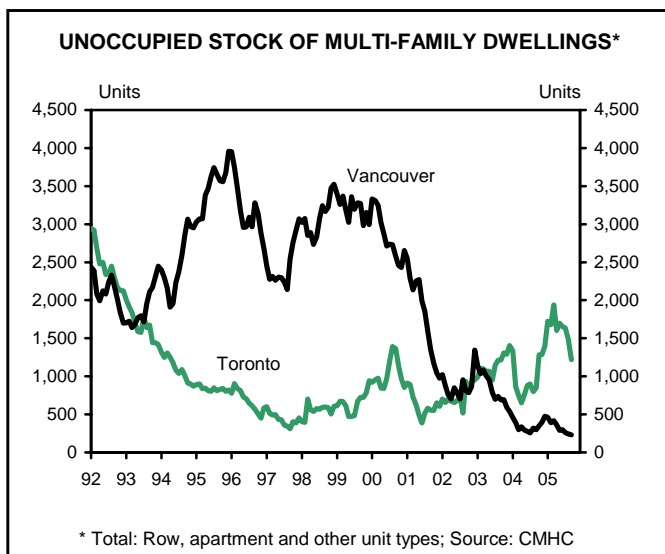
## No visible signs of overbuilding

Thus, as potential land supplies continue to diminish in two of Canada's largest urban markets – Vancouver and Toronto – the more affordable nature of condos in comparison to the limited supply of single family homes are a major reason why condo construction has intensified. And although construction is occurring at a record pace, an inspection of the unoccupied stock of new condo units reveals no evidence of a major supply glut. Indeed, Toronto's supply of unoccupied new condos remains low and is certainly well off the record highs following the late 1980's housing bubble. Meanwhile, Vancouver's available condo supply remains at rock bottom levels.

But even though there isn't a current supply glut, all this really shows is that condos are currently a popular housing product with buyers, whether they are potential homeowners or otherwise. Moreover, if a housing bubble were to suddenly burst, that could almost certainly change the inventory picture in the future. Thus, this analysis does not answer the key question of whether condo prices are rising faster than their underlying fundamentals – the critical litmus test for evidence of a speculative bubble.

## Condo prices and fundamentals

To this end, an examination of current price to earnings (P/E) ratios may be more analytically appealing since this indicator measures the price of a property in relation to its fundamentals (i.e., the expected cash flow the property could reasonably generate). For a condo, these expected cash flows reflect the owner's equivalent rent, or



said differently, what a homeowner/real estate professional believes an equivalent property would cost were it to be rented. In theory, this imputed rent should reflect all fundamental factors affecting the property, including expected economic, geographic and demographic conditions. Its important to note that this rent measure is different from a "market rent", which is based directly on the rental charges incurred by a renter.<sup>1</sup>

To illustrate, if a condo unit was located in a highly desirable part of a town that was experiencing rapid population growth, these fundamental factors should be captured by the potential rents generated by the condo unit. Thus, any increase in the condo's P/E ratio suggests that the property's price may be rising faster than what the underlying earnings of that property could generate, potentially implying some over-valuation. In other words, a P/E ratio that rises above its long-term average reveals that prices may be growing too quickly.

How do the estimated P/E ratios for standard condos in Toronto and Vancouver stack up? In Toronto, condo prices have indeed increased faster than imputed rents over the recent period. As such, the P/E ratio for condos in Toronto has surpassed its long-term average of about 11, albeit it is still lower than its comparable reading during the peak of the late 1980's housing bubble period. Meanwhile, the P/E ratio for condos in Vancouver has risen dramatically to about 20 over the past few years, well above its long term average and marking the highest reading on record for this city.

### The user cost of capital approach

While this might point to frothy condo market conditions in both Toronto and Vancouver, some observers have quite rightfully suggested that P/E ratios are a flawed tool when attempting to value housing assets. That's because they fail to account for the fact that the price of a home is not exactly the same as the cost of owning that property. In particular, accurately measuring the cost of home ownership should also weigh the cost of the forgone interest from an alternative type of investment.<sup>2</sup>

As such, a more robust valuation methodology is to utilize the user cost of capital approach. In effect, this valuation model suggests that the cost of owning a home (i.e., the imputed rent) should be a function of current interest rates, depreciation and property taxes less the expected rate of capital appreciation for that property. Thus, given the prospective rental stream generated by a property along with current interest rates, property tax rates and depreciation, one can establish what the expected rate of capital appreciation is for that property (see the corresponding box for the exact methodology). Should the *actual* rate of capital appreciation exceed the *expected* rate of capital appreciation, then the property must be considered overvalued.<sup>3</sup>

### No speculation in Toronto's condo market

What does this approach, suggest about the Toronto condo market? On a historical basis, condo prices in Toronto during the late 1980's were growing some 10 to 35 percentage points faster than they should have been. This was due to extreme speculation during that period of time. The ensuing crash eventually resulted in condo price growth that was some 10-20 percentage points slower than what they should have been between 1992-97, implying that condos became largely undervalued properties. These large historical swings underscore the highly cyclical nature of real estate, such that periods of extreme overvaluation (or bubbles) are likely to be met by severe corrections.

Examining conditions during the current housing cycle, it appears that condo prices in Toronto were growing only slightly faster than fundamentals warranted between 1998 and 2003. However, assuming a 3-5 per cent risk premium for owning versus renting, condos in Toronto now appear to be fairly priced. Certainly, there is a slight

#### VALUING A PROPERTY WITH THE USER COST OF CAPITAL APPROACH

According to financial theory, the user cost of a property (i.e., the imputed rent) can be expressed as the sum of the opportunity cost of holding the property, plus property taxes and depreciation and repair, minus the expected capital gain of the property:

$$(1) \quad R = P[(i + t + d) - E(P)]$$

In equation (1), R is the imputed rent of the property; P is the price of the property; i is the opportunity cost of holding the property (i.e., the short-term rate of interest); t is the property tax rate; d is the depreciation rate; and E(P) is the expected capital gain for the property.

Rearranging equation (1), we get a form of the expression that defines what the expected rate of capital appreciation should be for a property:

$$(2) \quad E(P) = i + t + d - R/P$$

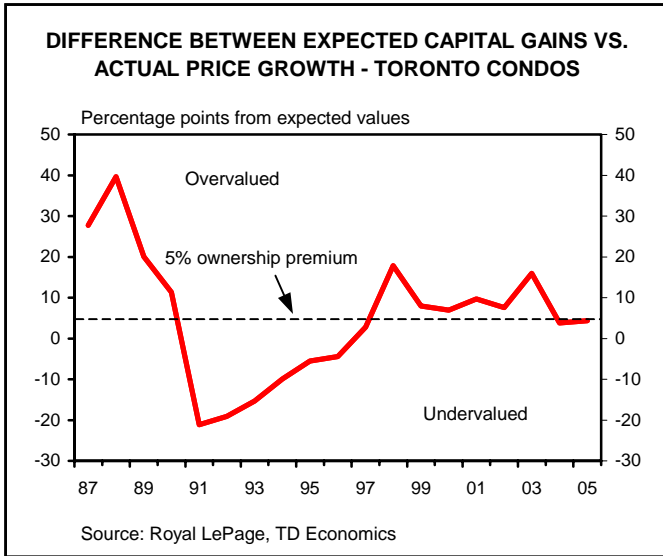
Equation (2) suggests that the expected rate of capital appreciation for a property is equal to the sum of the interest rate, the property tax rate and the depreciation rate, less the rental yield of the property.

To estimate the expected rate of capital appreciation for condos in Toronto and Vancouver, we use a fixed regional sample of condo prices, property taxes and implied rents from Royal LePage's Survey of Canadian House Prices. The short-term rate of interest reflects the yield on three-month Treasury bills, while we assume a depreciation rate of 2.5 per cent per year for the property.

risk that some condo projects could experience mild price declines over the next two years, especially as interest rates continue to rise and as more new condo units come on stream. But any potential "correction" would pale in comparison to the one that followed the bursting of the late 1980's bubble. That's because there is very little evidence of speculation occurring at present.

### Vancouver condo market very frothy

Meanwhile, condo prices in Vancouver have been accelerating well ahead of what would be implied by the user cost of capital. In fact, even allowing for a generous 5 per cent ownership risk premium, the current rate of condo



price appreciation is still about 10–15 percentage points faster than what it should be, suggesting that Vancouver’s condo market may now be at its most overvalued point in years. What is responsible for this situation?

Historically low interest rates do not provide the answer since the user cost of capital approach already establishes allowances for this fundamental factor. Another popular argument to justify excessive price growth is that a dwindling supply of land in Vancouver requires an additional price premium. However, as noted earlier, it is unreasonable to expect condos to have much of a premium for land shortages since municipal planners can always allow for greater densification. In other words, if you buy a condo today, it is not likely to be a rare commodity in the future.

Thus, the only reasonable explanation for the outsized pace of price growth in Vancouver’s condo market is due to heightened expectations of future capital appreciation or put simply, speculation. For example, the user cost of capital suggests that a current condo “investor” in Vancouver is likely to be willing to accept below-fair-value rental yields since they assume that future price appreciation will cover the loss. It does not matter whether such an “investor” plans to flip the property in six months, one year or two years. All that matters is that an investor’s decision to buy has been predicated on expectations of significant future price growth – the exact definition of a price bubble.

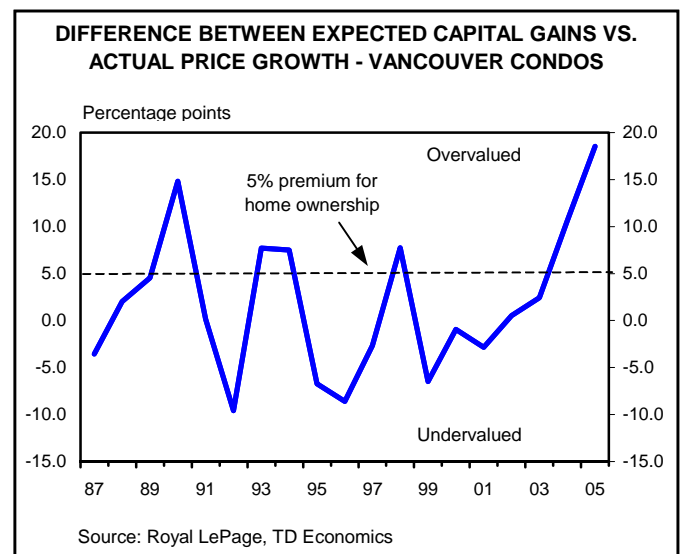
Potential homeowners are also capable of such speculation if they are willing to purchase a condo whose costs

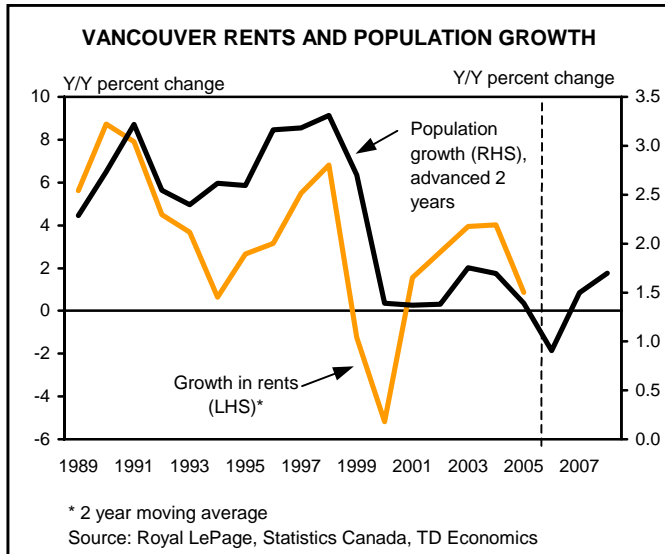
of ownership are greater than the cost of renting a comparable property. Again, this potential homeowner has made the decision to buy based on the belief that significant capital gains in the future will offset any losses incurred by not renting currently.

### Does a bubble imply a crash?

While we have shown evidence of a speculative bubble in Vancouver’s condo market, this does not imply that a major crash is forthcoming. Moderately higher interest rates could help to flush out speculators and this together with the cushioning effect of Vancouver’s currently strong fundamentals could help to bring the city’s condo market in for a soft landing. But under such a scenario, condo prices would need to begin a slow descent back to fair market values now and into the next year. Unfortunately, there are little signs of this occurring yet.

On the other hand, some observers have suggested that no correction at all will be warranted given that the imputed rents used in our analysis have merely been slow to adequately reflect the improving fundamentals of the city, including such factors as stronger population growth. However, as the corresponding chart shows, Vancouver’s population would need to be growing by an annual rate of over 3 per cent in the next few years in order to help generate the annual 8 per cent growth in imputed rents necessary to justify the current rate of price appreciation in condos. While Vancouver’s population is projected to grow by a robust 1.5-1.8 per cent this year and next, 3 per cent or more growth would be an extremely tall order. That’s





because it implies a population boom similar in magnitude to what occurred during the mid-1990s as immigration to Vancouver swelled following the hand-over of Hong Kong to China. Most forecasters do not anticipate such an event to occur any time soon.

Finally, another possibility is that a potential correction will be delayed, as expectations of future price gains stay elevated. Indeed, the awarding of the 2010 Winter Olympic Games to Vancouver has been suggested as a major reason why strong condo price growth can be sustained for another four years or so. However, this raises the question of what happens once the Games are over? Under such circumstances, the probability of a “hard landing” becomes even higher, especially as a rash of condo purchasers attempt to liquidate their holdings in order to realize potential capital gains. Cognizant that this could occur, some savvy condo holders might attempt to liquidate earlier than everyone else. Unfortunately, in a market as large as Vancouver’s, that would eventually transmit a “sell” signal to other market participants as well. The ensuing supply glut would still ensure a hard landing for condos.<sup>4</sup>

### A note about condo construction

Although we have dismissed the likelihood of a speculative bubble in the Toronto condo market and flagged the risk of a significant one in the Vancouver condo market, this analysis has little bearing on projected construction activity. That’s because the decision to build largely rests on whether condo developers can make the economics of a new residential project work. Thus, the cue for further construction depends largely on factor costs, in particular, interest rates, profit margins (which depends on relative price growth in the resale market, and therefore is also a proxy for anticipated demand) and current inventory levels.

Based on these criteria, it is reasonable to expect that condo construction will remain strong this year and next in both Vancouver and Toronto given that interest rates are only gently rising, inventory levels remain in check and resale indicators continue to signal strong demand for this type of dwelling. But given the long construction periods for condos, what happens if demand suddenly softened in response to a bursting price bubble?

As we noted in an earlier report, developers have instituted a number of risk management techniques to guard against their exposure to such a threat, including pre-sales of units prior to construction. Lenders have also established targets for a specified number of pre-sales as a condition to provide construction financing. However it is important to note that while condo developers may be insulated to some extent against the threat of a major price correction, most potential buyers are not. Consequently, potential buyers (of any type of dwelling) should make the decision to buy based on fundamental factors, such as their ability to reasonably make the payments on their home rather than on the expectation of price gains in the future.

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## Endnotes:

- <sup>1</sup> In the U.S., the Bureau of Labor Statistics explicitly distinguishes owner-equivalent rents from market rents in its estimate of monthly consumer price inflation.
- <sup>2</sup> A home can be viewed as an income-producing asset, conceptually similar to a stock. Thus, the value of such an asset is the discounted present value of the net income it provides, with the discount rate being the current yield on a competing asset with similar risk characteristics. In effect, even if the net income stream remained constant, a decline in the discount rate will boost the equilibrium value of the asset.
- <sup>3</sup> This approach is especially appealing for the valuation of condos since these properties should not be subject to any additional premiums for potential land supply shortages. Unlike a single family home, the higher densification implied by condos should effectively drive down any land supply premium to near negligible levels. Said differently, if the supply of developable land becomes increasingly short, municipal planners will allow for greater densification in order to maintain the best use of this scarce resource.
- <sup>4</sup> This situation is similar to a Ponzi scheme, which is a very risky investment operation that involves paying returns to investors out of the money raised from subsequent investors, rather than from profits generated by any real business. A Ponzi scheme offers high short-term returns in order to entice new investors. The high returns that Ponzi schemes advertise require an ever-increasing flow of money from investors. Once the flow of new investment stops, the scheme is doomed to collapse.

BUBBLE WATCH INDICATORS - Third Quarter of Each Year (Unless Otherwise Stated)										
	Atlantic	Montreal	Ottawa	Toronto	Winn.	Sask	Calgary	Edm.	Van.	Victoria
<b>Real Annualized Price Gain</b>										
1989	-1.7	1.8	2.3	20.1	-4.5	-2.2	6.5	2.7	31.1	12.6
1995	-3.4	-5.3	-5.0	-4.2	-4.3	-0.7	-3.1	-3.8	1.0	-5.5
2004	4.5	10.6	6.4	5.6	8.3	4.5	2.8	6.7	12.6	13.6
2005	5.5	5.3	2.2	4.7	10.8	6.4	8.4	4.9	9.5	16.8
<b>P/E Ratio</b>										
1989 (annual average)	N/A	12.0	10.5	14.4	8.8	N/A	N/A	8.5	11.6	N/A
1995 (annual average)	9.5	11.0	9.2	12.2	8.4	8.8	N/A	10.4	15.1	N/A
2004	9.9	12.8	11.2	12.2	8.2	10.4	N/A	11.4	18.9	N/A
2005	10.1	13.5	12.1	12.5	8.3	N/A	N/A	12.3	20.7	N/A
<b>OWN vs. RENT Indicator</b>										
1989 (annual average)	N/A	115.8	101.6	138.6	84.6	N/A	N/A	81.9	111.7	N/A
1995 (annual average)	71.3	82.9	69.6	91.7	63.3	66.1	N/A	78.7	113.9	N/A
2004	59.8	76.7	67.3	73.2	49.4	62.7	N/A	68.7	113.6	N/A
2005	57.3	76.6	68.6	71.2	47.3	N/A	N/A	70.0	117.8	N/A
<b>Irrational Exuberance Indicator</b>										
1989	-1.3	7.2	5.3	48.6	-14.6	-6.1	9.8	4	57.9	17.6
1995	-15.8	-29.7	-21.2	-6.3	-21.5	-7.7	-11.9	-15.4	16.1	-14.9
2004	8.5	18.8	10.7	9.8	10.9	6.9	4.3	9.8	20.3	20.1
2005	10.4	9.6	3.8	3.2	13.9	9.9	10.4	6.5	11.1	22.7
<b>Affordability</b>										
1989 (annual average)	N/A	28.7	20.7	49.2	20.6	19.7	21.9	15.9	34.0	32.5
1995 (annual average)	19.3	23.0	18.1	27.3	13.0	13.8	17.2	16.2	39.8	43.2
2004	17.4	22.9	18.8	23.7	10.7	15.8	19.4	15.6	38.0	34.1
2005	18.3	24.2	19.3	23.4	11.0	15.7	19.1	15.4	40.0	37.5
N/A = not available										

## INDICATOR DEFINITIONS

**Real Annualized Price Gain:** The twelve-month increase in average home prices deflated by the consumer price index (CPI). Sources: Canadian Real Estate Association, Statistics Canada, TD Economics.

**Price to Earnings (P/E) Ratio:** This indicator measures the price of a benchmark property (townhouse) in relation to its expected future cash flow. For real estate, this is broadly thought to be the imputed rent yielded by the property. On this basis, imputed rents should theoretically reflect all fundamental factors affecting the property including expected economic conditions. An increase in the P/E ratio suggests that a property's price may have risen faster than what the underlying earnings of that property could generate, potentially implying some overvaluation. A standard townhouse is chosen as a benchmark property since it conceivably represents a median housing choice in the housing market (i.e., this property contains attributes that are similar to both condos and single-family homes). It is also a property type that is consistently found in most urban markets thereby allowing for regional comparisons. Source: Royal LePage, Statistics Canada, TD Economics.

**OWN vs. RENT Indicator:** The ratio between the estimated monthly ownership costs of a benchmark townhouse and its imputed monthly rent. Ownership costs only consist of principal and interest payments for the property based on the current 5 year average mortgage rate and a 25 per cent down payment amortized over 25 years. The further the indicator moves above 100, the cheaper it is to rent that property type, all else equal. Sources: Royal LePage, Statistics Canada, TD Economics

**Irrational Exuberance Indicator:** The ratio between the twelve month percentage increase in inflation-adjusted average home prices and underlying supply and demand conditions. The latter term is estimated as the ratio between sales to new listings in the representative market. The Irrational Exuberance Indicator effectively suggests to what degree home prices are growing in relation to market conditions. For example, an indicator greater than 10, suggests that prices are growing faster than what market conditions would warrant, implying increasing risk of speculative activity. Conversely, an indicator less than -10 would suggest greater negative sentiment than the market would imply. Source: Canadian Real Estate Association, TD Economics.

**Affordability Indicator:** The percentage of household income needed to service the ownership costs of a benchmark property (townhouse). Ownership costs only consist of monthly principal and interest payments based on the current 5 year average mortgage rate and a 25 per cent down payment for the property amortized over 25 years. Household income is based on median total income for all economic family types. The greater this indicator, the more income it takes to service the costs of ownership. Source: Royal LePage, Statistics Canada, TD Economics