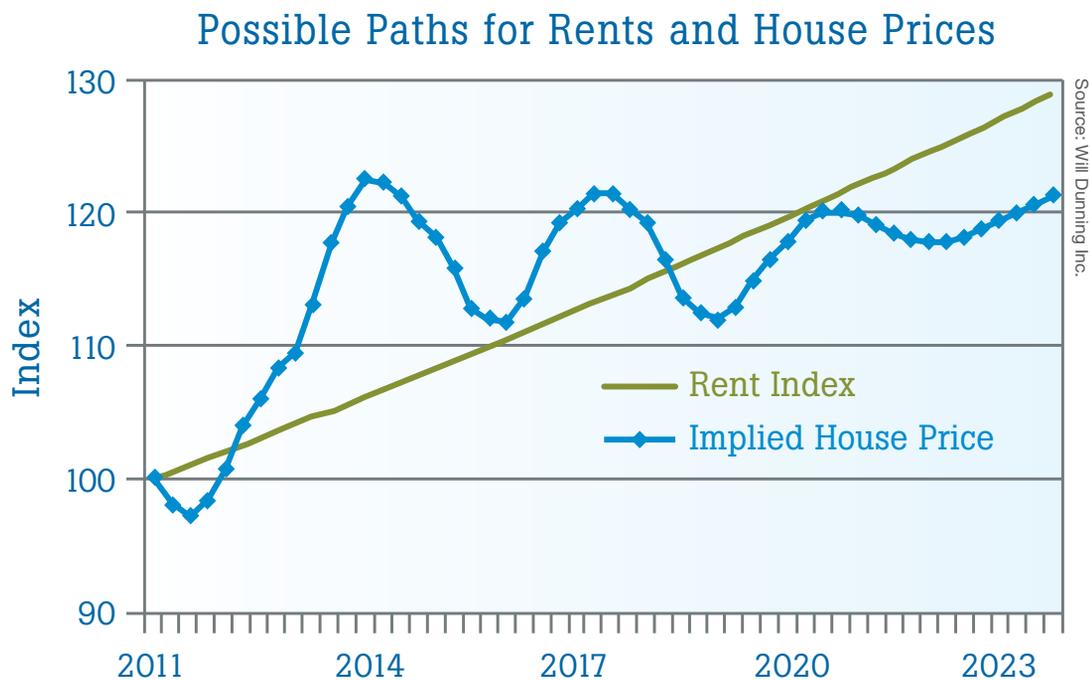


Restricted Land Supply and Rising Housing Costs in the GTA



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Abstract

House prices in the Greater Toronto Area (GTA) increased sharply during the past decade, by 78% (5.9% per year) during 2000 to 2010. The rapid rise is associated with low levels of interest rates. These low interest rates created “affordability space” within which prices could rise.

The reaction of prices to interest rates occurs gradually, over long periods of time. In that light, current levels of interest rates could result in further increases in house prices during the next few years, even if interest rates start to rise. This conclusion differs from widely-held opinions that house prices (in the GTA and elsewhere in Canada) will soon start to move sideways or even fall sharply.

The adjustment of prices to interest rates is not automatic. Market conditions matter. Until now, market conditions have supported the conversion of affordability space into rising house prices.

- Job creation has supported continued housing demand.
- Housing supply has been constrained through a shrinking inventory of available building lots. The shortage has resulted in rapid rises in land prices, estimated at 141% over the past decade, or more than 9% per year.
- In addition, government-imposed costs (for example, the HST and development charges levied by municipalities) have increased sharply.
- Rising land prices and government-imposed costs must get passed into house prices, in both the resale and new homes markets, otherwise the housing development cannot occur.

The rapid rise in house prices over the past decade and during the current economic recovery has contributed to job creation through a “wealth effect.” Rising housing values have encouraged consumer spending.

Should these circumstances (of constrained land supply and rising government-imposed costs) continue, house prices in the GTA are likely to continue rising rapidly (so long as job creation continues to support housing demand).

This raises future risks for the housing market and for the broader economy. There is a strong case to be made that changes are needed with regard to constraints on the land supply as well as high and rising government-imposed costs.

Table of Contents

Introduction	6
Summary of Key Findings	7
About RESCON	10
About Will Dunning and Will Dunning Inc.	10
Prices Are Rising Rapidly	11
Housing Bubbles	13
Affordability Remains Very Favourable	15
House Prices are Linked to Interest Rates	17
The Supply and Demand Environment	22
Rapidly Rising Land Costs	24
“Government-Imposed Costs”	25
Implications	27
Endnotes	29
Charts and Tables	
Chart 1: Mortgage Interest Cost as % of Income	8
Chart 2: Very Rapid Growth of Resale Prices	11
Chart 3: Average GTA House Price Versus Income	11
Chart 4: Typical 5 Year Mortgage Interest Rates	15
Chart 5: Mortgage Interest Cost as % of Income	15
Chart 6: Housing Affordability Versus Total Demand	15
Chart 7: Employment-Population Ratio Versus Total Demand	16
Chart 8: Price/Rent Ratio (Toronto Standard 2-Storey)	17
Chart 9: Relationship of House Prices to Interest Rates	18
Chart 10: Relationship of House Prices to Interest Rates	19
Chart 11: Relationship of House Prices to Lagged Interest Rates	19
Chart 12: Predicted Versus Actual Price/Rent Ratio	19
Chart 13: Predicted Versus Actual Price/Rent Ratio	20
Chart 14: Possible Paths for Rents and House Prices	21
Chart 15: New Low-Rise Sales as % of GTA Total Sales	23
Table 1: Government-Imposed Costs as % of New House Prices in the Greater Toronto Area	9
Table 2: Estimation of Lot Prices (1) as % of House Prices, 2000 and 2010	24
Table 3: Government Imposed Costs as a % of New House Prices	25
Table 4: Estimation of Sales Taxes Payable for New Single-Detached Homes	25
Table 5: Changes in Development Charges Versus Changes in Average Prices for New Single-Detached Homes, 2001/02 to 2010	26

Introduction

This research report follows a somewhat meandering path to reach conclusions about impacts of tightening supplies of development-ready land and rising government-imposed costs. These policy choices are raising risks to the housing market and the broader economy.

The locus of the risk – as other researchers have identified – is that housing prices have increased very rapidly for a prolonged period of time. The price increases have occurred in both the new construction and resale markets. This analyst will agree with anyone who argues that the price increases can be attributed to low interest rates, and that higher prices result in elevated risks within the housing market and to the broader economy (within the Greater Toronto Area and elsewhere), because when interest rates rise in future, the reduction in housing affordability will reduce housing demand.

This author also argues that, in order to further portray the risks and to promote discussions about policies, two key points need to be considered.

- Firstly, as the direct consequence of land supply constraints plus high and rising government-imposed costs, the rise in house prices (and therefore also the level of risk) has been much greater than it needs to be.
- Secondly, prices may very well rise further. This argument goes against the grain of the current consensus, but the consensus has wrongly been predicting a price slowdown for some time. This study offers an explanation. Again, the author's hypothesis is related to the interaction of those policy choices with low interest rates.

For those who see high risks at current housing price levels, there ought to be even greater concern about the prospect of even greater rises in prices.

This study is not predicting an imminent housing market collapse or any other economic catastrophe, however, it does posit that past and current choices in these two policy dimensions will have future impacts on the housing market and the economy. Secondly, if these policy choices are not reversed, they will have escalating impacts that raise the risks of mal-effects in the future.

This report has been completed by Will Dunning Inc for RESCON. RESCON and affiliate associations represent 300 of the largest builders of all forms of housing. Further information on RESCON and Will Dunning Inc. is provided on page 10.

Summary of Key Findings

Prices Are Rising Rapidly

Whether measured in absolute dollars terms, or relative to incomes or the cost of alternative housing (rentals), house prices in the Greater Toronto Area (GTA) have been rising very rapidly.

During 2000 to 2010, the average resale price in the GTA rose by 78%, or 5.9% per year, which is well in excess of comparative measures, such as overall inflation (2.1% per year), wages (2.7% per year for full-time employees), or rents (1.4% for two-bedroom apartments).

Some analysts and commentators conclude that prices are due to correct, either falling sharply or moving sideways (which would mean a fall relative to incomes or rents). Some base this conclusion on a natural tendency for reversion to prior values; others base it on forecasting models and see it as the consequence of a weakened economy and/or future rises in interest rates.

This analyst draws different conclusions and sees a potential for further rapid price rises, due to a combination of low interest rates with a constrained supply of development-ready building lots plus rising government-imposed costs. This argument is developed at length in the report.

Housing Bubbles

A rapid rise in house prices does not necessarily indicate that a bubble exists. A key issue is whether consumers are responding to expectations that prices will rise, and whether that expectation is generating additional speculative demand that is causing prices to be higher than they should be (based on fundamentals, such as costs of supplying new housing).

Whether there are excessive expectations at play is very difficult to judge. It is also unclear whether prices have departed from the levels that would be justified by “fundamentals,” (including the cost of production), since the rapid rise in prices is linked to some elements of cost (prices for building lots and costs imposed by governments).

Researchers have concluded that the creation of bubbles is influenced by the “elasticity” of housing supply: communities where the supply of housing responds well to changes in demand are much less likely to have bubbles than are communities where supply is “inelastic” (unresponsive). The GTA currently falls into “inelastic” category: the inventory of building lots (for low-rise homes) has become very tight, falling short of market needs. Therefore, the GTA has seen rapid house price increases, and is at greater risk of developing a housing bubble.

The “inelasticity” of lots for low-rise housing is linked to provincial government policies. Places to Grow, a plan issued by the Ontario Ministry of Public Infrastructure Renewal in 2006, is intended to limit future outward expansion of urban development. While this does not directly affect the current supply of development-ready lands, it has created expectations of long-run shortages, which is leading to artificial shortages. In some cases, it is causing land owners to offer fewer lots in the present, as they would prefer to sell at the higher future prices that will result from future absolute shortages.

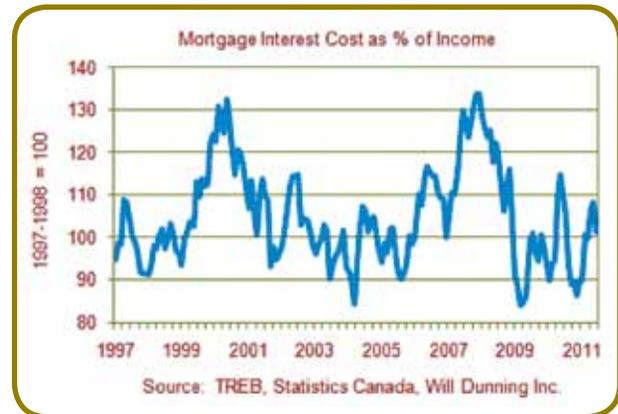
In addition, delays in obtaining final approvals and in installing infrastructure is reducing the supply of development-ready building lots.

Affordability Remains Very Favourable

While house prices have surged, reductions in mortgage interest rates means that the affordability of home ownership remains comfortably within historic bounds, as is indicated by the mortgage cost index.

In fact, the reduction of interest rates has created “affordability space,” which has allowed the rise in housing prices. This affordability space has been utilized by land owners and by governments, which have sharply raised the costs they impose on new housing.

Chart 1



House Prices Are Linked to Interest Rates

In a different but related analysis, the rapid rise in house prices can be explained by reductions of interest rates. This does not mean that prices had to rise – reduced interest rates created a potential for prices to rise. Market conditions caused the potential to become a reality.

Similarly, future rises in interest rates should bring a deceleration in the rate of price increases (or even price reductions). However, the analysis developed here finds that interest rates affect house prices with quite long lags. Thus, it appears that prices do not yet fully reflect the current low level of interest rates and there is potential for further rapid price rises. The deceleration scenario might not start to unfold until 2014 or even later.¹

The Supply-Demand Environment

The actual rise in prices was precipitated by imbalances between housing demand and housing supply. Continued population growth and a moderate recovery from the recession of 2008/2009 have created a need (or demand) to expand the housing inventory through new construction. When the supply of development-ready building lots falls short of that demand, the imbalance between supply and demand allows land owners to raise their prices. Those price rises must be passed onto home purchasers by the builders. In turn, in order for the builders to attain the prices they need, prices must also rise in the resale market.

Therefore, the rapid rise in house prices that has been precipitated by lack of supply affects all home buyers, including buyers of resale homes, not just new home buyers.

In addition, the “affordability space” has enabled governments to raise the costs that they impose on new homes, including both direct costs (such as GST/HST and development charges) and indirect costs (which result from escalating development standards and other regulations). Again, in order for new construction to be viable, prices must rise by corresponding amounts for new homes and in the resale market.

Rapidly Rising Land Costs

Land now represents a very substantial portion of the price of homes in the GTA, and land costs have increased very rapidly. From the fall of 2000 to the fall of 2010, lot prices in the GTA increased by an estimated 141%, or 9.2% per year. (Lot prices continue to escalate rapidly, with a further 11% rise in the half year to spring 2011.) In contrast, house prices increased by about 6% per year over the same period.

If the lot supply was more elastic (that is, if supply was able to respond in line with demand) then lot prices would have increased much less significantly, and the rise in house prices – in the new homes and resale markets – would have been correspondingly less.

“Government-Imposed Costs”

These costs have increased rapidly (*see Table 1*). Research published by Canada Mortgage and Housing Corporation, for a small subset of market areas within the GTA, shows that they represent a rising share of house prices. This indicates that these costs that are rising more rapidly than selling prices for new homes. While the coverage of this data is limited, there is no reason to believe that a conclusion based on broader data would be materially different.

The estimates shown in this table represent “direct” costs only (such as HST and development charges). They do not include the “indirect” costs that result from regulations and standards. No estimates exist for the indirect costs, but they certainly would bring the total share of government-imposed costs to at least 25% (and possibly closer to 30%) of new home prices.²

Table 1: Government-Imposed Costs as % of New House Prices in the Greater Toronto Area

	2002	2006	2009	Change in percentage points
Mississauga	16.3%	17.1%	NA	Unknown, but > 1 pt
Vaughan	16.7%	17.9%	18.9%	2.2 pts
Toronto (City)	14.1%	13.4%	16.7%	2.6 pts

Source: Will Dunning Inc., based on CMHC research

A major component of land prices is development charges imposed by municipalities. These are paid by the developer of the land and are passed on to the home builders who buy the lots, then the consumers who buy the homes. Therefore, the rapid rises in land prices discussed earlier are partly due to rapid rises in development charges which roughly doubled during the past decade.

Implications

The rapid rise in house prices may have strengthened the GTA economy, as the “wealth effect” encourages consumer spending (which brings job creation). However, as price growth decelerates (sometime in the future) a diminishing wealth effect would lead to a relative

softening of the GTA economy. The “excess gains” of employment during the recent past would be reversed to some degree. The shape of that process is highly uncertain, and there are risks. Risks can be positive (that the adjustment would be minimal) or negative (an abrupt downturn).

A key conclusion of this study is that rising interest rates have the potential, through a several-step process that occurs in the housing market, to weaken the GTA economy.

A second key conclusion is that the magnitude of the risk has been made greater by price increases that have been precipitated by land use planning constraints and by high and rising government-imposed costs.

Given the escalating risks, there is a strong case to be made that change is needed with regard to both of the detrimental factors. It will take some time to address the issues of land supply and government-imposed costs. Announcements of policy changes would not have immediate direct effects, but would encourage adjustment of expectations by land owners, home builders, and consumers. This would begin to relieve future pressures on house prices and mitigate the future escalation of risks.

About RESCON

RESCON is an association that caters solely to builder interests and issues. Builders face unique demands that require prompt action. RESCON has pioneered innovative contributions to the following areas: Health & Safety and WSIB Issues, Labour Training and Apprenticeship, Building Code Reform, Technical Standards and Procedures and Insurance.

RESCON and its affiliated associations are the industry voice on all key construction-related builder issues and interests. RESCON includes the membership of three active groups: the Metropolitan Toronto Apartment Builders Association (MTABA), the Toronto Residential Construction Labour Bureau (TRCLB) and the Durham Residential Construction Labour Bureau (DRCLB) as well as various non-union builders. It has also aided with the inception of the Ontario Residential Council of Construction Associations (ORCCA) which is a coordinating council of residential trade associations that addresses common concerns.

The members of RESCON are based in southern Ontario, the heart of the building industry, a region that generates approximately one-third of all housing starts in Canada.

About Will Dunning and Will Dunning Inc.

Will Dunning has been studying housing markets since 1982. For 16 years he worked at Canada Mortgage and Housing Corporation in various market analysis positions, including six years as the manager of the market analysis department at the Toronto Branch, with responsibility for all aspects of economic, demographic, and market analysis for the Greater Toronto Area. In the fall of 2000 he established Will Dunning Inc, which specializes in the economic and demographic analysis of housing markets.

Will has a Bachelor of Arts degree in Economics from McGill University and a Master of Arts degree in Economics from the University of British Columbia. www.wdunning.com provides more information as well as a selection of recent reports and presentations. In addition, “Housing Market Digest” provides a monthly review of economic and housing market conditions in the Greater Toronto Area.

Prices Are Rising Rapidly

In the GTA (and in many other areas of Canada) a period of rapid house price growth began at about the turn of the millennium. During 2000 to 2010, the average resale price in the GTA rose by 78%, or 5.9% per year.³ The price trend was interrupted very sharply by the recession of 2008/2009. Once the recession ended prices quickly bounced back and were soon reaching new records (*see Chart 2*). The pace of price increases remains strong. By this author's estimate, the house price trend is currently rising at a 9% rate, which is similar to the growth rate seen before the recession.

The average rate of house price growth (5.9%) has been well in excess of comparative measures, such as overall inflation (2.1% per year over the same 10-year period), wages (2.7% per year for full-time employees), or rents (1.4% for two bedroom apartments). Chart 3 illustrates one comparison, showing an index that compares house prices to incomes. Taking 1997 to 2001 as a base period, the current index of house prices versus incomes has increased by about 50%.

The continued very strong growth of house prices is initially surprising, given that we are in a post-recession environment and the economic recovery has not been robust.

Chart 2



Chart 3



Some analysts and commentators conclude that house prices are due to correct, either falling sharply or moving sideways, which would mean a fall relative to incomes, rents, or the overall price level.

- Some seem to base this conclusion on a natural tendency for a reversion to prior values of the ratios (of house-prices-to-incomes or house-prices-to-rents).
- Others base their expectations on forecasting models, and see it as the consequence of a weakened economy and/or future rises in interest rates.
- A recent article in the Toronto Star (“Housing Market Hot Streak Coming to an End” – Saturday, July 16) summarized forecasts from prominent economists. The position of the article on the top of the front page of a Saturday edition provides an indication that there is a high level of the interest in this topic.

These are not new expectations: house prices have been exceeding analysts’ forecasts for quite some time.

This research study has provided an opportunity to investigate some key issues, and has brought this author to a new set of conclusions. These opinions are markedly different from the current consensus.

One of the key issues of discussion is whether the GTA housing market is in a bubble. On that point, there is not a consensus: some analysts assert that there is a bubble that must burst (with an implication of severe economic damage, not unlike the United States experience). Others suggest that the price rises are due to economic conditions, including strong housing demand that has resulted from job creation and low interest rates.

One of the key conclusions reached below is that these two economic drivers (especially interest rates) created conditions in which house prices could rise rapidly. But, prices did not have to rise rapidly – other conditions have existed that caused the potential for rapid price increases to result in actual increases.

A further conclusion is that the rapid inflation of house prices in the GTA (and elsewhere in Canada) does not have to end in tears, unlike the U.S. experience. A severe downturn in house values would require a trigger. The U.S. experience had multiple triggers, including interest rate resets (mortgages that were initiated at below-market interest rates and were unaffordable once rates were reset at market levels). At the same time, there was a sharp rise in the cost of living – in particular, gasoline prices – that reduced consumers’ abilities to spend on other goods and services, including their housing obligations. Cautious behaviour by Canadians (consumers and lenders) means that we have much greater ability to tolerate future rises in mortgage interest costs, if and when they occur. The last page of this report elaborates upon this point in a discussion of research for “CAAMP.”

Housing Bubbles

A very good definition of bubbles has been provided by American economist Joseph Stiglitz:⁴

If the reason that the price is high today is only because investors believe that the selling price will be high tomorrow - when “fundamental” factors do not seem to justify such a price - then a bubble exists.

Reading this definition carefully, one ought to conclude that a rapid rise in house prices alone is not proof that a bubble exists. There are two further criteria:

- Firstly, price growth has been driven by expectations of future growth in prices.
- Secondly, prices have become divorced from “fundamentals.”

While the definition is clear, it may be very difficult to determine whether these two criteria are satisfied.

- Regarding the first criterion: Is there a speculative mindset that causes housing demand to be larger than it should be based on economic conditions and demographics? There is always some pressure in the housing market from an “investment motive.” The question is whether this motive has become excessive to the point that the expectations have become self-fulfilling. An answer to this question is not readily available.
- Regarding “fundamentals”: a key fundamental is the cost of production. For housing, this includes costs of labour and materials, as well as “soft costs” (such as design, marketing, interest costs, reasonable profits for the home builders, etc). These costs are generally measurable and relatively stable (they rise gradually): they do not explain the large rise in house prices. If these were the only costs, we might conclude that a bubble exists in the GTA housing market, since prices have increased much more than these costs. However, they are not the only costs. Later discussion examines two other sources of cost (building lots and government-imposed costs) and finds that these have increased very rapidly, and go a long way to explaining the rapid rise in house prices.

The discussion in later sections explores the following chain of argument: low interest rates have created “affordability space” which has resulted in a potential (but not a necessity) for house prices to rise:

- Governments have taken advantage of the affordability space to increase costs on housing.
- Building lot shortages have allowed land owners to take advantage of the affordability space to sharply raise the prices they charge to home builders (who in turn must pass the increased cost to home buyers).

U.S.-based academic research has concluded that the creation of bubbles is influenced by the “elasticity” of housing supply. Communities where the supply of housing is elastic (supply responds well to changes in prices and demand) are much less likely to have bubbles than are communities where supply is “inelastic” (unresponsive).⁵

The key culprit identified for inelastic supply in the United States has been planning practices that reduce or delay supplies of building lots. This includes “smart growth” (other names are used) that impose urban growth boundaries and other means to reduce growth. These government policies restrict development, often not allowing demand to be addressed. In consequence, prices rise disproportionately to other economic factors such as construction costs or in relation to incomes. The reduced housing activity negatively affects economic development and employment growth.

The GTA currently falls into the category of inelastic supply, as the land supply is increasingly constrained (for low-rise housing; there is considerable inventory of sites for apartments).

A significant body of provincial government policy is now negatively affecting the supply of development-ready land, although at present the impacts are mostly indirect.

Places to Grow establishes six “guiding principles” that will affect “how land is developed, resources are managed, and public dollars invested.” Two of the principles are of special interest. The third is to discourage conversion of lands from natural uses to developed uses (the resulting “greenbelt” has led to strict limits on urban expansion); the fourth is to “optimize the use of new and existing infrastructure” (this can be interpreted to mean that there will be less investment in infrastructure, and therefore less expansion of urbanized areas).

Similar “growth management” and “smart growth” approaches and philosophies are being pursued elsewhere under various labels.

Plans such as Places to Grow in combination with the intended limits on future supplies of development lands are not yet having much impact on the supply of lands that are now “development-ready,” but, they will in the distant future. Already, that fact may be influencing expectations and prices in the land market. Owners of potential development lands must have long time horizons; they are aware that Places to Grow will result in long-term shortages and escalation of values (as supplies become more and more limited). Therefore, the owners are further lengthening their horizons, selling less of their land now to take advantage of increased future values. This is reducing the supply available in the market.

In addition, lengthy approvals processes for new subdivisions and for installation of services (including water and sewer) are currently delaying the supply of building lots.

Unfortunately, there is a lack of organized data on land inventories. For a time, the provincial government (through the Ministry of Municipal Affairs and Housing) coordinated the production of data by municipalities on inventories by stage of approval. This is critical data from two important perspectives: 1) evaluating and therefore being able to fine-tune policies; 2) leading to greater knowledge that will help all actors make better decisions about land. *There is a pressing need to re-establish this very important data.*

While hard data on land inventories is lacking, available information provides indirect evidence of emerging shortages. That evidence (in commentary from industry and in market effects) is discussed later in this report (in the section on the Supply-Demand Environment).

These emerging and worsening constraints on supply – in theory and in reality – make the GTA susceptible to rapid house price increases, and there is greater risk of developing a housing bubble.

Affordability Remains Very Favourable

While house prices have increased sharply, in absolute terms and relative to other measures, reduced mortgage interest rates have prevented a deterioration of affordability for home owners. Chart 4 shows the author’s estimates of typical rates for five-year mortgages (after lender discounts). These rates are considerably lower than the rates that are advertised as “posted rates” by the major banks, and are lower than the “conventional mortgage rates” reported by the Bank of Canada.

Chart 5 combines data on house prices, mortgage interest rates, and wage rates, to produce an illustration of trends in the affordability of home ownership. It shows that the level of affordability is well within the range seen over this analysis period: over the past 14.5 years, the average value for this index is 105. The present index of 101.3 shows that the rise of house prices has not materially affected affordability – over that period, mortgage interest costs have been more-or-less matched by income growth.

Putting this another way, the fall in mortgage interest rates has created “affordability space,” which has allowed house prices to rise sharply without unduly reducing affordability.

Affordability does not seem to be a very important factor in driving the housing market. Chart 6 contrasts affordability with a measure of total housing demand (the combined total for

Chart 4



Chart 5

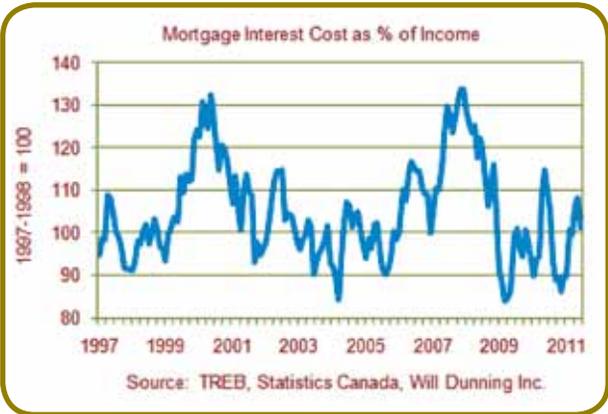


Chart 6

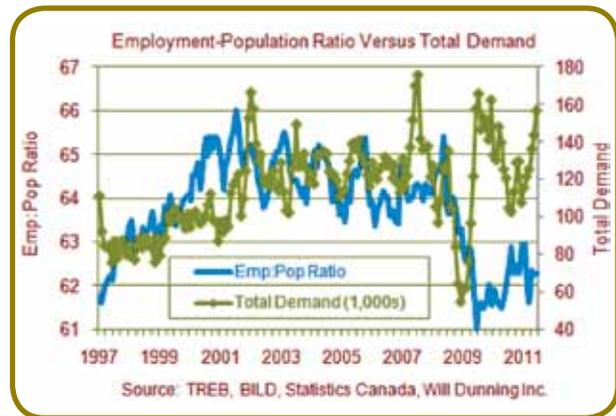


resales and new home sales – both seasonally adjusted). If affordability was important we would expect to see a strong “inverse relationship” – as affordability worsens (illustrated by a rise in the affordability curve) we would expect to see a fall in total demand, and vice versa. The expected inverse relationship does not appear to exist, at least most of the time.⁶

Some notable time periods in this dataset are 1999/2000, when a sharp deterioration in affordability (increased interest costs) seemingly had no impact on demand, and 2007, when sales rose at the same time as affordability worsened. There are some short-lived periods when affordability seems to affect demand in the way expected, such as the second half of 2009, when strongly improved sales followed shortly behind a very large improvement in affordability. However, there was a very important additional factor at the time: confidence was rebounding following the recession. Affordability sometimes has short-lived impacts that do not amount to very much total demand. However, while affordability may not have much influence on the total amount of demand, it does influence the price points that buyers select.

This analyst has long argued that affordability is not very important, that job creation is the key for housing demand. Chart 7 contrasts total housing demand with a measure of the employment situation (the percentage of adults who are employed, or the “employment-to-population ratio”). As the employment rate rises or falls, housing demand tends to move in the same direction, although often with a lag. Note for example the relationships, during the late

Chart 7



1990s, throughout most of the 2000s, and then during the recession that started in late 2008.

Most housing market analysts seem to attach a great deal of importance to affordability, and this is a key point of disagreement between this analyst and the consensus. It has important implications for the housing market outlook – many take the view that future rises in mortgage interest rates will have substantial negative consequences for the housing market. This analyst suggests that the changes in interest rates will be relatively unimportant. The critical factor going forward will be how many jobs are created and how much demand is created for home ownership. An additional consideration is how much demand for new housing will be provided by investors.

However, the changes in interest rates will have some impacts on employment and thus on housing demand. And the events can be expected to unfold quite gradually. This line of argument is developed in the following sections.

The next section further examines the role of interest rates within the housing market. While interest rates do not seem to have much impact on total demand, there does appear to be a very strong (but complex) linkage between interest rates and changes in house prices.

House Prices are Linked to Interest Rates

Other analysts have noted that house prices have increased relative to overall inflation, to incomes, and to rents. This section reviews the relationship of house prices to rents.

Other analysts have often compared house prices to rents for apartments, as measured by the rental market surveys of Canada Mortgage and Housing Corporation. However, this comparison – of two different housing forms – is not necessarily valid, for at least three reasons:

- Rents for apartments may be subject to different influences than the rents for other housing types.
- There is a “bias” in the data – over time the average quality of the home owner housing stock has improved (homes have become larger, with more expensive features) whereas the rental apartment stock is much more static (there are few additions to the housing stock included in the CMHC survey). Therefore, a rise in the price-to-rent ratio is partly due to change in “relative quality.”
- Increasingly, the two data sets represent different locations. Rents are based on an inventory that is heavily (five-sixths) concentrated within the City of Toronto, while a rising share of the price data (now about 60%) is for suburban (“905”) locations.

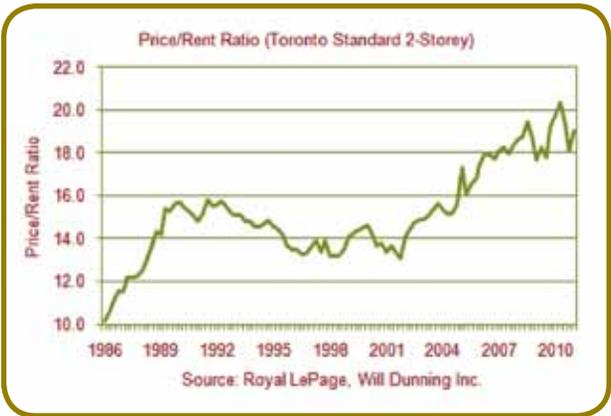
For these reasons, it would be best to make like-to-like comparisons of house prices and rents. Data from the Royal LePage house price survey is very useful for this purpose. For a range of standardized housing types, the survey provides estimates of current values and rents. The survey is conducted quarterly, and an on-line data base is available from the mid-1980s. Geographic coverage of the datasets has evolved over time, and therefore the methodology used must accommodate the changes of market areas.

The methodology used here is:

- For the “standard two-storey” housing type.⁷
- For all available geographies in the “Toronto area.”
- Calculate the rent price ratios (where both of the data elements are available).

The estimates are presented in Chart 8. The price/rent ratio shows a sharp rise over the past decade. There was also a rise during the “Boom” period of the late 1980s (which is widely acknowledged to have been a bubble period). The current price/rent ratio exceeds even that earlier record. The current ratio of about 19 is about one-third higher than the ratio of 14 that was seen 10-15 years ago.

Chart 8



Some analysts argue that the price/rent ratio must “revert” to the previous level. The data shown here might provide a basis for argument that house prices in the GTA should fall by about 25%, either by an absolute fall, or by a long period of no growth (which would cause prices to fall relative to rents), or by some combination of gradual falls in prices and rises in rents.

The author doesn’t subscribe to the argument that there must be a reversion to some past level of the ratio. For this to happen, there needs to be some kind of “mechanism” driving the adjustment

This is where interest rates become important.

Interest rates have fallen very sharply, whether the rates are measured in absolute terms, or in “real” terms (adjusted for inflation). As discussed above, this has resulted in “affordability space,” which has allowed house prices to rise rapidly.

Chart 9 contrasts the data on interest rates (using yields on five-year Government of Canada bonds) and the price/rent ratio. (Actually, to make the data easier to interpret, it inverts the housing ratio, which is now rent divided by price.)

The immediate impression is that there is a relationship for the second half of the period (interest rates and the rent/price ratio both trended downwards). For the first half of the period, there is not an apparent relationship.

However, a further analysis finds a very strong relationship.

To start, there is a conceptual basis for a relationship between the rent/price ratio and interest rates. This looks at housing as an “asset” that produces income. In this case, the income produced is “housing services,” in other words, rent (which might be received as an actual rent from a tenant; for an owner-occupant, presumably the value of the housing services is also equal to the rent). The yield on housing can be calculated in the same way that one would calculate the yield on a bond, or the dividend yield on an investment in a stock. The rent/price ratio measures the yield for housing. By this logic, when interest rates fall, we would expect that the rent/price ratio should also fall. Alternatively, prices should rise more rapidly than rents. We see this expected result in the second half of the period.

Chart 9



The second step is to convert the actual interest rate into a “real” rate, by taking out an adjustment for inflation.⁸ Chart 10 contrasts the rent/price ratio versus the inflation-adjusted (“real”) yield on five-year Government of Canada bonds. In this chart, it remains very difficult to see a relationship. In this presentation, it appears that there might be a weak relationship.

Chart 10



The third element of the analysis is the realization that house prices do not instantly adjust to changes in interest rates – prices adjust through a market process that involves the balance between supply and demand. When interest rates change, the dynamics of demand and supply are slowly altered. This results in a slow adjustment of prices and the price/rent ratio. The analysis suggests that the “lagged” adjustment period might extend over ten years. Chart 11 attempts to illustrate that lags exist – it shifts the bond yield by five years. On this basis (especially when we add the smooth trend lines) there is a very close relationship between interest rates and the rent/price ratio, since the mid-to-late 1990s.

Chart 11



A statistical analysis has been used to assess the relationship between rent/price ratios versus real interest rates over the prior ten years. This analysis indicates that there has been a very close relationship for the past 20 years (but not before). Chart 12 contrasts actual price/rent ratios with the ratios that are simulated

Chart 12



based on interest rates. The very close fit of the actual and simulated ratios strongly supports the theory. This provides a strong start to an explanation for the one-third rise in the price/rent ratio over the past decade.

It also calls into question the suggestions by some analysts that the price rent ratio must fall back to a prior level. This analysis suggests that the future path of the ratio (and of house prices) will be highly influenced by interest rates – past rates and future rates.

Interest rates are considerably lower than they were prior to the recession. The finding – that the price/rent ratio is influenced by interest rates over prolonged periods – provides a tantalizing suggestion that the price/rent ratio may rise further. Chart 13 provides a simulation (assuming that interest rates will soon return to the average seen in the decade prior to the recession – a real five-year Government of Canada bond yield of 2.5%). In this simulation, the price/rent



ratio would rise from the current level of about 19 to about 22 in three years from now. For this to happen, prices would have to rise by 17 percentage points more than rents (or about 5.5 to 6 percentage points per year). If rents were to rise by 2% per year, house prices would rise by 7.5% to 8% per year for the next three years.

Subsequently, the ratio would fall gradually (on the assumption of higher interest rates). During a period of about eight or nine years starting in 2014, the price rent ratio would fall from about 22 to about 18. The fall in the ratio would result from some combination of changing rents and changing house prices.

- If rents were to rise by 2% per year, flat house prices would be at essentially the same level in 2022 as in 2014 (and about 20% higher than at present).
- If rents were unchanged, house prices would fall by 18% during 2014 to 2022 (and would be 7% lower than at present).
- On the other hand, if rents rose by 3% per year (a scenario that could be caused by the housing shortages that are now emerging), house prices would rise by 9% during 2014 to 2022, and they would be 37% higher than at present.

Chart 14

Chart 14 illustrates a scenario for house price adjustment if interest rates rise to the extent assumed and if rents rise by 2% per year. Taking rents and house prices as of the first quarter of 2011 as a starting point (which has an index value of 100.0 in this chart) there is a suggestion of quite rapid growth in house prices for about three years, which would be followed by a more-or-less sideways movement for a long time.



This analysis simulates what could happen through a “mechanical process.” It is not a forecast of what will happen. What actually happens will be influenced by actual changes in interest rates and rents, and by many factors that affect the demand and supply of housing.

While it is not a forecast, the suggestion of continued rapid rises for the next three years is an intriguing alternative to forecasts that foresee – imminently – various forms of deceleration (slowdown), sideways movements, or even falls in house prices. Moreover, this analysis provides an explanation for the continuation of price increases, which for the past two years have defied predictions of slower growth (or worse) for house prices.

The Supply and Demand Environment

The relationship between interest rates and house prices (via the price/rent ratio) does not say that prices must adjust in response to changing interest rates. The theory says that there is a potentiality. Whether or not the adjustment actually occurs will depend on conditions on the ground.

Again, we can say that lower interest rates have created “affordability space” in which prices might rise. But, market conditions will determine how much prices actually rise. “Market conditions” refers to the balance between supply and demand.

Housing demand was constrained during the recession, but a developing recovery that has brought job creation has strengthened housing demand.

The supply side, however, is challenged. In particular, there is an increasing shortage of available building lots in the low-rise housing sector. Population growth in the GTA results in a need to expand the housing inventory. Lack of building lots is preventing that from happening, and the shortfall of housing supply relative to demand is driving up housing prices, taking advantage of the “affordability space.”

The constrained supply and its consequences can be illustrated in several ways.

Firstly, from comments made by the building industry:

“As for prices, the RealNet low-rise price index currently sits at \$549,371, up 12.6 per cent or \$61,531 since last June.” (excerpt from a press release by the Building Industry and Land Development Association – July 19, 2011)

“As for the low-rise market, April [2011] sales declined by four per cent compared with April 2010, and are down 14 per cent on a year-to-date basis, reflecting price pressure caused by the very restricted supply of low-rise land. Low-rise prices are up 7.3 per cent year/year to \$524,954 while high-rise prices are up 5.2 per cent to \$447,352.” (excerpt from a press release by the BILD – May 24, 2011)

“You can’t sell what you don’t have,” [Mr. George] Carras explained, noting that as at March 31, 2011, there was only 5.5 months of supply of low-rise new homes. “Active new home inventories are well below the long-term average levels.” (excerpt from a press release by the BILD – April 19, 2011)

Secondly, the new low-rise homes share of total housing demand (new home sales plus resales) has been very low for the past four years. The share has eroded since 2002. Some of that erosion can be explained by fundamentals: population growth for the GTA slowed after 2002, which meant there was less need to expand the housing inventory and therefore less need for construction of new homes; in addition, the record

Chart 15



low share seen in 2008 was certainly influenced by the recession. However, the subsequent economic recovery should have brought a rise in the new homes share of demand. A tentative recovery began in 2009, but it was truncated.

A third approach is to use a forecasting model. The author's model predicts new low-rise homes activity based on growth of employment and the population, housing affordability, and conditions in the resale housing market. Based on those factors, over the past year activity has been about one-third lower than it should have been.

In combination, the data and opinions point to a severely constrained land supply that is resulting in rapid rises in house prices.

The rise of house prices has involved increasing land prices (and rising costs imposed by governments). These cost increases must be passed through into the selling prices of the homes, otherwise the builders could not afford to build the homes. And, in order for the builders to sell for the required prices, prices must rise by corresponding amounts in the resale market.

These impacts of land shortages are being felt not just by home builders. Ultimately, because they affect prices of all homes, they affect buyers of both new and existing homes.

Rapidly Rising Land Costs

Land now represents a very substantial portion of the price of homes in the GTA, and land costs have increased very rapidly: from the fall of 2000 to the fall of 2010, lot prices in the GTA increased by an estimated 141%, or 9.2% per year.⁹ (Lot prices continue to escalate, with a further 11% rise in the half year to spring 2011.) In contrast, house prices have increased by about 6% per year over the same period.¹⁰ As illustrated in Table 2, land prices represent a rising share of new home prices in most areas of the GTA.¹¹ The available data permits calculations of ratios of lot prices to house prices, as of 2000 and 2010, for eight municipalities in the GTA. For six of the municipalities, lot prices have increased much more rapidly than house prices, causing the ratios of lot price to house prices to rise sharply. For one municipality (the City of Oshawa), lot prices have increased by less than house prices, resulting in a falling ratio. In one municipality (Whitby), lot prices and house prices have increased at about the same rate, resulting in a roughly flat ratio of lot prices to house prices.

Table 2: Estimation of Lot Prices (1) as % of House Prices, 2000 and 2010

	Markham	Newmarket	Richmond Hill	Vaughan	Brampton	Ajax	Oshawa	Whitby
2000								
Lot Price	\$104,000	\$84,000	\$106,000	\$104,000	\$84,000	\$72,000	\$60,000	\$68,000
House Price	\$300,948	\$272,423	\$312,913	\$293,949	\$245,043	\$299,897	\$211,479	\$230,729
Lot as % of house price	35%	31%	34%	35%	34%	24%	28%	29%
2010								
Lot Price	\$252,000	\$188,000	\$292,000	\$298,000	\$212,000	\$152,000	\$88,000	\$124,000
House Price	\$580,412	\$461,928	\$555,324	\$619,777	\$482,606	\$482,757	\$354,785	\$433,479
Lot as % of house price	43%	41%	53%	48%	44%	31%	25%	29%
% increase 2000-2010 (annual rate)								
Lot price	9.3%	8.4%	10.7%	11.1%	9.7%	7.8%	3.9%	6.2%
House price	6.8%	5.4%	5.9%	7.7%	7.0%	4.9%	5.3%	6.5%
Change in Ratio (2) (percentage points)	+ 9	+ 10	+ 19	+ 13	+ 10	+ 7	- 4	- 1

Notes: (1) for 40 foot lots (2) changes may not add due to rounding

Sources: MCAP Financial Corporation Lot Values, Canada Mortgage and Housing Corporation house prices, analysis by Will Dunning Inc.

“Government-Imposed Costs”

A second major category of costs is “Government-Imposed Costs.” This subject was covered in more detail by this author in an earlier report for RESCON (“Consequences of Government-Imposed Costs”, published in March 2011). That study cited research by CMHC,¹² to the effect that during 2002 to 2009, government-imposed costs (“GICs”) increased more rapidly than house prices, with the consequence that GICs represent rising shares of prices for new homes.

Table 3: Government Imposed Costs as a % of New House Prices

	2002	2006	2009	Change in percentage points
Mississauga	16.3%	17.1%	NA	Unknown, but > 1 pt
Vaughan	16.7%	17.9%	18.9%	2.2 pts
Toronto (City)	14.1%	13.4%	16.7%	2.6 pts

Source: Will Dunning Inc., based on CMHC research

In most municipalities of the GTA, sales taxes are the most significant government-imposed cost. With the conversion of provincial sales tax to HST, sales taxes have recently increased much more rapidly than house prices in the high priced markets of the GTA (for example, Vaughan, the former City of Toronto, and Mississauga).

Table 4: Estimation of Sales Taxes Payable for New Single-Detached Homes

Municipality	Vaughan	Toronto (former City)	Mississauga	Milton	Oshawa	Clarington
Average Single Detached House Price						
2006	\$519,128	\$1,213,478	\$509,593	\$363,257	\$329,874	\$296,746
2010	\$619,777	\$1,536,203	\$788,047	\$440,786	\$354,785	\$357,751
% Change in House Price	19%	27%	55%	21%	8%	21%
Combined GST + PST						
2006	\$39,800	\$93,000	\$39,000	\$20,700	\$18,800	\$16,900
2010	\$50,100	\$155,500	\$69,400	\$27,300	\$17,500	\$17,700
% Change in Sales Taxes	26%	67%	78%	32%	-7%	5%
Sales Taxes as % of House Price						
2006	7.7%	7.7%	7.7%	5.7%	5.7%	5.7%
2010	8.1%	10.1%	8.8%	6.2%	4.9%	4.9%

Source: Calculations by Will Dunning Inc. Using data from Canada Mortgage and Housing Corporation

A second major component of government-imposed costs is development charges. Table 5 provides data showing that in general these costs have increased more rapidly than house prices. These charges are paid by the developer of the land, and are passed on to the home builders who buy the lots and then the consumers who buy the homes. Therefore, the rises in land prices noted above are partly due to rapid rises in development charges.

Table 5: Changes in Development Charges Versus Changes in Average Prices for New Single-Detached Homes, 2001/02 to 2010

Municipality	Change in Development Charges	Change in House Prices
Vaughan (York)	97%	91%
Richmond Hill (York)	101%	66%
Markham	124%	83%
Mississauga	124%	148%
Brampton	143%	92%
Ajax	78%	63%
Whitby	72%	81%
Oshawa	55%	63%
Pickering	56%	98%
Milton	175%	71%
Simple Average	102%	86%

Source: David Amborski, "Alternatives to Development Charges for Growth-Related Capital Costs," completed for the Residential & Civil Construction Alliance of Ontario; calculations by Will Dunning Inc.

Implications

In the absence of land supply constraints and rising government-imposed costs, house prices in the GTA would not have increased as much as they have. The analysis developed here suggests that house prices are likely to rise further, as the consequence of the reductions of interest rates in recent times, in an environment of “inelastic” supply.

However, it is not pre-ordained that house prices must rise rapidly. The future path for prices will be highly influenced by the balance between supply (which is influenced by planning policies and implementation) and demand (which is influenced by the broader economy, particularly by the pace of job creation. At present, job creation is supportive of housing demand). The current combination of relatively strong demand with constrained supply sets the stage for house prices to take full advantage of the existing “affordability space.”

Growth in house prices is an important driver of job creation, through a “wealth effect” – which is perhaps the single most important factor. The strength of this factor has been illustrated in recent times: in the GTA the very strong rebound of housing values has been an important factor in the recovery from the recession of 2008/2009; in the United States, on the other hand, continued weakness of housing prices has imposed considerable drag on its economy.

Rising housing values encourages consumers to spend money and create jobs because:

- Increased home equity makes people feel more confident about their own futures and the future of their community.
- Consumers can borrow against housing equity.
- Because of the increased savings represented by their housing, they may decide to save less in other forms.

In a way, therefore, the house price increases that have been driven by the constrained land supply and government-imposed costs have strengthened the economy of the GTA. We might conclude that, at present, the employment situation is stronger than it would be if there was an ample supply of building lots.

At present, rising house prices is a positive factor for the GTA economy and may provide positive pressure for a few more years. But the high prices raise risks for the future. When interest rates rise, and housing prices moderate, we should expect a diminishing “wealth effect,” which would bring a relative weakening of the employment situation. In turn, a weaker employment environment would cause a weakening of housing demand. In addition, if (as is suggested by the analysis here) the softening of house prices occurs more gradually than the rise of interest rates, deterioration of housing affordability would also contribute to a weakening of housing demand (although as has been argued above, the effect of changed affordability is considerably less powerful than the impacts of changes in the employment situation).

For about three years (this author starts the clock in September 2008), there have been many concerns expressed about risks in the Canadian housing market. The initial wave (and some of the more recent waves) of concern focused on fears that Canadians would be unable to afford rises in their mortgage payments that will result when interest rates rise in future. (Three years later, those “inevitable” rises have yet to materialize, and they still appear to be some distance in the future.)

The experience in the United States, where unaffordable increases in mortgage payments was a significant trigger for prolonged economic trauma, certainly gives us reason to seriously consider this issue. But, and this is a crucial distinction, we can now see that in the United States millions of mortgage defaults were pre-destined at the time the mortgages were initiated. However, this is Canada: lending practices differ and (daresay) consumers and lenders are much more prudent.

In another capacity, as Chief Economist for the Canadian Association of Accredited Mortgage Professionals (“CAAMP”), this author has investigated risks related to changes in mortgage interest rates, and the ability of Canadian mortgage borrowers to withstand rises in their mortgage payments. Two approaches have been pursued (and repeated):

1. Analysis of a very large data set of recently transacted mortgages, which simulated the impacts of future rises in rates.
2. Data from consumer surveys, which asked about abilities to afford future cost increases, and compared those responses to scenarios for future rate rises.

Both approaches have concluded (on more than one occasion) that the vast majority of borrowers can accommodate interest rates at the levels that are expected for the future.

A further conclusion is that in the Canadian mortgage market, the greatest risk factor is loss of ability to pay (i.e., loss of a job) rather than changes in payment levels.

Pulling together these strands: As long as we have a stable economy, the current level of house prices has created some risk for the GTA housing market or economy, but the level of risk does not appear very large, and certainly not imminent.

The last area for discussion here is uncertainty. The analysis of the relationship between interest rates and house prices covers a period when rates were tending to fall. The simulation of consequences rising interest rates assumes that there will be “symmetry” of responses: an adjustment of house prices will be gradual, and in consequence the adjustment would be manageable.

It is possible that the reaction would be asymmetric – the house price adjustment could be much more rapid and turbulent. We saw a very good example of asymmetry during the recession. Prior to the recession, housing demand grew gradually in response to expanding employment. But, during the recession, a relatively small drop in employment (about one-half as large as during two prior recessions) resulted in a sudden collapse of housing demand. There is no guarantee that when interest rates rise we will see a smooth response in the housing market or the broader economy.

This uncertainty is another reason to wish that governments would mitigate the impacts they are having on house prices – higher prices mean higher risks of a future painful adjustment.

The current issue – increasingly constrained supplies of development-ready building lots – cannot be solved within a matter of a few months. Therefore, it will be quite difficult to arrest the rapid rise of land prices and house prices. But, consumers and suppliers are capable of being forward-looking: announcement of intentions to positively address the constraints could lead quite quickly to adjustments of expectations, which would begin a process of deceleration, and limit the future accrual of additional risks.

Endnotes

- 1 Even if interest rates do not rise to the extent assumed, or with the timing assumed, house prices would eventually find an equilibrium level. If, for example, rates stayed at current levels, they might continue to rise rapidly for another five or six years, at which point house prices might be 30-35% higher than they are today.
- 2 This estimate for the GTA is similar to recent research from the (US) National Association of Home Builders, which estimates that on average 25% of the price of new homes is due to government regulations. “How Government Regulation Affects the Price of a New Home,” Special Studies, July 5, 2011, By Paul Emrath, Economics and Housing Policy Group, National Association of Home Builders
- 3 Since this study is focused on new homes, it would be preferred to use a measure of price change for new homes. Statistics Canada does provide a New House Price Index. This shows a total increase of 39% over the same period (for the combined area of Toronto CMNA and Oshawa CMA), comparing the average index for 2010 versus the average for 2000). The average annual increase is 3.3%, less than the 5.9% indicated by the resale data. However, the NHPI is flawed. It captures price changes that occur for projects that are in continuous marketing, but misses price changes that are made at the time that new projects are opened. Therefore, the NHPI significantly underestimates actual price change in the new homes market. Canada Mortgage and Housing Corporation provides data on prices of “absorbed” homes. For the GTA, the CMHC data shows a 10-year rise of 102% (7.3% per year), greater than indicated by the resale data. However, the CMHC data has constraints that limit the reliability of estimated price changes: prices reported are the selling price at the time the sale was made (usually prior to the start of construction) rather than at the actual reporting date (which is the month the home is “absorbed” and may be as much as two years after the actual sale); secondly, changes in shares by geography and product characteristics can distort the estimates of change.
- 4 “Symposium on Bubbles,” Journal of Economic Perspectives, Volume 4, Number 2, Spring 1990, pages 13-18.
- 5 For example “Housing Supply and Housing Bubbles,” Edward L. Glaeser, Joseph Gyourko, and Albert Saiz, (July 16, 2008 draft) provides a rigorous (challenging) analysis. Similar conclusions about the role of supply are distributed widely throughout the literature on the economics of housing bubbles.
- 6 For those with a technical mindset, the correlation between the affordability index and total demand is just 7.8% using monthly data and just 2.0% using annual data. In other words, the relationship is extremely weak, perhaps non-existent.
- 7 The Royal LePage specifications are: “a three-bedroom, two-storey home with a detached garage. It has a full basement, but no recreation room. Using outside dimensions, the total area of the house is 139 sq. metres (1,500 sq. ft.), and it is situated on a full-serviced city-sized lot of approximately 325 sq. metres (3,500 sq. ft.). The house may be detached or semi-detached, and construction style may be brick, wood, siding or stucco.”

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- 8 The argument is that since (1) the value of “housing services” should rise somewhat in line with inflation and (2) interest rates reflect expectations about inflation, the effects of expected inflation should be neutralized by focusing on the “real” part of the interest rate. Strictly speaking, the adjustment should be for expected inflation, which is of course not available as a rigorous measure. Instead, this analysis uses the inflation rate over the past year.
 - 9 This calculation has been made by the author based on data generated by MCAP Financial Corporation, Real Estate Finance Group, in its semi-annual lot price surveys.
 - 10 Based on average resale prices as reported by the Toronto Real Estate Board.
 - 11 This table provides a best available estimate. It combines different datasets (which have different time concepts and do not use the same definitions of property types. The CMHC data is for all single-detached homes regardless of lot size whereas the lot price estimates are for 40 foot lots. Moreover, the lot prices are as of the survey date, whereas the house price data reflect selling prices that were established in the past, but are recorded as of the date of completion). Thus, while the estimated ratios of lot price to house price are far from being exact, the large changes provide a clear indication of a trend.
 - 12 “Government-Imposed Charges on New Housing in Canada,” by Ray Tomalty and Andrejs Skaburskis, published January 2009 and “Examination into Government Imposed Charges on New Construction,” completed by IBI Group, 2010.



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