Consequences of Government-Imposed Costs Within the New Housing Market

Completed for:

RESCON

By:

Will Dunning Inc.

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WILL DUNNING INC.
Economic Research

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Introduction and Key Findings

Introduction

New housing is a key component of the economy. During the past decade, construction of residential structures accounted for 6.3% of Ontario's economic output. Moreover, because the demand for housing expanded during the decade, this activity contributed 8.5% of the province's economic growth during the decade[1]. This report explores the consequences of rising government-imposed costs on new housing, which increasingly threaten this important economic sector.

Development of new housing obviously entails significant investments by the builder and then by the owner of the property. It also entails substantial investment by governments in:

- Infrastructure that will directly service the housing (such as water and sewer systems as well as roads) plus
- Community facilities that have less direct benefits, as they will serve the new residents as well as prior members of the community (such as schools, libraries, transit systems, and parks).

In order to fund those investments, governments increasingly rely on direct charges on new residential development. As will soon be shown, in the first major section of this report, those direct charges have become increasingly large and now represent a substantial share of the price of new homes.

In addition to the direct government-imposed costs, there are also indirect costs that builders incur:

- To comply with various government-mandated requirements (such as building codes, warranty programs, and environmental protection), as well as
- Costs of participating in processes that are required by government.

Those indirect costs have not been quantified, and to do so would require a Herculean effort. It is known that these indirect costs have also been expanding rapidly. Rather than attempt to estimate these costs, the second major section of the report briefly describes the range of the indirect costs.

To this author it is obvious that those costs will be reflected in housing prices – not just new housing but also existing housing – otherwise new housing would not be constructed. Since the logic will not be immediately apparent to all readers, the third section of the report briefly discusses the rationale for pass-through of the direct and indirect costs, and provides data that illustrates the dynamic process of cost pass-through. As an introduction to that discussion, it can be pointed out here that the new housing market is fiercely competitive: a visit to new development areas or perusal of advertising media will quickly demonstrate that a large number

[1] **Source:** Statistics Canada, *Provincial and Territorial Economic Accounts: Table 2, Gross domestic product, expenditure-based, Ontario, catalogue number 13-018-X; analysis by Will Dunning Inc.*

of suppliers (home builders) are competing for buyers. It is easy for consumers to be well-informed about prices. Competitive pressures assure that builders profit margins are low, and more importantly for this discussion, that any increases in costs – including government-imposed costs – become reflected in prices.

While housing prices have increased sharply, lower interest rates have largely offset the impact on housing affordability. Lower interest rates have created "affordability space" that has enabled governments to raise government-imposed costs. This is explored in the fifth section of the report.

However, as a result of the housing price rises related to government-imposed costs, housing demand is lower than it would otherwise be. In the fifth section of the report a forecasting model is used to simulate the impacts of various price increments on housing construction.

Then, in the sixth section of the report, an economic impacts model is used to estimate the consequences for employment, incomes, and related government revenues.

Key Findings

This report develops estimates of the impacts of current government-imposed costs on:

- New housing activity.
- Related impacts on employment and wages earned.
- Subsequent impacts on federal and provincial government revenues from personal income taxes plus premiums for the Canada Pension Plan and Employment Insurance.

As of 2006 (the effective date for the most comprehensive estimates), direct government-imposed costs on housing account for a very significant share of the price of new homes. (These costs include development charges that are intended to fund public infrastructure, land dedications, sales taxes, and various fees levied by governments and quasi-government agencies.) For three municipalities within the Greater Toronto Area, the estimated shares (for single detached homes) are: Vaughan – 17.9%, Mississauga – 17.1%, and the City of Toronto – 13.4%. With subsequent large increases for two of the major components – development charges and sales tax – the shares are likely now approaching 20%.

Furthermore, costs of complying with government policies and processes, result in further costs, and total government-imposed costs must now exceed 25% of the values of homes.

These government-imposed costs must be passed onto home buyers, otherwise the home building industry could not afford to build the homes.

The resulting increased level of housing prices has consequences in terms of reduced housing demand, which consequently reduces the level of employment within the construction industry as well as within other industries that provide goods and services that are used in the construction process. In turn, government tax revenues are reduced.

The increased housing prices and reduced housing demand would also have social impacts: higher housing costs will reduce ability to pay for other necessities (and comforts), possibly

including education; reduced housing demand would imply limitations on quality of life and achievement of other life objectives.

This report develops estimates of the economic impacts. Social impacts are not further discussed here, but surely must be borne in mind.

Simulations of economic impacts begin with a "baseline" that reflects current and expected economic conditions (including house prices). It then tests six alternative scenarios, in which house prices are lower by 5%, 10%, 15%, or 20% (representing a scaling back of government-imposed costs), or higher by 5% or 10% (representing further expansion of government-imposed costs).

The results of these simulations are summarized in the table below (and the results are presented in more detail in tables shown in the body of the report).

These simulations illustrate that reducing government-imposed costs on housing has considerable potential to stimulate housing demand, with resulting positive impacts on jobs, incomes, and government revenues.

Table 1
Summary of Simulations: Impacts of Changes in House Prices, 2011 to 2013 (Annual Averages)

Scenario	*Baseline*	*1st Scenario – House Prices 5% Lower*	*2nd Scenario – House Prices 10% Lower*	*3rd Scenario – House Prices 15% Lower*	*4th Scenario – House Prices 20% Lower*	*5th Scenario – House Prices 5% Higher*	*6th Scenario – House Prices 10% Higher*
Housing Starts	37,096	39,040	41,776	45,647	51,013	35,628	34,351
Difference vs Baseline		1,944	4,681	8,552	13,917	-1,468	-2,745
Jobs Created (1)	52,700	55,800	60,100	66,300	75,000	50,600	48,600
Difference vs Baseline		3,100	7,400	13,600	22,300	-2,100	-4,100
Wages Generated (2)	$2,990	$3,160	$3,400	$3,750	$4,250	$2,860	$2,750
Difference vs Baseline		$170	$410	$760	$1,260	-$130	-$240
Federal and Provincial Revenues (2,3)	$910	$960	$1,040	$1,130	$1,300	$870	$850
Difference vs Baseline		$50	$130	$220	$390	-$40	-$60

Source: Estimates by Will Dunning Inc.

Notes:
(1) Full time equivalent jobs
(2) Wages and tax revenues are in millions of 2010 dollars
(3) Revenues from personal income tax plus CPP and EI premiums

Implications

With regard to the direct government-imposed costs, it is time to consider whether the existing funding model is appropriate:

- Given the magnitudes of current costs and the resulting substantial negative impacts, alternative models must be given careful consideration.
- A model in which municipalities have long-term accountability for the costs they incur is likely to result in greater efficiency than the current model in which the costs are paid by

a subset of the population who cannot control the costs. An alternative model that results in this shifting of accountability would entail municipalities funding infrastructure costs via grants from higher levels of government, tax revenues, user fees, or by borrowing (and then retiring the borrowing out of tax revenues).

- Moreover, the house price increases that result from direct and indirect government-imposed costs affect not just buyers of new homes – in order for new development to be viable in the market the government-imposed costs must also become reflected in values across the entire existing housing inventory. Therefore, the attempt to shift costs onto buyers of new homes negatively affects housing affordability for the entire community.

With regard to indirect costs, a growing number of seemingly reasonable requirements have cumulated into a seemingly unreasonable total cost that is ultimately borne by buyers of new homes, and again, ultimately affects housing affordability for the entire community. There is a need to look at these costs in totality and where possible to streamline requirements.

For the future, when new requirements are contemplated that will have direct or indirect impacts on house prices, there is a need to examine costs and benefits: current decision-making processes are not adequately – and possible not at all – balancing costs and benefits.

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.

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. In the fall of 2000 he established Will Dunning Inc, which specializes in the economic and demographic analysis of housing markets.

1.0 Growing Direct Government-Imposed Costs

Costs as of 2006

A CMHC-sponsored research project quantified direct government-imposed costs as of 2006[2]. The figure below (taken verbatim from the report) identifies the cost elements that were measured. This listing appears to be quite comprehensive, although it is possible that some minor cost elements were not included. The authors state clearly that the estimates do not include indirect costs that are "created by government regulations (such as zoning, building codes and approvals processes) but not directly charged by a government or quasi-government agency".

Figure 2-1: GICs and Their Components

GIC	Level	Components
Infrastructure charges	Municipal/regional	Hard (sewer, water, road) and soft (parks, libraries, police station) off-site infrastructure (either through subdivision agreement or development charges), and water and sewer connection fees. Engineering review fee. Sewer connection and other inspection fees.
Land dedications	Municipal/regional	Land dedications and cash in lieu
Development application and processing fees	Municipal/regional	Subdivision application fees, condominium application fees, site plan approval, administration fees.
Building permit fees	Municipal/regional	Building permit, plumbing, and mechanical or electrical permit fees.
Home warranty fees	Provincial	New home warranty programs (both required and optional)
Registry/Land transfer fees	Provincial	Land transfer taxes and title registration fees.
Provincial sales taxes	Provincial	Provincial Sales Tax on construction materials, Quebec Sales Tax on house sale, Harmonized Sales Tax on house sale.
Provincial other	Provincial	Provincial plumbing and electrical inspection fees, provincial engineering review fees, home warranty licensing fees.
GST	Federal	GST on house sale.
Property taxes	Municipal/regional	Property taxes, garbage collection surcharges, police surcharges, fire surcharges, education surcharges, etc..

The research study developed costs for government-imposed costs (hereafter "GICs") for three dwelling types (median priced single-family detached homes, town homes, and apartments) for major urban centres across Canada.

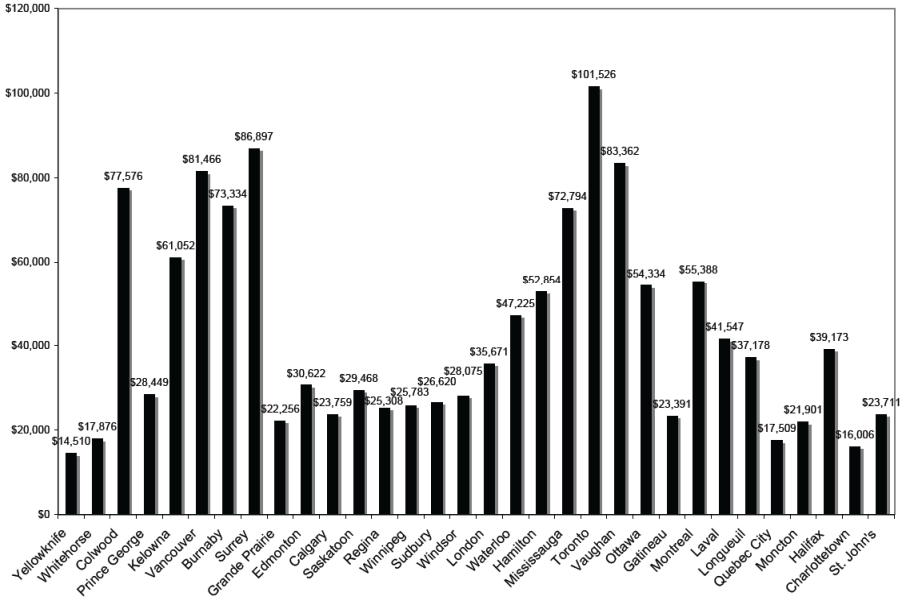
Clearly, the greatest effort was devoted to the single-family detached dwelling type (which is reasonable given that this type represents the largest share of new residential development). The estimates are summarized within the report in a set of bar charts. Two of the charts are presented below.

The first chart shows the Tomalty/Skaburskis estimates of total costs for the direct GICs as of 2006. As can be seen, the costs range from a low of $14,510 in Yellowknife to a high of $101,526 in the City of Toronto. In dollar terms, GICs are largest in British Columbia (for the six cities the average – not weighted by size – is about $68,000), followed by Ontario (unweighted average of about $56,000 across nine centres). Within the three municipalities located in the

[2] "Government-Imposed Charges on New Housing in Canada", by Ray Tomalty and Andrejs Skaburskis, published January 2009. The relatively long lag time between the effective date of the research and its publication would appear to testify to the difficulty of compiling this very detailed (and widely distributed) information.

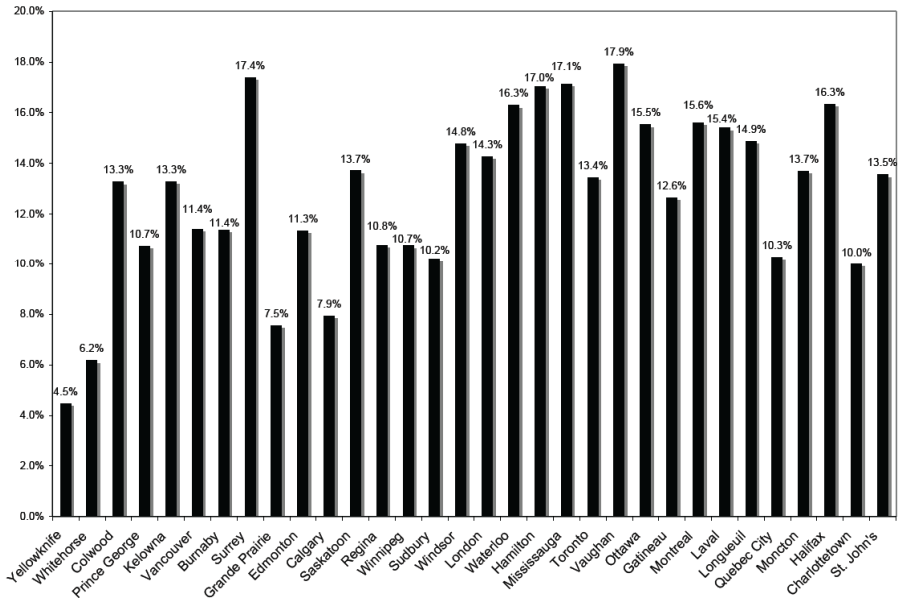
Greater Toronto Area, the average is about $86,000 (again unweighted), including $101,526 for the City of Toronto, $83,362 for Vaughan, and $72,794 for Mississauga.

Figure ES-1: Total GICs on Single-detached Dwellings



The second chart shows the estimates of direct GICs as percentages of the selling prices. These range from 4.5% in Yellowknife to 17.9% in Vaughan (Ontario). Across the provinces, the highest share is in Nova Scotia (16.3%, based on one city – Halifax). In Ontario, the (unweighted) average is second highest among the provinces, at 15.2%. In the three GTA municipalities, the (unweighted) average is 16.1%.

Figure ES-2: Total GICs as Percent of Price on Single-Detached Dwellings



Major elements of the direct GICs include:

- Infrastructure charges (development charges), which were estimated (as of 2006) at $11,644 for the City of Toronto, $28,825 for Vaughan, and $25,310 for Mississauga.
- Land dedications, estimated for 2006 at: $15,418 for the City of Toronto, $7,159 for Vaughan, and $6,835 for Mississauga.
- Provincial sales taxes, estimated at $12,145 for the City of Toronto, $8,906 for Vaughan, and $7,908 for Mississauga. These are estimated as of 2006. Today, the amounts (in dollar terms and as percentages of selling prices) would be higher, due to the Harmonized Sales Tax. This point is discussed further below.
- Federal GST for 2006 was estimated as $45,300 for the City of Toronto, $27,900 for Vaughan, and $22,400 for Mississauga.
- Registry fees and land transfer taxes, estimated as $11,650 for the City of Toronto, $5,850 for Vaughan, and $7,100 for Mississauga.
- Elements that make lesser contributions to the total GICs are: development application and processing fees, building permit fees, new home warranty fees, and other provincial charges.
- Home builders note that these calculations appear to omit costs related to WSIB (Workplace Safety and Insurance Board).

Estimates of GICs for town homes and apartments were presented in less detail in the report, and for fewer cities.

For town homes:

- Across 12 cities, GICs as percentages of home prices range from 9.9% in Vancouver to 18.1% in Hamilton.
- The unweighted average of the 12 cities is 13.8%
- Two cities of the GTA are included. The shares are 17.3% in Mississauga and 12.6% in the City of Toronto.

For apartments:

- Across 15 cities, GICs as percentages of home prices range from 6.5% in Calgary to 16.5% in Mississauga.
- The unweighted average of the 15 cities is 11.9%
- Three cities of the GTA are included. The shares are 16.5% in Mississauga, 13.2% in Vaughan, and 11.1% in the City of Toronto.

Changes 2002 to 2006

The authors of the CMHC study revisited some prior research, recalculating estimates from 2002 to make them comparable to the 2006 data. The table below provides the estimates in the first four data columns. The remainder of the table adds this author's calculations, to show changes over the period.

Across the 28 municipalities covered, GICs rose at about the same rate as house prices (both about 39%). The consequence is that the share of GICs in the prices was flat, at a (simple,

unweighted) average of 12.5% in 2002 and 2006. The experience is slightly different in Ontario. Across seven centres, the average increase for GICs was 38%, slightly larger than the 36% rise for house prices. Consequently, the average share of GICs in prices rose from 14.5% in 2002 to 14.8% in 2006. For the three cities of the GTA, total GICs increased by 44% in the City of Toronto, 60% in Vaughan, and 53% in Mississauga.

Table 2
Single Family Detached House Prices and GICs,
2002 versus 2006

Municipality	*2002 Median Price*	*2002 GIC*	*2006 Median Price*	*2006 GIC*	*% Change*		*GIC as % of House Price*		*Change (in pct points)*
					Price	*GIC*	*2002*	*2006*	
St. John's	145,750	22,441	175,000	23,711	20%	6%	15.4%	13.5%	-1.8
Charlottetown	160,000	16,314	160,000	16,006	0%	-2%	10.2%	10.0%	-0.2
Halifax	174,000	33,360	240,000	39,173	38%	17%	19.2%	16.3%	-2.9
Moncton	139,800	19,812	160,000	21,901	14%	11%	14.2%	13.7%	-0.5
Quebec City	145,000	17,699	170,000	17,509	17%	-1%	12.2%	10.3%	-1.9
Longueil	190,000	24,042	250,000	37,178	32%	55%	12.7%	14.9%	2.2
Laval	200,000	24,176	270,000	41,547	35%	72%	12.1%	15.4%	3.3
Montreal	250,000	31,772	355,000	55,388	42%	74%	12.7%	15.6%	2.9
Gatineau	140,000	17,192	185,000	23,391	32%	36%	12.3%	12.6%	0.4
Ottawa	274,900	45,262	350,000	54,334	27%	20%	16.5%	15.5%	-0.9
Vaughan	311,990	52,194	465,000	83,362	49%	60%	16.7%	17.9%	1.2
Toronto (1)	500,000	70,342 (1)	755,000	101,526	51%	44%	14.1%	13.4%	-0.6
Mississauga	292,990	47,706	425,000	72,794	45%	53%	16.3%	17.1%	0.8
Windsor	164,000	20,899	190,000	28,075	16%	34%	12.7%	14.8%	2.0
London	203,959	28,466	250,000	35,671	23%	25%	14.0%	14.3%	0.3
Sudbury	180,000	20,617	260,000	26,620	44%	29%	11.5%	10.2%	-1.2
Winnipeg	179,900	20,153	240,000	25,783	33%	28%	11.2%	10.7%	-0.5
Regina	156,471	19,672	235,000	25,308	50%	29%	12.6%	10.8%	-1.8
Saskatoon	163,998	21,427	215,000	29,468	31%	38%	13.1%	13.7%	0.6
Calgary	211,500	19,457	300,000	23,759	42%	22%	9.2%	7.9%	-1.3
Edmonton	187,900	19,263	270,000	30,622	44%	59%	10.3%	11.3%	1.1
Grande Prairie	148,000	13,293	295,000	22,256	99%	67%	9.0%	7.5%	-1.4
Surrey	379,000	57,182	500,000	86,897	32%	52%	15.1%	17.4%	2.3
Burnaby	448,598	50,765	645,000	73,334	44%	44%	11.3%	11.4%	0.1
Kelowna	285,000	35,488	460,000	61,052	61%	72%	12.5%	13.3%	0.8
Prince George	195,000	22,139	265,000	28,449	36%	29%	11.4%	10.7%	-0.6
Whitehorse	170,769	11,052	290,000	17,876	70%	62%	6.5%	6.2%	-0.3
Yellowknife	187,846	9,807	325,000	14,510	73%	48%	5.2%	4.5%	-0.8
28 centres (simple average)					39%	39%	12.5%	12.5%	0.0
7 Ontario centres (simple average)					36%	38%	14.5%	14.8%	0.2

Source: Tomalty and Skaburskis; calculations by Will Dunning Inc.

Note: the Tomalty/Skaburskis report appears to show an incorrect calculation for the 2002 GST for Toronto ($22,440, indicating that the GST rebate was applied incorrectly). The original calculations have been revised by this author. This includes adjusting total GICs for 2002 from the original $57,742 to $70,342.

Looking in more detail at the seven Ontario cities included in the analysis, the table on the next page shows the components of change.

The estimates indicate that Goods and Services Tax rose by 37% (based on a simple unweighted average) and accounted for about one-third of the increase for GICs across the province (32% - as is shown in the right-most column of the table). Within two of the three municipalities located within the Greater Toronto Area, increases for GST were considerably larger, because by 2006 the house prices exceeded the $450,000 threshold for the GST rebates: the effective rates for GST increased, from 4.48% as of 2002 to 6.0% as of 2006 (in Vaughan) and 5.3% (Mississauga). In the City of Toronto, the rise for GST was below average, because the $450,000 threshold was exceeded in both 2002 and 2006: the tax rate was reduced from 7% in 2002 to 6% in 2006.

For provincial sales tax, estimated increases were generally slightly lower than the rate of increase in house prices. This is likely due to the fact that costs for the materials that are subject to PST increased less rapidly than the costs for land and labour that were not subject to PST.

Municipal charges (which includes development charges and various fees) rose by 40% and accounted for the largest share of the rise (41% - again, calculations are based on simple unweighted averages). Within the three cities located in the GTA, the increases for municipal charges were 41% in Vaughan, 68% in the City of Toronto, and 37% in Mississauga.

The remainder of the charges that are included in the calculations (land registry, new home warranty, and other provincial charges) rose quite rapidly (by 75% on average for the seven centres in Ontario, including 79% in Vaughan, 91% in the City of Toronto, and 128% in Mississauga. The largest component of these increases is land transfer tax, which is calculated using a steeply progressive scale.

Table 3 ***Components of Change for Government-Imposed Costs, 2002 to 2006***				
Municipality	*2002*	*2006*	*% Change*	*Change as % of rise in total GICs*
Goods and Services Tax				
Ottawa	12,316	13,440	9%	12%
Vaughan	13,977	27,900	100%	45%
Toronto	35,000	45,300	29%	33%
Mississauga	13,126	22,440	71%	37%
Windsor	7,347	7,296	-1%	-1%
London	9,137	9,600	5%	6%
Sudbury	8,064	9,984	24%	32%
Simple Average	*14,138*	*19,423*	*37%*	*32%*
Provincial Sales Tax				
Ottawa	6,556	9,848	50%	36%
Vaughan	6,188	8,906	44%	9%
Toronto	10,040	12,145	21%	7%
Mississauga	5,855	7,908	35%	8%
Windsor	4,460	5,614	26%	16%
London	5,586	7,128	28%	21%
Sudbury	4,991	6,975	40%	33%
Simple Average	*6,239*	*8,361*	*34%*	*13%*
Municipal Charges				
Ottawa	23,361	26,511	13%	35%
Vaughan	28,263	39,821	41%	37%
Toronto	18,717	31,496	68%	41%
Mississauga	25,245	34,511	37%	37%
Windsor	7,225	12,822	77%	78%
London	11,476	16,008	39%	63%
Sudbury	5,536	6,526	18%	16%
Simple Average	*17,118*	*23,956*	*40%*	*41%*
Other GICs				
Ottawa	3,029	4,535	50%	17%
Vaughan	3,766	6,735	79%	10%
Toronto	6,585	12,585	91%	19%
Mississauga	3,480	7,935	128%	18%
Windsor	1,867	2,343	25%	7%
London	2,267	2,935	29%	9%
Sudbury	2,026	3,135	55%	18%
Simple Average	*3,289*	*5,743*	*75%*	*15%*
Source: Tomalty and Skaburskis; calculations by Will Dunning Inc.				
Note: as noted above, the Tomalty/Skaburskis estimates for 2002 have been recalculated by this author.				

Subsequent to 2006

The research and analysis required to generate the estimates of government-imposed costs is onerous. CMHC has recently published a partial update of the 2006 estimates, to 2009[3]: not all areas covered in 2006 were included in the 2009 analysis. Moreover, a different team completed the 2009 analysis and it is possible that changes in methodology may have invalidated comparisons of the 2006 and 2009 estimates. These caveats expressed, the research indicates that the share of GICs in house prices increased. For Vaughan, the share increased to 18.9%, from the 2006 estimate of 17.9%. For the City of Toronto, the 2009 share was 16.7% versus the 2006 estimate of 13.4%.

Since 2009, total GICs have continued to rise rapidly. This section provides some partial estimates of changes for major components of GICs, for 2006 to 2010.

Sales taxes for new homes continue to rise rapidly, due to a combination of rising home prices and increasing effective tax rates. The recent imposition of the HST in particular has resulted in large tax increases in many locations. Provincial sales tax was previously applied only to the material inputs, which resulted in a tax rate of about 2% of the value of a new home. Since July 1, 2010 the provincial component of the Harmonized Sales Tax ("HST") is based on 8% of the pre-tax value, less a 75% rebate that is capped at $24,000. This means that for any properties valued at about $485,000 or higher, the effective rate of provincial tax has been increased. New home prices in the GTA are generally in excess of that threshold, resulting in an increased burden from the provincial component of the sales tax.

On the other hand, the GST rate, which was 6% in 2006, has been reduced to 5%. This has tended to reduce the federal component of sales taxes, although rising house prices have resulted in overall increases in GST payable.

For a range of centres within the GTA, sales taxes (combined federal and provincial) that would be payable in 2006 and 2010 have been calculated based on the respective tax regimes. Results are shown in the following table[4].

Within the most expensive market areas, sales taxes have risen substantially in absolute terms, and as a percentage of the homes' selling prices (for example in Vaughan and Mississauga, with the most extreme example being the City of Toronto). In a mid-priced market area (Milton), taxes also increased more rapidly (32%) than did house prices, with consequence that the tax burden increased from 5.7% of the selling price in 2006 to 6.2% in 2010. In lower cost areas, tax burdens were reduced, because of the reduced GST rate and because taxes may have been reduced for the provincial component. Oshawa provides a rare example where a combination of low prices and a slow rate of price growth resulted in an actual decline in sales taxes and a drop in the tax burden from 5.7% in 2006 to 4.9% in 2010. In the case of Clarington, low prices combined with a moderate rate of house price growth resulted in a minor tax rise (5% over the period).

[3] "Examination into Government Imposed Charges on New Construction". Completed by IBI Group, 2010.
[4] The calculations use data from Canada Mortgage and Housing Corporation on average prices for single-detached houses that were absorbed (occupied after the completion of construction) during the respective years and therefore the estimates here for 2006 will differ from those in the Tomalty/Skarburskis report. This methodology allows for a consistent calculation of changes during 2006 to 2010.

The conclusion from this section of the analysis is that rising sales taxes have contributed to rising GICs, in absolute dollar terms and as a percentage of home values. Thus, in the case of Vaughan, increased sales taxes will have added about 0.4 percentage points to the 2006 GIC burden of 17.9% (to about 18.3%); for the City of Toronto the increment due to sales taxes is 2.4 percentage points on top of the 2006 burden of 13.4% (to about 15.8%); and for Mississauga, the increment is 1 percentage point on top of the 2006 burden of 17.1% (to 18.1%).

Table 4
Estimation of Sales Taxes Payable for New Single-Detached Homes in the Greater Toronto Area, 2006 and 2010

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						

In addition to the tax rises, there have been increases for municipal costs. This study has not attempted to update the municipal costs, but piecemeal information shows that there have been substantial increases.

A recent research report "Alternatives to Development Charges for Growth-Related Capital Costs", completed by David Amborski for the Residential & Civil Construction Alliance of Ontario shows:

- For Vaughan, in 2010 development charges amounted to $41,245, a 43% rise versus the 2006 amount of $28,825 estimated in the Tomalty/Skaburskis study. This far exceeds the 19% increase in house prices over the same four year period.
- For Mississauga, 2010 development charges are estimated as $34,611, 37% above the 2006 estimate of $25,310. This increase is less than the 55% rise in house prices over the period, but it is far in excess of overall inflation (4.9%).
- For the City of Toronto, the 2009 development charge is estimated at $12,281, an 11% increase from 2006. For this period, there was a moderate rate of increases, and it was lower than the 27% increase for house prices. In response to the recession, the City froze its development charges, but it appears that the period of moderation is now over.
- For Mississauga (and even moreso for Toronto) the low-rise lot supply is essentially built out: new activity is limited and the market is increasingly concentrated on luxury homes. Among these three municipalities, Vaughan provides the most substantive illustration of

the relationship between development charges and house prices, and the extent to which development charges are out-pacing house values.

The estimates of development charges in the Tomalty/Skaburskis report cover just three municipalities within the Greater Toronto Area. However, estimates can be developed for 2001/02 versus 2010 using data from the Amborski report. The table below provides data for ten municipalities with significant starts of single-detached homes and for which the Amborski research provides data on development charges. The figures (increases in development charges and rises in average house prices) for 2001/02 to 2010 show that in five out of ten municipalities increases for development charges exceeded the rises for average house prices, and in five out of ten the opposite was the case. Based on a simple unweighted average, the increase for development charges (102%) was well in excess of the growth of house prices (86%), indicating a rising burden for this component of GICs during 2001/02 to 2010.

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

Land dedications represent a non-trivial component of GICs. Since, as will be discussed below, land prices have increased more rapidly than house prices, this also represents a growing burden.

To conclude this section:

- In two suburban municipalities of the Greater Toronto Area (Vaughan and Mississauga), as of 2006, direct government-imposed costs represented 17% to 18% of the price of new single-detached homes. In the inner municipality of Toronto, in 2006 GICs represented a lower share of new home prices (13.4%), but a rapid increase in sales taxes payable will have subsequently caused a sharp rise for the share.
- In 2006, the GIC share was already very substantial. It has increased further and is approaching 20%, due to rising sales taxes, development charges, and land dedications.

Indirect costs represent a further burden, as is discussed in the next section.

2.0 Indirect Costs

The indirect costs that result from government requirements have two broad elements: the cost of complying (such as the cost of building to prescribed standards, etc.) and the cost of participating in processes (such as staff costs and costs for consultants).

Considering costs of complying with standards:

- Building requirements (federal and provincial) were originally focused on health, safety, and structural integrity but have increasingly been used to address environmental issues and social issues.
- Safety-related provisions of building standards have been expanded, such as actual and proposed requirements for sprinklers.
- Clearly improvement in environmental impacts and safety is desirable, but the building industry opines that changes are being introduced without adequate consideration of their costs or of cost-benefit trade-offs. Moreover, some changes have negative impacts, such as reduced indoor air quality that has resulted from tightening of building envelopes, which will result in further costs to improve indoor environments and/or will affect the health of occupants.

Considering costs of participation - the industry faces high and rising costs for taking part in various approval processes.

These indirect costs are even more difficult to measure than the direct costs, and no attempt will be made here to provide estimates.

However, industry participants believe that the costs (for both compliance and participation) are rising and that current proposals will add further to costs.

RESCON and its membership are attempting to compile information on the costs resulting from existing or new regulations affecting housing, with a view to publishing a supplemental report on indirect GICs. The preliminary indication is that over the past decade cost increases have been similar in magnitude to the substantial increases for development charges and fees.

It is noteworthy that there is no existing analysis of these indirect costs. This absence is due to the fragmentation of regulation across many government interests (including land use planning, environmental issues, social objectives, health and safety, and labour market issues). The fragmentation of government interactions has prevented development of a “big picture” and has allowed total impacts to become extremely large.

Furthermore, the pressure to address the cost issues was not evident so long as interest rates were falling and masking the impacts on affordability. It is now appearing increasingly likely that the period of record low interest rates is at an end, and impacts on affordability will become increasingly important, with negative impacts on the important economic activity of housing construction.

These concerns are not isolated to Canada. Consideration of the impacts of indirect GICs has already resulted in actions in other similar jurisdictions such as Australia and the United Kingdom.

In conclusion, the prior section of this report concluded that the direct effect of government-imposed costs is in the range of 20% of the selling price of new homes, and is rising. These indirect costs are additional, and also appear to be rising. It is quite likely that combined direct and indirect GICs are in the range of 25% to 30% of new home prices.

The information provided here results in a call for further research on indirect government-imposed costs, and more importantly, for discussions involving all levels of government and the building industry on:

- Appropriate requirements.
- Future processes that will find appropriate balances between costs and benefits.

3.0 Pass-Through of Government-Imposed Costs

Some might believe that government-imposed costs are paid by land developers and home builders and therefore do not affect home buyers. However, builders will construct homes only if they can cover their costs and earn a return on their investments that is acceptable to them. The industry is very competitive, and prices are transparent to consumers. This combination limits profit margins and means that over the long run, prices for new homes must increase by enough to recover rising government-imposed costs (in addition, of course, to recovering increases for other costs).

The mechanism by which cost increases are passed on to home prices is complex.

New homes compete against each other, but even moreso they compete against options that are available in the resale housing market. Therefore, new home prices cannot be automatically increased whenever costs change. In order for builders to sell their new homes, their prices must be in an attractive relationship to prices in the resale market.

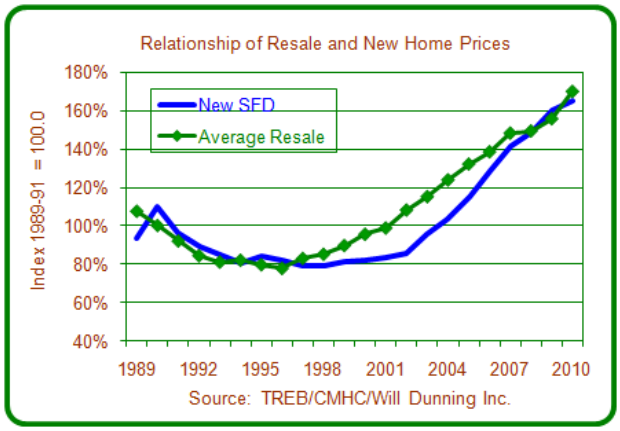
Broadly-speaking, the mechanism is:

- New housing development becomes necessary when a rising population and an expanding number of households generate a need to expand the housing stock.
- The pressure from an expanding number of households causes the supply in the resale market to be insufficient relative to demand. This causes prices to rise to levels at which new construction becomes viable (sufficiently profitable to interest home builders).
- Prices (and supply) will tend to rise to a point at which overall supply and demand are in balance, which will limit further pressures for price increases.
- Another way to express this theory is that when the costs of new construction rise (due to increased government-imposed costs, or due to other cost increases, for labour, materials, land, energy, or financing costs) profitability is reduced and there is less incentive to build. This reduces the supply of new homes. This creates pressure in the resale market, which will tend to result in rising prices – new construction can play its full role in expanding the housing inventory only when prices in the resale market have risen sufficiently that builders can sell at prices that cover their increased costs.
- A further part of the process is that rising house prices reduce total demand. There are two channels for this. Firstly, rising house prices within a community will tend to reduce population growth, by discouraging in-movement and encouraging movements away to lower-cost communities. Secondly, higher prices discourage household formation. We are all aware of suggestions that younger people are staying in the parental homes for longer, and that rising house prices are significant factor for this change. Rising GICs and the resulting increases for housing prices have reduced the need to expand the housing stock within the GTA, and thereby reduced new housing starts.

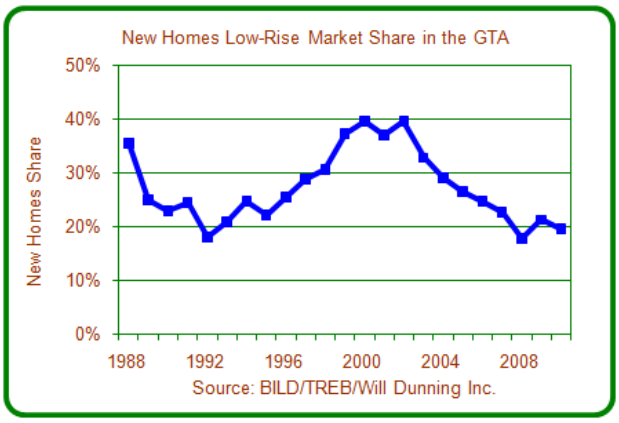
Measuring the impacts of house prices on population growth rates and household formation is quite challenging and there may be no definitive estimates. This author has made various attempts at the analysis. The research supports the idea that higher house prices discourage in-movement and encourage out-movement. Other estimates indicate that a 10% rise in house prices would reduce household formation rates enough that the total number of households would be 2.5% to 3% lower. If this impact was spread over a 10 year period, household

formation (and the required number of housing starts) in the GTA would be reduced by 4,000 to 5,000 per year. The reduced population growth would further reduce housing requirements.

The chart to the right illustrates the relationship between prices for resale and new homes. In both cases the price data have been converted to an index (in which the average price during 1989 to 1991 provides the base – a value of 100.0). For the most part, there is a close relationship, but there is a prolonged period starting about 1998 and lasting for four or five years, in which resale prices rose but new home prices were slow to follow. This does not invalidate the theory: the theory tells us that there will be adjustment, but the adjustment does not need to be instantaneous. In this case, there was very substantial capacity to build new homes at the start of that period, in the form of ample supplies of development-ready building lots and a large number of home builders who were actively marketing.



During that period, there was a relative price advantage for new homes, with the result that sales of new low-rise homes reached the highest ever levels, both in terms of unit sales and as a percentage of total demand. The chart to the right illustrates the share of new low-rise home sales relative to total low-rise sales (new homes plus resales). The record high share in the middle of the chart coincides with (and is the consequence of) a period when new homes were at a relative price advantage due to excess supply. With the elimination of the surplus supply of new homes early in the past decade, prices returned to a normal relationship and the share fell. Moreover, in the past three years, the share has fallen to quite low levels, as there is now deficient supply in the new homes market. This deficient supply can be related to two major factors: continued rapid rise in government-imposed costs which has discouraged investment by builders of low-rise homes and a shortage of building lots, which is attributed to provincial land-use policies.



Development charges are generally borne by land developers - the companies that acquire the land and obtain development approvals as well as access to infrastructure. Thus, increased GICs are in part reflected in rising land values.

Land is a very significant component of the cost of new homes. Within the suburban regions of York, Peel, and Halton Regions, lot prices account for 40% to 50% of the selling prices of new homes; in Durham Region the share is closer to 30%, and trends for lot prices are a critical determinant of the economics of the new homes market.

The table below uses data generated by MCAP Financial Corporation (a company that provides financing for residential development projects). The MCAP survey has shifted its geographic

coverage over time, as development locations have shifted – the table provides data for nine market areas for which lot value estimates are available for both 2000 and 2010. The MCAP data is published on the basis of cost per front foot, for four types of lot. For each of the time periods shown, this author has generated estimates of average prices on a per lot basis.

Table 6
MCAP Financial Estimates of Lot Prices, Fall 2000 and Fall 2010

Market Area	*Price Per Front Foot*			
	Town Homes	*Single-Detached Homes*		
	20 Foot	*30 – 36 Foot*	*40 Foot*	*50 Foot*
Fall 2000				
Richmond Hill	$3,150	$2,950	$2,650	$2,450
Markham	$3,100	$2,800	$2,600	$2,400
Maple	$3,000	$2,800	$2,500	$2,300
Woodbridge	$3,200	$3,000	$2,700	$2,500
Newmarket	$2,600	$2,300	$2,100	$1,900
Brampton	$2,600	$2,300	$2,100	$1,900
Ajax	$2,300	$2,100	$1,800	$1,700
Whitby	$2,100	$1,900	$1,700	$1,500
Oshawa	$1,800	$1,700	$1,500	$1,400
Average (Per Front Foot)	$2,722	$2,491	$2,251	$2,064
Average $ Price Per Lot	$54,446	$82,217	$90,026	$103,224
Fall 2010				
Richmond Hill	$7,100	$6,600	$7,300	$6,850
Markham	$5,900	$5,900	$6,300	$6,600
Maple	$9,650	$7,800	$7,800	$8,500
Woodbridge	$8,300	$6,500	$7,100	$7,450
Newmarket	$5,400	$4,600	$4,700	$5,500
Brampton	$5,700	$4,900	$5,300	$5,300
Ajax	$3,800	$4,100	$3,800	$3,500
Whitby	$3,700	$3,300	$3,100	$3,900
Oshawa	$2,700	$2,200	$2,200	$2,600
Average (Per Front Foot)	$6,054	$5,389	$5,661	$5,901
Average $ Price Per Lot	$121,082	$177,825	$226,448	$295,039
Change Since Fall 2000				
Average $ Price Per Lot	$66,636	$95,608	$136,421	$191,815
% Change	122%	116%	152%	186%
Source: MCAP Financial; analysis by Will Dunning Inc.				
Note: MCAP publishes prices as ranges; the figures above represent mid-points of the ranges				

The next table contrasts the rises in lot prices, development charges, sales taxes, and house prices. Since the data for land prices covers a 10-year period this provides the span for the analysis. The estimates for development charges cover about 8.5 years. For each of the indicators, the rates of increase have been recalculated as annual averages. The data are presented for eight areas for which estimates of rates of change are available for all three components (estimates of changes for development charges in Newmarket are not available).

These estimates show that the rates of increase for lot prices and development charges are broadly similar, with some exceptions.

- For the two component areas of Vaughan (Maple and Woodbridge) and for Richmond Hill the rises for lot prices were substantially more rapid than the rises for development charges.
- In the remaining five areas, rises for lot prices are similar to lower than the rise for development charges.

Obviously, development charges are not the sole determinant of changes for lot prices. Market conditions and other cost factors influence lot prices. In the case of Vaughan for example, it appears that proximity to the centre of the GTA and erosion of supply have permitted above average rises.

Other factors will be:

- Costs of land development that are borne by the developer.
- Changes in the value of land in other uses (including agricultural value).
- Costs of holding land from the time of purchase until sale of lots, including interest costs, the "opportunity cost" of tying up capital, management costs, and realty taxes.

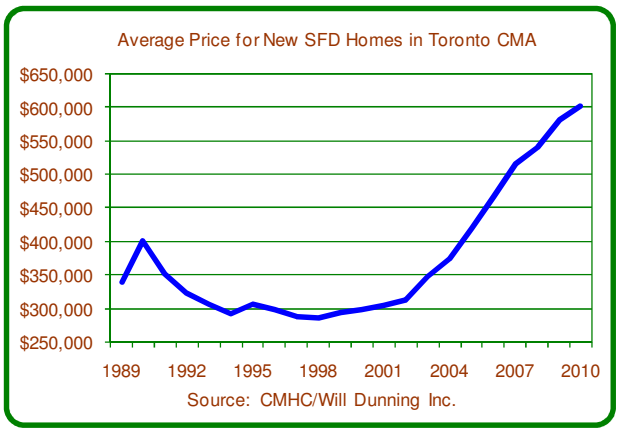
The house price data show increases that are lower than the rates of land price increase in six of eight cases (excluding only Whitby and Oshawa). As a simple average, the annual rate of house price (6.5%) is 2.2 percentage points lower than the rate of land price increases (8.7%), as well as being 1.6 percentage point lower than the increase for development charges (8.1%). Similarly, the data on sales taxes shows rates of increase that exceed house price growth. The clear implication of this data sequence is that the "net price" available to cover increased construction costs has increased by even less than the 6.5% rise for "gross house prices".

Table 7
Average Annual Increases for Lot Prices (1), Development Charges, Sales Taxes, and House Prices

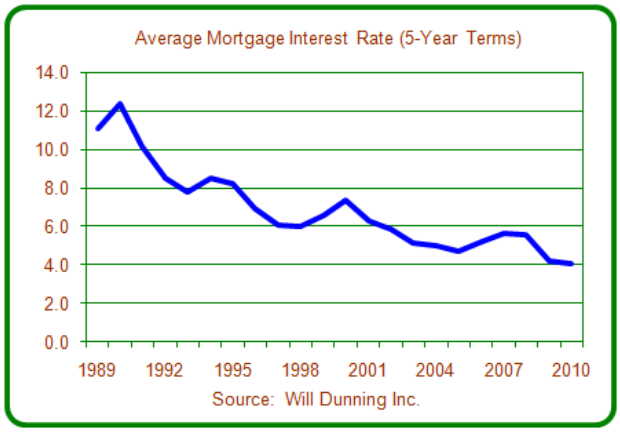
Municipality	*Lot Prices % Change (10 Years)*	*Development Charges % Change (8.5 Years)*	*Sales Tax % Change (10 Years)*	*Single-Detached House Prices % Change (10 Years)*
Richmond Hill	10.7%	8.6%	8.0%	5.9%
Markham	9.3%	9.9%	9.2%	6.8%
Maple	12.1%	8.3%	10.5%	7.7%
Woodbridge	10.2%	8.3%	10.5%	7.7%
Brampton	9.7%	11.0%	8.2%	7.0%
Ajax	7.8%	7.0%	6.0%	4.9%
Whitby	6.2%	6.6%	6.0%	6.5%
Oshawa	3.9%	5.3%	2.8%	5.3%
Simple Average	8.7%	8.1%	7.7%	6.5%
Source: Will Dunning Inc. Using data from MCAP and David Amborski, "Alternatives to Development Charges for Growth-Related Capital Costs", completed for the Residential & Civil Construction Alliance of Ontario				
Notes (1): based on 40 foot lots				

4.0 Housing Affordability

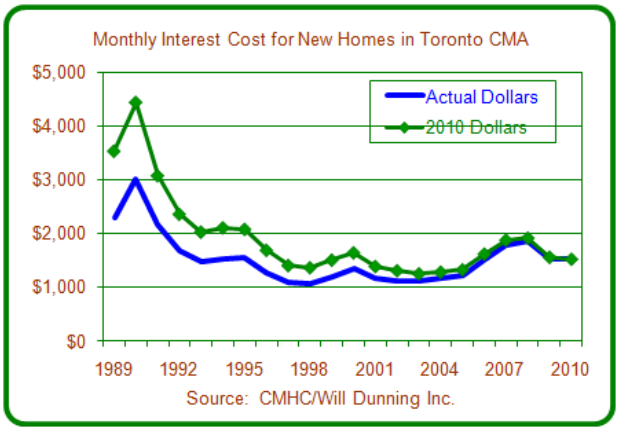
As has been seen, within the Greater Toronto Area (and throughout most of Ontario and Canada) house prices have increased very substantially. In the new homes market, the average price for new single-family detached homes (as measured by Canada Mortgage and Housing Corporation's market absorption survey) was 78% higher in 2010 than in 1989. In fact, prices had been unusually high at the start of the period. Taking as a starting point the trough of 1998, the average price has more than doubled (rising by 110%).



Yet, once changes in interest rates are considered housing affordability has not deteriorated as badly as would be expected. The chart to the right provides the author's estimates of typical rates for mortgages with five-year terms (after lender discounts). The data shows a pronounced reduction over the past two decades. During 2010, the average rate was close to 4%. In fact, even lower rates are available for variable rate mortgages, typically 2.3% to 2.5% after lender discounts.



Falling mortgage interest rates have largely offset the sharply higher house prices. The next chart shows the largest component of housing costs – monthly interest cost for the average priced homes (for interest only, excluding the principal repayment component of payments; the calculations also assume 25% down-payments). The costs are shown both in actual dollars and after adjustment for overall inflation (2010 dollars). The costs in 2010 dollars show that affordability in the new homes market remains highly favourable.



The conclusion from this discussion of housing affordability (building on the discussion in the prior section on price dynamics) is that falling interest rates created room in which house prices could increase if cost pressures generated a need for higher prices. This made it possible for rapidly rising government-imposed costs to be passed-on in the market.

The flip side of this conclusion is that if not for the rapid rise in government-imposed costs, housing prices would be even lower than they are, affordability would be even better, and in consequence, activity in the new housing market would be stronger than it has been in recent times. This conclusion is pursued further in the next section.

5.0 Impacts on Housing Activity

Clearly, governments must be able to fund the investments that they make in support of new communities. However, given the very large magnitudes of the costs, one has to wonder if they have become excessive. In consequence, housing prices in the Greater Toronto, and throughout all of Ontario and Canada, are higher than they need to be.

Overview of the Methodology

This section uses a forecasting model to simulate the consequences of different levels of housing prices. The essential finding – which should be surprising to no one – is that if housing prices were lower, demand for new homes would be stronger (resulting in increased housing starts). Conversely, if prices were higher, new housing activity would be lower.

The forecasting model has been developed by the author over many years, and uses a complex "feedback loop" process to forecast total employment within the community, resale market activity, new home sales, and housing starts.

In this case, the area under consideration is the Greater Toronto Area. The simulations consider the consequences if, as a starting condition, house prices were higher or lower by various increments, what would happen during 2011 to 2013 to resale activity, new home sales and housing starts?

The subsequent section extends the analysis, to estimate the impacts on employment and wages earned as a result of housing construction, as well as the resulting government revenues.

The Simulations

The table below summarizes the simulations. The scenarios start with a baseline set of assumptions about the economy and then employ varying assumptions that initial house prices are lower by 5%, 10%, 15%, or 20% (implying that government-imposed costs are lower) or higher by 5% or 10% (implying that GICs continue to rise rapidly).

The forecasts developed in the baseline scenario seem reasonable to the author, in light of housing activity in prior years and in the context of a continuing recovery from recession. But, the point here is not whether this is a definitive outlook for the next three years. Rather, the point being explored is – how might the future vary depending on what happens to government-imposed costs: what would be the outcome if they were less of a burden; alternatively, what would be the consequences of further rises?

The first conclusion is that changes in the level of housing prices might have only minor impacts on resale market activity.

But, changes in the level of house prices would sharply alter how much the housing inventory needs to expand - housing demand flows into the new homes market. The impacts are greatest for the most expensive housing form – low-rise housing - and less for apartments. This makes

sense. A rise in house prices will cause some demand for low-rise housing to shift to the apartment sector; conversely, a price drop would cause shifting away from apartments to more expensive low-rise forms.

A relatively small change in house prices would have relatively small impacts on new homes activity: a 5% price reduction might cause total housing starts to be about 5% higher; a 5% price rise might cause a 4% reduction in housing starts. But, larger changes in prices have accelerating impacts on housing activity: the simulation with prices 10% lower shows starts 12.6% higher than in the baseline scenario; a 15% price drop results in starts 23% higher; and a 20% price drop brings a 38% rise for housing starts.

Table 8
Summary of Scenarios for Housing Activity Within the Greater Toronto Area

	Resales	*New Home Sales*			*Housing Starts*			
		Low-Rise	*High-Rise*	*Total*	*Low-Rise Ownership*	*High-Rise Ownership*	*Rental*	*Total*
Actual Activity								
2007	95,223	21,847	23,210	44,697	25,476	9,615	1,139	36,230
2008	76,414	12,302	14,851	27,153	20,447	22,634	1,729	44,810
2009	89,273	18,369	15,627	33,996	13,762	11,044	2,302	27,108
2010	90,554	16,454	20,349	36,803	18,090	15,176	1,483	34,749
Averages for 2011-2013								
Baseline Scenario	88,969	20,433	15,289	35,722	18,720	16,770	1,605	37,096
1st Scenario - House Prices 5% Lower	89,766	21,750	16,110	37,860	20,041	17,393	1,605	39,040
2nd Scenario - House Prices 10% Lower	90,321	23,697	17,059	40,757	22,048	18,123	1,605	41,776
3rd Scenario - House Prices 15% Lower	90,640	26,638	18,172	44,810	25,059	18,983	1,605	45,647
4th Scenario - House Prices 20% Lower	90,734	30,961	19,487	50,448	29,412	19,995	1,605	51,013
5th Scenario - House Prices 5% Higher	87,929	19,422	14,561	33,983	17,790	16,233	1,605	35,628
6th Scenario - House Prices 10% Higher	86,654	18,433	13,898	32,331	16,985	15,760	1,605	34,351
Difference Versus Baseline (in Units)								
1st Scenario	797	1,317	821	2,138	1,321	623	0	1,944
2nd Scenario	1,353	3,264	1,770	5,035	3,327	1,353	0	4,681
3rd Scenario	1,671	6,205	2,884	9,088	6,338	2,213	0	8,552
4th Scenario	1,765	10,527	4,199	14,726	10,692	3,225	0	13,917
5th Scenario	-1,039	-1,012	-727	-1,739	-931	-537	0	-1,468
6th Scenario	-2,315	-2,001	-1,391	-3,391	-1,735	-1,009	0	-2,745
Difference Versus Baseline (in %)								
1st Scenario	0.9%	6.4%	5.4%	6.0%	7.1%	3.7%	0.0%	5.2%
2nd Scenario	1.5%	16.0%	11.6%	14.1%	17.8%	8.1%	0.0%	12.6%
3rd Scenario	1.9%	30.4%	18.9%	25.4%	33.9%	13.2%	0.0%	23.1%
4th Scenario	2.0%	51.5%	27.5%	41.2%	57.1%	19.2%	0.0%	37.5%
5th Scenario	-1.2%	-5.0%	-4.8%	-4.9%	-5.0%	-3.2%	0.0%	-4.0%
6th Scenario	-2.6%	-9.8%	-9.1%	-9.5%	-9.3%	-6.0%	0.0%	-7.4%

Sources: Toronto Real Estate Board, Building Industry and Land Development Association, Canada Mortgage and Housing Corporation. All forecasts and analysis by Will Dunning Inc.

6.0 Economic Consequences

Construction is a significant element of the Canadian economy. At present, about 7% of Canadian employment (over 1.2 million individuals) is in construction, and about 1 million more work in other industries, providing goods and services that are used in the construction industry. This section extends the simulations developed in the prior section, to estimate the impacts of changing levels of housing starts on employment and on wages earned. Those estimates are then used to estimate impacts on federal and provincial revenues from personal income tax, and premiums for Canada Pension Plan and Employment Insurance.

Methodology

The analysis starts with Statistics Canada estimates of "employment multipliers".

- For each $1 million invested in residential construction (as of 2007), 5.54 jobs[5] are created in Ontario in the construction industry, 2.93 jobs are created in other industries within Ontario, and 0.85 jobs are created in other industries elsewhere in Canada. In total, 9.32 "full-time equivalent" jobs are generated by each $1 million (in 2007) of residential construction in Ontario.
- The author has combined these multipliers with data on construction costs per dwelling unit, to estimate the number of jobs created per housing start in Ontario (again, as of 2007). Those estimates are summarized in the following table.
- In total, for each single-detached unit started 2.23 jobs are created, for each semi-detached unit 1.66 jobs are created, for each row (town house) unit 1.26 jobs are created, and for each apartment unit 1.20 jobs are created.

Table 9
Estimated Employment Multipliers
Full-Time Equivalent Jobs Created
Per Housing Start, Ontario, 2007

Impact	*Singles*	*Doubles*	*Rows*	*Apartments*
Direct	1.32	0.99	0.75	0.71
Indirect (within province)	0.70	0.52	0.40	0.38
Indirect (other provinces)	0.20	0.15	0.11	0.11
Total Jobs	2.23	1.66	1.26	1.20

Source: Will Dunning Inc., using data from Statistics Canada (Provincial Input-Output Multipliers, 2007; building permit data)

These factors are applied to the forecasts of housing starts to estimate the job impacts for the 2011 to 2013 period, for the various scenarios.

The employment estimates are then combined with data on average wages (for full-time employees) in the relevant industries:

[5] The figures are expressed as "full-time equivalent" jobs. Since some of the work will be part-time, the actual number of individuals employed will be greater. This conversion to full-time equivalent jobs permits us to more accurately estimate the resulting incomes and, in the subsequent section, the taxes generated.

- Construction in Ontario.
- All industries in Ontario (to capture the indirect employment within the province).
- All industries for all of Canada (for indirect employment in other provinces).

Fiscal impacts are estimated based on federal and provincial parameters for personal income taxes, combined with estimated impacts on the level of employment and average wage rates for full-time employment. Similarly, federal government receipts are estimated for Canada Pension Plan and Employment Insurance premiums.

Housing Starts

The table below allocates the simulations of housing starts (which were developed in the prior section) by type of dwelling.

Table 10
Simulations of Housing Starts by Dwelling Type

Scenario	*Single*	*Semi*	*Row*	*Apt*	*Total*
Average 2011-2013					
Baseline Scenario	11,936	2,264	4,535	18,360	37,096
1st Scenario - House Prices 5% Lower	12,779	2,424	4,853	18,983	39,040
2nd Scenario - House Prices 10% Lower	14,058	2,667	5,338	19,714	41,776
3rd Scenario - House Prices 15% Lower	15,978	3,031	6,065	20,574	45,647
4th Scenario - House Prices 20% Lower	18,754	3,558	7,116	21,586	51,013
5th Scenario - House Prices 5% Higher	11,343	2,152	4,310	17,823	35,628
6th Scenario - House Prices 10% Higher	10,830	2,054	4,116	17,351	34,351
Difference Versus Baseline (in Units)					
1st Scenario	842	160	319	623	1,944
2nd Scenario	2,121	402	803	1,353	4,681
3rd Scenario	4,041	767	1,530	2,213	8,552
4th Scenario	6,817	1,293	2,581	3,225	13,917
5th Scenario	-593	-113	-225	-537	-1,468
6th Scenario	-1,106	-210	-419	-1,009	-2,745
Difference Versus Baseline (in %)					
1st Scenario	7.1%	7.1%	7.0%	3.4%	5.2%
2nd Scenario	17.8%	17.8%	17.7%	7.4%	12.6%
3rd Scenario	33.9%	33.9%	33.7%	12.1%	23.1%
4th Scenario	57.1%	57.1%	56.9%	17.6%	37.5%
5th Scenario	-5.0%	-5.0%	-5.0%	-2.9%	-4.0%
6th Scenario	-9.3%	-9.3%	-9.2%	-5.5%	-7.4%
Sources: Forecasts and analysis by Will Dunning Inc.					

Impacts on Jobs and Incomes

The next table shows the estimates of value of construction, jobs created (in full-time equivalents), and wages earned as the consequence of housing starts, during 2011 to 2013, on an average annual basis. The dollar figures (value of construction and wages earned) are expressed in 2010 dollars.

Table 11
Economic Impacts of Housing Starts in the Greater Toronto Area,
Annual Averages, 2011 to 2013

Scenario	*Baseline*	*1st Scenario - House Prices 5% Lower*	*2nd Scenario - House Prices 10% Lower*	*3rd Scenario - House Prices 15% Lower*	*4th Scenario - House Prices 20% Lower*	*5th Scenario - House Prices 5% Higher*	*6th Scenario - House Prices 10% Higher*
Value of Construction, in Billions of $s	$8.48	$8.96	$9.65	$10.64	$12.04	$8.12	$7.81
Jobs Created (Total Person Years)							
- Direct (Construction)	34,500	36,500	39,300	43,400	49,100	33,100	31,800
- Indirect (Within Province)	18,200	19,300	20,800	22,900	25,900	17,500	16,800
- Other Provinces	5,300	5,600	6,000	6,600	7,500	5,100	4,900
- Total	52,700	55,800	60,100	66,300	75,000	50,600	48,600
Total Wages Generated in Billions of $s	$2.99	$3.16	$3.40	$3.75	$4.25	$2.86	$2.75
Source: estimates by Will Dunning Inc.							

The subsequent table compares the scenarios, showing the deviations compared to the baseline. These estimates show the escalating impact of high house prices and are highly suggestive about the positive economic impacts that can be achieved by rationalizing government-imposed costs on housing.

Table 12
Economic Impacts of Housing Starts in the Greater Toronto Area,
Annual Averages, 2011 to 2013
Differences Versus Baseline

Scenario	*1st Scenario - House Prices 5% Lower*	*2nd Scenario - House Prices 10% Lower*	*3rd Scenario - House Prices 15% Lower*	*4th Scenario - House Prices 20% Lower*	*5th Scenario - House Prices 5% Higher*	*6th Scenario - House Prices 10% Higher*
Value of Construction, in Millions of $s	$480	$1,170	$2,160	$3,560	-$360	-$670
Jobs Created (Total Person Years)						
- Direct (Construction)	2,000	4,800	8,900	14,600	-1,400	-2,700
- Indirect (Within Province)	1,100	2,600	4,700	7,700	-700	-1,400
- Other Provinces	300	700	1,300	2,200	-200	-400
- Total	3,100	7,400	13,600	22,300	-2,100	-4,100
Total Wages Generated in Millions of $s	$170	$410	$760	$1,260	-$130	-$240
Source: estimates by Will Dunning Inc.						

Fiscal Impacts

The final step in the analysis is to estimate government revenues from personal income taxes, as well as premiums for Canada Pension Plan and Employment Insurance. The first table shows the estimates of anticipated revenues for each of the scenarios.

Table 13
Fiscal Impacts, Due to Housing Starts in the GTA Activity (Millions of $s)
Annual Averages, in 2010 Dollars, 2011 to 2013

Scenario	*Baseline*	*1st Scenario - House Prices 5% Lower*	*2nd Scenario - House Prices 10% Lower*	*3rd Scenario - House Prices 15% Lower*	*4th Scenario - House Prices 20% Lower*	*5th Scenario - House Prices 5% Higher*	*6th Scenario - House Prices 10% Higher*
Personal Income Tax							
- Federal	$370	$390	$420	$460	$520	$350	$340
- Provincial	$170	$180	$190	$210	$240	$160	$160
- Other Provinces	$20	$20	$20	$20	$30	$20	$20
Total	$560	$590	$630	$690	$790	$530	$520
CPP Premiums	$250	$260	$290	$310	$360	$240	$230
EI Premiums	$100	$110	$120	$130	$150	$100	$100
Total	$910	$960	$1,040	$1,130	$1,300	$870	$850

Source: estimates by Will Dunning Inc.

The second table shows the deviations compared to the baseline scenario. As is illustrated, reducing housing prices (by reducing government-imposed costs) has the potential to generate substantial increases in federal and provincial tax revenues: if housing prices were 5% lower, revenues from these sources would be about $50 (5%) higher than in the baseline. A 10% downward price adjustment would result in $130 million (14%) in additional revenue; a 15% price adjustment would result in $220 million (24%), and a 20% price reduction would result in $390 million additional revenue (43%).

On the other hand, a 5% further increase in costs would reduce the revenues by $40 million (4%) and a 10% cost rise would reduce revenues by $60 million (7%).

Table 14
Fiscal Impacts, Due to Housing Starts in the GTA Activity (Millions of $s)
Annual Averages, in 2010 Dollars, 2011 to 2013
Differences Versus Baseline

Scenario	*1st Scenario - House Prices 5% Lower*	*2nd Scenario - House Prices 10% Lower*	*3rd Scenario - House Prices 15% Lower*	*4th Scenario - House Prices 20% Lower*	*5th Scenario - House Prices 5% Higher*	*6th Scenario - House Prices 10% Higher*
Personal Income Tax						
- Federal	$20	$50	$90	$150	-$20	-$30
- Provincial	$10	$20	$40	$70	-$10	-$10
- Other Provinces	$0	$0	$0	$10	$0	$0
Total	$30	$70	$130	$230	-$30	-$40
CPP Premiums	$10	$40	$60	$110	-$10	-$20
EI Premiums	$10	$20	$30	$50	$0	$0
Total	$50	$130	$220	$390	-$40	-$60

Source: estimates by Will Dunning Inc.

These estimates have been developed just for the Greater Toronto Area, which accounts for just over one-half of housing starts in Ontario. If housing costs can be reduced across the province as a result of rationalizing government-imposed costs, the total fiscal benefits would be even greater.

In addition to these outcomes, increased employment would mean that the federal and provincial governments incur lower costs for income support (including Employment Insurance benefits and social assistance).

The estimates also exclude increases in federal and provincial revenues that would result from corporate income taxes paid by land developers, home builders, and other businesses that contribute to housing construction.