

Constrained Land Supply for New Housing is Hampering the Recovery

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Introduction

In Canada and in much of world, low interest rate policies are being used in attempts to accelerate economic recovery from the recession of 2008/2009.

Since the housing market is one of the most interest-sensitive elements of the economy, it is expected that many of the benefits of low interest rates will be seen in the housing sector, which will then promote improvements in other parts of the economy.

Housing activity in Canada has responded to low interest rates and improved affordability. The chart to the right illustrates that demand levels – for resale market activity and construction of new dwellings – are not as strong as they were in the boom-times prior to the recession. But post-recession housing activity has been healthy in a longer-term perspective. This is especially so for resale market activity, which is just slightly (about 1%) below pre-recession figures; the rebound of housing starts has been less robust (during 2009-2011 activity was 20% lower than during 2002-2008).



Data for the Toronto area¹ shows broadly similar trends. However, a close examination shows some subtle, but potentially significant, differences. In Toronto, the rebound for resales has been stronger than for all of Canada (recent sales are 8% higher than pre-recession while for Canada they are 1% lower). For new construction, the recovery has been slightly weaker in Toronto (current activity is 22% lower than pre-recession, versus 20% for Canada). The discrepancy between resales and new construction for the Toronto area provides the starting point for this research project.



¹ For the Toronto area, data for housing starts is for the Toronto Census Metropolitan Area; data for resale market activity is for the slightly larger Greater Toronto Area (“GTA”). Later in the report, data on new home sales is utilized – this data is for the GTA.

Findings

The key findings of this report are:

- A shortage of land supplies in the low-rise housing market has resulted in reduced sales and construction of new homes in the Toronto area, which have been about 10,000 units per year below potential levels (for a total shortfall of almost 50,000 units over five years).
- Consequently, employment has been less than it could be in the construction industry and in other industries that provide goods and services used in the construction process. The impact is estimated at about 26% of the potential level, or a shortfall of about 22,000 jobs per year. Wages earned were about \$1.1 billion per year below potential.
- Reduced employment means that total wages have been reduced below potential by a corresponding amount, and there are similar impacts for income taxes received by the federal government and provincial governments.
- Sales taxes received by the federal and provincial governments are also below potential, by a similar amount.
- Combining impacts on income taxes, sales taxes, and premiums for the Canada Pension Plan and Employment Insurance: based on actual starts, total revenues from these sources are estimated at \$1.959 billion per year during 2007 to 2011; based on simulated starts, revenues should have averaged \$2.67 billion per year. In consequence, the revenue loss averaged about \$700 million per year.
- The on-going shortfall of housing production is creating an escalating gap between potential and actual realty tax revenues. As of the end of 2011, the revenue shortfall is more than \$200 million (of which about one-quarter is for education; the balance of the shortfall has reduced the funds available to support municipal and regional services). The size of this gap will continue to expand for as long as housing production is constrained.
- Vacancy rates in the residential rental market are lower than they should be and rent increases are more rapid than they should be. The increased rents (about \$25 per month as of the fall of 2011) are being paid by tenants and, to the extent that costs increase for rent supplements and social assistance, by government. The excess level of rents will escalate.
- On the other hand, reduced housing supply has caused house prices to rise more rapidly than they might otherwise. As of 2011, the average resale house price in the GTA may be about 15% higher than it would be in the absence of the supply constraints.

The supply shortage for new low-rise homes is due to at least three factors:

- “Growth management” is intended to limit the future supply of potential (“designated” lands). The policy is not yet having much of a direct impact on the supply of development-ready lands, but, it will in the distant future.
- Expectations of future shortages may already be influencing expectations and prices in the land market.
- More pertinent at present are delays in finalizing approvals for new subdivisions and in installing hard services (including water and sewer).

In conclusion, low interest rates have stimulated a recovery of housing starts. However, due to constrained supplies of building lots in the low-rise housing sector, the housing market recovery has been considerably less robust that it might have been. In consequence, the overall

economic recovery has also been hampered, and the budget balances of federal, provincial, and municipal governments have been made worse than they need to be.

This report has been completed by Will Dunning Inc as unsponsored research, as a contribution to discussions about housing markets.

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.

Some Simulations for the Housing Market

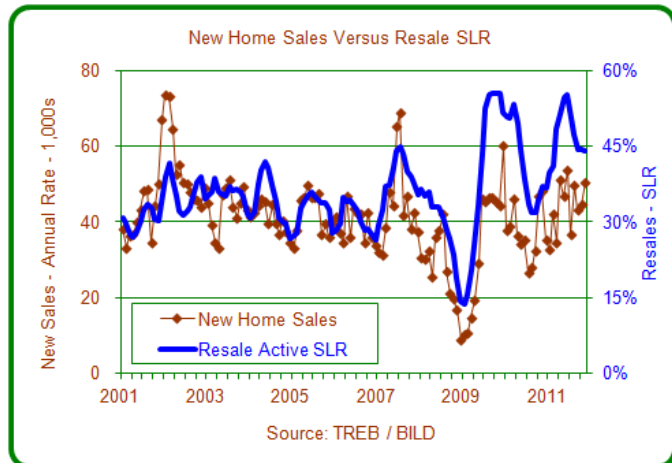
This author has been studying housing markets for 30 years, and has developed a rather elaborate statistical system for analysing and forecasting the Toronto housing market. Several messages have emerged. One finding is that key factors affecting new housing activity are:

- Growth of employment, which determines how many people are theoretically in a position to consider buying a home.
- The level of affordability, which determines how much they can afford to pay, and therefore what type of property they might buy.
- The state of the resale housing market, in particular, the balance between demand (sales) and supply (listings), which influences whether they buy a new or existing home.

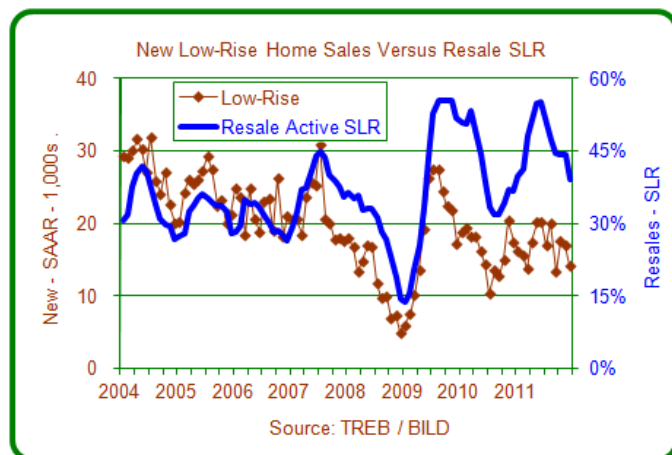
All of these factors are important. The discussion below focuses on the third factor, because comparison of trends for resales and new homes suggests that there has been a fundamental change in the new homes market in recent times.

A Broken Model?

The chart to the right contrasts new home sales in the Greater Toronto Area (as reported by the Building Industry and Land Development Association) and the state-of-balance in the GTA resale market (using data from the Toronto Real Estate Board, to calculate a sales-to-listings ratio, “SLR”). The chart shows that in the past there was a close relationship: in times when the resale market is tight (witnessed by a high SLR) new home sales increase, etc. However, since 2007 that relationship has broken down – this chart suggests that during the past five years new home sales have been far below where they should have been.

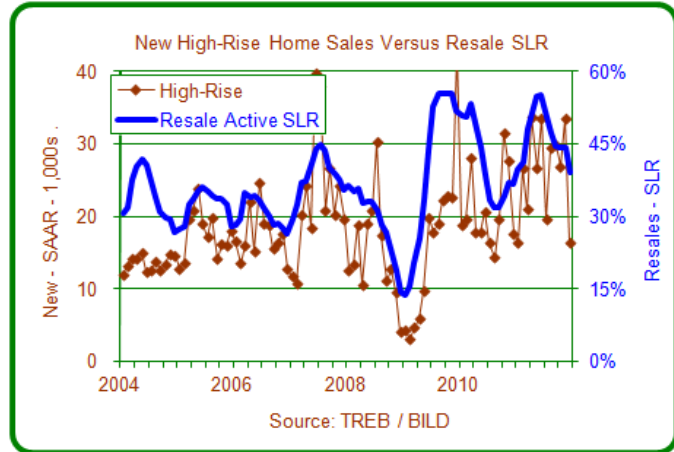


Looking at the data in more detail, the shortfall is focused in the low-rise sector (including single-detached, semi-detached, and town homes): in recent times the resale market has been very tight (as evidenced by quite high sales-to-listings ratios) but sales of new low-rise homes have not responded.



Commentary from the home building industry (and from this author) has pointed to lack of supply in the low-rise sector as the cause of reduced sales.

For high-rises (apartments) the data is quite volatile and difficult to interpret, but it appears that the relationship (if any) has not changed: sales of new high-rises have responded to changes in the resale market balance. In recent times, strong sales of new apartments have coincided (more-or-less) with a tightened resale market. (Later discussion will consider the other factors, in particular that very low interest rates have contributed to the very strong sales in this sector).



Testing the Data

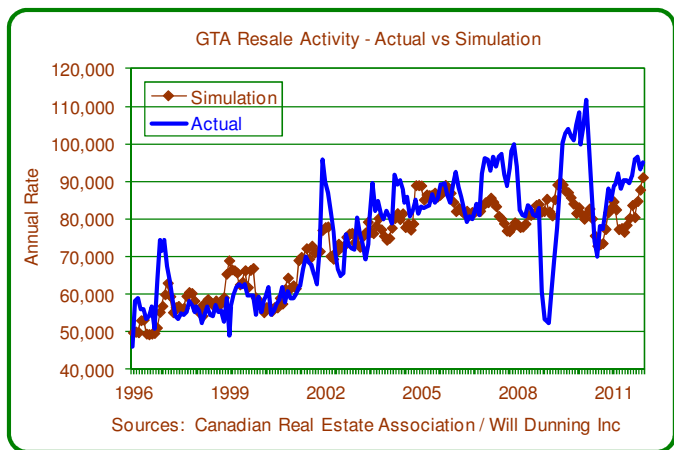
The research uses a forecasting system to simulate what “should” have happened in the housing market (resale activity and prices, as well as sales of new low-rise and high-rise homes) during 2007 to 2011. Comparing what “should” have happened versus what actually occurred provides an indication of the impacts of supply constraints.

A normal dynamic process in the housing market should mean that when the resale market tightens, the reduction in opportunities and rising prices for resales will cause more buyers to shift to new construction. But, in the current environment, in which there is a shortage of new homes supply, there will be less shifting than there should be, which will cause the resale market to become hotter than it should – sales will be higher than they should be, listings will be sold and removed from the market more quickly than they should be, bringing a higher sales-to-listings ratio, and prices will rise more rapidly than they should.

The simulations suggest that all of these outcomes have occurred during the past five years.

Resale Market

During 2007 to 2011, resale activity was on average about 6,400 units per year higher than it should have been (average actual activity was about 88,175 versus average expected activity of 81,750). In 2010 and 2011, the excess amounts were about 9,500 units per year, or more than 10% per year. Due to the escalation of sales, price increases in the GTA resale market were stronger than they should have been. The table below illustrates that during 2006 to 2011, actual price increases totalled 32.2% over the five year period, more than double the 15% rise that the simulations suggest should have occurred. The average price for 2011 (\$465,412) was 15% higher than the simulations suggest it should have been. The simulated outcome suggests that the resale market should have been in a balanced state, with a healthy level of



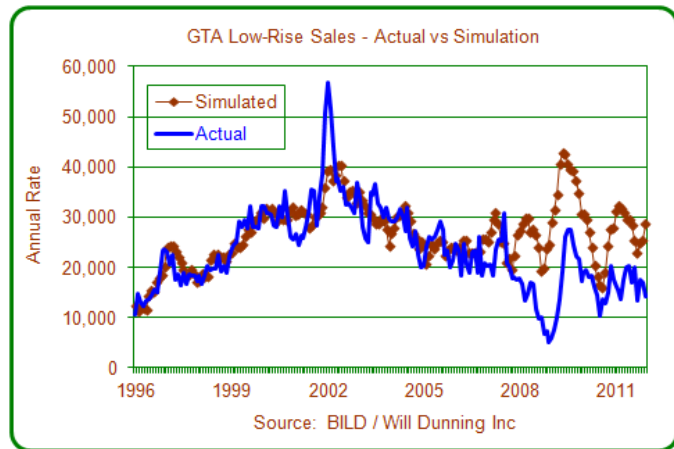
sales that supported moderate price growth. Instead, the lack of supply in the new low-rise homes sector caused the resale market to overheat.

Year	Actual Average Price	Simulated Average Price
2006	\$351,941	\$351,941
2007	\$376,236	\$361,952
2008	\$379,347	\$369,039
2009	\$395,460	\$380,493
2010	\$431,276	\$387,918
2011	\$465,412	\$404,589
% Change		
2006-07	6.9%	2.8%
2007-08	0.8%	2.0%
2008-09	4.2%	3.1%
2009-10	9.1%	2.0%
2010-11	7.9%	4.3%
Total Change 2006-2011	32.2%	15.0%

Source: Toronto Real Estate Board, Will Dunning Inc.

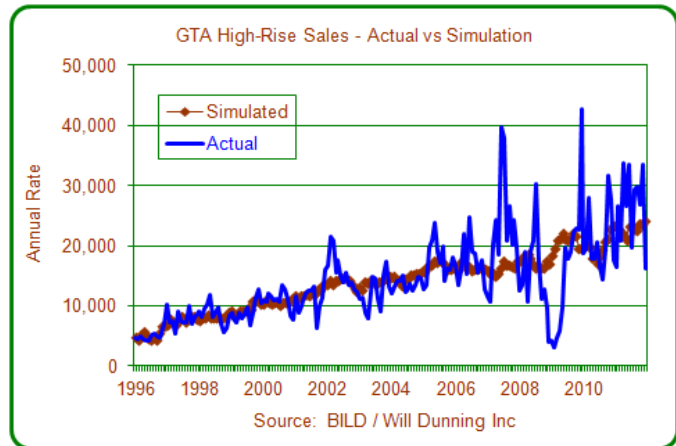
New Home Sales

Also as expected, during 2007 to 2011 sales of new low-rise homes were much lower than they should have been (about 17,100 units per year, which was a sharp drop from the average of 28,700 during 2002 to 2006). The simulations suggest that sales during the past five years should have been about the same as during 2002 to 2006 (about 28,000 units per year) due to the combination of job creation, low interest rates, and a healthy resale market environment. The shortfall of low-rise sales during 2007 to 2011 was about 10,800 units per year (39%).



High-rise sales, to the contrary, were close to what the simulations suggest. Sales averaged about 20,500 per year during 2007 to 2011, while the simulations suggest they should have been about 19,400 units per year: actual activity was 1,100 units per year (about 6%) higher than the simulations suggest it should have been².

The reader should recall that the simulations of sales in the low-rise and high-rise sectors are based on economic relationships that existed during 1991 to 2006.



- For the high-rise sector, those relationships seem to have held up, and provide a basis for predicting with quite good accuracy what sales should have been during the post-2006 period. The model also provides us with a set of explanations for the very robust activity in the new high-rise market: demand was stimulated by the combination of low interest rates, job creation, and a healthy resale market.
- For the low-rise sector, in stark contrast, the past economic relationships do not lead to good simulations for the post-2006 period. Those simulations tell us that the same factors should have stimulated strong demand for new low-rise homes. The fact that activity did not respond as expected, and in fact was quite weak, confirms that the lack of supply was a significant impediment.

Housing Starts

New home sales lead to housing starts (which are a significant generator of jobs and government revenues, as will be explored in following section on Economic and Fiscal Consequences).

The table below takes the next step, using the simulations of sales to predict what housing starts should have been for low-rises and high-rises (for the Toronto Census Metropolitan Area). The simulations are contrasted with data on actual activity. During 2007 to 2011, Toronto CMA starts should have averaged almost 44,000 units per year, but actual starts averaged just over 34,000 units per year. The discrepancy is due to low-rise activity, for which starts were about 8,600 per year below the simulated amounts; high-rise starts were about 1,300 units per year below the simulated amounts³.

² There has been a great deal of speculation about sources of demand for high-rises and whether activity has exceeded the needs of the population (and thus whether there may be a correction in future). While this simulation indicates a set of causes for the strong demand, it does not tell us whether the demand exceeds the real need (especially whether there has been too much demand from investors who intend to rent out or to resell the units).

³ In this analysis, simulated starts of rental units are assumed to be equal to actual activity. In fact, because actual rents are rising more rapidly than they “should”, actual starts were more than the simulated levels, by a trivial quantum.

The shortfall of almost 10,000 units per year will have had significant consequences for job creation, incomes earned, and revenues generated for the federal, provincial (and municipal) governments.

Year	Simulated				Actual			
	Low-Rise	High-Rise	Rentals	Total	Low-Rise	High-Rise	Rentals	Total
2000	27,445	8,458	275	36,178	28,726	9,981	275	38,982
2001	28,807	9,501	956	39,265	27,323	12,738	956	41,017
2002	32,799	10,903	1,512	45,214	33,212	9,081	1,512	43,805
2003	31,507	12,151	1,983	45,640	30,005	13,487	1,983	45,475
2004	27,662	12,301	1,241	41,203	28,424	12,450	1,241	42,115
2005	24,222	13,182	1,843	39,247	25,569	14,184	1,843	41,596
2006	22,695	14,686	1,561	38,942	22,181	13,338	1,561	37,080
2007	23,861	14,344	993	39,198	22,904	9,396	993	33,293
2008	24,277	14,469	1,706	40,452	18,262	22,244	1,706	42,212
2009	29,311	15,545	1,923	46,779	13,072	10,954	1,923	25,949
2010	27,827	17,845	1,682	47,354	15,927	11,586	1,682	29,195
2011	25,396	17,704	3,074	46,174	17,476	19,195	3,074	39,745
2002-2006	27,777	12,644	1,628	42,049	27,878	12,508	1,628	42,014
2007-2011	26,134	15,981	1,876	43,991	17,528	14,675	1,876	34,079

Source: Canada Mortgage and Housing Corporation, Will Dunning Inc.

Residential Rental Market

The author's forecasting system includes the rental apartment market. This module of the forecasting system has evolved over time. The author has concluded that the key drivers of changes in vacancy rates are job creation and completions of new housing (this includes all forms of housing, not just rentals – completions of ownership units provide opportunities for tenants to move and therefore affect vacancies.)

With housing starts about 10,000 units per year lower than they should have been, housing completions have also been suppressed, with the consequence that the vacancy rate is lower than it might have been. Due to the tightened rental market, rent increases have been more rapid than they might have been.

The impacts of production shortfalls are additive: in 2007 and 2008, the differences between the actual and simulated vacancy rates and rent increases were trivial. By 2010 and 2011, the impacts had become more substantial. As is shown in the next table, as of October 2011, the vacancy rate was more than one point lower than it should have been (1.4% versus the simulated 2.7%) and the rate of rent increase was one point more than it should have been (2.5% versus the simulated 1.4%). By October 2011, the average rent (\$1,066) was 2.4% higher than the \$1,041 it should have been. Given the additive nature of the rental market

impacts, the discrepancy between actual rents versus the “should be” levels of rents will expand at an accelerating rate in the coming years.

The rent differential as of 2011 is \$25 per month or \$300 per year. Applying this to the roughly 585,000 tenants in the Toronto CMA, the aggregated additional rent is \$175 million per year, and this amount will increase rapidly. The additional costs will be borne by tenants, and to some degree by governments, through increased costs for social assistance and rent supplements.

<i>October of ...</i>	<i>Vacancy Rate</i>		<i>Average Rent</i>		<i>Rent Increase</i>	
	<i>Actual</i>	<i>Simulated</i>	<i>Actual</i>	<i>Simulated</i>	<i>Actual</i>	<i>Simulated</i>
2000	0.6%		\$908		7.5%	
2001	0.9%		\$949		4.5%	
2002	2.5%		\$975		2.7%	
2003	3.8%		\$964		-1.1%	
2004	4.3%		\$973		0.9%	
2005	3.7%		\$973		0.0%	
2006	3.2%		\$989		1.6%	
2007	3.2%	3.2%	\$984	\$984	-0.5%	-0.5%
2008	2.0%	2.2%	\$1,014	\$1,013	3.0%	2.9%
2009	3.1%	3.6%	\$1,011	\$1,006	-0.3%	-0.7%
2010	2.1%	3.1%	\$1,040	\$1,027	2.9%	2.1%
2011	1.4%	2.7%	\$1,066	\$1,041	2.5%	1.4%

Source: Canada Mortgage and Housing Corporation, Will Dunning Inc.

Economic and Fiscal Consequences

The constraint on housing starts that has occurred during the past five years will have reduced employment in construction and related industries, which will have reduced total wages earned. In turn, this will have reduced the revenues received by the federal and provincial governments, for income taxes as well as premiums received by the federal government for the Canada Pension Plan and Employment Insurance. In addition, with reduced sales of homes, sales tax revenues received by the federal and provincial governments have been reduced. A further consequence is that with slower growth of the housing inventory, realty tax revenues have grown by less than potential.

Methodology

The analysis starts with Statistics Canada estimates of “employment multipliers”.

- For each \$1 million invested in residential construction (as of 2007), 5.54 jobs⁴ 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 the Toronto CMA (again, as of 2007). Those estimates are summarized in the following table.
- In total, for each single-detached unit started 2.78 jobs are created, for each semi-detached unit 1.86 jobs are created, for each row (town house) unit 1.41 jobs are created, and for each apartment unit 1.20 jobs are created.

<i>Table 4</i>				
<i>Estimated Employment Multipliers</i>				
<i>Full-Time Equivalent Jobs Created</i>				
<i>Per Housing Unit Started, Toronto CMA, 2007</i>				
<i>Impact</i>	<i>Singles</i>	<i>Doubles</i>	<i>Rows</i>	<i>Apartments</i>
Direct (construction)	1.65	1.11	0.84	0.71
Indirect (within province)	0.87	0.58	0.44	0.38
Indirect (other provinces)	0.25	0.17	0.13	0.11
Total Jobs	2.78	1.86	1.41	1.20
Source: Will Dunning Inc., using data from Statistics Canada (Provincial Input-Output Multipliers, 2007; building permit data)				

These factors are applied to data on actual housing starts during 2007 to 2011, as well the simulated levels of activity, to calculate the respective job impacts.

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

⁴ 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, subsequently, the taxes generated.

- Construction within Ontario.
- All industries within 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 the estimated impacts on the employment and average wage rates for full-time employment. Similarly, federal government receipts are estimated for Canada Pension Plan and Employment Insurance premiums.

In addition, estimates are developed for sales taxes, net of rebates (the GST federally and for the province the PST prior to mid-2010 and the HST subsequently).

The Estimates

The analysis indicates that during 2007 to 2011, actual housing starts in the Toronto CM resulted in an average of about 62,600 jobs per year. However, if starts had been at the potential (simulated) levels, the employment generation would have averaged more than 75,000 jobs per year. The impact of the constraints on housing starts was a shortfall of almost 20,000 jobs per year.

Table 5						
Estimated Employment Impacts due to Housing Starts in the Toronto CMA ("Full-Time Equivalent" Jobs)						
	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>Average</i>
Based on Actual Starts						
Direct	40,066	43,945	28,211	32,265	41,828	37,263
Indirect (within province)	21,162	23,211	14,901	17,042	22,093	19,682
Indirect (other provinces)	6,117	6,709	4,307	4,926	6,386	5,689
<i>Total Jobs</i>	<i>67,345</i>	<i>73,865</i>	<i>47,419</i>	<i>54,232</i>	<i>70,307</i>	<i>62,634</i>
Based on Simulated (Potential Starts)						
Direct	45,302	46,058	54,257	53,487	51,642	50,149
Indirect (within province)	23,928	24,327	28,658	28,251	27,277	26,488
Indirect (other provinces)	6,916	7,032	8,283	8,166	7,884	7,656
<i>Total Jobs</i>	<i>76,147</i>	<i>77,417</i>	<i>91,198</i>	<i>89,904</i>	<i>86,803</i>	<i>84,294</i>
Impact (Jobs Shortfall)						
Direct	-5,236	-2,113	-26,046	-21,222	-9,814	-12,886
Indirect (within province)	-2,766	-1,116	-13,757	-11,209	-5,184	-6,806
Indirect (other provinces)	-799	-323	-3,976	-3,240	-1,498	-1,967
<i>Total Jobs</i>	<i>-8,801</i>	<i>-3,552</i>	<i>-43,778</i>	<i>-35,672</i>	<i>-16,496</i>	<i>-21,660</i>
Source: Will Dunning Inc						

In consequence of the reduced level of employment, incomes were reduced. As is illustrated in the next table, actual wages generated were about \$3.15 billion per year during 2007 to 2011. Compared to the potential of \$4.25 billion, there was a shortfall of about \$1.10 billion per year. About 90% of the incomes (and of the shortfall) would have been within the province of Ontario.

Based on Actual Starts (\$ Billions)	\$3.15
Based on Simulated (Potential Starts) (\$ Billions)	\$4.25
Impact (Income Shortfall, in Billions of Dollars)	- \$1.10
Source: Will Dunning Inc	

Furthermore, revenues received by the federal and provincial governments have been reduced to less than potential. As is illustrated below, federal and provincial revenues from income taxes, CPP and EI premiums, and sales taxes have been reduced by about \$700 million per year. Of this total shortfall, about \$516 million would have been received by the federal government, \$189 million by the province of Ontario, and \$7 million by other provinces).

	<i>Based on Actual Starts</i>	<i>Based on Simulated (Potential Starts)</i>	<i>Impact (Revenue Shortfall)</i>
Personal Income Tax			
- Federal	\$391	\$525	-\$135
- Provincial	\$183	\$248	-\$65
- Other Provinces	\$19	\$27	-\$7
- Total	\$593	\$800	-\$207
Total CPP Premiums	\$263	\$355	-\$92
Total EI Premiums	\$111	\$150	-\$39
Sales Taxes			
- Federal	\$662	\$912	-\$250
- Provincial	\$329	\$453	-\$124
- Total	\$991	\$1,365	-\$374
Total Federal and Provincial Government Revenues (Per Year)	\$1,959	\$2,670	-\$712
Source: Will Dunning Inc Totals may not add due to rounding.			

In addition, the reduced production of new housing is resulting in escalating impacts on realty taxes. Assuming that the average realty property tax rate is 1.0%: by the end of 2011, with a total shortfall of about 50,000 dwelling units, annual revenues have been reduced by more than \$200 million (of this about one-quarter is for education and the balance is used by municipalities and regions to fund services). As the gap between the actual housing inventory versus the potential inventory continues to expand, the annual shortfalls of realty tax revenues will also continue to worsen, by perhaps \$50 million per year.