TD Bank Financial Group

TD Economics

Special Report

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OVERPRICED AND OVERBUILT: CANADIAN HOUSING MARKET RETURNS TO FUNDAMENTALS

Looking back on the boom in Canadian homebuilding from 2002 to 2008, it is now clear that unsustainable price increases drove unsustainable levels of building. This overbuilding will weigh on markets over at least the next three years. Even as Canada recovers from the cyclical downturn, house prices will only rebound sluggishly and new residential construction will remain depressed, owing to this structural weakness. While newly-built houses were being rapidly purchased by new homeowners during the housing boom, our view is that house prices exceeded the value of housing that was justified by fundamentals by approximately 9% nation-wide during 2004 to 2008. The steep erosion of affordability and the persistence of increases in house prices signal that speculation fuelled this inflation. In a self-fuelling spiral, expectations of higher prices were in turn driving prices even higher. This overpricing compelled a level of residential construction that exceeded its fundamental-justified level by approximately 12% during the "housing boom" that ran from 2002 to 2008. The excess was most exaggerated in the past three years. Consequently, while most markets won't face U.S.-style overhangs, the construction of too many new homes over the boom means a deepened slump. With February's housing starts having plunged to 134,000 units at a seasonally-adjusted annual rate (SAAR), construction is now undershooting fundamentals and we expect this dampened level of building to persist over the next two years. We anticipate that nationwide residential construction will fall further to around

OVERBUILDING

	1991-2008	2002-2008	2007-2008
CANADA	-0.3%	12%	8%
Nfld.&Lab.	-1.1%	4%	-1%
P.E.I.	-1.0%	8%	4%
N.S.	-0.1%	9%	8%
N.B.	-0.8%	8%	11%
Quebec	-0.2%	16%	3%
Ontario	-0.9%	12%	13%
Manitoba	0.4%	19%	12%
Sask.	0.0%	11%	13%
Alberta	-0.3%	13%	7%
B.C.	0.9%	8%	4%

Source: TD Economics

HIGHLIGHTS

- **Speculation by homebuyers drove house prices beyond levels justified by fundamentals and induced an excess of new housing relative to sustainable levels – particularly on Canada's prairies.**
- **Affordability eroded severely over the last two years, demonstrating an unsustainable disconnect between house prices and incomes that was due for a correction.**
- **Inventories of singles have burgeoned in western markets and unsold multiples are at worrying levels in Québec. The historically elevated construction of condos in Toronto and Vancouver mean that these cities' inventories will spike during 2009 and only alleviate slightly during 2010.**
- **The cyclical downturn will depress housing demand during 2009, but recent overbuilding will prevent a quick recovery. In particular, as migration ebbs to the prairies, residential construction will experience a protracted slump.**
- **However, Canada will not experience a U.S.-style housing crash, owing to less overbuilding and more conservative lending institutions.**

OVERPRICING			
	2001-2003	2004-2006	2007-2008
CANADA	-7.5%	9.1%	9.2%
Nfld.&Lab.	-3.7%	4.5%	6.4%
P.E.I.	-3.3%	3.1%	6.9%
N.S.	-4.2%	2.4%	7.3%
N.B.	-5.4%	6.0%	7.8%
Quebec	-8.8%	13.2%	9.5%
Ontario	-5.0%	10.1%	8.9%
Manitoba	-11.7%	9.6%	13.7%
Sask.	-6.4%	-4.0%	20.1%
Alberta	-7.2%	5.3%	11.2%
B.C.	-9.2%	4.5%	7.1%
Source: TD Economics			

STARTS / HOUSEHOLDS					
	1991 - 1996	1996 - 2001	2001 - 2006	2007-2008	2008Q4
CANADA	0.9	1.0	1.3	1.5	1.2
Nfld.&Lab.	0.9	2.2	1.6	1.8	1.4
P.E.I.	0.8	1.1	1.8	0.8	0.9
N.S.	1.2	1.2	1.5	1.5	1.2
N.B.	0.8	1.1	1.6	1.6	1.4
Quebec	0.8	0.8	1.2	1.4	1.2
Ontario	0.8	1.1	1.2	1.3	1.2
Manitoba	0.8	1.1	1.4	1.2	1.1
Sask.	1.0	2.0	2.3	1.1	1.5
Alberta	1.2	1.1	1.3	1.1	0.9
B.C.	1.0	0.9	1.4	1.4	1.2
Source: CMHC, Statistics Canada, TD Economics					

125,000 starts over 2009 with a trough around 115,000 units in the fourth quarter.

To be clear, we don't envision a U.S.-style crash for Canada: Unlike south of the border, the supply of new housing was absorbed by new owners, and Canada has more robust mortgage lending structures (see Annex A). We calculate that Canada's new housing is still on average absorbed within just under 3 months, while U.S. inventories have burgeoned to an over 10-month overhang.[1]

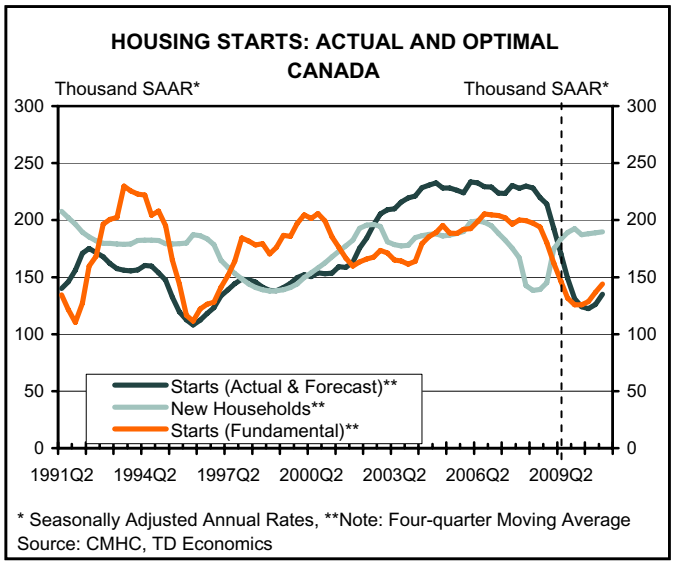
Going forward, the cyclical downturn will continue to dampen the housing market. However, future home construction will inherit a structural weakness. That is, a glut in the housing stock means that builders will have to rein in residential construction further – particularly in the most overbuilt markets. As well, excess inventories in certain markets will prove an additional drag on home prices. In particular, Calgary and Edmonton have accumulated worrisome inventories of unsold singles, and, while at a lessened scale, Saskatoon's overhang of singles is at a historical high. Montreal also has a burgeoning inventory of unabsorbed multiples. Toronto and Vancouver have not yet seen major upticks in their multiple inventories; however, the present number of condos under construction in each city raises the definite possibility of mounting overhangs as 2009 progresses. We discuss the implications for each region's housing market in detail, starting on page 9.

What we mean by "Overbuilt"

An excess of new housing can occur in two ways. The first is "supply-driven", where builders rapidly accumulate inventories, driven by the prospect of higher prices. In other words, suppliers speculate on future demand, and this oversupply creates persistent overhangs of unsold units. This is akin to the experience of Canadian homebuilding in the late 1980s. The second is "demand-driven", where overextended homebuyers induce an unsustainable pitch of construction. This latter type is a bit more subtle and means that demand will be dampened going forward. As is being witnessed in the U.S., these two forms can occur together, battering the housing market severely.

In Canada, as inventories begin to accumulate in certain markets, we conclude that there may be some limited and recent supply-driven overbuilding. These supply-side excesses will show up as mounting inventories and are concentrated in the prairies as well as other specific, if significant, markets like Toronto and Vancouver. However, we contend that Canada's overbuilding is more of the second type and driven by excessive demand. New housing was largely absorbed, but too many households bought in and this will drag down demand for additional building in the years to come. In this report, whether it was buyers or builders who drove the excess, we refer to either form of excess new housing as "overbuilding".

To substantiate this claim, we: 1) present the unsustainable erosion of home affordability, showing that prices dis-

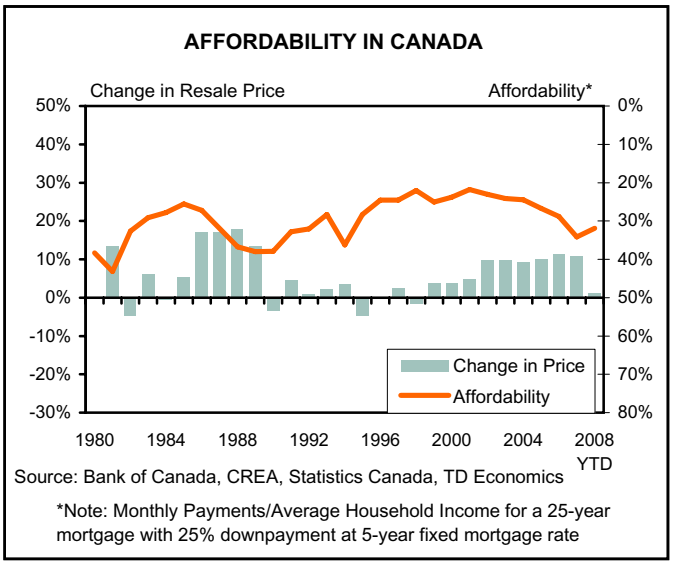


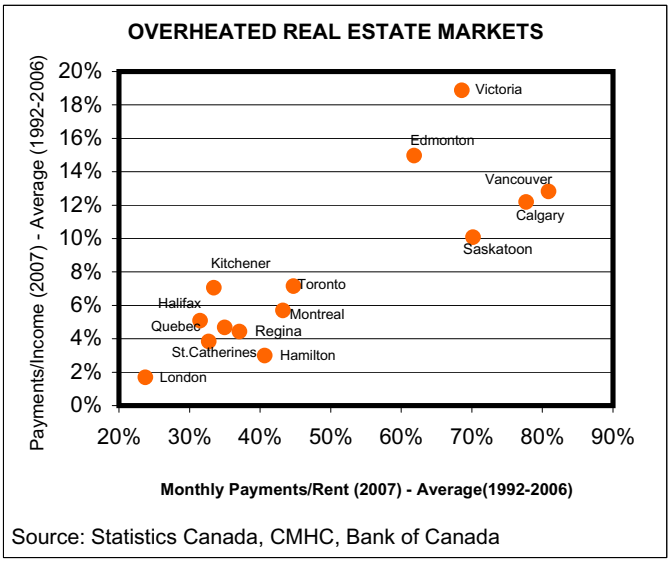
connected from what households could afford; 2) exhibit evidence that speculation by buyers drove this excessive price growth; 3) consider the demographic drivers of household formation and homeownership, which in turn fuelled demand for new housing; 4) examine absorption of newly-constructed units as a barometer of oversupply from builders; and 5) discuss what overbuilding means for each province over the coming years.

We estimate the degree of overbuilding using a "counter-factual," reflecting how much homebuilding would have occurred if prices had been at levels justified by long-run fundamentals. Since builders are highly competitive and calibrate their supply to market prices, a market price that is justified by long-run fundamentals should induce the optimum level of home-building. In contrast, an overpriced market will induce overbuilding. Annex B to this report details our approach for estimating fundamental-justified levels for house prices and residential construction.

Affordability: Can "house poor" stay trendy?

Over the long-term, the value of housing cannot exceed what households are able and willing to pay to live somewhere. House prices are necessarily tied to incomes. As well, house prices are also anchored by rental rates. As the premium for ownership increases, buying becomes less attractive relative to renting. This points to two measures of affordability: Firstly, the proportion of household income that would be consumed by the mortgage carrying costs on an existing home at the average resale price; and, secondly, the "ownership premium" represented by the ratio of mortgage carrying costs to average rent. The first measure gauges how much consumption or savings the average household must sacrifice to own a home. The second measure gauges the premium for investing in home equity rather than just having a roof over one's head.





Relative to Canadian households' average income, the estimated carrying costs for a five-year fixed rate standard mortgage (25% downpayment, 25-year amortization) on an average price home have risen dramatically.[2] In 2000, these mortgage payments would have consumed 22% of average Canadian income. At the trough of affordability in 2007, mortgage payments would have consumed 34% of average income. Affordability has improved over the past year owing to a lower interest rate environment, and mortgage carrying costs have particularly eased since January 2008 as house prices commenced their decline.

These price declines have significantly improved affordability. Based on the Canadian Real Estate Association's (CREA) seasonally-adjusted average resale price, Canadian house values have declined 11% as of February from their peak in December 2007.[3] This brought national average prices back to the level recorded in October 2006. Nationwide, the carrying cost-to-household income affordability measure stood at its long-run average of 30%. However, real incomes will stagnate during this recession, and Canadians' nominal incomes will be further impacted by the deterioration of our terms-of-trade (see "When the Commodity Boom Goes Bust," December 4, 2008). A deterioration of nominal incomes will place further downward pressure on prices, and we expect roughly a further 10-15% decline in Canadian house values.

Since rents reflect the local value of housing and differ significantly across the country, rental rates relative to incomes are a less appropriate measure at the national level. The Canadian Mortgage and Housing Corporation (CMHC) only publishes rental costs for given markets and does not compute a national average. However, the rental markets of major cities show a strong increase nationwide in the ownership premium. Over 1992 to 2007, the average ownership premium, computed as the ratio of carrying costs relative to the average rental rate, ranged from 80% to 120% across most major cities. Certain cities, like Victoria and Vancouver, have had historical average ownership premiums in excess of 150%. This means that it costs 50% more to own a house than to rent month-to-month. In other cities, such as Winnipeg, Hamilton or Québec city, it was historically cheaper to own than to rent.

Nonetheless, ownership premiums increased substantially in almost all major cities during 2007 and early 2008. In fact, the greatest increases are observed in those Western markets where the carrying costs-to-rent ratio was already high. While restrictions on rental rates no doubt influence these exaggerated spreads[4], such recent premiums are certainly out-of-step with history. Particularly where vacancy rates are high, renting becomes a more attractive option as the ownership premium rises – that is, unless one believes that home prices can sustain yearly increases of 10% indefinitely.

Speculation: The Irrational but Invisible Hand

Again, overbuilding can occur even if inventories of unabsorbed units are not mounting. Indeed, we believe Canada's overbuilding to have been mainly demand-driven.

AFFORDABILITY
Monthly Payments / Average Household Income*

	Average 1981-2001	Average 2001-2006	2007E	2008E
CANADA	30%	25%	34%	32%
Nfld. & Lab.	27%	20%	22%	23%
PEI	21%	16%	19%	19%
N.B.	25%	20%	25%	24%
N.S.	23%	16%	20%	20%
Quebec	25%	21%	27%	27%
Ontario	29%	23%	30%	28%
Manitoba	21%	15%	21%	22%
Sask.	20%	15%	21%	25%
Alberta	25%	20%	33%	31%
B.C.	38%	34%	50%	48%

Source: Statistics Canada, CREA, Bank of Canada
E: TD Economics' estimate
*Defined as monthly payments at 5-year mortgage rate

AFFORDABILITY
Monthly Payments / Average Household Income*

	Average 1980-2001	Average 2001-2006	2007E	2008E
St. John's	27%	20%	22%	25%
Halifax	23%	21%	25%	25%
Saint John	23%	17%	20%	22%
Quebec	15%	15%	20%	20%
Montreal	25%	21%	29%	28%
Ottawa	26%	21%	27%	27%
Toronto	33%	26%	33%	30%
Hamilton	25%	20%	24%	24%
St. Catharines	24%	20%	25%	25%
Kitchener	24%	22%	29%	29%
London	25%	18%	23%	23%
Windsor	21%	16%	17%	16%
Winnipeg	20%	14%	20%	21%
Saskatoon	23%	18%	28%	33%
Regina	20%	15%	20%	27%
Calgary	26%	21%	33%	29%
Edmonton	23%	18%	33%	31%
Vancouver	45%	39%	56%	52%
Victoria	42%	37%	60%	57%

Source: Statistics Canada, CREA, Bank of Canada
E: TD Economics' estimate
*Defined as monthly payments at 5-year mortgage rate for a 25-year mortgage with 25% downpayment on an average resale price home

While new units were being purchased, we believe that buyers were behaving speculatively, absorbing more units than should have been bought, thereby fuelling a mild price bubble.

Of course, direct evidence for speculation by buyers is difficult to pin down. We lack data on homebuyers' beliefs about price increases and intentions for resale. CMHC conducts a Renovation and Home Purchase survey, but this does not include questions that would shed light on speculative buying. An average of duration-to-relisting for properties on the Multiple-Listing Service would also provide insight: Increased turnover of properties would evidence speculative "flipping". However, CREA does not presently publish such statistics. Nonetheless, we can observe certain trends that are consistent with speculation.

Firstly, as discussed, the carrying cost of a standard mortgage on an average resale home relative to average household income has increased sharply both nationwide and particularly in certain markets. As well, mortgage carrying costs have increased strongly relative to average rental rates. This indicates that homebuyers are willing to invest a greater share of their income in home equity and pay a higher premium to own rather than rent. Either households' preferences have shifted towards more housing and less consumption, or homebuyers anticipated con-

PRICE CHANGE PERSISTENCE Coefficient on Monthly Y/Y % Chg. in AR(1) process				
	Sample Period			
	1995-1998	1999-2002	2003-2005	2006-2008
CANADA	0.86	0.94	0.74	1.05
Nfld. & Lab.	0.78	0.73	0.52	0.97
PEI	0.70	0.50	0.51	0.59
N.B.	0.81	0.73	0.78	0.71
N.S.	0.83	0.59	0.74	0.76
Quebec	0.86	0.98	0.96	0.63
Ontario	0.94	0.88	0.70	0.81
Manitoba	0.81	0.85	0.70	0.68
Sask.	0.83	0.75	0.92	0.95
Alberta	0.93	0.99	0.91	1.01
B.C.	0.77	0.91	0.92	1.03
Source: TD Economics, CREA				

tinued strong home price appreciation, justifying their investment.

Secondly, while lacking statistics on how long owners are holding particular properties, the quarterly number of new listings nationwide has risen steeply relative to the estimated number of Canadian households. Quarterly new listings rose from a share of 1.2% of households in 2002 to 1.5% in 2005 and 1.8% in 2008. This statistic may not imply short-duration "flipping" but simply indicate more households transitioning between different types of units. Nonetheless, a greater proportion of the housing stock is constantly on the resale market, and this would be consistent with increased turnover.

Thirdly, the persistence of Canadian resale house prices has increased markedly. At the national level, for 2002 to 2008, a 1% year-over-year increase in the resale price correlates significantly with a 1% increase in the subsequent quarter. Prices were particularly persistent in Alberta and British Columbia over this interval. Testing over other intervals prior to 2001, price movements were much less persistent. This implies that recent increases in resale prices have been particularly sensitive to the past momentum in prices. This is most consistent with speculation: Increases in prices create expectations of future gains, inducing speculators to pay higher prices and causing prices to further diverge from fundamentals.

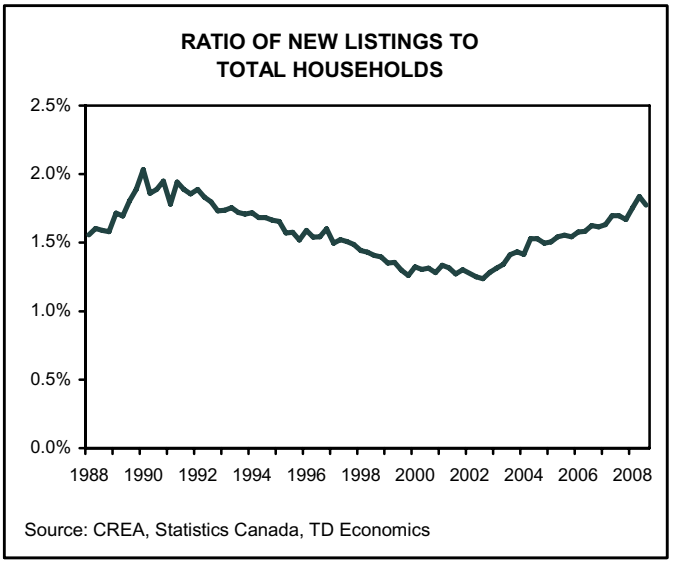
Persistence would be less of a concern if price increases were justified by fundamentals. Expectations that house prices would appreciate in-line with incomes would be reasonably founded. However, we have evidence that price increases were occurring persistently at the same time that price levels had diverged from fundamentals. This implies that price increases were more supported by ongoing speculation than by fundamental-driven appreciation.

Household Formation: More Roofs than Heads?

Every new household must be housed somewhere. The ratio of starts-to-new households measures the degree to which construction has outpaced this backbone of demand. Across Canada, we compute that house construction overshot household formation by 27% over the 2001 to 2006 census interval. Moreover, we estimate that starts continued to overshoot new households by 26% over 2007 and 2008. However, these apparent excesses followed a decade in which home-building undershot household formation by 5%. Nonetheless, for the combined three census intervals from 1991 to 2006, housing starts exceeded new households by 6% or around 156,000 units. The overshoot was strongly centred on the prairies: Housing starts above new households in Alberta accounts for 72,000 of this excess.

In the long-term, the level of construction must match the combined rates at which new households form and old housing stock depreciates. Estimates of annual housing stock losses are in the range of 6,000 to 8,000 units.[5] Against the annual rate of around 180,000 new households, the loss of old stock is therefore a fairly minor driver of the need for new housing. It is household formation that ultimately drives long-term housing demand.

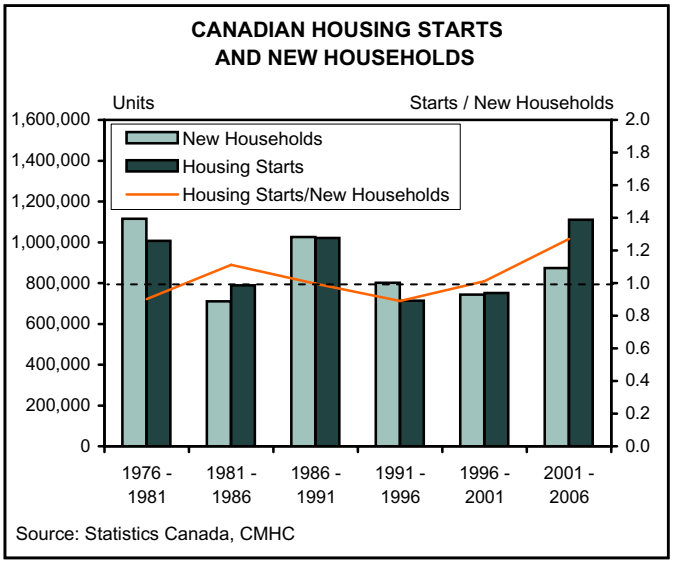
However, in the short-run, new housing often exceeds household formation in response to geographic shifts in population and to meet demography-driven demand. In particular, migration flows between provinces and cities respond to differences in labour market conditions and costs of living. As well, young individuals make decisions about whether to form separate households partly based on mar-

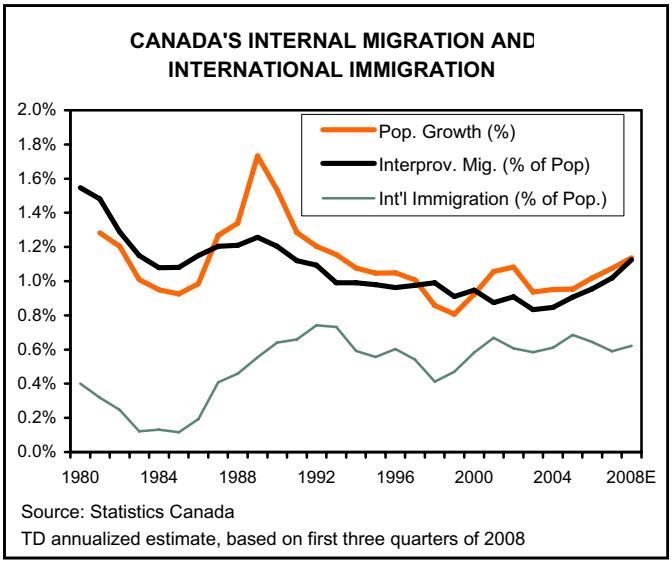


ket conditions. Income and cost of housing will impact their decision to form a household. Recent graduates may choose to live with friends or in their parents' basement rather than purchase a new condo. Life events, such as marriage or the birth of a first child, also have a significant correlation with homeownership (although this correlation may be related to a third variable rather than show causation). While household formation is therefore difficult to model explicitly, we extrapolate trends in headship ratios from the 2001 and 2006 Censuses and compute household growth by applying these to Statistics Canada's population estimates.[6]

At the national level, immigration constitutes around 60% of Canada's annual increase in population. Immigrants arrive typically as young adults and have tended to live with family members within the first five years of arrivals.[8] Thereafter, immigrants have an important impact on household formation. Immigration is strongly centred on Ontario, Québec, and British Columbia, although a recent trend towards the prairies has been observed.

At the regional level, inter-provincial migration drives household growth, slowing it in provinces of origin and heightening the pace in provinces of destination. Across the country, elevated housing needs in particular provinces can thereby buoy the national start numbers. Inter-provincial employment prospects and income differences provide a prime driver of these flows. Owing to the east-west wedges in income and unemployment, inter-provincial migration has been particularly exaggerated in recent years (See text-box on "Inter-provinicial migration"). One particularly important recent trend, migration westward, will





subside over the next year as a contraction in the commodities sector reduces the incentive to seek oil patch employment.

Homeownership: A dry sponge?

It bears repeating that these past eight years of apparent excess supply followed a decade in which housing construction lagged behind the number of new households. Homeownership rates stagnated through the 1980s and early-1990s, but the growth in homeownership over the past decade has been exceptional. It seems that there was ample pent-up demand. Ownership rates do differ across markets but have climbed in all major markets.

From 2001 to 2006, those in the 25-35 age range provided a significant boost to the number of new owners, representing about 9% of the net increase in new owners while the absolute number of households in this age range was actually on the decline. This pattern is consistent across Canada but varies in intensity for different cities. For instance, homeownership amongst households headed by a 15 to 24 year-old was 21% across Canada and 20% in Toronto, but 30% in Calgary and 11% in Montréal. Additionally, while increased buying by 25 to 35 year-old households provided 7% of the boost to ownership in Toronto over 2001-2006, that same cohort provided 19% of the new owners in Calgary. In contrast, ownership for under-35 households fell in B.C. and stagnated in Québec.

Young households clearly formed the margin at which much of the action in new homeownership has occurred. This appears to result from solid income growth within this

HOUSEHOLD AND OWNERSHIP GROWTH OVER 2001-2006									
	CANADA		% of New Owners						
	% of New Households	% of New Owners	Toronto	Vancouver	Montreal	Calgary	Saskatoon	Winnipeg	Halifax
15-24	1%	3%	1%	3%	1%	4%	6%	4%	3%
25-34	-1%	9%	7%	10%	11%	19%	20%	9%	-1%
35-44	-18%	-5%	15%	9%	1%	5%	-30%	-26%	-11%
45-54	37%	30%	29%	21%	29%	31%	37%	34%	33%
55-64	54%	42%	29%	38%	32%	27%	47%	65%	49%
65-74	7%	7%	4%	7%	8%	3%	4%	0%	14%
75+	20%	15%	14%	12%	17%	10%	16%	14%	13%
Source: Statistics Canada, CMHC									

OWNERSHIP RATES			
	1996	2001	2006
Toronto	58%	63%	68%
Vancouver	59%	61%	65%
Montreal	48%	50%	53%
Calgary	65%	71%	74%
Saskatoon	61%	65%	67%
Winnipeg	64%	65%	67%
Halifax	60%	62%	64%
Source: Statistics Canada, CMHC			

OWNERSHIP RATES (UNDER 35 YEAR-OLD HOUSEHOLDS)			
	1996	2001	2006
Toronto	34%	39%	45%
Vancouver	33%	32%	40%
Montreal	29%	27%	31%
Calgary	42%	47%	55%
Saskatoon	36%	38%	43%
Winnipeg	43%	41%	45%
Halifax	37%	33%	34%
Source: Statistics Canada, CMHC			

cohort during that period, along with favourable borrowing conditions. 25 to 30 year olds had total income gains of 20% between 1996 and 2001. Many "Gen-Xers" were clearly homeowners in waiting.

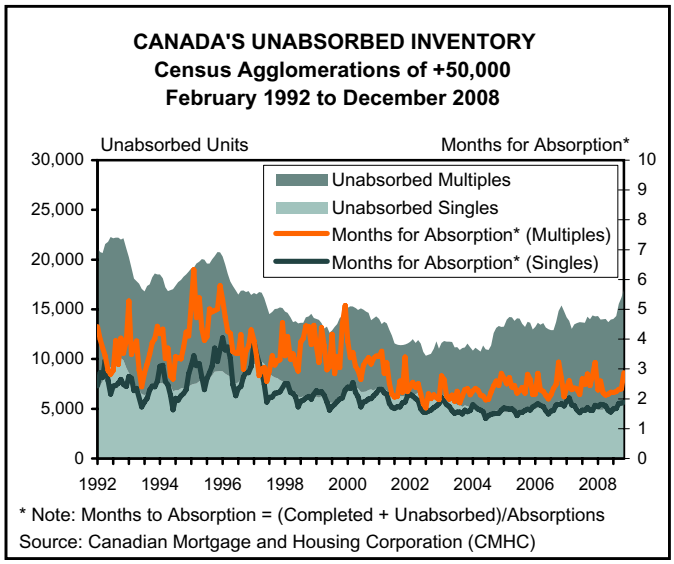
Demographic change has also registered a strong impact on the composition of homebuilding. Such age-related shifts in preferences towards different types of housing units can also spur demand. Multiple-family units like townhouses and condos constituted a greater share of overall building over the last census interval for those cities with greater proportions of young cohorts and retirees. Hence condos as a segment are benefiting from strong demand at both ends of the demographic spectrum. As new grads start to house-hunt, the better affordability of multiples compared to single-detached homes best suits their paycheque and family situation. As boomers enter their golden years, the upkeep of a single-detached home looks less attractive and downsizing also provides a means of cashing out home-equity, not to mention the many security and energy-saving features that many projects offer.

Unabsorbed Inventories: But is the sponge already soaked?

The level of unabsorbed new housing provides insight into whether new supply is running at too fast a clip. At the national level, we observe mounting inventories, particularly of multiples. While roughly at their 2000 level, the surge in unabsorbed inventories just prior to a downturn raises some cause for concern.

However, at the national level, the current months for absorption remain relatively low against those over the past 15 years. We compute the months for absorption as the ratio of unabsorbed inventory and new completed houses to the total number of absorptions in a given month.[8] By this metric, at present rates of absorption, Canada's current new stock would clear in about three months time. This is much less than the over 10 month overhangs witnessed Stateside (see Annex A). The absorption rates over the housing boom show that homebuilders were generally building to meet market demand.

Nonetheless, while still low, the months for absorption nation-wide have ticked slightly upwards over 2008 and unabsorbed inventories have steadily mounted. Especially given that demand will contract during the recession, new supply may not be easing as quickly as it should. In particular, in metropolitan markets where multiples comprise a large share of homebuilding, a large number of these units remain under construction and a spike in unabsorbed units may yet be waiting down the road. New condo-building in Vancouver and Montreal appears to have eased under pressure from mounting inventories. However, Toronto's 2008 summer surge of new condo-construction created a thick plug of new units that are currently flowing through the pipeline. Many of these new condos will come



to completion right in the thick of 2009's recession.

The Outlook: Seven years of plenty, Seven years of hardship?

We employ regression specifications for each province in order to estimate fundamental-justified "shadow prices" and levels of residential construction (see Annex B for full details). From our estimates of fundamental-justified house prices, we can conclude that nation-wide average prices were overshooting their fundamental value since 2005. During this period, we estimate that housing nation-wide was overpriced by 9%. Declines in prices are now returning to fundamental-justified values. We estimate this process to be roughly half done, both in terms of time and value adjustments.

Indeed, as of February, the (seasonally –adjusted) average nation-wide price had already declined from its peak of $324,000 to $282,000 – a drop of 13%. Although the average price likely overstates the actual, nation-wide fall in home values (See "A Different Look at Canadian Home Prices," November 20, 2008), we nonetheless forecast further declines over 2009-10, anticipating a peak-to-trough plunge of 24%. While current prices have roughly converged to those justified by the fundamentals, our macroeconomic forecasts for 2009 and 2010 predict a significant decline in house prices. Hence, as these fundamental prices are themselves moving targets (in this case, moving downwards) this slump in incomes will ripple through to a further drop in home values.

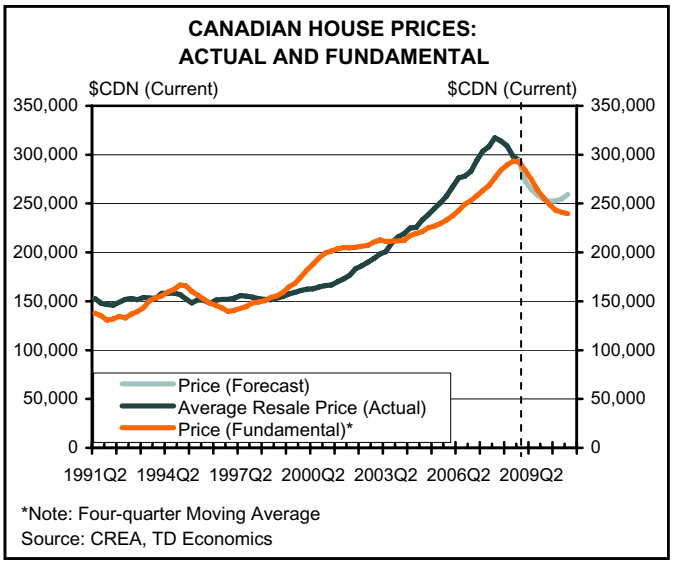
Given the unsustainable inflation of house prices, we estimate that nation-wide housing starts exceeded their optimum by an average 20% over 2002 to 2008. This was particularly exaggerated during 2005 and 2006, but overbuilding persisted in 2007 and most of 2008.

Going forward, as fundamentals themselves deteriorate, falling home prices mean a diminished incentive for homebuilding. However, past oversupply will continue to haunt the market. While anticipated incomes and interest rates might justify 145,000 starts nation-wide, we expect housing starts to plunge to 125,000 over 2009 and only rebound slightly to 135,000 in 2010 – an approximate 20% undershoot of fundamentals during these years.

AVERAGE EXISTING HOME PRICE
Thousand $

	2006	2007	2008	2009F	2010F
CANADA	**276.0**	**305.8**	**303.6**	**262.6**	**254.8**
N. & L.	139.5	149.3	178.5	185.8	183.8
P.E.I.	125.4	133.5	139.9	144.1	145.0
N.S.	168.6	181.0	189.9	187.9	190.5
N.B.	126.9	136.6	145.8	142.5	144.6
Québec	190.3	202.9	210.8	197.2	186.8
Ontario	278.4	299.5	302.4	264.0	258.8
Manitoba	150.2	169.2	190.3	181.8	170.8
Sask.	132.1	174.4	224.6	216.2	196.4
Alberta	285.4	356.2	352.9	297.3	275.7
B.C.	391.0	439.1	454.6	377.2	358.0

F: Forecast by TD Economics as at March 2009
Source: Canadian Real Estate Association



Provincial Outlook

The Atlantic

Aided by strong income growth but relatively moderate increases in house prices, affordability on the east coast remained quite balanced – both relative to history and to house affordability at the national-level. In Newfoundland and Labrador, housing still remained cheap as a proportion of income – even as ex-pat Newfoundlanders remitted wages home and the Rock benefited from its own oil boom. The same holds for Nova Scotia and New Brunswick, where mortgage carrying costs still remain quite moderate. Housing prices did not depart significantly from their fundamentals and, consequently, the level of construction did not substantially exceed its optimum. Newfoundland and Labrador seems to have experienced a mild bout of excess pricing and a slight recent excess of supply. Building on Prince Edward Island appears to have been generally balanced and affordability was not impaired. PEI homebuilding will suffer during the downturn but a structural overhang appears unlikely.

While the ratio of housing starts to new households has been high on the east coast, this reflects the replacement of outdated stock and the internal migration away from rural areas. Unsold inventories of singles and multiples have remained steady and the months for absorption of new stock are at historical lows throughout the Atlantic. Builders on the east coast seem to have been very prudent in calibrating new supply to demand.

Going forward, the commodities plunge will dampen the region's prospects. Oil production and investment in Liquefied Natural Gas (LNG) plants have spurred regional growth, but this sector will slow in the medium-term, owing to a lower, but more sustainable, trend for oil and natural gas prices. However, since Maritimers' housing demand didn't get too giddy, home construction in the region will not see too great a slip. As fundamentals subside, we expect housing starts to slow during 2009 to 2,900 in Nova Scotia and to 3,400 in New Brunswick, while staying relatively even keel in Newfoundland and Labrador.

Québec

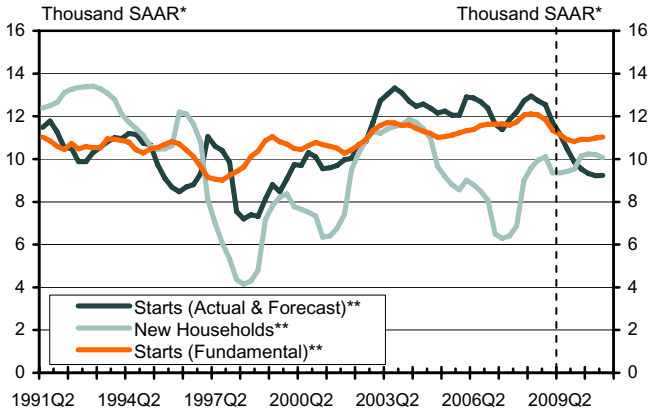
Québec experienced a surge in building over the early 2000s with the pace of building doubling from 28,000 in 2001 to 59,000 units in 2004. Even as household formation has picked up in Québec, housing starts have exceeded new households by approximately 25% since 2001. However, housing starts undershot household formation by 20% over the 1990s, and there was significant under-pricing after 1997. Resale prices only appear to have caught up with their fundamentals at the end of 2003. With a standard mortgage on the average resale home consuming around 27% of Québecers' average household income, house affordability in Québec remains quite moderate relative to that at the national-level and even against history. Even with the new stock of housing, Québec's ownership rate was 60% at the time of the 2006 census, remaining the lowest in Canada by far. The precise reason for this discrepancy remains unclear: Affordability remains quite strong in Québec and the ownership premium is relatively low. One would expect more Québecers to own houses. However, Québecers' income growth has been sluggish and

HOUSING STARTS
Thousands of units

	2006	2007	2008	2009F	2010F
CANADA	**229.1**	**227.9**	**211.4**	**125.0**	**130.0**
N. & L.	2.3	2.6	3.2	3.0	2.7
P.E.I.	0.8	0.7	0.7	0.6	0.5
N.S.	5.2	4.8	4.3	2.9	3.0
N.B.	4.0	4.1	4.2	3.4	3.0
Québec	48.0	48.7	47.9	35.0	32.0
Ontario	74.4	68.0	75.6	43.3	45.7
Manitoba	5.0	5.8	5.6	3.8	4.6
Sask.	3.7	5.9	6.8	3.0	3.5
Alberta	49.1	48.1	29.0	14.0	16.3
B.C.	36.6	39.3	34.3	16.0	18.7

F: Forecast by TD Economics as at March 2009
Source: Canada Mortgage and Housing Corporation

HOUSING STARTS: ACTUAL AND OPTIMAL ATLANTIC PROVINCES



* Seasonally Adjusted Annual Rates, **Note: Four-quarter Moving Average
Source: CMHC, TD Economics

Inter-provincial Migration: Home is…where the jobs are

The picture of housing demand is a necessarily regional one since households need housing where they live and work. In the short-term, immigration of new Canadians and the inter-provincial migration of current Canadians are the drivers of regional population growth. Perhaps the greatest economic advantage of confederation is that Canadians are free to move and work where they choose – and they certainly do. Interprovincial migration has been strong in the past years with about 1.0% of Canada's population – approximately 375,000 Canadians in 2008 – on the move. These movements are still low by the flood heights of 1.5% and 1.3% that we witnessed in the early- and late-1980s, but the recent shifts have certainly generated demand for new housing where new migrants now reside.

Alberta became a net inflow province in the mid-1990s, but, particularly since 2003, inter-provincial migration has certainly been "Westward ho!" The prairies have even become a significant destination for international immigration. While Ontario and B.C. still remain prime destinations for new Canadians, an increasing share of immigrants prefer canola fields to Great Lakes shores. In 2000, around 9% of immigrants chose to homestead on the prairies but over 16% settled there in 2008. In contrast, the share of immigrants settling in Ontario declined from nearly 60% in 2000 to 45% in 2008. The acceleration of immigration to Québec is truly impressive and, with Québec's low birth-rate and net inter-provincial outflows, is the main source of its population growth. From a low at a 12.5% share of immigrants in 1995, 18% of new Canadians settled in Québec in 2008.

New households create demand for new housing, and we consider household growth to be the backbone of optimal housing construction. In turn, our forecasts for household formation rely on our assumptions about net inter-provincial migration.

Individuals move for all sorts of reasons, but net migration certainly depends highly on economic incentives. The migration decision has strong economic components: An individual's net return to migration subtracts the relative costs of goods and housing between the origin and destination from the differential in wages, adjusted for the probability of employment. A recent Statistics Canada study examined this decision using micro data covering individual migrants. The authors, unsurprisingly, found that young individuals in slack labour markets tend to move to provinces with better outcomes.[9]

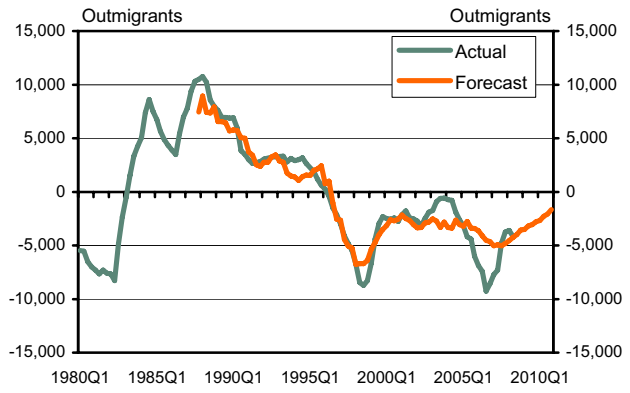
In order to forecast inter-provincial migration, we estimate the effect on net bilateral inter-provincial migration (i.e. Ontario to Alberta, Québec to B.C., and vice versa) from differentials in annual income, unemployment, and houses prices themselves for each pair of provinces. We additionally adjust house price or income differentials by consumer prices excluding shelter. For the high-volume origin/destination provinces, our specifications show significance for coefficients on each of these variables.

For instance, all else constant, each percentage point of difference between the unemployment rates in Alberta and Ontario, increases net migration to Alberta from Ontario by 150 people each quarter. Alternatively, all else constant, every $100 of inflation-adjusted difference in house price between Alberta and Ontario decreases emigration from Ontario by around one person each quarter, but every $100 of annual income drives around 25 more Ontarians from their native province each quarter. Our models have very strong explanatory power, accounting for 80% to 90% of the quarterly variation in net migration levels from 1987 to present between Ontario, Alberta and B.C., and Québec.

Using TD Economics' forecasts for future values of these variables, we can then extract expected migration trends for the major sending and receiving provinces. To derive estimates for overall population growth for each province, we add our projections for inter-provincial migration to the average rate of population growth net of migration across the previous half-decade (2003-2007).

We project that continued wedges in unemployment

NET INTERPROVINCIAL MIGRATION
PRAIRIE PROVINCES*

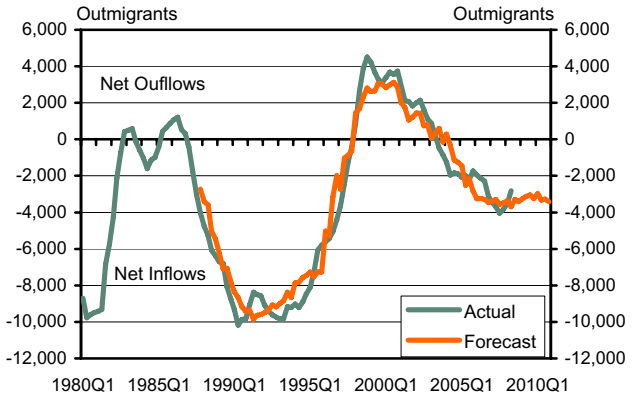


Source: Statistics Canada, TD Economics
* Alberta, Saskatchewan, Manitoba

Inter-provincial Migration: Home is…where the jobs are *(continued)*

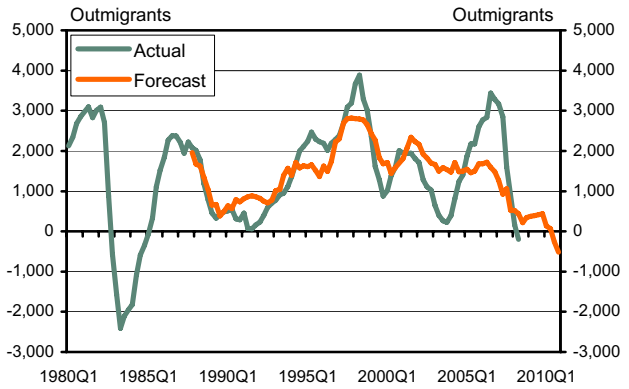
and wages between the east and west will continue to push wagons westward. However, the "four strong winds" certainly won't be blowing as hard as before, and we project migration to increasingly trend towards B.C. rather than to the prairies. During 2009, unemployment in Alberta is expected to surge to near 7% (albeit from a very low level of 3.6% in 2008), and wage growth will slow dramatically with the dreary near-term outlook for the province's oil & gas - fuelled economy. Alberta's unemployment rate will still remain below the national average, but this forecast anticipates the departure of a significant proportion of Alberta's unemployed labour force. The appeal of Wild Rose country will certainly diminish and Saskatchewan will at least partially supplant Alberta as a prairie destination. While B.C.'s unemployment rate will still exceed that of the oil patch, it will remain steady at historically low levels with west coast economic growth leading the national average over 2009-2010. High house prices have provided a disincentive to a B.C. move but, as these decline sharply, the net returns of a Pacific lifestyle will heighten. In line with hikes in unemployment and a realigning manufacturing sector, we forecast continuing migration from the east. However, departures from Québec will decrease through 2009-2010 and we project a slight drop in Ontarians' one-way tickets. Nonetheless, plenty of Toronto ex-pats will still crowd up the Whistler slopes.

NET INTERPROVINCIAL MIGRATION
BRITISH COLUMBIA



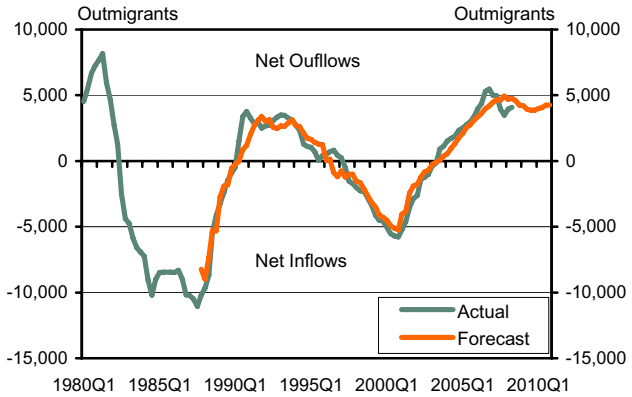
Source: Statistics Canada, TD Economics

NET INTERPROVINCIAL MIGRATION
ATLANTIC PROVINCES*



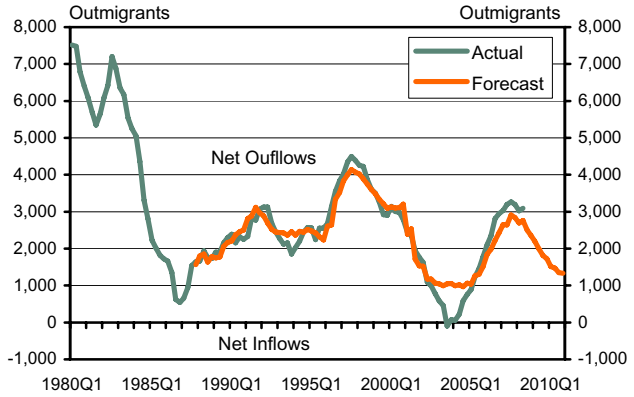
Source: Statistics Canada, TD Economics
* Nfld. & Lab., P.E.I, Nova Scotia, and New Brunswick

NET INTERPROVINCIAL MIGRATION
ONTARIO



Source: Statistics Canada, TD Economics

NET INTERPROVINCIAL MIGRATION
QUEBEC



Source: Statistics Canada, TD Economics

Inter-provincial Migration: Home is…where the jobs are *(continued)*

INTER-PROVINCIAL MIGRATION (2007)

NET OUTFLOWS

NET INFLOWS	Nfld.&Lab.	P.E.I.	N.S.	N.B.	Quebec	Ontario	Manitoba	Sask.	Alberta	B.C.	**Total Inflows**
Nfld.&Lab.	-	-24	-262	16	49	937	-50	-92	-1,561	62	-925
P.E.I.	24	-	97	-336	64	9	-16	12	-466	-18	-630
N.S.	262	-97	-	-365	175	264	-51	-212	-1,963	251	-1,736
N.B.	-16	336	365	-	284	209	-170	-58	-1,280	-27	-357
Quebec	-49	-64	-175	-284	-	-5,199	-42	-538	-5,432	-998	-12,781
Ontario	-937	-9	-264	-209	5,199	-	-201	-604	-12,761	-4,135	-13,921
Manitoba	50	16	51	170	42	201	-	-174	-912	-1,239	-1,795
Sask.	92	-12	212	58	538	604	174	-	5,475	340	7,481
Alberta	1,561	466	1,963	1,280	5,432	12,761	912	-5,475	-	-9,588	9,312
B.C.	-62	18	-251	27	998	4,135	1,239	-340	9,588	-	15,352

Source: Statistics Canada

NET INTERNATIONAL MIGRATION

	2005	2006	2007	2008F	2009F	2010F
	Total Persons (Positive numbers are inflows)					
CANADA	220,704	209,295	194,002	211,800	214,400	211,400
Nfld.&Lab.	260	254	283	300	300	300
P.E.I.	280	501	931	1,300	500	500
N.S.	1,249	1,969	1,897	2,000	1,900	1,900
N.B.	644	1,172	1,171	1,200	1,200	1,200
Quebec	36,771	38,208	38,651	39,000	39,000	39,000
Ontario	120,544	105,355	90,606	100,000	115,000	115,000
Manitoba	6,393	8,288	9,190	8,000	6,000	4,000
Sask.	1,601	2,223	3,014	4,000	2,500	2,500
Alberta	14,422	15,661	15,765	18,000	8,000	7,000
B.C.	38,431	35,563	32,368	38,000	40,000	40,000

F: Forecast by TD Economics, Source: Statistics Canada

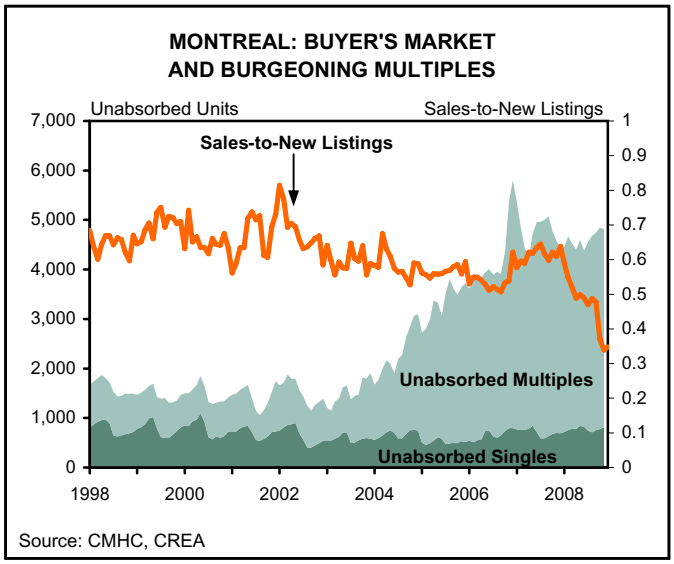
NET INTER-PROVINCIAL MIGRATION

	2005	2006	2007	2008F	2009F	2010F
	Total Persons (Positive numbers are inflows)					
CANADA						
Nfld.&Lab.	-4,680	-4,198	-925	888	508	509
P.E.I.	-252	-752	-630	700	-700	0
N.S.	-3,243	-4,071	-1,736	-935	-936	-937
N.B.	-2,697	-4,077	-357	-1,126	376	755
Quebec	-7,156	-11,828	-12,781	-11,238	-3,904	-1,574
Ontario	-13,513	-21,941	-13,921	-15,536	-14,402	-15,886
Manitoba	-8,602	-7,277	-1,795	-1,495	-1,206	-1,216
Sask.	-9,521	-3,731	7,481	7,052	1,012	2,035
Alberta	43,418	46,239	9,312	15,924	3,592	3,647
B.C.	7,212	12,799	15,352	6,649	15,729	13,663

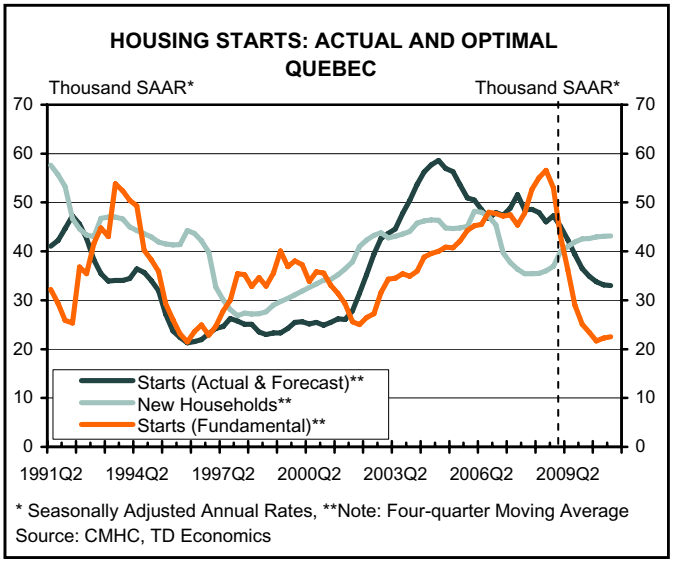
F: Forecast by TD Economics, Source: Statistics Canada

average income remains lower than any province west of Québec. The bias away from ownership may be explained by Québec households' relatively low incomes, which make renting preferable rather than sacrificing current consumption. Tight rent controls also likely skew incentives towards renting.

Nonetheless, current signs point to an overbuilt market. In particular, the province has accumulated a sizable inventory of unsold multiples. While inventories of singles remain low and rates of absorption appear sustainable, the unsold multiples have ballooned to over 5,600 units. Moreover, the rate of absorption had slowed such that new province-wide stock would require four months to be absorbed. These excess multiples inventories are strongly concentrated in Montréal, where over 3,900 newly completed multiple units remained unsold in February. Unsold apartment-style units on l'Île de Montréal comprise the majority of this excess inventory. Notably, these unabsorbed new units



have continued to mount even as a steep plummet in Montréal's sales-to-new listings ratio has moved its resale market into buyer's territory. These unoccupied new apart-



ments will place additional downward pressure on housing prices.

Even though affordability in Québec remained moderate, we estimate that during 2007-2008 Québec house prices were inflated by around 10% relative to their historical relationship with fundamentals. The price inflation that occurred in Québec since 2003 induced a level of construction that largely erased the undersupply of the previous decade.

The recent boom then does seem to have produced a slight excess in Québec's housing stock. Although there remains a potentially worrisome overhang of unsold multiples in Montreal, Québec's present housing stock remains relatively balanced. Nonetheless, the market will be unable to sustain the current pace of building. As of February, Québec's 38,200 starts were still outpacing the province's annual household growth of roughly 35,000. Coupled with the faltering manufacturing sector and deteriorating export conditions, fundamentals in Québec will diminish, placing downward pressure on house prices and dampening building further. We expect housing starts to follow the decline in fundamentals and bottom near 30,000 units.

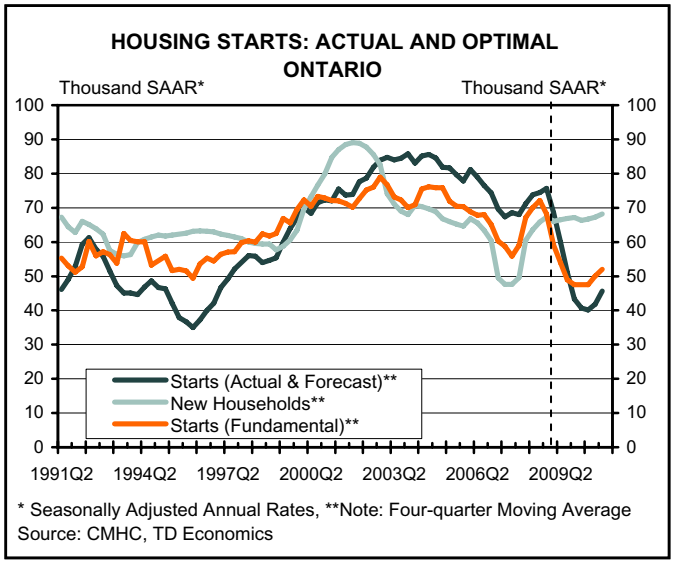
Ontario

Ontario's residential construction will certainly slump over the next two years but we regard this plunge as largely cyclical, owing to the blows to Ontarians' incomes, rather than structural. That is, except for certain markets, we do not regard Ontario as overbuilt overall. Ontario experienced moderate overbuilding during the early part of the housing boom, but this largely compensated for pent-up demand. As well, despite some mild overpricing during the last two years, starts in the province remained roughly in-line with fundamentals. Even while observed prices detached from their fundamentals, building was actually near to its optimal level. House prices now appear to have returned to fundamental-justified levels but will be further walloped over the next year by a contracting provincial economy. Ontario home building has similarly followed suit. Nonetheless, the stock does not appear substantially over-extended. Overhangs of singles and multiples both remain relatively low and are being absorbed at an acceptable pace.

Affordability in Ontario was certainly eroded over the past two years. However, aided by strong income growth in the province, housing remained remarkably affordable against the province's historical standards up to 2006. Even Toronto's affordability was not too greatly impaired – especially when compared to western markets. We estimate that the peak of overpricing occurred during the latter part of 2007 and, with the decline in resale prices over the latter half of 2008, Ontario's home values returned to fundamentals. However, the latter are expected to deteriorate.

In addition, the present number of multiples under construction in Toronto may create some weakness as unsold units are completed during 2009 (see text-box).

Over the next year, with Ontario's manufacturing sector in a tailspin, incomes impacted and unemployment climbing significantly, house prices will experience further de-

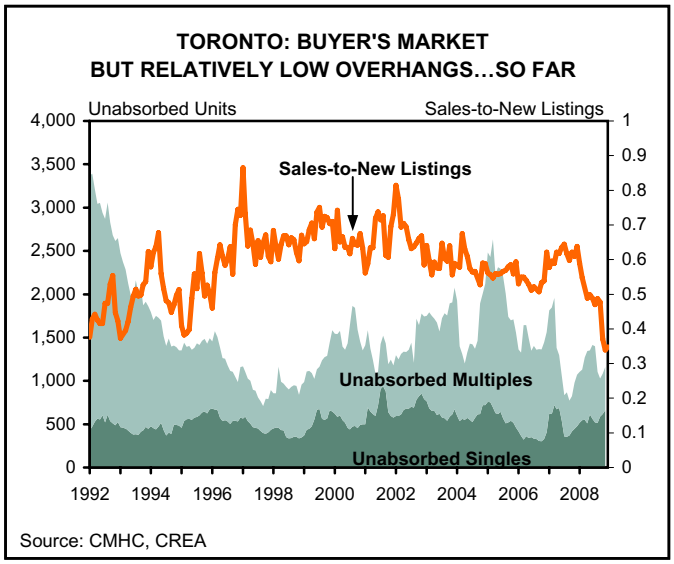


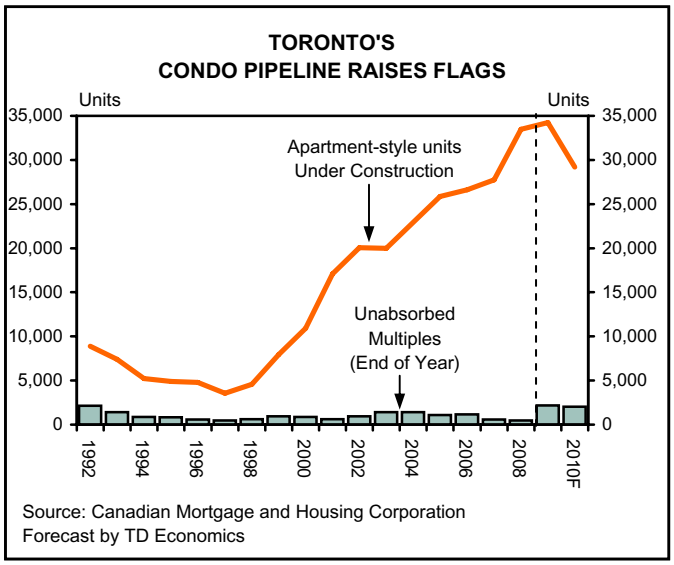
Too many Condos in the T-dot?

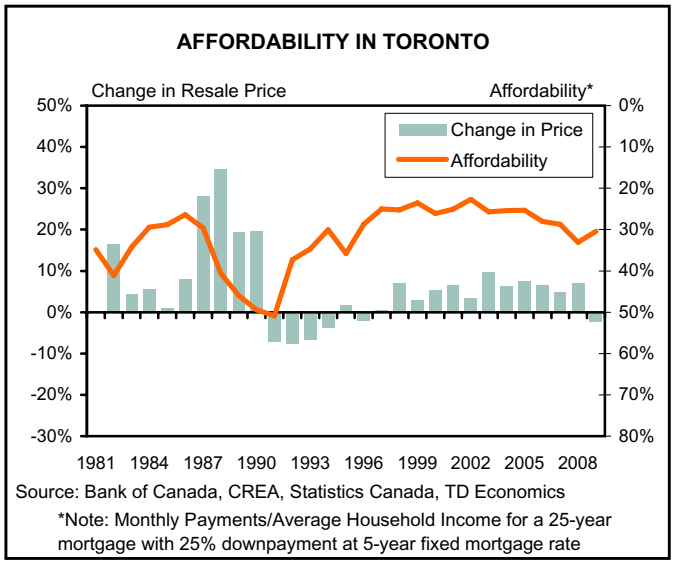
The Toronto condo market has been alleged as a potential focus for overbuilding. Up until 2008, the pace of multiple unit starts seemed reasonable. However, we believe that the recent surge of building has pushed the city into overbuilding. So far, inventories of newly completed but unsold multiples have remained low relative to their historical levels. This shows that the newly completed condos coming onto market have generally been absorbed. Nonetheless, the past summer witnessed an intensive wave of multiple starts in the GTA. Although starts of multiples have slowed in Toronto, the number of apartment-style units under construction is at an all-time high. As well, from 2001 to 2007, multiples represented about 40% to 50% of Toronto's starts. However, 2008 was an anomalous year in which multiples constituted two-thirds of Toronto's starts.

There are certainly structural factors pushing Toronto towards greater density. Over the past five years, Toronto's employment growth was driven by new jobs in professional and financial services, while GTA manufacturing employment witnessed a persistent decline. This sectoral shift in employment encourages high-density homebuilding around commercial hubs rather than low-density developments beyond Toronto's industrial ring. As well, the concentration of young homeowners and newly arrived immigrants in the city also encourages lower-cost, high-density accommodation. An increasing tilt of homebuilding towards multiples is consistent with these trends.

However, the number of multiple units presently under construction in Toronto certainly raises flags. Even assuming a drastic slowdown in Toronto's construction of apartment-style units to 8,700 starts during 2009 from a peak near 24,000 starts last year, we estimate an average of 1,250 new apartment-style units will be completed each month over the next year. Based on historical completion rates for the condos under construction, more condos will be completed in Toronto during 2009 than in any year in the past two decades except 2008. While many of these multiple units are pre-sold prior to construction commencing, Toronto could end up with sizable overhangs of condos unless construction is ratcheted back substantially. Toronto's unabsorbed multiples did actually fall in February,







Too many Condos in the T-dot? *(continued)*

but Toronto has a large plug of condos under construction. Even assuming the 90% of multiples are absorbed at completion, Toronto's unoccupied new multiples will more than double.[10] A very high number of condo projects will still remain in the pipeline and these overhangs will plague Toronto's condo market into 2010 and likely beyond. We will be examining Toronto's condo market in greater depth in a forthcoming report.

clines as the market's fundamentals deteriorate. Ontario's homebuilding already subsided to 47,300 in February from its 91,000 units peak in August. We forecast that starts will remain around the 43,300 level for the coming year. This would represent a substantial undershoot of the approximately 67,000 households formed per year in Ontario. Indeed, we forecast that population outflows to Canada's west will continue to wane while Ontario continues to be the prime destination for new arrivals to Canada. We believe that there are low structural risks to the overall provincial housing market. Rather than be plagued by a structural oversupply of housing stock, it is the current cyclical downturn that will diminish home values and decrease demand for housing.

Manitoba

Manitoba's homebuilding remained generally on-track with fundamentals throughout the housing boom. While steady and prudent, Manitoba's residential construction will nevertheless reel from cyclical pressures over the next two years.

The housing boom almost seems to have forgotten the province. Residential construction largely followed the growth in households. Since more Manitobans leave the province than arrive from other provinces, Manitoba's net household formation owes primarily to international immigration. Although homebuilding slightly lagged a population spurt in 2004, the influx was rapidly accommodated. Affordability remained strong and, although slightly inflated, houses remained consistently priced.

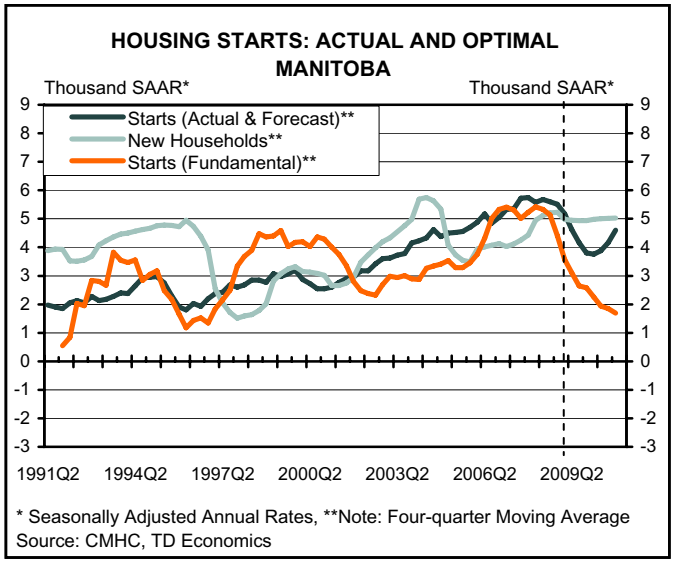
However, despite fairly conservative homebuilding, residential construction in the province will sag as production in the province contracts. While expansion of hydro and mining projects will somewhat soften the blow, Manitoba's service and manufacturing industries will certainly experience a decline. As house price fundamentals deteriorate, we forecast that Manitoba's housing starts will fall to approximately 3,800 units over the coming year from their 5,500 units level over 2008.

Saskatchewan

Despite Saskatchewan's strong growth spurt over 2008 and diversified resource base, the commodities slump will dampen the attractiveness of Big Sky country to migrants over 2009. The population influx cannot be sustained and Saskatchewan's housing starts have already plunged to 4,000 units from a peak around 8,000 units last summer. Climbing inventories of singles and plunging sales-to-new listings ratios signal that the pace of building during 2008 may have been over-zealous.

Income growth was quite strong in Saskatchewan during 2007 and 2008. Nonetheless, affordability declined substantially over the past two years, as average resale prices strongly detached from levels justified by long-run fundamentals. Despite leading the country in 2008 with an estimated GDP growth rate of 3.4%, two consecutive years of 30% increases in the average resale price of a Saskatchewan house were nonetheless far in excess of the province's performance.

The rapid influx of migrants during the past two years did justify some uptick in building. However, housing starts had already well exceeded household formation from 1997 until the end of 2006. Indeed, annual construction of 3,000 units was being sustained during 2000 to 2001 when the number of households in the province was actually shrinking. The overshoot of fundamentals implies that Saskatch-



ewan homebuilders may have sped ahead of what the market could ultimately bear.

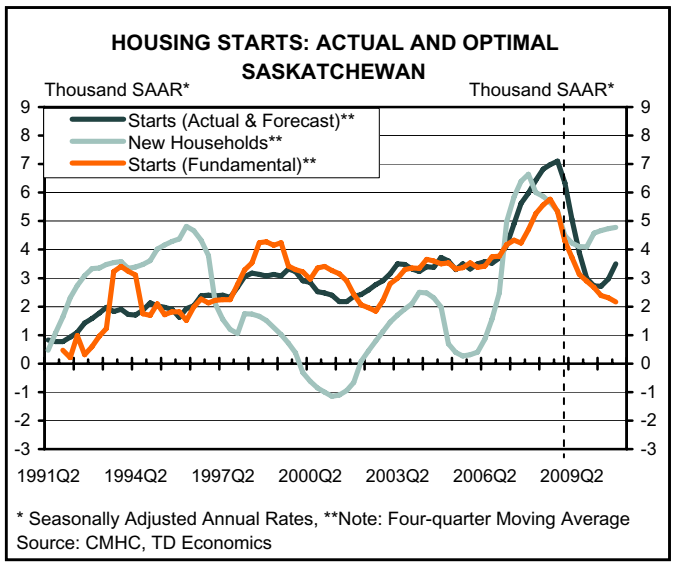
In November 2008, Saskatoon's sales-to-new listings ratio had plunged to the lowest level since 1990, and, as of December, unabsorbed new single units in Saskatoon had surged to an all-time high of 256 units. While conditions have since improved marginally, the market has nonetheless moved into strong buyer's territory with an increased number of prairie houses hitting the market but fewer buyers biting.

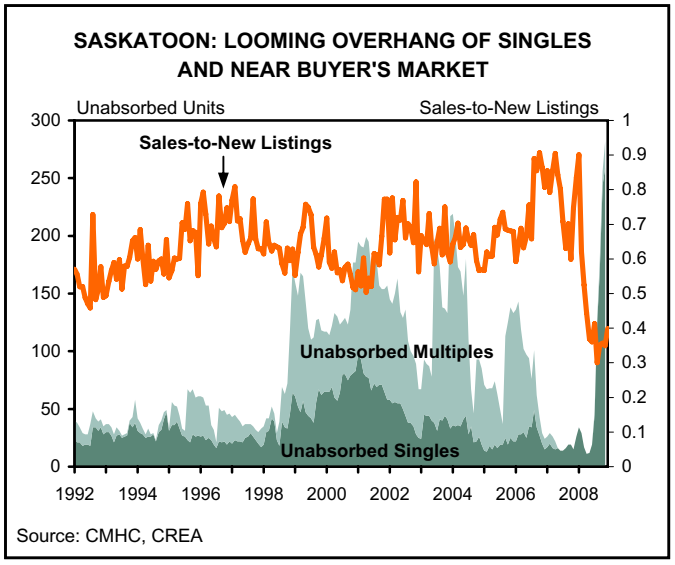
We anticipate that migrant inflows will subside substantially, and that household growth will slow to a pace of 4,000 annually. Since incomes will also take a hit from the U-turn in commodities markets, a level of homebuilding of around 3,000 starts during 2009 is likely justified by fundamentals. This would mean a chop in residential construction activity of nearly 50% from the 2008 pace.

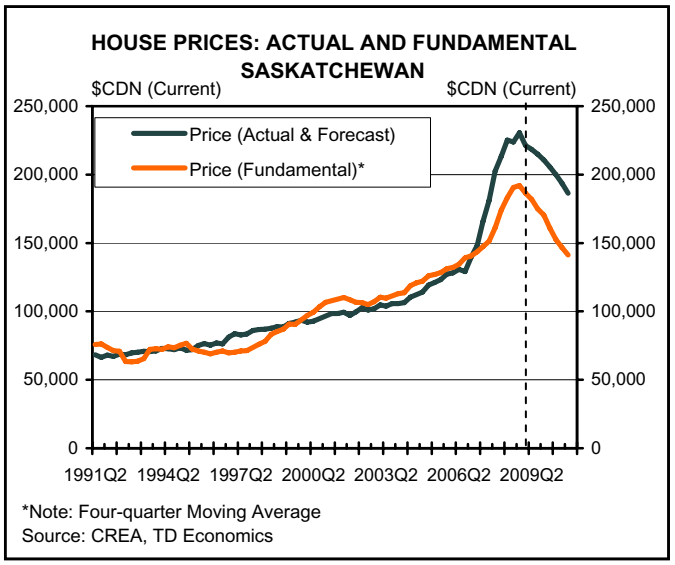
Alberta

Wild Rose country was overbuilt substantially during its boom years, and mounting inventories in Calgary and Edmonton are cause for concern. Indeed, even over 1991 to 2001, housing starts in Alberta had already overshot household formation by 12%. With oil prices having subsided from their fever pitch and expansion projects now on hold, the net inflow of migrants has slowed dramatically and may even cease completely during 2009. The previous pace of homebuilding could not be sustained and slowed precipitously during the fall. Alberta's starts further declined to 13,100 units in February, 61% lower than a year prior. With Alberta's economy set to contract by 2.5% this year in real terms and roughly 10% in nominal terms, homebuilding has likely not yet bottomed. While around 30,000 new households will form in the province during 2009, starts are likely to be nearer 14,000 units on the year.

Even accounting for the population inflows, the province's homebuilding overshot fundamentals by nearly 10% during the commodity boom. From 1991 to 2006, Alberta has approximately 72,000 more housing starts than new households, and the estimated 13% overshoot of fundamentals during 2002-2008 exhibits this excess. Now, plunging sales-to-new listings ratios and mounting unsold inventories clearly indicate that the present stock of homes is excessive. As of February, Calgary had an overhang of 1,133 unsold units (874 singles and 259 multiples) and a sales-to-new listings ratio of 0.29, indicative of a definitive







buyer's market, having now fallen to its lowest value in two decades. Similarly alarming is Edmonton's surge in unsold inventories. As of December, Edmonton had 1,747 unsold units (1,254 singles and 493 multiples) – its largest recorded overhang ever – and conditions for sellers in the resale market have deteriorated sharply. In both of Alberta's major cities, homebuilders have worrisome unsold inventories of new singles, and, with demand having cooled rapidly, resale markets already appear saturated.

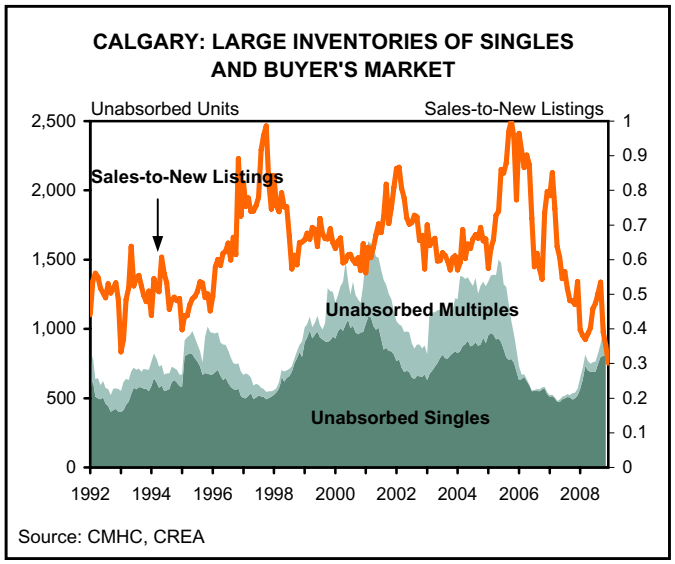
The steep appreciation of house prices during Alberta's boom times now appears to have been far too optimistic. Although income growth was very strong, Albertan housing during 2007 and 2008 was especially overpriced relative to fundamentals. The quick climb of Albertan resale prices substantially eroded affordability and, even though Albertans were Canada's highest income earners on average, the growth in household income was not sustainable. The 9% year-over-year decline in Alberta's average resale price in February is evidence that past prices exceeded fundamentals. Those inflated prices drove homebuilding in excess of fundamentals. Given Albertans' deteriorating incomes and the overhangs of unsold inventories, Alberta's resale prices probably have another 20% leg down over 2009.

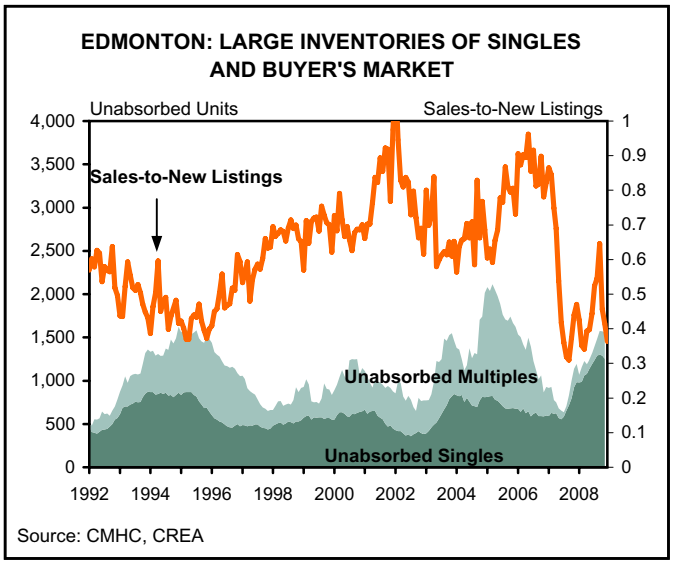
British Columbia

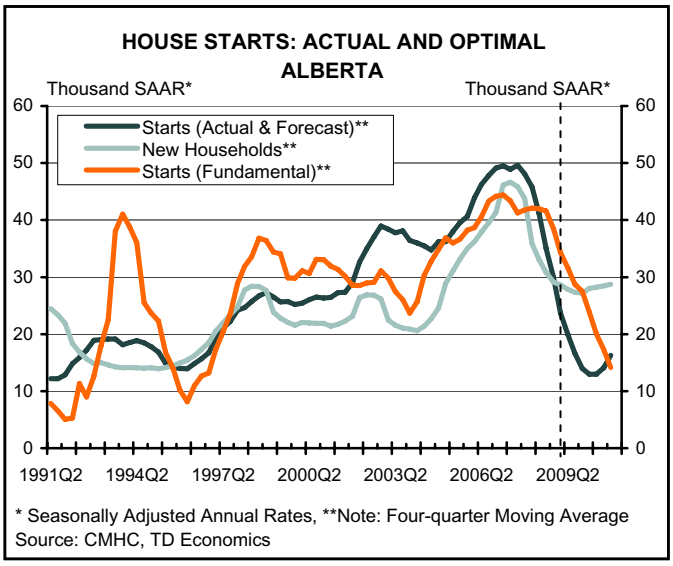
While west coast building largely kept pace with fundamentals until mid-2006, B.C.'s building spurt during 2007 and 2008 was excessive. Homebuilding exceeded the number of new households since 2001. B.C. has nonetheless experienced sustained and substantial population inflows, particularly of new immigrants. Although starts did not get too far ahead of household formation during most of the boom, inflated prices did drive over-building during the past two years.

Affordability in B.C. has generally been the worst in the country and deteriorated even further during the past two years. Some of this deterioration in affordability can be explained by the settlement of retiree or immigrant households who have substantial wealth but not necessarily high current incomes. Nonetheless, during 2007 and 2008, resale houses in B.C. were over-valued relative to long-run fundamentals by at least 7%.

Mounting inventories of singles and multiples in the Vancouver region show that too many new homes were built. In the immediate term, B.C.'s overhangs of singles, which are particularly exaggerated in the greater Vancou-







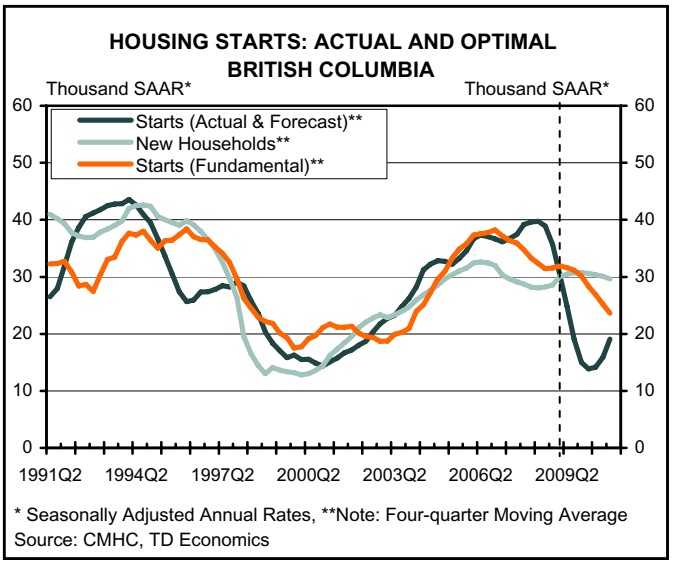
ver area, should flag concern. Moreover, Vancouver has a large number of multiples in the pipeline that will come to completion this year. Similar to Toronto, the Vancouver condo market may face a deeper structural weakness. The resale market already having deteriorated sharply, and, given the historically high number of multiples under construction, a surge of unsold condos is likely yet-to-come. Assuming completion of the present condo projects underway at average historical rates, Vancouver's unsold inventories of new multiples could surge to over 4,000.[11] Rumours abound of empty floors of owned but unoccupied units in Vancouver's downtown complexes. As Asian markets are walloped, offshore owners may choose to liquidate these assets.

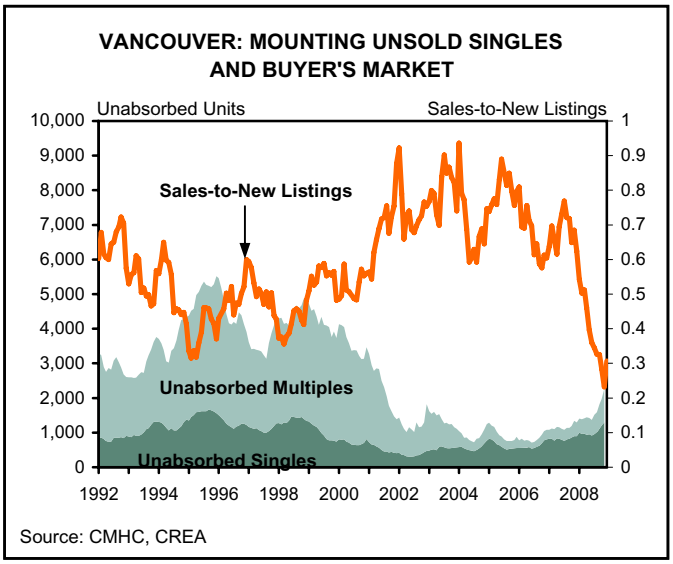
Nonetheless, we project that B.C. will still experience household growth of 30,000 this year. Although dependent on federal policies, international immigration to the province should not abate, and B.C. will still have favourable employment conditions relative to eastern Canada. The coast will remain a draw for easterners, especially as the oil patch loses some of its lustre. Inter-provincial inflows of migrants to B.C. should be sustained and may indeed increase. However, with the past two years of overbuilding, B.C.'s new construction should slow to well below the rate of household formation.

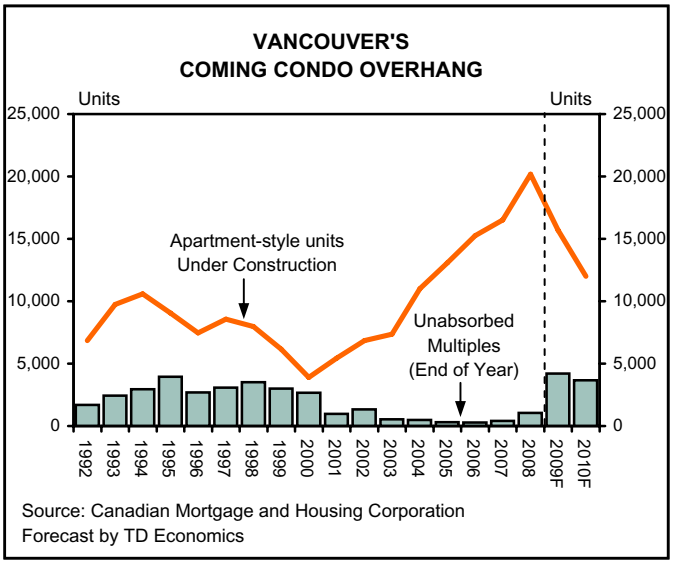
B.C. starts already slowed to 16,400 units in February. It is likely that new construction will remain near this level over the next two years. As well, average house prices should fall to a level better justified by incomes in the province. An influx of wealth arguably provided the spur for anomalously poor affordability – even by B.C. standards. However, home prices must return to fundamentals over the long-run. We project that the average house price will fall by approximately 15% relative to its current level over the course of 2009.

Grant Bishop, Economist
416-982-8063

Pascal Gauthier, Economist
416-944-5730





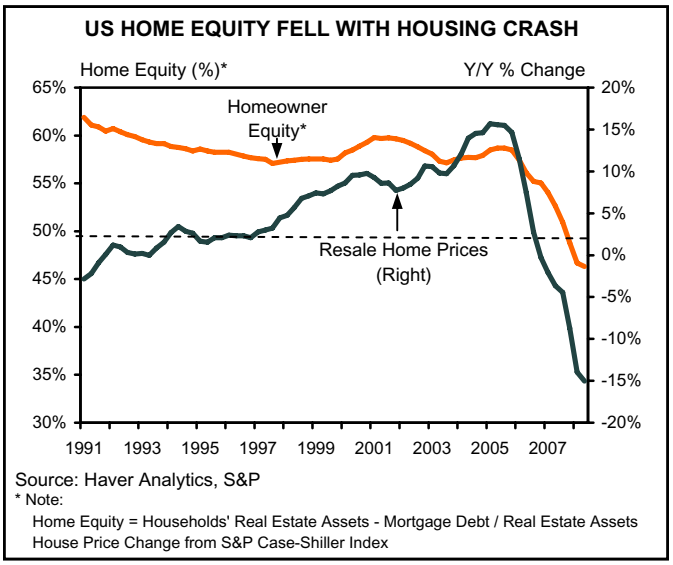


Annex A : A U.S.-style Housing Crash?

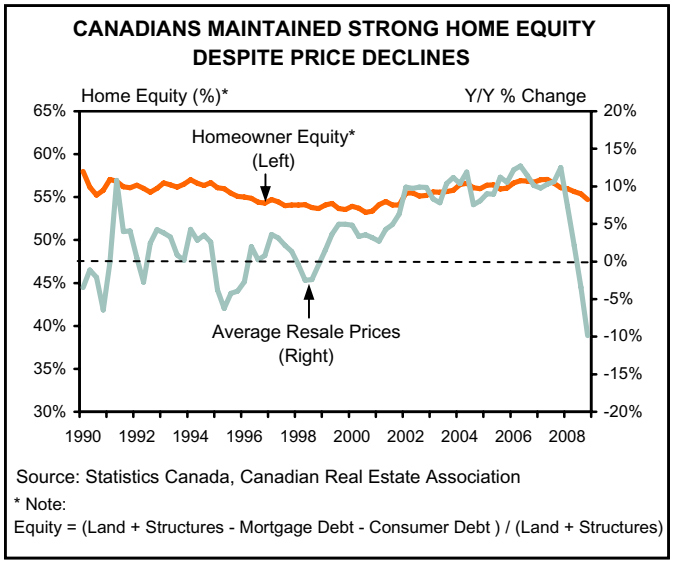
In the U.S., lax credit fuelled unsustainable buying and, buoyed by that bubble, too many builders built houses that now can't be sold off. To compound this over-building, with defaulting mortgage-borrowers mailing in their keys, additional homes are being released onto the market, driving inventories higher. With the bubble bursting, U.S. housing starts plummeted nearly 80% from their peak, shrinking from 2.3 million units in January 2006 to only 466,000 units in January 2009. Will Canada follow the U.S. down this road?

The short answer is that this is unlikely, for a variety of reasons. Although starts have exceeded household formation in Canada since 2001, this came after a decade of undersupply. Evidence of overbuilding has only appeared during the tail-end of the Canadian housing boom, whereas U.S. housing starts had been overshooting household formation a full four years before the downturn. Furthermore, Canada's increases in homeownership have been largely low-risk, founded in credit institutions that assured borrower quality. To a good degree, the excess supply over the earlier years of Canada's "housing boom" eased pent-up demand for homeownership. U.S. overbuilding was longer and much more excessive. While growth in Canadian homeownership since 2001 has been the most rapid in 35 years, homeownership had stagnated since the 1980s. Certainly, this recent growth owed to low interest rates and broader extension of credit. However, unlike the U.S., creditors did not ignore credit-worthiness, and borrowers were not disconnected from ultimate lenders through exotic derivatives. It is worth noting some key institutional differences between U.S. and Canada mortgage markets:

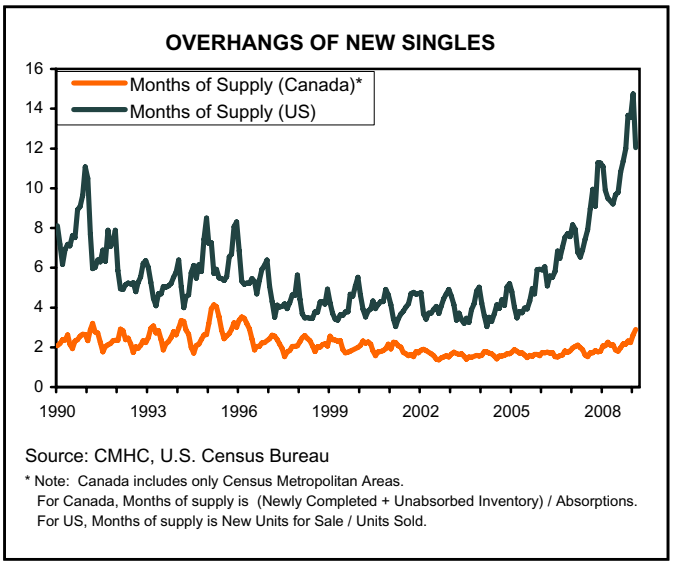
- Mortgage interest deductibility from personal income tax, biasing households towards larger mortgages, discouraging early accumulation of home equity and encouraging "flipping" over short-periods. In contrast, mortgage interest cannot be deducted against income tax in Canada, thereby avoiding such a distortion against renting.
- The U.S. legal system provides incentives to default since the legal costs of pursuing mortgage defaulters often exceed the loss from foreclosure and since many states' foreclosure laws mean that lenders effectively have "no recourse" on a defaulting borrower. In Canada, a borrower can be pursued for the remaining value of



Source: Haver Analytics, S&P
* Note:
Home Equity = Households' Real Estate Assets - Mortgage Debt / Real Estate Assets
House Price Change from S&P Case-Shiller Index



Source: Statistics Canada, Canadian Real Estate Association
* Note:
Equity = (Land + Structures - Mortgage Debt - Consumer Debt) / (Land + Structures)



Source: CMHC, U.S. Census Bureau
* Note: Canada includes only Census Metropolitan Areas.
For Canada, Months of supply is (Newly Completed + Unabsorbed Inventory) / Absorptions.
For US, Months of supply is New Units for Sale / Units Sold.

the mortgage if the proceeds from a foreclosure sale are less than the amount outstanding.

- The existence of "teaser" adjustable rate mortgages (ARMs) was inherently unstable, causing default on the part of homeowners who were subsequently refused refinancing as home prices started falling and standards tightened. This created the systemic risk behind the first spike in foreclosures, a risk that is not present in Canada.
- Poor risk assessment by ratings agencies and investors in Mortgage Backed Securities (MBS) encouraged greater entry into U.S. mortgage lending, relaxation of credit standards and greater subprime originations. In contrast to a peak near 30% stateside, subprime mortgage originations in Canada anecdotally never exceeded 5% (albeit aggregate data is presently lacking on this issue).

Canadian mortgage lending was relatively conservative and our financial institutions refrained from these house-of-cards lending structures that proliferated stateside. A severe erosion of homeowner equity demonstrates the massive leveraging by U.S. homeowners. Notably, while equity was further eroded by shrinking real estate values, U.S. homeowner equity had already fallen to under 40% *before* house prices went into a tailspin in mid-2006. The initial erosion in equity was caused not by the fall in home prices but by imprudent spending by U.S. homeowners on the expectation of unabated appreciation of their houses. With house prices plummeting, one in five homeowners has probably sunk "underwater", their house being worth less than the outstanding mortgage on it. In contrast, despite home price appreciation, Canadian credit has not overreached the value of Canadian housing and home equity is still comfortably near 55%. Today, most Canadians owning houses in Canada can afford to do so, and few homeowners will be submerged. Snowballing defaults and foreclosures have plagued the U.S. housing market, sending the financial system and overall economy into a tailspin. The structure of Canada's mortgage lending institutions and control on mortgage securitization make such a domino-effect unlikely in Canada. We expect Canadian housing markets to follow the current economic downturn, with some downward pressure from overbuilding - rather than behave as the proverbial tail (mortgage financing) wagging the dog (economy).

Lastly, Canadian builders were also more disciplined and housing supply was not as "elastic" as that Stateside. While Canadian housing starts exceeded average households formation since 2001, U.S. homebuilding exceeded household growth by larger margins and had already been overshooting through the 1990s. U.S. builders built large inventories and the numbers of months typically required for absorption of new housing were well above the Canadian lags. Quite simply, our builders are much less exposed to a downturn in demand for new housing. While Canada has seen inventories rise, the relative scale of the pile-up is less severe than overhangs south-of-the-border. All told, we consider alarmism about an imminent U.S.-style crash waiting in the wings for Canada to be an exaggeration. Knowing and understanding the risks from observing the dramatic U.S. corrections is one thing. Claiming that this is the most likely outcome for Canada is a leap that simply cannot be made on anything other than shaky ground.

Annex B: A Model for Overbuilding: Rational Building but Exuberant Pricing

In competitive markets, higher prices compel increased quantity supplied, and, indeed, home-building closely follows changes in house prices. Therefore, our model views prices as providing the push for new construction. If market prices detach from those justified by fundamentals (what we consider the "shadow price" of housing), this can induce residential construction beyond fundamental-justified levels. As we have discussed, speculative buying can detach current prices from fundamental-justified levels.

These market imperfections have real consequences. The longer that overbuilding persists, the longer construction will undershoot during a housing downturn. In this way, overbuilding can amplify the shock to housing markets from an economy-wide downturn. Where homebuilding would decline in sync as the economy contracts during a cyclical downturn, overbuilding creates additional structural weakness, leading to a more severe decline in construction.

To estimate the degree of overbuilding, we first must compute the fundamental-justified level of home-building. To determine this level, we employ a "counter-factual": We ask how many houses would have been built had the average resale price been at its fundamental-justified level. We first estimate historical "shadow prices," representing the true value of housing, based on the long-run fundamentals. Secondly, we estimate homebuilders' long-run response to changes in home prices, using quarterly data covering 1989 to 2008. We then substitute the estimated "shadow price" into the homebuilders' equation in order to compute what builders would have built if houses had been priced optimally.

The degree of overpricing and overbuilding for each quarter are calculated as:

$$\%\, overpricing_t = \frac{"shadow\ price"_t - price_t}{"shadow\ price"_t}$$

$$\%\, overbuilding_t = \frac{house\ starts_t^{Optimal} - house\ starts_t}{house\ starts_t^{Optimal}}$$

That is, a 10% price overshoot means that observed average prices have exceeded their estimated "shadow price" by 10%. An 12% "overbuilding" means that observed housing starts exceeded the fundamental-justified level of housing starts, computed at the "shadow price" rather than the observed price, by 12%. We discuss our model in greater detail below.

The "Shadow Price": What price is right?

The idea behind this "shadow price" is that incomes and interest rates determine the optimum price for housing in a given region. Since individuals generally must live near where they work, a region's wage rates should be capitalized in the price of living there. Higher carrying costs for a mortgage limit the portion of household income that can be spent on consumption or invested in other assets. Higher spreads between mortgage rates and government bonds make investing in housing more costly.

In the short-run, actual house prices may detach from these fundamentals, but, in the long-run, the erosion of affordability should rein in prices to a fundamental-justified level. As affordability diminishes, fewer households buy houses. The contraction in demand slows price growth.

Nonetheless, resale market tightness, investor speculation and buyer psychology during a bidding war can all work to detach prices from fundamentals in the short-run. Over the past three years, we conjecture that speculative buying was a prime source of this inflation.

House prices cannot persist at levels that are unaffordable for homebuyers. Therefore, in the long-run, house prices in a given region are linked to interest rates and regional incomes.

To model the "shadow price" of housing in each province, we regress inflation-adjusted, observed resale house prices on GDP per household, unemployment rates, mortgage interest rates and the 5-year government bond rate. We use estimated relationship to infer each province's "shadow price" for housing in each quarter. We estimate the following relationship by performing a least-squares linear regression using quarterly data covering 1988 to 2008:

$$\frac{price_t}{CPI_t} = fn\left(\frac{GDP_t}{households_t}, unemployment\ rate_t, 5year\ mortgage\ rate_t, 5year\ GoC\ bond\ yield_t\right)$$

Using this specification, we explain around 70% of the quarterly variation in house prices nationally, approximately 65% in Ontario and Québec, and over 80% in both Al-

berta and B.C. The regression coefficients on these fundamental explanatory variables are generally significant in the regression for each province. For certain provinces, we find significance for a non-linear effect from unemployment, which we incorporate by including the square of the unemployment rate as an additional term.

The "shadow price" is the estimate based on these fundamentals. That is:

$$\begin{aligned} "shadow\ price"_t &= \hat{price}_t \\ &= \left(\hat{\alpha}_1 \frac{GDP_t}{households_t} + \hat{\alpha}_2 (unemployment\ rate_t) \right. \\ &\quad + \hat{\alpha}_3 (5 year\ mortgage\ rate_t) \\ &\quad \left. + \hat{\alpha}_4 (5 year\ GoC\ bond\ yield_t) \right) \times CPI_t \end{aligned}$$

We should note that the sales-to-new-listings is often used as a measure of market tightness and employed to forecast short-run resale house prices. However, while the sales-to-new-listings ratio has significant and strong effect on changes in resale prices, we exclude it as a true fundamental. Although this ratio demonstrates the tightness of the resale market and certainly correlates with changes in actual price, it is really a measure of homebuyer behaviour and not truly of the fundamental value of housing. The sales-to-new listings ratio will capture speculative buying, and is not a true determinant of the underlying "shadow price".

Hitting the bullseye: How much homebuilding was justified?

We argue that, in the long-run, house construction then must track a level determined by 1) the rate at which new households form, 2) a fundamental-justified, "shadow price" for housing, and 3) builders' cost of capital. Household formation is primarily demographic but is influenced by economic conditions that induce young individuals to form households or propel job-seekers to migrate between regions.

We need to consider all factors in order to estimate an optimal level of building at any point in time. Over a given interval, household formation may exceed the number of new units, but the cost and value of a new unit might not justify more homebuilding. Conversely, during a period of high income growth, the value of each new unit increases and homebuilding that exceeds household formation would be optimal.

As already discussed, the "shadow price" captures the affordability of housing, but more subtly represents the benefit to a household from living where they live. The spread between the business prime rate over the risk-free rate (proxied by yield on a government five-year bond) represents the cost to homebuilders of their investment. We also include the "gap" between household formation and housing starts in previous periods with a moving sum over the past four years. This captures the reversion of housing supply to household formation over the long-term.

We estimate a linear regression in which housing starts in each quarter are dependent on these factors, according to:

$$\begin{aligned} house\ starts_t = fn \Bigg(& Y/Y\%\Delta\left(\frac{price_t}{CPI_t}\right), \Delta households_t, \\ & prime\ rate_t, 5 year\ GoC\ bond\ yield_t, \\ & \sum_{i=1}^{16} (\Delta households_{t-i} - house\ starts_{t-i}) \Bigg) \end{aligned}$$

Price changes and household formation enter significantly and strongly into the model at the national-level and for each province. The estimated equations explain over 80% of the variation in homebuilding in British Columbia and Alberta, approximately 65% in Ontario, and 75% in Québec. We apply this model to estimate the degree to which house prices and homebuilding have overshot fundamentals nationwide and in different regions. We compute the fundamental-justified level of housing, using the estimated model and substituting the estimated "shadow price":

$$\begin{aligned}\widehat{house\ starts}_t^{Optimal} &= \hat{\beta}_0 \\ &+ \hat{\beta}_1\left(Y/Y\%\Delta\left(\frac{"shadow\ price"_t}{CPI_t}\right)\right) \\ &+ \hat{\beta}_2\Delta households_t\ fn \\ &+ \hat{\beta}_3\sum_{i=1}^{16}\left(\Delta households_{t-i} - house\ starts_{t-i}\right) \\ &+ \hat{\beta}_4\ prime\ rate_t \\ &+ \hat{\beta}_5\left(5 year\ GoC\ bond\ yield_t\right)\end{aligned}$$

We can also use this model to forecast fundamental-justified levels of homebuilding in future periods, based on our projections for fundamentals.

Grant Bishop, Economist
416-982-8063

Pascal Gauthier, Economist
416-944-5730

Endnotes

[1] Note that we calculate the months for absorption in a different manner than is reported by CMHC. We calculate this rate as the sum of completions and unabsorbed inventories divided by total absorptions. CMHC computes the months for absorption as the unabsorbed inventories divided by the absorptions from the unabsorbed inventory (therefore excluding those absorptions from completions). We employ a different approach in order for comparability with the months of supply figure that is published by the U.S. Census Bureau. The U.S. figure considers single family dwellings (including new singles and compartmentalized multi-residential structures but excluding mobile homes or rooming houses) and is computed as the number of units for sales divided by the units sold. U.S. sales are roughly comparable to the total Canadian absorptions (albeit the timing differs: a U.S. sale may be recorded before construction commences while, in Canada, absorptions occur upon completion). In contrast, CMHC's months for absorption only considers the absorptions from the unabsorbed stock.

[2] We recognize that a 25-year, 25% downpayment mortgage may no longer be "standard". However, we lack data on the distribution of lengths for mortgage amortization and downpayment sizes. CMHC collects this information for those mortgages that it insures, but does not publish statistics. Anecdotally, new homeowners have moved towards longer amortization periods and lower downpayments. Indeed, such a trend would explain a great deal of the recent deterioration of affordability. Moreover, we hypothesize that the short-lived 0% downpayment, 40-year amortization mortgages may have had the perverse effect of fuelling house price inflation: Many households could afford larger mortgages and were willing to bid more for a given property.

[3] Our own TD House Price Index (HPI) is based on a weighted average, based on the number of owner households in 24 cities (See "A New Look at Canadian Home Prices"). The TD HPI thereby accounts for volatile sales volumes in certain markets and show a more muted decline. The flipside of the more moderate decline thus far means that house prices still have some ways to fall to return before reaching the long-run affordability level.

[4] For example, in Ontario, rental rates for 2008 for existent tenants are limited to 1.4% per annum. In British Columbia rent controls stipulate a 3.8% maximum increase. Alberta has no limits on a single increase, but rent may be increased only once yearly. All of these controls would limit the rate at which the average rental rates adjust to a new value for housing in a given region.

[5] Lewis, R. (2005) "Demographics and Housing Construction." CMHC Socio-economic Series (08-004)

[6] We have used Statistics Canada's population estimates as derived from the 2001 Census. Annual population estimates derived from the 2006 Census have recently been published by Statistics Canada but have not been updated on the CANSIM interface. Our study therefore uses the available "old" estimates of population to estimate household formation.

[7] Thomas ("Socio-demographic Factors in the Current Housing Market," Canadian Economic Observer, October 2005), reports that, for the 2001 Census, 40% of recent immigrants lived with family members.

[8] As in footnote 1, this approach differs from that used by CMHC. CMHC reports months for absorption based on the absorptions from the unabsorbed stock, rather than total new stock relative to total absorptions. We use the latter measure for consistency with the U.S. statistic.

[9] Bernard, A., Finnie, R., and St. Jean, B. "Interprovincial mobility and earnings," Perspectives on Labour Markets (75-001-X). Statistics Canada, October 2008.

[10] Over 97% of Toronto's completed multiples were absorbed during 2008. However, absorption fell to under 92% in both of 2003 and 2004 – relatively good years for home sales. Rates under 90% would not be unrealistic given present pressures on potential buyers.

[11] This assumes a plummet in absorption to 70% of Vancouver's new multiple stock. However, absorption fell to under 72% in both 1998 and 1999, and experienced a low of 68% in 2000.