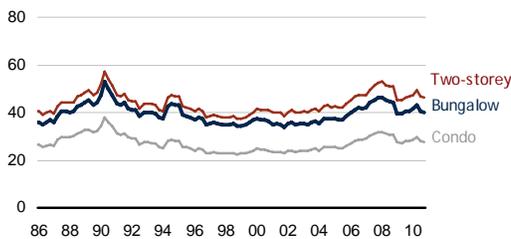


HOUSING TRENDS AND AFFORDABILITY

February 2011

RBC Housing Affordability Measures - Canada

% of household income taken up by ownership costs



Affordability* simulation - Canada

% of household income taken up by ownership costs



* Based on the purchase of a typical detached bungalow.

Owning a home became a little more affordable in Canada at the end of 2010

Housing affordability improved modestly for the second consecutive quarter in the fourth quarter of 2010. Homeownership costs were lowered by small decreases in the five-year fixed mortgage rate (posted) during October and November of 2010 amid minimal home-price appreciation (even outright declines in certain local markets). At the national level, the RBC Housing Affordability Measures fell depending on the housing type between 0.4 and 0.8 percentage points in the fourth quarter (a decrease represents an improvement in affordability). These latest declines in the Measures further reversed the rises during the latter half of 2009 and first half of 2010, and thereby released some of the stress that had been building on the housing market in Canada. Still, with the levels of the Measures remaining slightly above long-term averages, some greater than usual tensions persist overall.

The majority of provinces saw declines in homeownership costs

Housing Affordability Measures fell in the majority of provinces in the latest quarter. Only the standard two-storey benchmark became less affordable in Ontario and Quebec, as did the standard condominium apartment in Quebec and the Atlantic region. The most significant improvement occurred in Alberta, where falling home prices once more contributed to lowering the bar for homeownership. The Alberta market is the only provincial market showing year-over-year home price declines, reflecting soft market conditions—although there have been signs of tightening more recently. Weak to moderate declines in the RBC Measures registered in other provinces resulted primarily from lower mortgage rates. Home prices generally inched higher in the rest of the country — with exceptions in the condominium segments of British Columbia and Saskatchewan. In the final quarter of 2010, British Columbia continued to stand as the least affordable housing market in Canada and, therefore, endured the most stress. Compared to their respective historical norms, homeownership costs in Saskatchewan and Quebec also appeared to be somewhat elevated although both remained below national averages. At the other end of the spectrum, the RBC Measures in Alberta and Manitoba stood below their long-term average in all housing categories, indicating to us that there is little stress in these markets. In Ontario and the Atlantic region, the picture is mixed, with the affordability of some housing types above and others below historical norms.

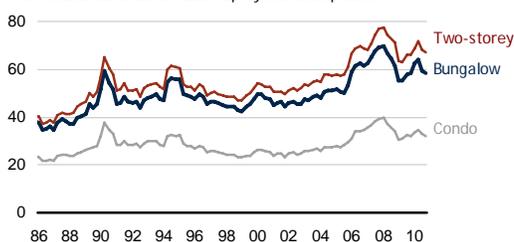
Rise in homeownership costs on the way

The improvement in affordability in the last two quarters is likely to be short lived. Earlier this month, Canadian financial institutions raised posted mortgage rates for the first time since November 2010—by 0.25% to 5.44% in the case of the five-year fixed term. Given our expectation that the Bank of Canada will resume its rate hike campaign this spring (adding 100 basis points to

RBC Housing Affordability Measures

British Columbia

% of household income taken up by ownership costs



Source: Statistics Canada, Royal LePage, RBC Economics Research

the overnight rate this year and a further 150 basis points in 2012), borrowing costs are set to climb further still in Canada in the next two years. We believe that this will be the dominant factor that will cause housing affordability generally to erode across the country going forward, yet the magnitude of this deterioration is unlikely to derail the housing market. The effect of higher interest rates will be partly offset by rising household income amid a sustained economic recovery and job creation. We simulated the effect on the bungalow benchmark in Canada of our base-case scenario for personal income, interest rates and home prices (for the latter, see our report *Canadian home resale market outlook: moderation, moderation, moderation*, published February 10, 2011) and found that the RBC Measures would rise gradually in the next three years or so, while monetary policy is being renormalized, but would land softly thereafter once interest rates stabilize at higher levels beyond 2012. On the basis of our forecasted increases of 0.5% and 1.3% in home prices in 2011 and 2012, respectively, and assuming an appreciation rate of 1.6% subsequently—the average rate registered in the 1990s—the peak in the RBC Measures at the end of 2013 (44.8%) would be lower than the most recent cyclical peak reached at the start of 2008 (46.4%) and the record high set in 1990 (52.8%). The Measures would reverse most, though not all, of this deterioration by the end of 2015. This simulated pattern would be consistent with moderate yet sustained stress on Canada's housing market, which we believe could be borne without any significant breakdown in the demand for and supply of housing. Should the stress be greater than we anticipate and cause home prices to stay flat in the next five years (a performance roughly equivalent to the stagnation that prevailed during the better part of the 1990s), the RBC Measures would peak at a lower mark (43.5%) and return fully to its long-term average by the end of 2015. The key point here is that home prices need not fall precipitously (or at all) for the market to return to some long-term 'equilibrium' affordability level. Any such concerns might be more warranted under an alternative economic scenario (e.g., spike in interest rates and/or drop in employment). Nonetheless, the era of rapid home-price appreciation of the past 10 years has likely run its course overall in Canada, and we believe that we have entered a period of very modest increases. If anything, the recently announced changes to mortgage rules by the federal Minister of Finance will, at the margin, contribute to that slowing of activity.

Provincial overviews

British Columbia – Somewhat less unaffordable

Thanks primarily to the small drop in mortgage rates, buying a home in British Columbia became a little more affordable—or rather less unaffordable—in the fourth quarter of 2010. After experiencing some declines in the previous quarter, home prices rose modestly for most housing categories; condominium apartments bucked the trend, however, and depreciated slightly. Prices were supported by a tightening in market conditions in the fall with home resales picking up smartly following substantial cooling in the spring and summer that saw sellers lose their edge in setting property values. Demand and supply in the province are judged to be quite balanced at this point. RBC's Affordability Measures fell between 0.8 and 1.0 percentage points in

the fourth quarter and came on the heels of much more substantial drops (1.7 to 4.8 percentage points) in the third quarter. Notwithstanding these declines, affordability remains poor in British Columbia and will weigh on housing demand going forward.

Alberta – Officially the most affordable in Canada

At the other end of the affordability spectrum from British Columbia is Alberta, which, in the fourth quarter of 2010, officially became the most affordable provincial market in the country, according to the RBC Measures. Those Measures fell once again by 1.0 to 2.4 percentage points in the province, extending their long strings of declines since late 2007. In addition to the lower mortgage rates, the further depreciation of home prices contributed to lowering the cost of homeownership in the fourth quarter. Property values were negatively affected by a substantial downswing in demand in the spring and early summer, which put buyers in the driver's seat. The significant improvement in affordability is near the end of its line, however. Demand has shown more vigour in recent months—alongside a provincial economy that is gaining more traction—and the Alberta market has become better balanced. We expect that this will stem price declines this year, thereby removing a potential offset to the negative effect of the projected rise in interest rates on affordability.

Saskatchewan – Hitting a sweet spot?

The Saskatchewan housing market finished 2010 on an enviable note. Home prices, for the most part, rose slightly in the fourth quarter, yet housing affordability improved for the second consecutive time. The provincial home resale market gained back solid forward momentum in the second half of last year (notwithstanding some softening in the final months), which contributed to re-establishing a stronger balance between demand and supply. Generally, the price increases in the fourth quarter more than reversed declines in the previous period but were too small to negate the beneficial effect of lower mortgage rates on affordability. The RBC Measures fell between 0.6 and 1.1 percentage points in the quarter, although the levels continue to be modestly above historical averages in the province. In our view, the Saskatchewan market will take its current affordability position in stride as a rebound in provincial economic growth, and, especially, continued strong migration inflows will support housing demand this year.

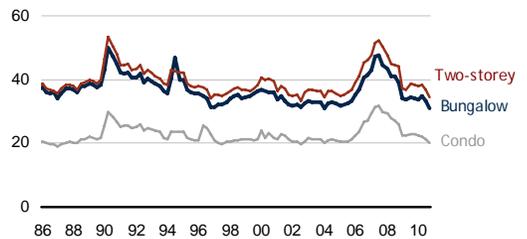
Manitoba – Best of both worlds

Similar to the situation in Saskatchewan, the Manitoba market enjoyed the best of both worlds in the fourth quarter of 2010: higher home prices yet lower ownership costs. Thanks to lower mortgage rates in the quarter and continued growth in household income, the negative effect of small gains in property values on affordability was more than offset. The RBC Measures for Manitoba eased between 0.1 and 0.6 percentage points in the most recent quarter, thereby maintaining the province among the only two markets in Canada (with Alberta) in which Affordability Measures stand below long-term averages for all housing categories. Sales of existing homes ramped up considerably in the fall, by reaching near historical peaks by December. Housing demand is being boosted by the strongest net international immigration in the province since the mid 1950s and by improved job prospects—

RBC Housing Affordability Measures

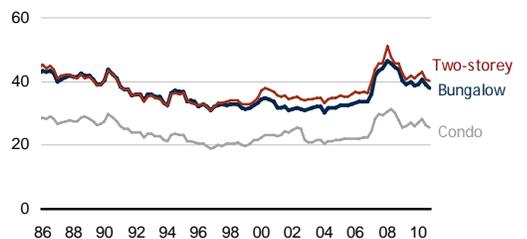
Alberta

% of household income taken up by ownership costs



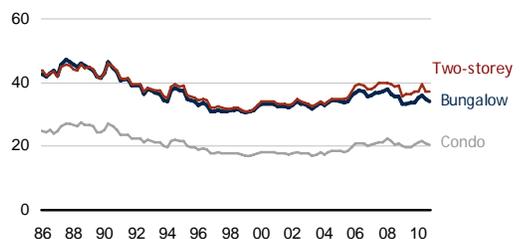
Saskatchewan

% of household income taken up by ownership costs



Manitoba

% of household income taken up by ownership costs

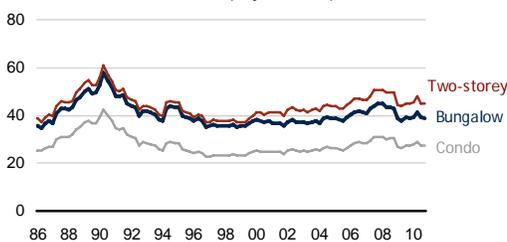


Source: Statistics Canada, Royal LePage, RBC Economics Research

RBC Housing Affordability Measures

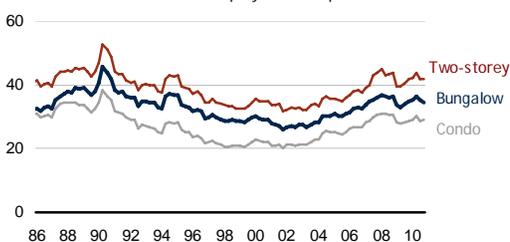
Ontario

% of household income taken up by ownership costs



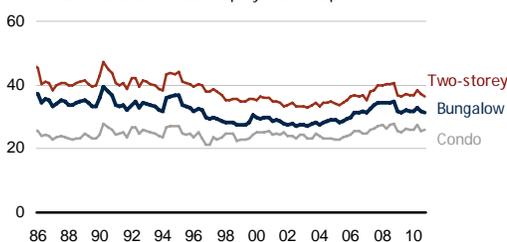
Quebec

% of household income taken up by ownership costs



Atlantic Provinces

% of household income taken up by ownership costs



Source: Statistics Canada, Royal LePage, RBC Economics Research

Manitoba boasts the lowest unemployment rate in Canada (as of the fourth quarter of 2010) and we expect it to continue to do so in 2011.

Ontario – Affordability in neutral; housing demand in gear

Concerns last year that the Ontario housing market would falter have now largely dissipated. Home-resale activity picked up smartly in the fall, and property values resumed their appreciation trend in the closing months of 2010, by shrugging off a short-lived setback in the third quarter. The slowdown in market activity in the spring and summer last year largely reflected various transitory factors—including the introduction of the HST and changes in mortgage lending rules—that brought demand forward to the start of the year. The silver lining of this slowdown, however, has been an improvement in affordability in the province. The RBC Measures edged lower for the second consecutive time for most housing categories in the fourth quarter, down by 0.2 to 0.3 percentage points. The only exception was two-storey homes, which became marginally less affordable amid notable price gains. In our opinion, affordability plays a neutral role for housing demand in Ontario at this point, with RBC Measures close to their long-run average in the province.

Quebec – Homeownership becomes slightly more expensive

Higher home prices in the fourth quarter of 2010 caused some deterioration in affordability in Quebec following meaningful improvement in the previous period. Home resales strengthened in the latter part of last year, and this contributed to market conditions tightening sufficiently to give sellers a stronger hand in negotiating prices, particularly in the two-storey home category. Price gains dominated the positive effects of lower mortgage rates and rising household income on affordability in the fourth quarter for all housing types except detached bungalows (where a small improvement was registered). RBC Measures rose marginally by 0.1 to 0.2 percentage points for two-storey homes and condominium apartments, and fell by 0.6 percentage points for detached bungalows; however, the levels of all Measures still modestly exceeded long-term averages in the province. In our opinion, this modestly strained affordability in Quebec will further deteriorate in the period ahead when interest rates rise.

Atlantic – Affordable with plentiful supply

Home-resale activity sputtered late in 2010 in the Atlantic Canada region and reversed some of the gains previously achieved at the end of the summer and early fall. This activity has not disrupted property values in the fourth quarter, however, as home prices generally appreciated throughout the region; yet housing affordability improved for most housing categories because declines in interest rates provided a dominant offset. Among the housing types that we track, only condominium apartments saw a slim deterioration in affordability—the RBC Measures rose by 0.1 percentage point compared with declines of 0.5 percentage points for both detached bungalows and two-storey homes. Affordability levels continue to be mostly attractive in Atlantic Canada from both historical and cross-country perspectives. We believe that is likely to remain so in the near term despite our expectation of higher interest rates. Market conditions have recently swung in favour of buyers, and this will exert downward pressure on prices in coming months.

Major city markets

Vancouver – Ownership costs fall again—yet still high

Very high homeownership costs in the Vancouver market dropped for the second consecutive quarter in the closing three-month period of 2010, therein bringing some small relief to the area's homebuyers. The RBC Measures fell 0.4 to 1.3 percentage points (depending on the housing type) in the fourth quarter, although these declines were much smaller relative to the 2.0 to 5.3 percentage point drops recorded in the preceding period when lower mortgage rates combined with weaker prices for most housing categories. In the fourth quarter, home prices mostly rose and, thus, dampened the affordability-improving benefits of further declines in mortgage rates. Housing market activity picked up late last year from the summer 2010 lows, yet resales remain well below the levels that prevailed in the five-years prior to the 2008 downturn. In our view, the area's poor affordability—the RBC Measures for Vancouver are still far above their long-run average—will continue to weigh on local demand and cause a high degree of stress within the market.

Calgary – At a turning point?

A gradual but steady recovery in housing demand in the past half-year has just begun to bolster market conditions in the Calgary area, by drawing the prolonged slump since 2007 closer to an end. On a seasonally-adjusted basis, home resales increased appreciably since the June 2010 lows, and this helped to reduce the market slack significantly by the end of last year that kept buyers in the driver's seat. Nonetheless, the return to more balanced market conditions in Calgary did not succeed in reversing the tide in the fourth quarter of 2010, because home prices continued to weaken for the most part. This, however, contributed to further material improvement in affordability—the RBC Measures for Calgary, again, fell the most among Canada's largest urban markets, by declining by 0.9 to 3.1 percentage points. Affordability in the area is now the best in almost six years. We believe that attractive affordability will support further increases in demand as the local economy picks up steam in the year ahead.

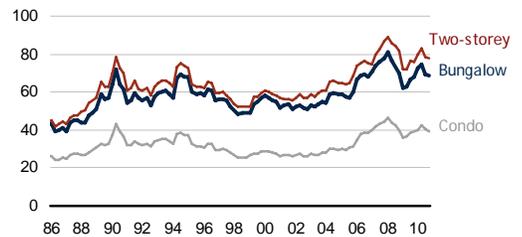
Toronto – Climbing its way back to sustainable levels

The Toronto-area market sustained a rebound in activity in the latter part of 2010, following a steep decline in the spring and early summer from unsustainably high levels last winter. The recovery confirmed our view that the earlier weakness had much more to do with the advancing of activity in the face of special factors (e.g., the HST and new mortgage lending rules) than the permanent evaporation of demand. With the influence of these transitory factors largely dissipating by the end of the summer, the Toronto-area market has since climbed its way back toward more sustainable levels of activity. Thanks primarily to lower mortgage rates, local homebuyers enjoyed improved affordability for most housing categories in the fourth quarter. The RBC Measures eased for both condominium apartments (by 0.6 percentage points) and detached bungalows (by 0.5 percentage points), although two-storey homes rose modestly (by 0.3 percentage points). RBC Measures are generally close to their long-term averages in the area.

RBC Housing Affordability Measures

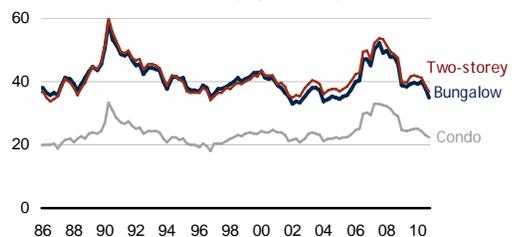
Vancouver

% of household income taken up by ownership costs



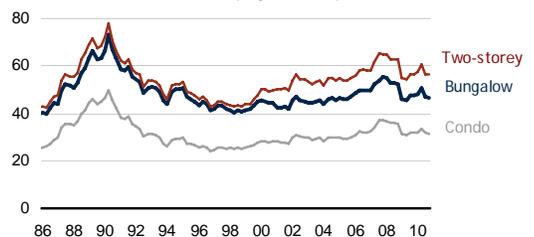
Calgary

% of household income taken up by ownership costs



Toronto

% of household income taken up by ownership costs

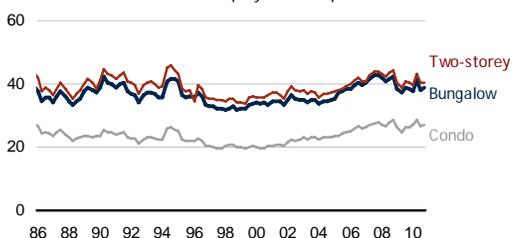


Source: Statistics Canada, Royal LePage, RBC Economics Research

RBC Housing Affordability Measures

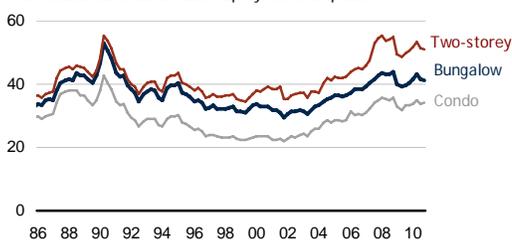
Ottawa

% of household income taken up by ownership costs



Montreal

% of household income taken up by ownership costs



Source: Statistics Canada, Royal LePage, RBC Economics Research

Ottawa – Bucking the trend

Contrary to the general trend among Canada's large urban areas, the Ottawa market did not experience any improvement in affordability in the fourth quarter of 2010. The RBC Measures either rose (by 0.5 percentage points for both detached bungalows and condominium apartments) or remained unchanged (in the case of two-storey homes). During the fourth quarter, the local-housing market saw fairly sizable price increases that pushed home-ownership costs up more than the savings generated by lower mortgage rates. This deterioration in affordability, however, did little to dampen the enthusiasm of Ottawa-area homebuyers, as home resales continued to trend higher to levels that would have been considered very strong prior to the wild swings in 2009 and early 2010. Nevertheless, affordability levels have reached levels that are likely to pinch demand going forward—the RBC Measures are above their long-run averages for all housing types in the area.

Montreal – Lacking direction

Despite the lack of clear direction in home-resale activity since last summer and a recent surge in the supply of homes available for sale, property values in the Montreal-area market continued to appreciate steadily in the latter part of 2010. The listless housing demand could well, in part, reflect tremendous strength earlier last year—which may be taking longer to unwind—however, the erosion in housing affordability in the Montreal area in the past year also likely played a role. Although there was some modest declines in RBC Measures for two-storey homes and detached bungalows (by 0.2 and 0.4 percentage points, respectively) in the fourth quarter of 2010, the levels for all housing types remain higher than they were a year ago and their long-term average in the area. We believe that strained affordability is holding back some homebuyers at this point. That being said, market conditions have become less favourable to sellers, and this is likely to minimize any further price appreciation in the near term.

How the RBC Housing Affordability Measures work

The RBC Housing Affordability Measures show the proportion of median pre-tax household income required to service the cost of mortgage payments (principal and interest), property taxes and utilities on a detached bungalow, a standard two-storey home and a standard condo (excluding maintenance fees).

The qualifier 'standard' is meant to distinguish between an average dwelling and an 'executive' or 'luxury' version. In terms of square footage, a standard condo has an inside floor area of 900 square feet, a bungalow 1,200 square feet and a standard two-storey 1,500 square feet.

The measures are based on a 25% down payment, a 25-year mortgage loan at a five-year fixed rate and are estimated on a quarterly basis for each province and for Montreal, Toronto, Ottawa, Calgary, Edmonton and Vancouver-metropolitan areas. The measures use household income rather than family income to account for the growing number of unattached individuals in the housing market. The measure is based on quarterly estimates of this annual income, created by annualizing and weighting average weekly earnings by province and by urban area. (Median household income is used instead of the arithmetic mean to avoid distortions caused by extreme values at either end of the income distribution scale. The median represents the value below and above which lie an equal number of observations.)

The RBC Housing Affordability Measure is based on gross household income estimates and, therefore, does not show the effect of various provincial property-tax credits, which could alter relative levels of affordability.

The higher the measure, the more difficult it is to afford a house. For example, an affordability measure of 50% means that home ownership costs, including mortgage payments, utilities and property taxes take up 50% of a typical household's pre-tax income.

Qualifying income is the minimum annual income used by lenders to measure the ability of a borrower to make mortgage payments. Typically, no more than 32% of a borrower's gross annual income should go to 'mortgage expenses' — principal, interest, property taxes and heating costs (plus maintenance fees for condos).

Summary tables

Detached bungalow

| Region | Average Price | | Qualifying Income (\$) Q4 2010 | RBC Housing Affordability Measure | | | |
|------------------|---------------|-----------|-----------------------------------|-----------------------------------|--------------|--------------|--------------------|
| | Q4 2010 (\$) | Y/Y % ch. | | Q4 2010 (%) | Q/Q Ppt. ch. | Y/Y Ppt. ch. | Avg. since '85 (%) |
| Canada* | 326,900 | 5.1 | 72,100 | 39.9 | -0.8 | -0.7 | 39.3 |
| British Columbia | 551,800 | 6.5 | 108,400 | 58.5 | -0.8 | 0.0 | 49.1 |
| Alberta | 327,300 | -1.9 | 71,900 | 30.9 | -2.4 | -3.3 | 36.8 |
| Saskatchewan | 315,200 | 7.4 | 70,100 | 37.9 | -1.1 | -0.8 | 36.5 |
| Manitoba | 254,200 | 10.3 | 60,500 | 34.2 | -0.6 | 0.7 | 36.8 |
| Ontario | 340,500 | 5.2 | 77,800 | 38.7 | -0.3 | -0.2 | 40.4 |
| Quebec | 223,300 | 6.5 | 51,500 | 34.5 | -0.6 | -0.3 | 33.1 |
| Atlantic | 199,100 | 4.5 | 48,900 | 31.4 | -0.5 | -0.4 | 32.1 |
| Toronto | 470,300 | 3.8 | 100,600 | 46.8 | -0.5 | -0.9 | 48.5 |
| Montreal | 274,300 | 9.9 | 61,500 | 41.3 | -0.4 | 0.8 | 37.1 |
| Vancouver | 686,900 | 8.0 | 132,100 | 68.7 | -0.4 | 1.0 | 57.6 |
| Ottawa | 354,500 | 6.3 | 83,100 | 38.7 | 0.5 | 0.1 | 36.8 |
| Calgary | 392,200 | -4.9 | 81,500 | 34.9 | -3.1 | -4.8 | 40.8 |
| Edmonton | 312,800 | 1.2 | 70,400 | 31.0 | -2.4 | -2.5 | 34.5 |

Standard two-storey

| Region | Average Price | | Qualifying Income (\$) Q4 2010 | RBC Housing Affordability Measure | | | |
|------------------|---------------|-----------|-----------------------------------|-----------------------------------|--------------|--------------|--------------------|
| | Q4 2010 (\$) | Y/Y % ch. | | Q4 2010 (%) | Q/Q Ppt. ch. | Y/Y Ppt. ch. | Avg. since '85 (%) |
| Canada* | 377,400 | 6.0 | 83,500 | 46.2 | -0.4 | -0.4 | 43.7 |
| British Columbia | 632,600 | 8.4 | 124,000 | 66.9 | -1.0 | 1.1 | 54.4 |
| Alberta | 358,100 | -3.5 | 80,000 | 34.4 | -2.2 | -4.1 | 39.6 |
| Saskatchewan | 324,200 | 7.3 | 74,300 | 40.1 | -0.6 | -1.0 | 37.9 |
| Manitoba | 278,000 | 6.8 | 65,500 | 37.0 | -0.2 | -0.1 | 37.8 |
| Ontario | 397,400 | 6.0 | 90,700 | 45.1 | 0.1 | 0.0 | 44.1 |
| Quebec | 270,500 | 8.2 | 62,500 | 41.9 | 0.1 | 0.2 | 39.0 |
| Atlantic | 225,900 | 5.7 | 56,900 | 36.5 | -0.5 | -0.2 | 38.6 |
| Toronto | 570,100 | 6.1 | 121,700 | 56.6 | 0.3 | -0.1 | 53.9 |
| Montreal | 342,600 | 8.5 | 76,200 | 51.1 | -0.2 | 0.4 | 42.0 |
| Vancouver | 780,700 | 9.0 | 149,700 | 77.8 | -0.7 | 1.7 | 62.9 |
| Ottawa | 359,600 | 6.2 | 87,100 | 40.5 | 0.0 | 0.1 | 39.3 |
| Calgary | 405,700 | -5.0 | 86,200 | 37.0 | -2.0 | -5.0 | 41.4 |
| Edmonton | 356,000 | -2.4 | 80,600 | 35.5 | -2.4 | -3.9 | 37.8 |

Standard condominium

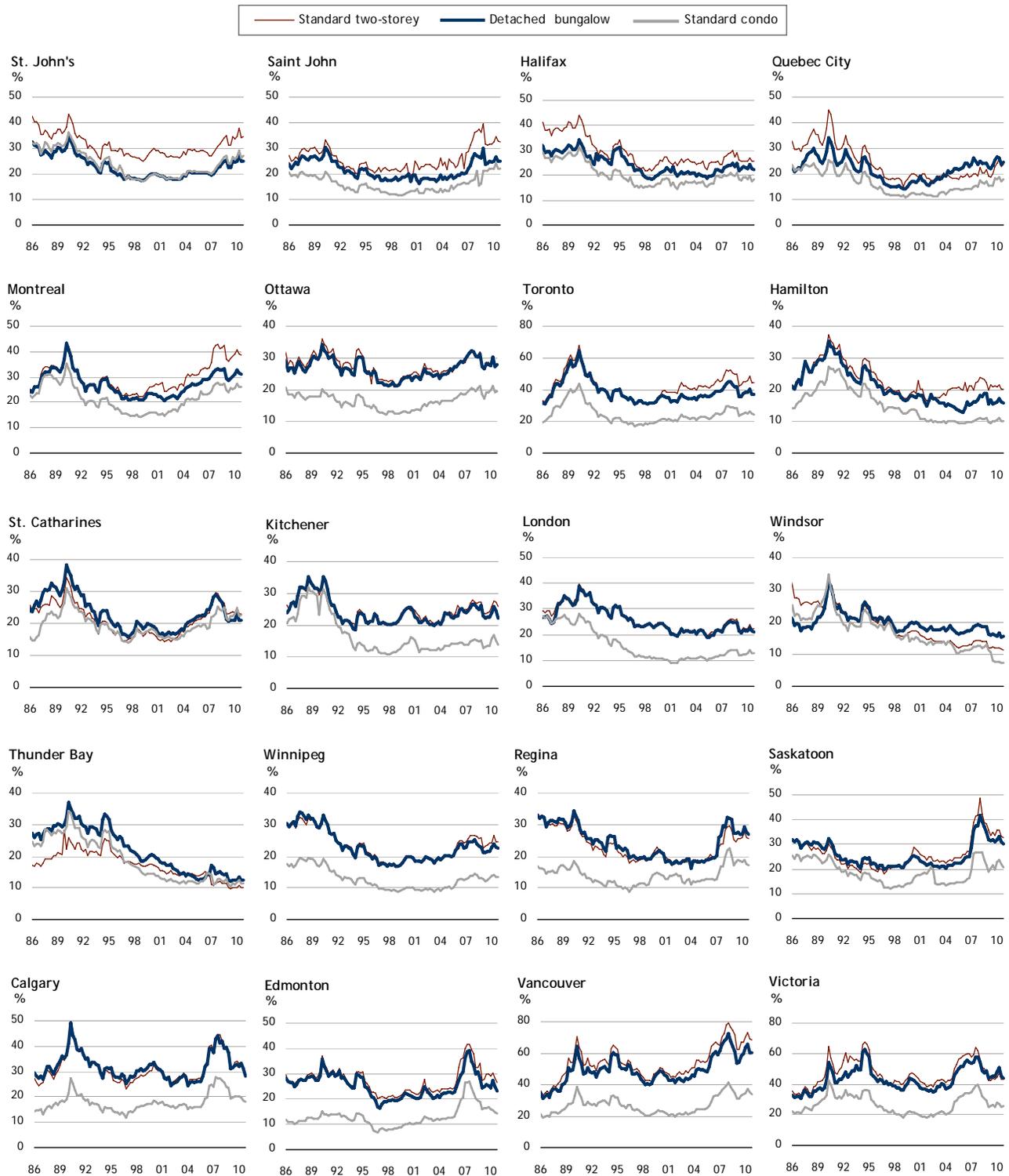
| Region | Average Price | | Qualifying Income (\$) Q4 2010 | RBC Housing Affordability Measure | | | |
|------------------|---------------|-----------|-----------------------------------|-----------------------------------|--------------|--------------|--------------------|
| | Q4 2010 (\$) | Y/Y % ch. | | Q4 2010 (%) | Q/Q Ppt. ch. | Y/Y Ppt. ch. | Avg. since '85 (%) |
| Canada* | 223,800 | 5.4 | 49,900 | 27.6 | -0.4 | -0.4 | 27.1 |
| British Columbia | 296,600 | 6.5 | 59,700 | 32.2 | -0.9 | 0.1 | 28.2 |
| Alberta | 211,700 | -4.7 | 47,100 | 20.3 | -1.0 | -2.6 | 22.7 |
| Saskatchewan | 208,800 | 7.8 | 47,100 | 25.4 | -1.0 | -0.6 | 24.4 |
| Manitoba | 152,700 | 7.8 | 36,500 | 20.7 | -0.1 | 0.1 | 21.1 |
| Ontario | 238,100 | 5.8 | 54,900 | 27.3 | -0.2 | -0.1 | 27.9 |
| Quebec | 191,700 | 8.9 | 43,000 | 28.9 | 0.2 | 0.3 | 27.1 |
| Atlantic | 168,300 | 4.8 | 40,200 | 25.8 | 0.1 | -0.3 | 24.8 |
| Toronto | 309,600 | 3.0 | 67,400 | 31.3 | -0.6 | -0.8 | 31.3 |
| Montreal | 231,800 | 10.9 | 50,800 | 34.1 | 0.2 | 0.9 | 29.4 |
| Vancouver | 387,000 | 6.7 | 75,200 | 39.1 | -1.3 | 0.2 | 32.0 |
| Ottawa | 250,000 | 10.0 | 58,200 | 27.1 | 0.5 | 0.8 | 23.6 |
| Calgary | 248,300 | -3.0 | 52,300 | 22.4 | -0.9 | -2.7 | 23.7 |
| Edmonton | 193,400 | -6.7 | 44,200 | 19.5 | -0.8 | -2.8 | 18.7 |

* Population weighted average

Source: Royal LePage, Statistics Canada, RBC Economics Research

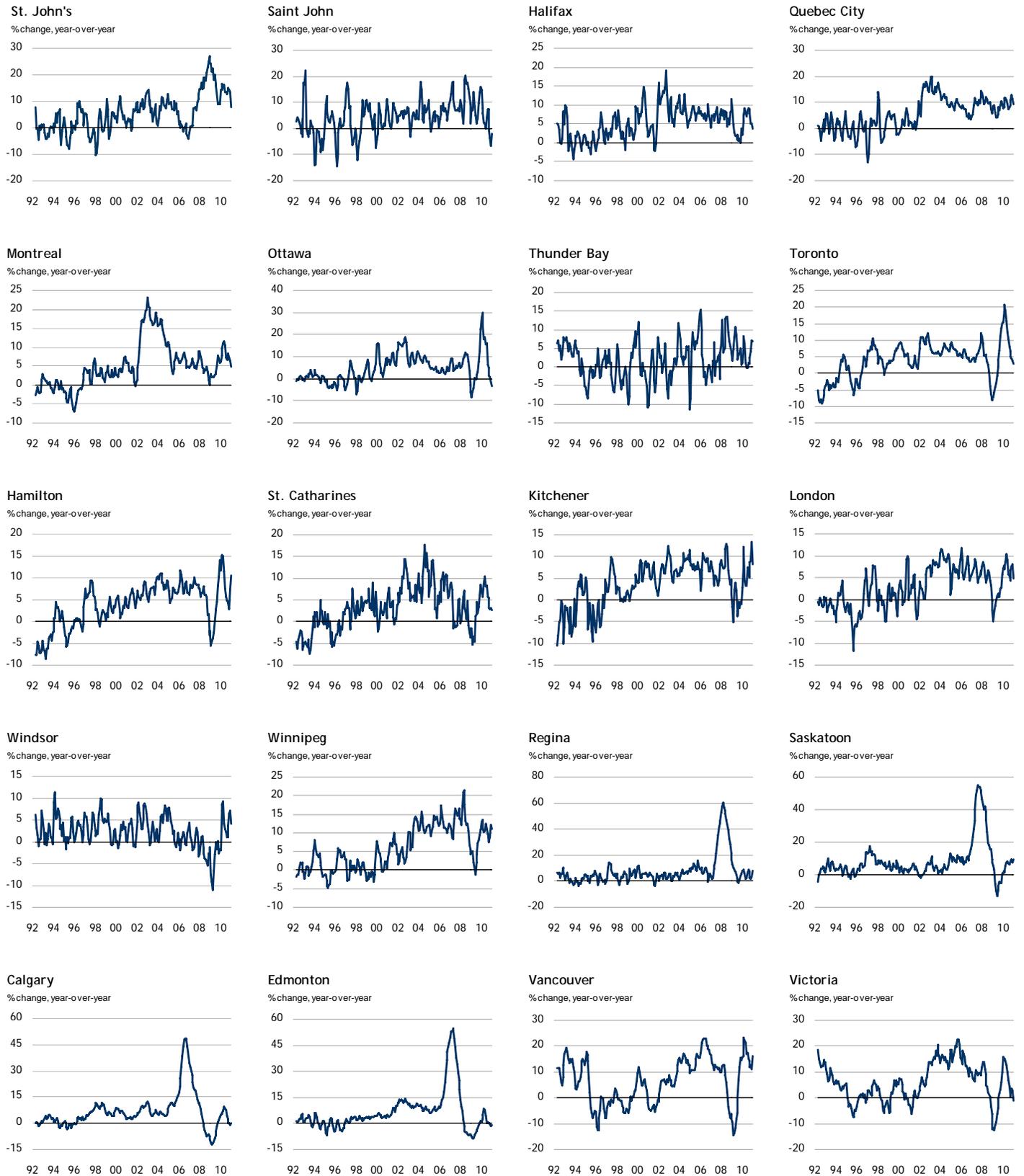
Mortgage carrying costs by city

Our standard RBC Housing Affordability Measure captures the proportion of median pre-tax household income required to service the cost of a mortgage on an existing housing unit at going market prices, including principal and interest, property taxes and utilities; the modified measure used here includes the cost of servicing a mortgage, but excludes property taxes and utilities due to data constraint in the smaller CMAs. This measure is based on a 25% down payment, a 25-year mortgage loan at a five-year fixed rate and is estimated on a quarterly basis. The higher the measure, the more difficult it is to afford a house.



Source: Statistics Canada, Royal LePage, RBC Economics Research

Home prices

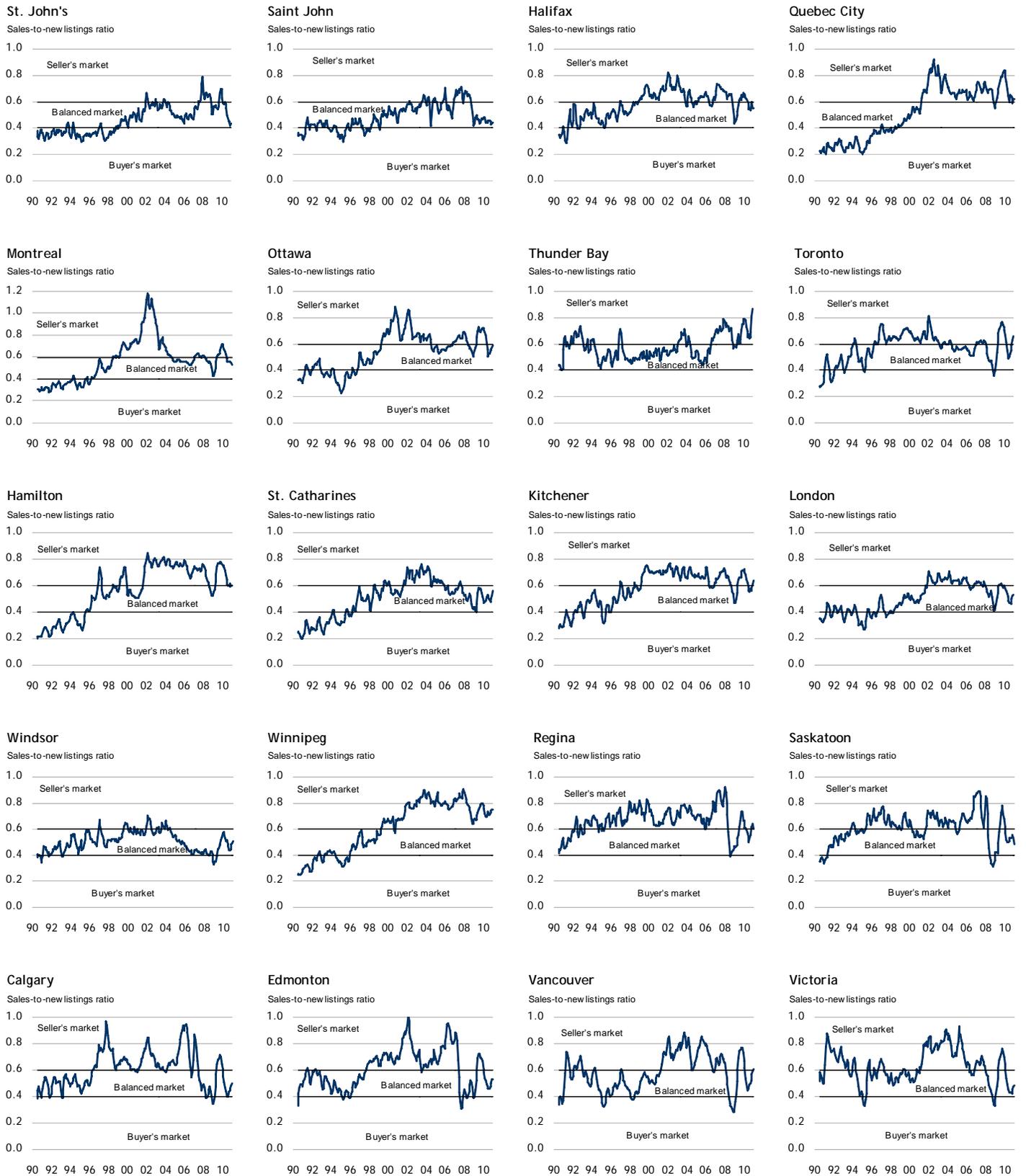


House prices are based on a three-month moving average.

Source: Canadian Real Estate Association, RBC Economics Research



Home sales-to-new listings ratio



House prices are based on a three-month moving averages.

Source: Canadian Real Estate Association, RBC Economics Research



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