HOUSING MARKET ASSESSMENT
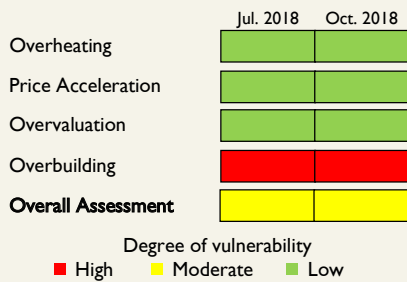## Calgary CMA

Date Released: Fourth Quarter 2018

Canada

CMHC ◆ SCHL

Highlights

Results Overview
Calgary CMA

	Jul. 2018	Oct. 2018
Overheating	🟩	🟩
Price Acceleration	🟩	🟩
Overvaluation	🟩	🟩
Overbuilding	🟥	🟥
Overall Assessment	🟨	🟨

Degree of vulnerability
🟥 High 🟨 Moderate 🟩 Low

- CMHC's HMA Framework detected a moderate degree of vulnerability in the overall assessment for Calgary[1].

- The number of completed and unsold units per capita increased from the first quarter of 2018, keeping the indicator above the critical threshold for overbuilding.

- Overbuilding in Calgary is largely being driven by the multiples segment of the market.

- A decline in house prices moved prices closer in line with economic and demographic fundamentals, which reinforced low evidence of overvaluation in the market.

HMA Overview[2]

As Canada's authority on housing, CMHC contributes to market stability by providing information on potential imbalances that could affect housing markets. With the Housing Market Assessment (HMA), CMHC offers information and analysis that can help Canadians make more informed decisions.

The HMA combines the results from a technical framework with insights gained through CMHC's Market Analysts' knowledge of local market conditions. These insights position CMHC to provide additional context and interpretation to the results of the HMA framework.

The HMA framework detects degrees of vulnerability in local housing markets by identifying imbalances. An example would be the detection of overbuilding, a situation in which the inventory of unsold new homes accumulates due to supply outpacing demand. Such an imbalance could be resolved by an adjustment in house prices. As an example, lower prices would help resolve an excess supply imbalance by supporting stronger demand and/or reducing supply. However, other unexpected developments that do not originate from the housing market could accentuate or reduce an imbalance.

Colour codes indicate the degree of market vulnerability. The HMA is a comprehensive framework that considers both the intensity of signals of imbalances (that is, how far the indicator is from its historical average) and the persistence over time. Generally, low intensity and persistence are associated with low evidence of vulnerability. As the number of intense and persistent signals increases, the associated degree of vulnerability becomes stronger.

[1] Results are based on data as of the end of June 2018 and local market intelligence up to the end of September 2018. CMHC continuously monitors market developments and will issue HMA updates on a quarterly basis.

[2] A detailed description of the framework is available in the appendix of the National edition.

In Detail

Overheating

Evidence of overheating remained low as the sales-to-new listings ratio (SNLR) declined in the second quarter of 2018 to 40% from 52% in the previous quarter, which was well below the 85% critical threshold. The SNLR dropped as a result of an 8% quarter-over-quarter (q/q) decline in seasonally adjusted sales combined with an 18% q/q increase in new listings.
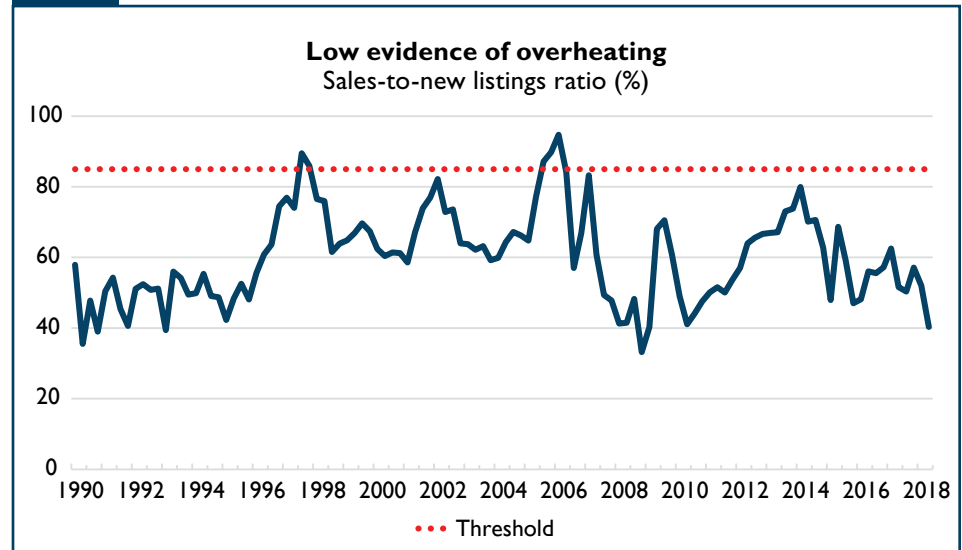
Second quarter seasonally adjusted sales decreased to 4,981, a level not seen since the third quarter of 2010. Sales increased higher towards the end of 2017 likely as a result of buyers making purchases in advance of the new mortgage rules that took effect in January 2018. Since then, however, sales lulled as economic and demographic fundamentals recover from the past recession.

Seasonally adjusted new listings increased to over 12,000 units in the second quarter of 2018 representing a growing number of homes for sale in Calgary. This trend in the resale market combined with elevated inventory levels in the new homes market (discussed further below) has led to buyers' market conditions and downward pressure on home prices in Calgary.
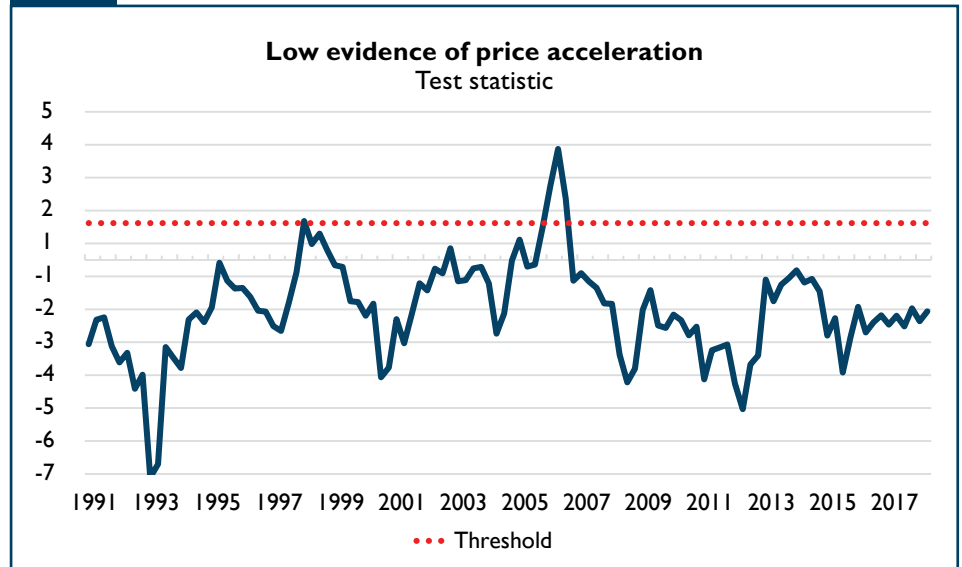
James Cuddy,
Senior Analyst,
Economics

There continued to be strong evidence of overbuilding as elevated inventory levels persisted in the second quarter of 2018. A substantial number of apartment units are under construction which pose a risk to rising inventory if these units are not timely absorbed.

Figure 1

Low evidence of overheating
Sales-to-new listings ratio (%)

· · · Threshold

Last data point: 2018Q2
Sources: CREA and calculations by CMHC

Figure 2

Low evidence of price acceleration
Test statistic

· · · Threshold

Last data point: 2018Q2
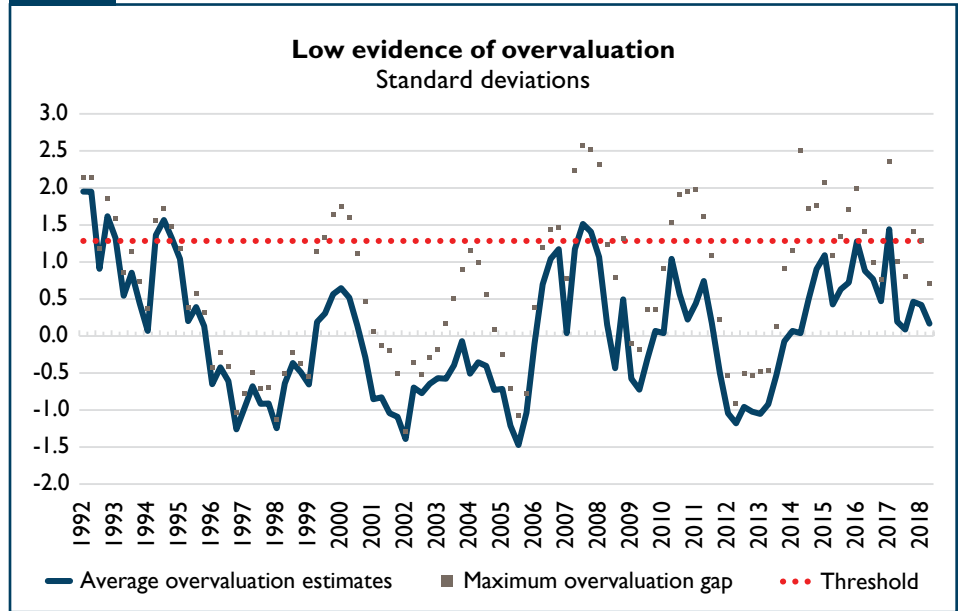Sources: CREA and calculations by CMHC

Price Acceleration

CMHC's HMA framework detected low evidence of price acceleration in the second quarter of 2018. The real Teranet® house price index and the CREA benchmark price both decreased in real terms on a year-over-year basis. Price declines were largely driven by declining year-over-year prices for apartments. More recent monthly data indicates that price acceleration is unlikely to be present in the third quarter of 2018 as buyers' market conditions continue to persist.

Overvaluation

CMHC's HMA framework detected low evidence of overvaluation in Calgary in the second quarter of 2018. The gaps between actual house prices and price levels estimated by economic and demographic fundamentals were below the critical threshold for all six models selected. Overall estimated overvaluation decreased from the first quarter to the second quarter indicating that lowered home prices are closer in line with fundamentals.

There are a number of factors impacting demand. In particular, the adult population aged 25 to 34, a proxy for household formation and first-time buyers, declined for the fifth consecutive quarter. This, combined with a relatively high unemployment rate have impacted demand. At the same time, however, real personal disposable income has increased slightly in the second quarter of 2018 by 0.24% on a year-over-year basis. Relatively higher disposable incomes coupled with a decline in home prices moved valuations of the market closer to that estimated by fundamentals.

Figure 3

Low evidence of overvaluation
Standard deviations

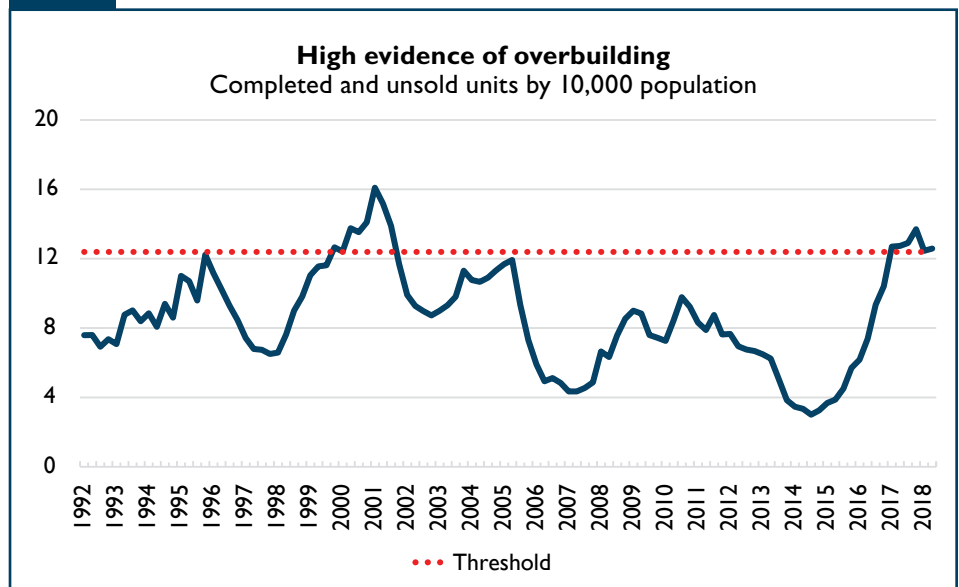Legend: Average overvaluation estimates — Maximum overvaluation gap — Threshold

Last data point: 2018Q2
Sources: CREA, Statistics Canada and calculations by CMHC.
Note: The average estimate of overvaluation is the average gap between actual house prices and price levels estimated from a group of selected models. Baseline models include demand, supply, hybrid, and affordability models, each of which is estimated using four measures of house prices to generate sixteen unique estimates of overvaluation. The selection of models is conducted with a set of cointegration tests, and the selected models are estimated with Dynamic Ordinary Least Squares (DOLS). The maximum overvaluation gap is obtained from the model that has the largest gap between the actual price and the estimated price. The threshold is fixed at a critical value of 1.29 for a confidence level of 80%. Overvaluation is signaled when overvaluation estimates lie above the threshold.

Figure 4

High evidence of overbuilding
Completed and unsold units by 10,000 population

Legend: Threshold

Overbuilding

There continued to be strong evidence of overbuilding as elevated inventory levels persisted in the second quarter of 2018. Recent monthly data indicates that a large number of apartment and condominium starts continue to come onto the market. Additionally, the number of units that are under construction indicate a strong flow of new supply in the future, which pose a risk to rising inventory if these units are not absorbed timely.

The rental apartment vacancy rate was 6.3% in Calgary in October 2017, and is above it's critical threshold. This indicator also contributed to CMHC's HMA framework for identify high evidence of overbuilding in Calgary.

Figure 5

High evidence of overbuilding
Vacancy rate (%)

••• Threshold
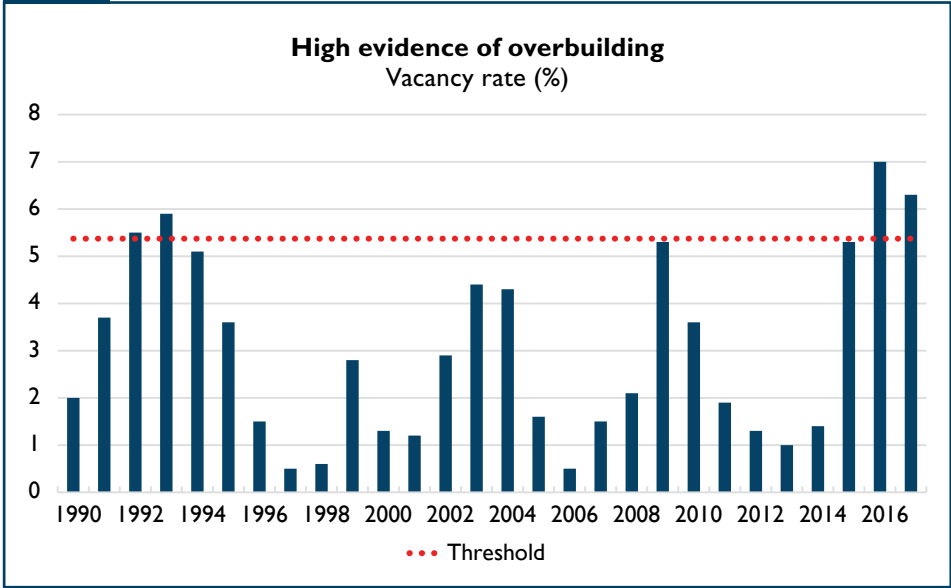
Last data point: 2017
Sources: CMHC

Overview of the Housing Market Assessment analytical framework

To obtain an accurate picture of the overall state of the housing market, it is important to consider multiple data points and lines of evidence rather than relying on just one measure or indicator.

The Housing Market Assessment (HMA) analytical framework provides a comprehensive and integrated view that relies on a combination of signals from several indicators to detect imbalances in housing markets.

Specifically, the framework considers four main factors that may provide an early indication of vulnerability in the housing market: (1) overheating (when demand outpaces supply); (2) sustained acceleration in house prices; (3) overvaluation of house prices in comparison to levels that can be supported by housing market fundamentals (listed below); and, (4) overbuilding (when the inventory of available housing units is elevated).

For each factor, the framework tests for: (1) the incidence of signs of vulnerability, but also considers; (2) the intensity of the signals, i.e. how their magnitude compares with their historical average or how consistent they are with known or suspected house price bubbles, such as for Toronto in the late 1980s and early 1990s; and, (3) the persistence of signals over time.

Generally, a situation in which we detect few signals with low intensity or lack of persistence is associated with a low degree of vulnerability. Conversely, as the intensity, number, and/or persistence of the signals increases, so does the evidence of imbalances in the housing market.

The framework takes into account demographic, economic, and financial determinants of the housing market such as population, personal disposable income, and interest rates to detect vulnerability. The framework also takes into account developments in both resale and residential construction markets.

The framework was developed on the basis of its ability to detect vulnerable housing market conditions in historical data, such as the house price bubble Toronto experienced in the late 1980s and early 1990s. The ability of the HMA to detect vulnerabilities relies on the assumption that historical relationships between prices and fundamental drivers of housing markets have not changed.

Housing Market Assessment Factors

Overheating

Overheating is caused by demand significantly and persistently outpacing the supply of housing. The sales-to-new listings ratio is used as an indicator to assess possible overheating conditions in the existing home market. To identify signs of overheating, the framework compares the sales-to-new listings ratio to thresholds. When demand is strong relative to supply, house prices typically grow at a faster rate. Sustained overheating on the existing home market may lead to acceleration in house prices for existing and new homes. However, as supply and demand begin to balance out, indicators of overheating (and acceleration) would begin to soften and house prices would gradually moderate.

Acceleration in House Prices

Under balanced market conditions, house prices are expected to increase over time, in line with increases in households' cost of living. House price acceleration occurs when the growth in house prices strengthens over time on a persistent basis. Acceleration in house prices over an extended period can cause their pace of increase to depart from the overall price inflation and eventually lead to overvaluation.

To assess acceleration in house prices, the HMA framework uses a statistical test* that was developed to identify periods of accelerating asset prices.

Overvaluation

Overvaluation is detected when house prices remain significantly above the levels warranted by fundamental drivers of housing markets such as income, population, and actual and expected financing costs.

The HMA framework uses combinations of different house price measures and models to estimate house price levels warranted by fundamental drivers.

The difference between observed house prices and their estimated levels consistent with housing market fundamentals allows for an estimation of the degree of over- and undervaluation. The use of different price measures and models improves the reliability of results.

Overbuilding

Overbuilding is detected when the supply of readily available housing units significantly exceeds demand. In such a context, downward pressure on house prices would occur until the excess supply is eventually absorbed. To assess signs of overbuilding in the housing market, the HMA framework uses two indicators that relate to the supply of readily available housing units: the rental vacancy rate, and the inventory of completed and unsold housing units per 10,000 population. The HMA framework compares the current level and recent trends in these indicators with thresholds.

Note 1: Colour codes indicate the degree of market vulnerability. The HMA reflects a comprehensive framework that not only tests for the presence or incidence of signals of imbalances (that is, how far the indicator is from its historical average), but also considers the intensity and the persistence of these signals over time. Generally, low intensity and persistence are associated with a lower vulnerability. As the number of persistent signals increases, the evidence of an imbalance increases.

Note 2: Results at the CMA level are not segmented by housing type or neighbourhood. They represent an assessment of the entire CMA. However, specific CMA reports provide further detailed analysis of these markets.

Note 3: The colour scale extends to red only for those factors that have multiple indicators that can identify imbalances. As a result, only overvaluation and overbuilding can receive a red rating, since they are assessed using more than one indicator.

Note 4: To ensure the framework is as current as possible, on a regular basis, we undertake a model selection process whereby our house price models for overvaluation are tested for statistical significance at the national and CMA level. The result of this process may change the number of indicators showing vulnerability from the previous assessment.

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* See Phillips, Wu and Yu (2008) ''Explosive Behaviour in the 1990s NASDAQ When Did Exuberance Escalate Asset Values?'' for further details on the methodology.

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