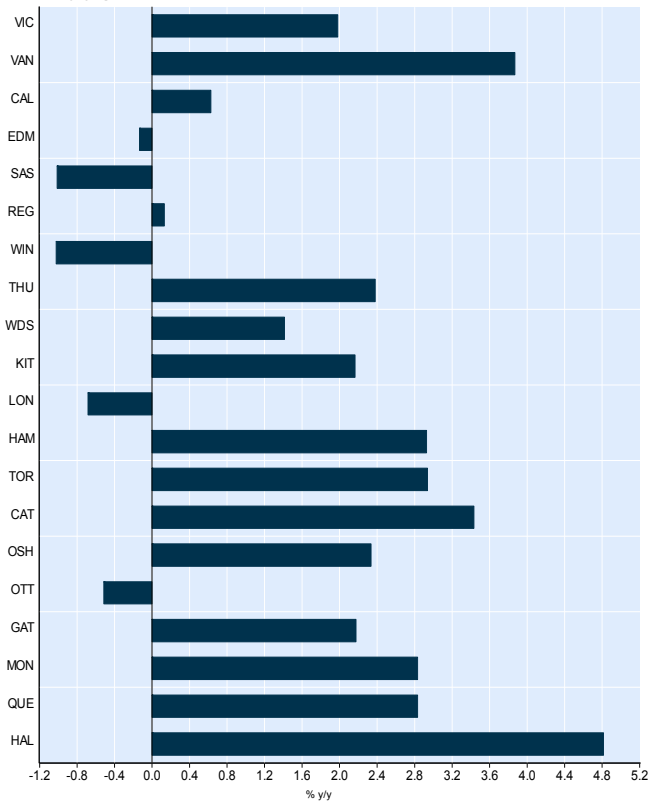


Halifax, Vancouver and St.Catharines on the podium

FACTS: According to our proprietary Metropolitan Economic Momentum Index (see page 3 for methodology), Halifax enjoyed the largest economic upswing on a y/y basis in Q1 2018 as its MEMI rose 4.8% (top chart). That performance was underpinned by whopping gains in the number of home sales (+13%) and non-residential building construction (+49%) (See charts on next page). In second place, Vancouver saw its MEMI rise 3.9% with major contributions from employment (+4.7%), house prices (the Teranet-National Bank House Price Index™, or TNBHPI jumped +15.7%). Also, Vancouver is one of the few CMAs considered where housing starts were more numerous in Q1 than four quarters ago. St.Catharines' third place (MEMI rose 3.4%) is mostly due to a 23% gain in non-residential building construction, an 11.7% advance in its TNBHPI and a resurgence of employment (+2.4%) after two quarters of declines in a row. Toronto and Hamilton were tied in fourth place (+2.9%) while Montreal and Quebec City (+2.8%) were tied at sixth place.

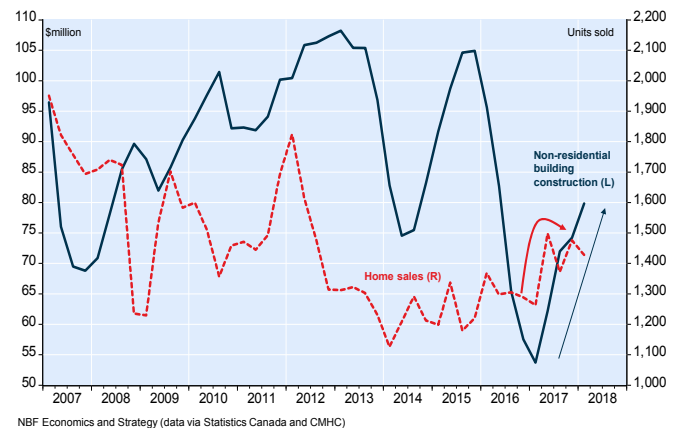
OPINION: The standings of the three major CMAs in Canada was little changed from the preceding quarter as Vancouver kept its second place, Toronto improved somewhat with a tied fourth place (it was fifth three months ago) and Montreal declined from fourth to tied sixth. It is therefore difficult to assert that they are responsible for the soft Q1 overall Canada (we estimate annualized real GDP growth rate of 1.5% and y/y growth of 2.3%). As in the previous quarter, the fact that Toronto did not reach the podium is due to the largest decline in home sales (-31%) among the 20 CMAs considered. For Q2, it is likely that home sales and TNBHPI will both be a drag on Toronto's MEMI growth, and that home sales will continue to do so in Vancouver. At the opposite, Montreal was one of the four CMAs considered where home sales were up from a year ago. In this area, Montreal enjoyed the best Q1 over the last six years. Turning to Halifax, its first place in Q1 is mostly due to the fact that non-residential building construction expenses in real terms recovered from a historically low level in Q1 2017, particularly for commercial and institutional and government buildings. Also, Halifax enjoyed a jump in home sales in Q2 2017 that endured up to last Q1 (bottom chart).

MEMI y/y growth in Q1 2018



NBF Economics and Strategy (Calculations from data published by Statistics Canada, CMHC, CREA and Teranet-National Bank HPI)

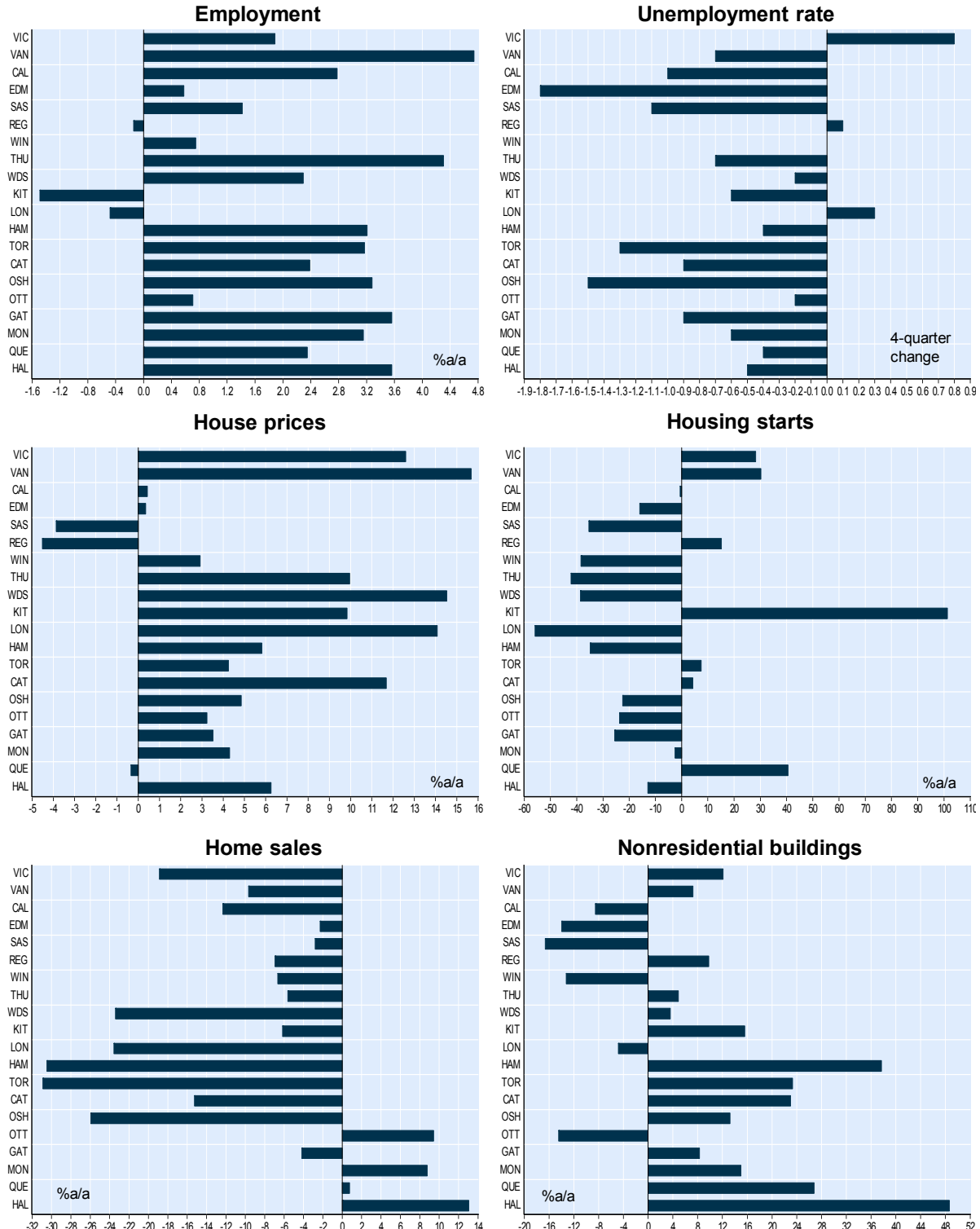
Halifax: Recoveries in non-residential construction and home sales



NBF Economics and Strategy (data via Statistics Canada and CMHC)

4-quarter change of indicators comprised in the MEMI

Last observation: Q1 2018



NBF Economics and Strategy (Data from Statistics Canada, CMHC, CREA and Teranet-National Bank HPI)

Purpose

We constructed the Metropolitan Economic Momentum Index (MEMI) to gauge the current economic momentum of census metropolitan areas (CMA), with a special emphasis on their fiscal capacity. Growth in the index reflects growth in the following six quarterly economic indicators: average employment level in quarter, average unemployment level in quarter, housing starts, number of MLS home sales, investment in non-residential building construction in constant dollars, and the Teranet-National Bank House Price Index (MLS House Price Index for Regina and Saskatoon).

Methodology

The index constitutes a weighted average of the symmetrical quarterly growth rate of each indicator. The symmetrical growth rate is given by:

$$G = 200 \cdot (X_q - X_{q-1}) / (X_q + X_{q-1})$$

where X is an indicator, q is the current quarter, and q-1 is the previous quarter. What is particular about a symmetrical growth rate is that an increase in an indicator (say $X_1 - X_0 > 0$) will generate the same percentage (with inverted sign) as a decrease from X_0 to X_1 . Given that change in the unemployment rate is itself a symmetrical change in percentage points, in this case the equation can be expressed as $G = -(X_q - X_{q-1})$, which means that an increase in the unemployment rate makes a negative contribution to the MEMI and vice versa.

The symmetrical growth rate of each indicator is then divided by the standard deviation of the symmetrical growth rate of the aggregate indicator for all the CMAs. Accordingly, for each CMA, the symmetrical growth rate of employment is divided by the standard deviation of the symmetrical growth rate of employment for all of the CMAs considered. We thus obtain a normalized growth rate that is comparable across indicators even if some indicators vary more widely than others.

For each CMA, the normalized symmetrical growth rates of all six indicators are then summed and this sum is divided by a constant that is the sum of the standard deviations of the symmetrical growth rates of the aggregate indicators. This gives us a growth rate that has the dimension of a quarterly change (symmetrical but not normalized) in a single indicator, regardless of the number of indicators considered. Once converted to a conventional growth rate, this figure becomes the quarterly growth rate of the MEMI for the CMA considered. For example, we apply the result for 2005Q2 to 100 (base level of the index at 2005Q1), and to the index level thus obtained we apply the result for 2005Q3 to obtain the index level for that quarter, and so on. This way, we obtain a historical series for the MEMI for each CMA.

List of abbreviations

CMA (province)	Abb.	CMA (province)	Abb.
Victoria (B.C.)	VIC	Kitchener-Cambridge-Waterloo (Ont.)	KIT
Vancouver (B.C.)	VAN	St. Catharines-Niagara (Ont.)	CAT
Edmonton (Alb.)	EDM	Hamilton (Ont.)	HAM
Calgary (Alb.)	CAL	Toronto (Ont.)	TOR
Saskatoon (Sask.)	SAS	Oshawa (Ont.)	OSH
Regina (Sask.)	REG	Ottawa (Ont.)	OTT
Winnipeg (Man.)	WIN	Gatineau (Qué.)	GAT
Thunder Bay (Ont.)	THU	Montreal (Qué.)	MON
Windsor (Ont.)	WDS	Quebec City (Qué.)	QUE
London (Ont.)	LON	Halifax (N.S.)	HAL

MEMI – Metropolitan Economic Momentum Index



Economics and Strategy

Montreal Office

514-879-2529

Stéfane Marion

Chief Economist and Strategist
stefane.marion@nbc.ca

Paul-André Pinsonnault

Senior Fixed Income Economist
paulandre.pinsonnault@nbc.ca

Krishen Rangasamy

Senior Economist
krishen.rangasamy@nbc.ca

Marc Pinsonneault

Senior Economist
marc.pinsonneault@nbc.ca

Matthieu Arseneau

Senior Economist
matthieu.arseneau@nbc.ca

Angelo Katsoras

Geopolitical Analyst
angelo.katsoras@nbc.ca

Kyle Dahms

Economist
kyle.dahms@nbc.ca

Jocelyn Paquet

Economist
jocelyn.paquet@nbc.ca

Toronto Office

416-869-8598

Warren Lovely

MD & Head of Public Sector Strategy
warren.lovely@nbc.ca

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MEMI – Metropolitan Economic Momentum Index



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