

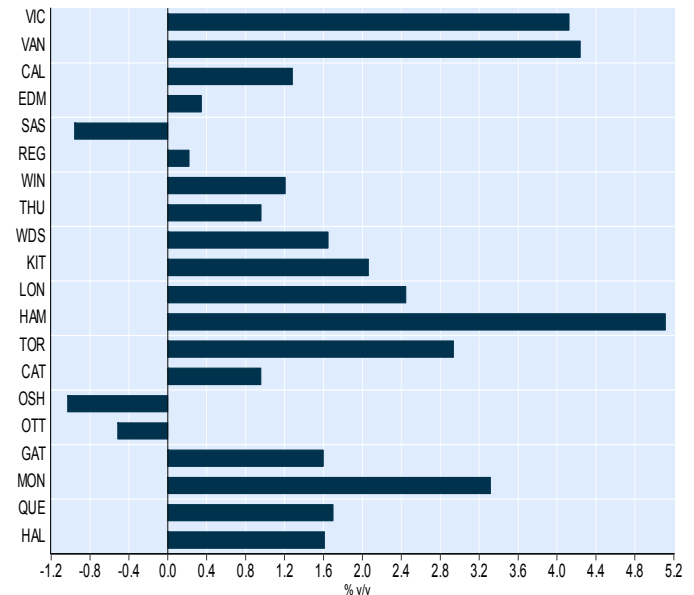
## Hamilton, Vancouver and Victoria led the pack in 2017

**FACTS:** According to our proprietary Metropolitan Economic Momentum Index (see page 3 for methodology), Hamilton enjoyed the largest economic upswing in 2017 as its MEMI rose 5.1% on a y/y basis in Q4 (top chart). That performance was underpinned by whopping employment gains (+6.8% y/y in Q4) and buoyant non-residential building construction (+28% - see charts next page). In second place, Vancouver saw its MEMI rise 4.2% with major contributions from employment (+4.6%), house prices (the Teranet-National Bank House Price Index™, or TNBHPI jumped +16.2%) and home sales (+24.1%, the steepest gain countrywide). Not too far behind, Victoria's MEMI climbed 4.1%, mostly due to employment (3.6%), home prices (TNBHPI +11.5%), the unemployment rate (-1.6 percentage points, the second largest drop observed) and housing starts (+82.6% due to record starts last October). Montreal placed fourth on the list (MEMI +3.3%) with four of the six indicators contributing strongly: employment (+2.6%), TNBHPI (+7.0%), the second largest increase in housing starts (+96.7%) and non-residential building construction (+10.3%). Finally, Toronto's MEMI sprang a healthy 2.9% with noticeable gains for employment (+4.5%), TNBHPI (+9.2%) and non-residential building construction (+11.0%).

**OPINION:** Among the 20 Census Metropolitan Areas (CMAs) covered, the three largest metropolitan areas, Toronto, Vancouver and Montreal, were among the first five in terms of MEMI growth in 2017 (Q4/Q4). The vigour observed in these urban areas surely played a role in lifting Canada's real GDP growth for the year (estimated at 3.0% in real terms). Momentum was strong in most of the 20 CMAs covered by the MEMI, a fact which allowed employment to grow 2.9% in those regions (bottom chart). Such a positive context allows solid population growth through migration as immigrants, who usually settle in large urban areas, are attracted by abundant job opportunities. Data also showed that the situation in Toronto, while good, could have been better were it not for the largest decrease in home sales countrywide. As in several CMAs in the Golden Horseshoe, sales in Canada's most populated city were affected by the foreign-buyers tax introduced last April. Looking ahead, home sales, house prices and housing starts will probably be impacted in 2018 by rising interest rates and the introduction of more stringent mortgage regulations (B-20). The impact of these measures will be felt most acutely in Toronto and Vancouver, the dearest housing markets in Canada.

Marc Pinsonneault

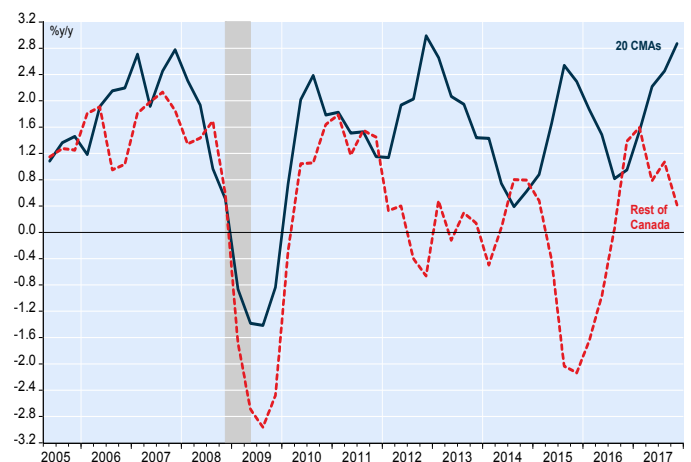
MEMI y/y growth in Q4 2017



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

Employment growth in Canada concentrated in CMAs

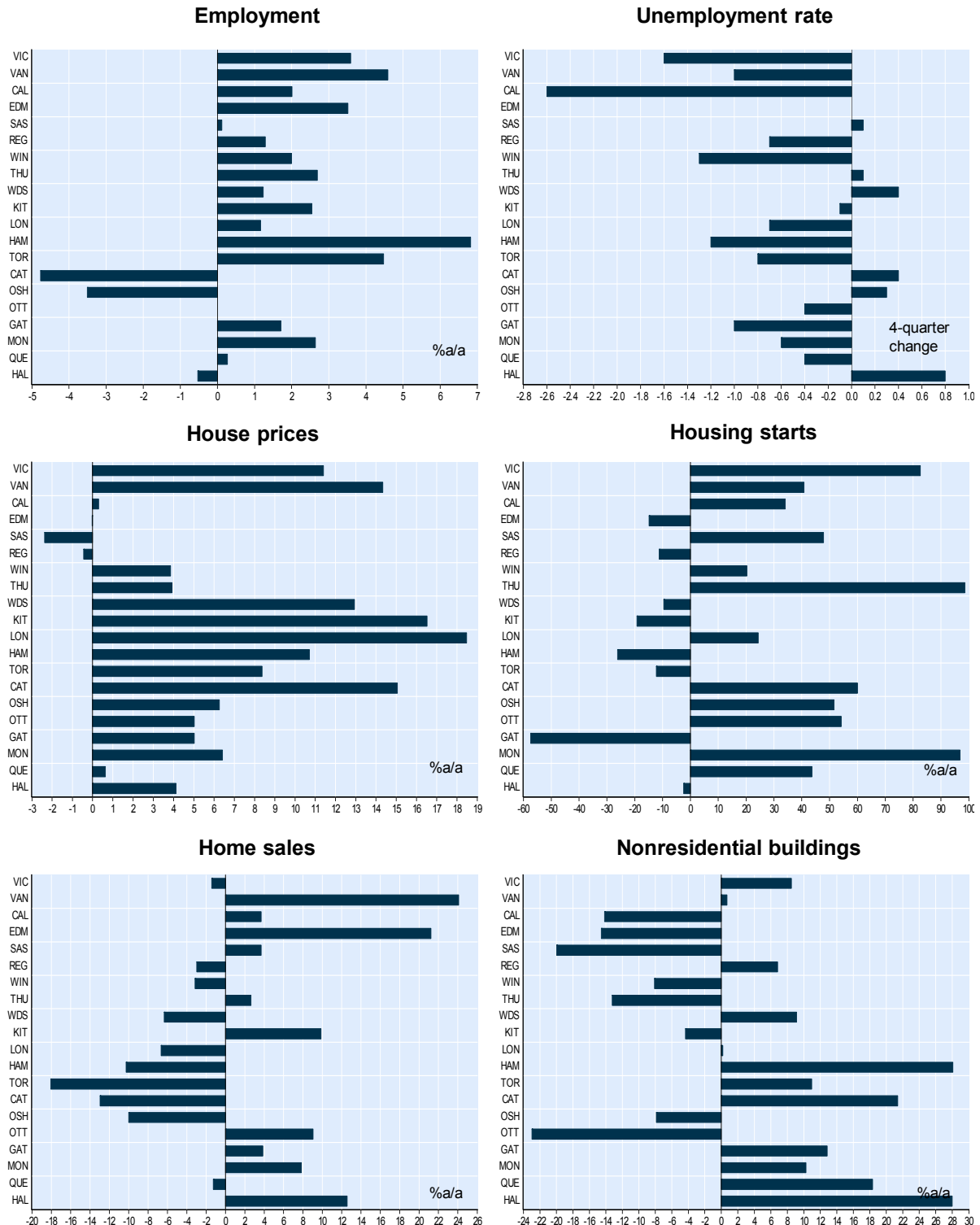
Seasonally adjusted employment levels



NBF Economics and Strategy (data via Statistics Canada)

## 4-quarter change of indicators comprised in the MEMI

Last observation: Q4 2017



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:

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

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



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# MEMI – Metropolitan Economic Momentum Index

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