

Experimental indexes of economic activity in the provinces and territories, December 2020

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The increase in the three-month moving average of economic activity slowed in a majority of provinces and territories in December. The slowdown in activity growth in the three months up to December corresponds with a period of rising COVID-19 cases and tightening restrictions across the country.

The experimental indexes based on principal component analysis (PCA) and the least absolute shrinkage and selection operator (LASSO) were developed to address the need for a comprehensive measure of economic activity at the sub-national level in advance of the annual estimates of gross domestic product for the provinces and territories. PCA and LASSO are statistical methods that can be used to combine a range of economic indicators from a number of areas (e.g., the labour market, merchandise trade, manufacturing production, and wholesale and retail trade) into composite indicators.

The average growth over the October-to-December period for the PCA-based indexes was slower than for the three months ending in November for 7 of the 11 indexes reported. The largest slowdowns are found in Saskatchewan, Alberta, Quebec and Ontario.

The average growth for the three months ending in December for the LASSO-based indexes was slower for 9 of the 12 indexes reported when compared with the three months ending in November. The largest slowdowns occurred in Alberta, Saskatchewan, Nova Scotia and Quebec.

The statistical methods used to estimate the activity indexes can result in month-to-month changes that are subject to volatility. This can lead to month-to-month changes that obscure trends. The moving averages help to account for the volatility when looking at underlying tendencies in the activity indexes.

Table 1
Three-month moving averages of monthly growth rates, PCA-based indexes

	October 2020	November 2020	December 2020	October to November 2020	November to December 2020
	% change			change in percentage points	
Newfoundland and Labrador	..	..	..	..	..
Prince Edward Island	2.62	1.41	0.92	-1.21	-0.49
Nova Scotia	2.21	1.12	1.38	-1.09	0.26
New Brunswick	1.27	1.92	1.37	0.65	-0.55
Quebec	1.29	0.38	-0.6	-0.91	-0.98
Ontario	3.16	2.02	1.18	-1.14	-0.84
Manitoba	0.28	0.46	0.76	0.18	0.3
Saskatchewan	3.26	2.51	0.94	-0.75	-1.57
Alberta	3.7	2.22	0.97	-1.48	-1.25
British Columbia	2.77	1.61	1.44	-1.16	-0.17
Yukon	0.19	0.44	0.86	0.25	0.42
Northwest Territories	0.6	1.88	2.56	1.28	0.68
Nunavut	..	..	..	..	..

.. not available for a specific reference period

Note(s): PCA: principal component analysis.

Source(s): Author's calculations based on data from table [36-10-0633-01](#).

Table 2
Three-month moving averages of monthly growth rates, LASSO-based indexes

	October 2020	November 2020	December 2020	October to November 2020	November to December 2020
	% change			change in percentage points	
Newfoundland and Labrador	-0.49	1.11	1.03	1.6	-0.08
Prince Edward Island	0.18	0.28	0.31	0.1	0.03
Nova Scotia	0.75	0.63	0.32	-0.12	-0.31
New Brunswick	0.32	0.14	0.09	-0.18	-0.05
Quebec	0.4	0.12	-0.02	-0.28	-0.14
Ontario	0.89	0.68	0.48	-0.21	-0.2
Manitoba	0.3	0.23	0.22	-0.07	-0.01
Saskatchewan	0.99	0.73	0.36	-0.26	-0.37
Alberta	2.25	1.23	0.39	-1.02	-0.84
British Columbia	0.89	0.52	0.57	-0.37	0.05
Yukon	0.8	0.55	0.65	-0.25	0.1
Northwest Territories	..	..	..	..	..
Nunavut	0.39	0.51	0.32	0.12	-0.19

.. not available for a specific reference period

Note(s): LASSO: least absolute shrinkage and selection operator.

Source(s): Author's calculations based on data from table [36-10-0633-01](#).

Note to readers

Additional information is available in the paper titled "[Experimental Economic Activity Indexes for Canadian Provinces and Territories: Experimental Measures Based on Combinations of Monthly Time Series](#)," which is part of the series *Analytical Studies: Methods and References (11-633-X)*.

Available tables: table [36-10-0633-01](#).

Definitions, data sources and methods: survey numbers [2101](#), [2151](#), [2201](#), [2301](#), [2310](#), [2325](#), [2401](#), [2406](#), [2419](#), [2612](#), [2802](#), [3701](#), [5005](#) and [7505](#).

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