Study: Measuring the Correlation Between COVID-19 Restrictions and Economic Activity

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COVID-19 restrictions and economic activity

Tighter public health restrictions on business and personal activity due to the COVID-19 pandemic were associated with a slowing of economic activity, but the strength of that relationship depended on the severity of the restrictions and the wave of the pandemic. These are the main findings of the study "Measuring the Correlation Between COVID-19 Restrictions and Economic Activity" that is released today by Statistics Canada.

The public health restrictions that were introduced to combat the spread of the COVID-19 virus changed the daily lives of Canadians, including the way they worked and consumed. This study focuses on the link between the restrictions and economic activity, specifically retail sales, employment and the number of active firms. It illustrates the potential short-term consequences that these restrictions have on the economy, contextualizing the movements in these economic data and informing future decision making.

The study finds that growth of 10 percentage points in the severity of restrictions was associated with a slowing of retail sales growth by 0.4 percentage points, a slowing of employment growth by 0.2 percentage points, and a slowing of the growth in the number of businesses by 0.1 percentage points.

However, the link between restrictions and economic activity was not linear. Past a certain level of restrictions, the impact restrictions had on economic activity were more pronounced. At this threshold level, restrictions tended to go from being an inconvenience (e.g., wear a mask and gather only in smaller groups) to being a burden (e.g., in-person schooling is cancelled, non-essential retail and personal services are closed, and stay-at-home orders are issued).

Past this threshold, growth of 10 percentage points in the severity of restrictions was associated with a slowing of retail sales growth by 1.0 percentage points (vs. 0.4 percentage points before the threshold) and a slowing of employment growth by 0.6 percentage points (vs. 0.2 percentage points before the threshold). The response of active firm growth to tighter restrictions remained little changed.

Evidence of adaption to restrictions after the first wave

The estimates reported above on the strength of the relationship between measures of economic activity and restrictions were for the second and third wave of the pandemic. During the first wave, the correlations between changes in economic restrictions and changes in economic activity were stronger. The average correlation between changes in restrictions and changes in retail sales for all provinces and territories during the first wave was -0.78 compared with -0.31 during the second and third waves. Similarly, the correlations between changes in restrictions and changes in employment and changes in number of active businesses also weakened, from -0.83 to -0.43 for employment and from -0.77 to -0.22 for the number of active businesses.

The change in the response of the economy to restrictions likely arises from the greater uncertainty around COVID-19 when it first emerged, from adaptations that businesses and households undertook to enable greater operation in the face of restrictions (e.g. having employees work from home, enacting social distancing and mask use at work), and from adaptations in how restrictions were implemented and enforced.

The measurement of the severity of restrictions

To quantify the severity of restrictions, restrictions indexes were developed for the provinces and territories. These indexes build on the Oxford University Stringency Index by adjusting and adding variables to create a more province/territory-specific view of COVID-19 containment policies.

The indexes are constructed with the goal of producing measures of how stringent restrictions are from a low of 0% (no restrictions) to a high of 100% (all restriction categories are as stringent as possible). The index is made up of restrictions on daycares, schools, workplaces, non-essential retail, gyms, hair and beauty salons, public transit, public events, internal travel, international travel, in-person dining, indoor gatherings, outdoor gatherings, and public information campaigns. Once different restrictions were enacted for vaccinated and unvaccinated persons, the different restriction levels are reported for these two groups.

Note to readers

The report presents provincial and territorial restrictions indexes up until the end of January 2022, encompassing the first five waves of the COVID-19 pandemic. The analysis of how restrictions impact on economic activity focuses on data ending in mid-2021, ahead of the emergence of the Delta and Omicron variants. Daily values for the restriction indexes up to January 31, 2022 are available in table 33-10-0496-01 and monthly values for the restriction indexes are available in table 33-10-0497-01 up to January 2022.

Detailed monthly summaries of government restrictions during the pandemic, along with major business and financial market developments, are available at Canadian Economic News.

Available tables: 33-10-0496-01 and 33-10-0497-01.

Definitions, data sources and methods: survey numbers 5373 and 5374.

The study "Measuring the Correlation Between COVID-19 Restrictions and Economic Activity" part of the *Analytical Studies: Methods and Reference* Series (**11-633-X**), is now available.

For more information, or to enquire about the concepts, methods or data quality of this release, contact us (toll-free 1-800-263-1136; 514-283-8300; **infostats@statcan.gc.ca**) or Media Relations (**statcan.mediahotline-ligneinfomedias.statcan@statcan.gc.ca**).