The Economic Costs of Delayed Policy and Delayed Vaccines in the Fight Against COVID-19

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Abstract:

We apply the methodology developed in Cotton et al (2021) to compare the economic outcomes under alternative COVID-19 mitigation and recovery strategies under consideration by policymakers and public health officials in Canada. This includes updating previous economic cost projections to consider new data and the possibility of delayed policy and vaccine response. We estimate that a one month delay in Canada's vaccination rollout will cost the Canadian economy between $7 and $16 billion.

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Project Background and Funding: Limestone Analytics provided financial support for this modeling exercise and the development of the STUDIO economic model on which it builds. The methodology is presented in Cotton et al. (2021). The epidemiological and public policy scenarios considered in this brief were provided to the research team by Global Canada's COVID Strategic Choices Group.

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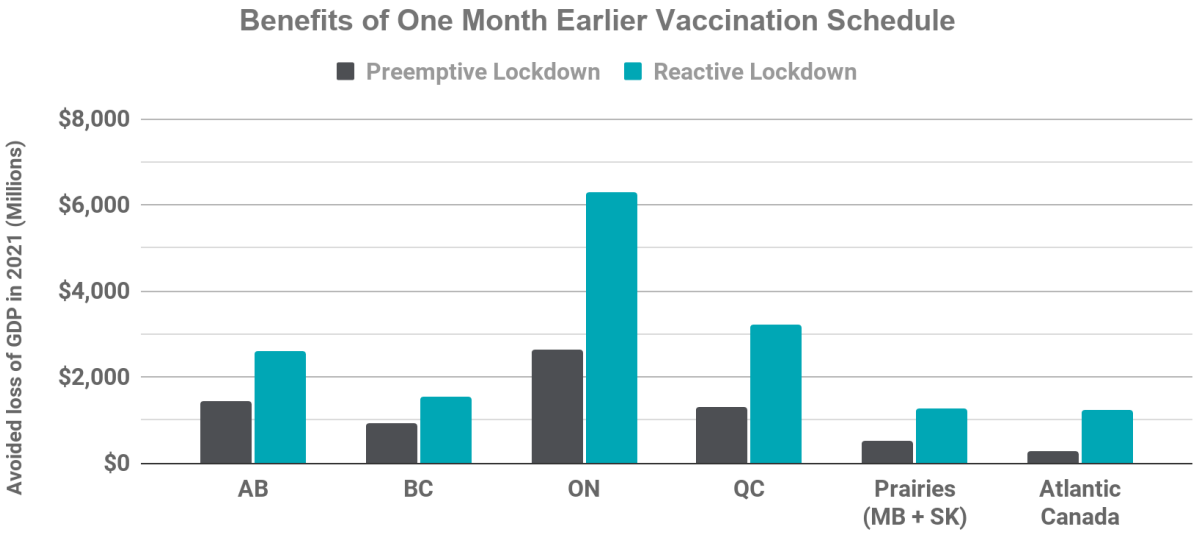

The Economic Costs of Delayed Policy & Delayed Vaccines

This month we compare the economic costs for Canada under four alternative mitigation and recovery scenarios, which differ in terms of their lockdown and reopening strategy, and in terms of how quickly Canada can vaccinate a sufficient share of the population to more-fully reopen the economy. In all scenarios, we assume that enough of the population will be vaccinated to allow governments to reopen their provinces and territories beginning in August 2021 at the latest.

The analysis is conducted using Limestone Analytics STUDIO Model of the Canadian economy, updated to reflect Statistics Canada's release of its March Labour Force Survey (LFS) update.

The four alternative scenarios are:

- **Reactive Lockdown with Early Vaccination (RL-EV)** - This is the 'reactive response' scenario in which Canada's provinces and territories ease restrictions during March and the beginning of April of 2021. However, a resurgence of the virus, possibly driven by new variants of the disease, forces governments to impose another round of lockdowns in late April and continuing into June. These lockdowns are comparable in severity to those in place during January 2021. In this scenario, a staged reopening process begins in July, and demand in tourism related sectors picks up again at the end of the reopening process in October.

- **Preemptive Lockdown with Early Vaccination (PL-EV)** - This is the 'proactive response' scenario in which, after slightly easing restrictions in March, as we have seen, Canada's governments cautiously revert to restrictions that were in place during February 2021 for the month of April. A staged reopening process then begins in May, and demand in tourism related sectors picks up again in August 2021.

- **Reactive Lockdown with Late Vaccination (RL-LV)** - This scenario is identical to RL-EV, except that due to delays in the vaccination rollout, the January-level restrictions are extend through to the end of July, the reopening process begins in August, and demand in tourism related sectors picks up again at the end of the reopening process in November.

- **Preemptive Lockdown with Late Vaccination (PL-LV)** - This scenario is identical to PL-EV, except that due to delays in the vaccination rollout, the February-level restrictions are extend through to the end of May, the reopening process begins in June, and demand in tourism related sectors picks up again at the end of the reopening process in September.

The projections reflect the current scenarios being considered by Global Canada's COVID Strategic Choices Group, with the Preemptive Lockdown scenario reflecting their revised 'Canadian Shield' scenario and our Reactive Lockdown scenario reflective of what is seen as their most-likely default policy. These scenarios have been updated to reflect the most-recent estimates available about vaccine roll out compared to the scenarios we used in previous month policy briefs. The analysis assumes that the early lockdown strategy will be effective at reducing spread and will therefore reduce lockdown intensity in later months; our economic projections are only as accurate as the virus and policy evolve as assumed under the scenarios.

Projections

At this time, it appears as though Canadians are on track to have access to at least one dose of COVID-19 vaccine by July, which aligns with the 'Early Vaccination' scenarios. The projections shown in Figure 1 demonstrate that the PL-EV policy that reverts to moderate restrictions in April is likely to result in lower economic costs than the RL-EV strategy, if proactive caution prevents a spike in the disease that then needs to be addressed with stricter lockdown policies in May and June. This is because stronger restrictions today are assumed to allow for lighter restrictions in summer months.

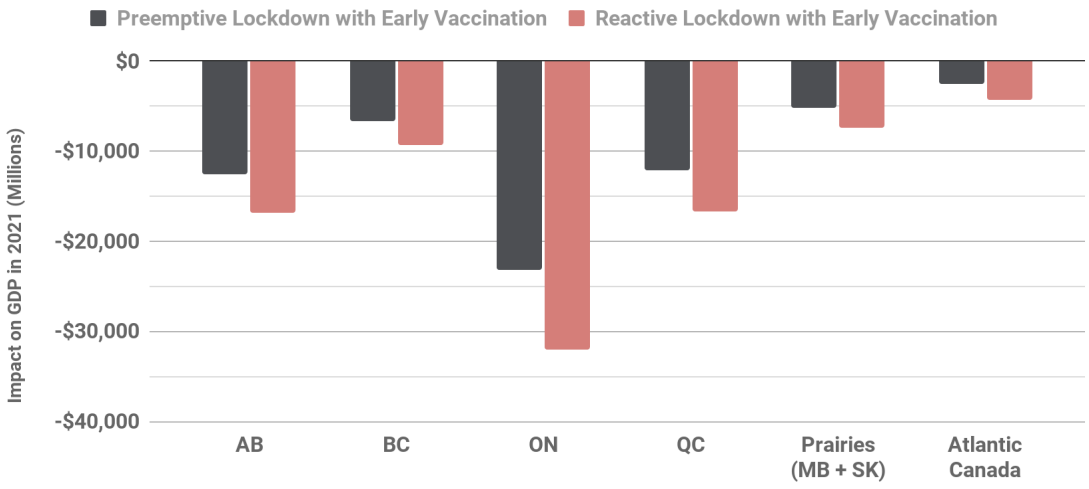

Figure 1: Estimated loss of GDP in 2021 by province or region under alternative strategies

When we compare the 'Early Vaccination' scenarios to their 'Late Vaccination' counterparts (Table 1), we see that an accelerated vaccination schedule could save Canada's economy between $7 and $16 billion in avoided GDP loss. This is because a delay in the vaccine delays the economic recovery.

Figure 2 shows the potential avoided loss in GDP that accelerated vaccination would offer to each province or region.

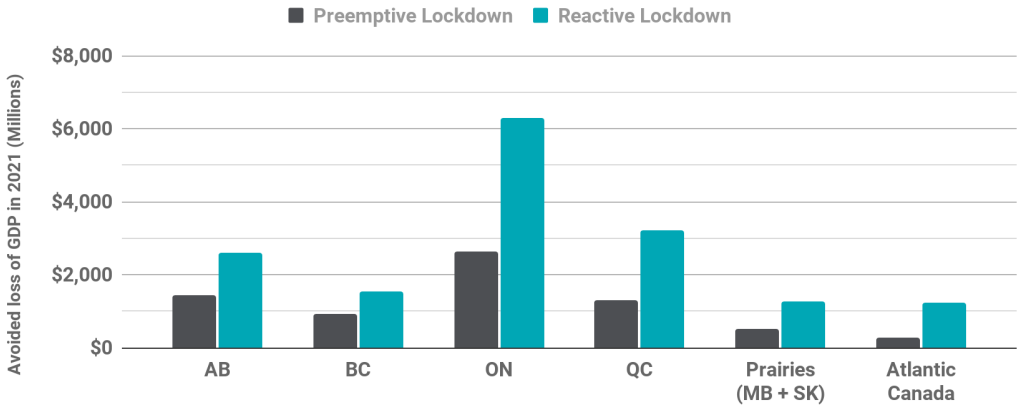

Figure 2: Estimated avoided loss of GDP by province or region due to accelerated vaccination

The following pages include tables and graphs presenting the results of the analysis.

Table 1: Projected cumulative GDP loss in 2021 (Mil. CAD)

	AB	BC	ON	QC	Prairies (MB + SK)	Atlantic Canada	CA
Preemptive - Late Vaccine	-$14,060	-$7,660	-$25,770	-$13,427	-$5,763	-$2,782	**-$69,462**
Reactive - Late Vaccine	-$19,413	-$10,908	-$38,384	-$19,943	-$8,610	-$5,543	**-$102,801**
Preemptive - Early Vaccine	-$12,637	-$6,744	-$23,143	-$12,124	-$5,235	-$2,503	**-$62,386**
Reactive - Early Vaccine	-$16,810	-$9,384	-$32,081	-$16,740	-$7,345	-$4,306	**-$86,666**

Table 2: Projected average monthly job loss in 2021 (# of jobs)

	AB	BC	ON	QC	Prairies (MB + SK)	Atlantic Canada	CA
Preemptive - Late Vaccine	-95,895	-73,398	-214,722	-127,966	-35,265	-26,220	**-573,466**
Reactive - Late Vaccine	-129,547	-102,796	-302,376	-182,317	-51,189	-44,091	**-812,316**
Preemptive - Early Vaccine	-85,801	-64,479	-192,601	-114,300	-31,419	-23,106	**-511,706**
Reactive - Early Vaccine	-113,626	-88,638	-258,423	-155,703	-44,206	-35,866	**-696,462**

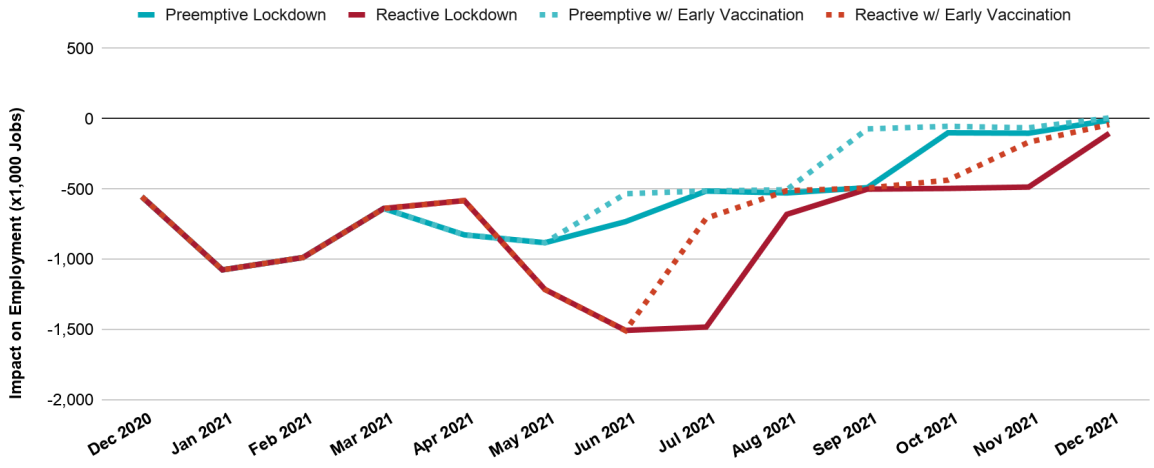

Figure 3: Impacts on employment over time

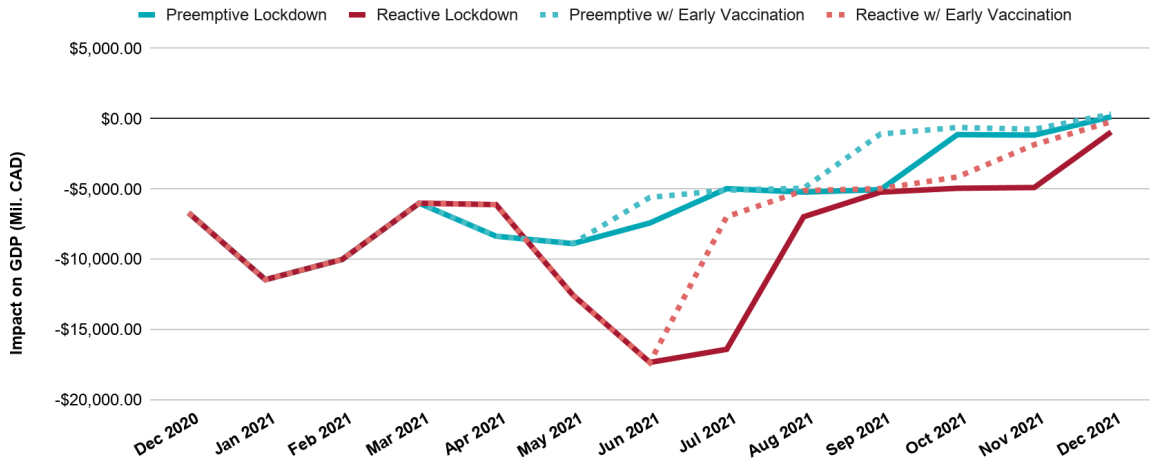

Figure 4: Impacts on GDP over time

Conclusion

Our analysis illustrates two important policy considerations.

First, it shows how more-restrictive lockdown measures today may decrease total GDP and job loss due to COVID-19 if the restrictions allow us to relax restrictions more-fully and earlier in the summer months.

We compare the projected economic costs of COVID-19 under a proactive strategy of significantly tightening lockdown restrictions in late March and under an alternative reactionary strategy in which governments avoid tighter lockdown restrictions until a third wave of viruses forces an even more significant tightening of the lockdown restrictions later in April. These scenarios are consistent with the projections provided to us by the policymakers and epidemiologists from Global Canada's COVID Strategic Choices Group. The model suggests that a preemptive lockdown strategy may save the economy between $24 and $33 billion in lost GDP and a decline in work hours equivalent to between 185 and 239-thousand full time employees (monthly average for 2021).

Second, it identifies the cost of delayed vaccination schedules. A one-month quicker roll out of vaccines is shown to increase GDP by between $7 and $16 billion, depending on the lockdown and reopening strategy being used by governments. This is associated with between 62-thousand and 116-thousand additional annual full-time equivalent jobs. This highlights the economic importance of an efficient and effective vaccine roll out strategy.

For additional information

This policy brief is based on output from the Limestone Analytics STUDIO Model of the Canadian Economy. The report was prepared by Brett Crowley, Christopher Cotton, and Huw Lloyd-Ellis. Previous policy briefs can be found at https://limestone-analytics.com/publications/ .

The bibliography includes sources directly referred to in the analysis and related policy briefs that informed the research team's analysis, including reference to updated, publicly available versions of the health projections that were shared with the research team.

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