Intelligence MEMOS

From: Paul Jenkins and Jeremy M. Kronick

To: Policymakers Across the Country

Date: November 16, 2020

Subject: DEALING WITH THE SECOND WAVE: FURTHER RESULTS

In a recent Intelligence Memo we presented results using an epidemiological-economic model to analyze a range of possible interventions to turn the recent surge in infection rates back down to our summertime levels, and perhaps better, while minimizing economic losses.

The results using this model were calibrated treating young, middle-aged and older groups differently. Three key insights emerged: the importance of targeted interventions, a capacity to improve interventions through a timely mix of interventions (e.g. better testing and tracing), and staying the course on an intervention strategy given the uncertainty as to when a vaccine would be widely available.

In this Memo, we extend our research by calibrating the model by industry type, using three categories: enterprises with high contact among workers and clientele (for example, restaurants), medium contact industries (for example, wholesale trade), and low contact industries (for example, finance). To determine which industries fit in which category, we use data from Statistics Canada on people's ability within each industry to work from home pre-COVID.

These industry-based results are complementary to our earlier results. With an industry calibration we can analyze different lockdown and intervention strategies of the sort that governments are currently focused on, and ask what improvements in execution are possible.

An industry calibration also captures to some degree the influence of the situation in other countries on Canada's economy through trade flows on various industries. And, lastly, it gives us a sharper focus on the working-age population. Our working assumption by not including retired folks is that policymakers have implemented the key insights of our age-based results and we are asking whether these results can be improved further by focusing on the most high-risk industries.

As with our earlier results, we recognize that the results of any such model represent a simplified description of a process of cause and effect, with a wide confidence band around its parameters. Nonetheless, we can draw insights to help identify how a combination of interventions, undertaken in a coherent way, can turn our current situation around and guide us to both better health and economic outcomes.

We start with a base-case scenario where all three industry categories are similarly locked down to bring infection rates back down, and where lives lost over the next year (the scenario time horizon we use throughout), as a percentage of the population, are no greater than they have been from March to present day. This uniform lockdown results in an economic loss (in terms of GDP) of 9.59 percent. The reason it is lower than we saw in the age-based results is because we exclude an entire segment of the population (non-working age people).

Allowing for a more targeted approach, where high-contact industries are locked down more than other sectors at varying degrees over the one-year horizon, while achieving the same health outcomes as with a uniform lockdown, the economic loss is reduced to 7.56 percent. This is a significant improvement (a 2 percentage points or 20 percent decrease), and can conceptually be viewed as similar to what some governments have been attempting by targeting restaurants and other high-contact businesses.

But we can go further with non-economic interventions that can be thought of as workplace protocols employers have introduced. These types of interventions can allow for an even more targeted approach to those industries considered high risk (e.g. shutting down only those failing to comply). Starting with the targeted industry approach just described above:

- Improving social distancing, specifically by lowering close-contact interactions with those in high contact industries, reduces the economic loss from 7.56 percent to 5.09 percent;
- Introducing better testing and tracing, with only a 5 percentage point improvement, reduces the economic loss from 7.56 percent to 4.36 percent;
- Lowering the transmission rate by 10 percent through, for example, plexiglass installation and mask-wearing, lowers the economic loss from 7.56 percent to 3.89 percent;
- Combining all three measures lowers the economic loss to 2.44 percent, a big improvement over the starting point 7.56-percent loss.

We offer the following insights:

- Targeting: Targeting high risk industries, or aspects within an industry, complements our earlier results of the importance of targeting vulnerable groups. Critical to this is gathering and leveraging data to ensure timely testing and tracing.
- Intervention Improvements: Also complementary to our earlier results is the importance of employers introducing workplace protocols to reduce transmission, for example, through distancing and plexiglass installation.
- Individual responsibility: In following the insights of bullets one and two, governments can not only target by industry, but factor in compliance when individual industries and employers themselves are taking responsibility for assessing and implementing measures appropriate to their situation.

With our earlier results, we stressed that formal modeling, while only one tool, provides a framework to inform coherent messaging and a narrative from our leaders that Canadians can understand and trust. The extended industry-based results presented here only reinforce that view.

Overall, given the knowledge gained, including through the use of models, we can turn back the recent resurgence at a lower economic cost than in the first wave, by leveraging timely data to pinpoint and align the most effective tools to deal with the diversity in the spread of the virus.

Paul Jenkins is a former senior deputy governor of the Bank of Canada and a senior fellow at the C.D. Howe Institute, where Jeremy M. Kronick is associate director, research.

To send a comment or leave feedback, email us at blog@cdhowe.org.