Do lockdown and testing help in curbing Covid-19 transmission?

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Abstract.:  
This study investigates the effectiveness of lockdown and testing in curbing the transmission of Covid-19 infection. Using a combination of data from the European Centre for Disease Prevention, Roser et al. (2020) and Hale et al. (2020), we carried cross country analysis covering 69 countries across the 5 continents. To take care of the fact that the number of Covid-19 cases strongly depend on its own lag values, we used two-step system GMM for the estimations. Unlike prior studies that measure lockdown in terms of a fixed intervention date, we relied on the stringency index from Hale et al. (2020) that accommodates for the gradual lockdown measures in different countries. We found that lockdown significantly affects the number of confirmed cases after 7 days of its implementation and its lag effects are intact even after 21 days of its implementation. A unit change in the lockdown index decreases the total number of confirmed cases by 0.19 percent. Testing has no significant effects for at least 14 days after its implementation. However, after 21 days of its implementation, its effects become significant with −0.03 elasticity value.

Data description:  
The data for the study is taken from three different sources. We collected data on the number of confirmed cases from the European Centre for Disease Prevention and Control. Data on the number of tests conducted is taken from Our World in Data project, gathered by Roser et al. (2020). The data on the lockdown measures is taken from the ‘Oxford Covid-19 Government Response Tracker’ project gathered by Hale et al. (2020). For each country, we consider the time period from the date of its first positive Coronavirus case until 18 April, 2020. We exclude countries that do not have data on testing in our analysis. Our source data has observations for 135 countries. Our data cleaning process resulted in 69 countries across the 5 continents with observations for a maximum time period between February 21, 2020 and April 18, 2020.

JEL-Classification: C23, I18, I19  
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