Title: The Impact of Response Measures on COVID-19-Related Hospitalization and Death Rates in Germany and Switzerland

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Abstract: We assess the impact of COVID-19 response measures implemented in Germany and Switzerland on cumulative COVID-19-related hospitalization and death rates. Our analysis exploits the fact that the epidemic was more advanced in some regions than in others when certain lockdown measures came into force, based on measuring health outcomes relative to the region-specific start of the epidemic and comparing outcomes across regions with earlier and later start dates. When estimating the effect of the relative timing of measures, we control for regional characteristics and initial epidemic trends by linear regression (Germany and Switzerland), doubly robust estimation (Germany), or synthetic controls (Switzerland). We find for both countries that a relatively later exposure to the measures entails higher cumulative hospitalization and death rates on region-specific days after the outbreak of the epidemic, suggesting that an earlier imposition of measures is more effective than a later one. For Germany, we also evaluate curfews (as introduced in a subset of states) based on cross-regional variation. We do not find any effects of curfews on top of the federally imposed contact restriction that banned groups of more than 2 individuals. Finally, an analysis of mobility patterns in Switzerland shows an immediate behavioral effect of the lockdown in terms of reduced mobility.

Data: Data on COVID-19 infections and related hospitalizations and deaths collected by the Swiss Federal Office of Public Health; data on COVID-19 infections and related deaths collected by the German Robert Koch Institute; mobility data from MOBIS-COVID19 study, a research project initiated by the ETH Zurich and the University of Basel.

JEL Codes: I18, I12, H12

Keywords: COVID-19, pandemic, social distancing, lockdown, treatment effect, synthetic control