1. Title: The Impact of Stay-at-Home Orders on US Output: A Network Perspective

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3. Abstract: Under the stay-at-home orders issued by states, economic activities are reduced or put on hold by some states across the U.S. to control the spread of COVID-19. By combining several sources of data, we estimate the output loss due to such restrictions using a network approach. Based on our most conservative estimates, the measures as of April 15, 2020 reduce 26% of total US output per period, and about 43% of which is due to the input-output connections in the production network. Using a SIR model with an inter-state infection network, we also calculate the cost of reducing each infection to be approximately $150,000 during the period of March 19 to April 15, 2020. Simulation results of various hypothetical stay-at-home orders show that the unit cost of infection reduction of the existing order is about 13% higher than the local minimum.


5. JEL codes for the project: E23, E24, F62

6. Key-words: COVID-19; production network; labor shock; stay-at-home orders

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