Title
An economic model of the Covid-19 epidemic: The importance of testing and age-specific policies

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Abstract
This paper investigates the role of testing and age-composition in the Covid-19 epidemic. We augment a standard SIR epidemiological model with individual choices regarding how much time to spend working and consuming outside the house, both of which increase the risk of transmission. Individuals who have flu symptoms are unsure whether they caught Covid-19 or simply a common cold. Testing reduces the time of uncertainty. Individuals are heterogeneous with respect to age. Younger people are less likely to die, exacerbating their willingness to take risks and to impose externalities on the old. We explore heterogeneous policy responses in terms of testing, confinements, and selective mixing by age group.

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COVID-19, testing, social distancing, age-specific policies