Title.
Twin Peaks: Covid-19 and the Labor Market

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Abstract.
The Covid-19 epidemic has posed significant challenges to public health. Since the virus outbreak, governments have implemented social distancing policies to stricter confinement measures, aimed at reducing the spread of the virus and delaying the contagion peak. Nevertheless, these measures have a potentially huge economic and social costs. Understanding costs and benefits of alternative confinement policies and supporting labor market policies is of first order.

To this purpose, we build a quantitative framework that merges a search and matching friction model of labor market to a standard SEIR epidemiological model of contagion. In this framework, workers move between different labor market and health states, depending on firms' hiring and firing decisions and on endogenous infection rates. If employed, workers have the options of performing part of their job from home, depending on their job's type. In the absence of a pandemic, workers divide their time optimally between working from home and outside the home, subject to technological constraints. During a pandemic however spending any time outside the home working increases exposure and spread contagion. This generates a trade-off between aggregate production and epidemic death toll, and has significant distributional consequences across workers.

We calibrate the model to data describing the spread of the disease and the labor market dynamics in the UK and in the US, and we use the framework as a laboratory to evaluate the welfare and the distributional consequences of different confinement measures - from herd immunity to full lock-down - either alone or jointly implemented with alternative labor market policies - from extension of unemployment insurance to firms subsidies.

Data.
The model will be calibrated using epidemic and labor market data for the UK and the US. In particular, for the UK we use data from Office for National Statistics to calibrate the transition rate across labor market states and the share of time of spend time working at home (see https://www.ons.gov.uk/) and data from National Health Statistics to calibrate the epidemiological part of the model (see https://www.england.nhs.uk/statistics/statistical-work-areas/covid-19-daily-deaths/). For the US we use data from the BLS to calibrate the transition rate across labor market states (https://www.bls.gov/), and data from the O*Net (https://www.onetonline.org/help/onet/database) to classify jobs according to their feasibility of working at home (Dingel and Neiman, 2020).

JEL codes.
I1, I3, J0, J6

Keywords.
SEIR model, search and matching frictions, confinement policies, labor market policies, inequality, welfare