Discussion of “Fiscal Multipliers in the COVID19 Recession”
by Auerbach, Gorodnichenko, McCrory and Murphy

Adrien Auclert
Stanford

Virtual AEA Meetings
January 3, 2021
The COVID19 shock

- 3 features of COVID19 raised demand for macroeconomists:

  1. New type of shock, requiring new theories

  2. Came in age of big data, requiring processing & analysis

  3. Came with large fiscal response, requiring program evaluation
The COVID19 shock

3 features of COVID19 raised demand for macroeconomists:

1. New type of shock, requiring new theories

2. Came in age of big data, requiring processing & analysis

3. Came with large fiscal response, requiring program evaluation
   - eg government spending: this paper
The COVID19 shock

- 3 features of COVID19 raised demand for macroeconomists:

1. New type of shock, requiring new theories
   - eg Auerbach, Gorodnichenko, Murphy 2020a/c

2. Came in age of big data, requiring processing & analysis
   - eg labor market: Coibion, Gorodnichenko, Weber 2020b

3. Came with large fiscal response, requiring program evaluation
   - eg government spending: this paper
   - eg stimulus checks: Coibion, Gorodnichenko, Weber 2020a
The COVID19 shock

- 3 features of COVID19 raised demand for macroeconomists:
  1. New type of shock, requiring new theories
     - eg Auerbach, Gorodnichenko, Murphy 2020a/c
  2. Came in age of big data, requiring processing & analysis
     - eg labor market: Coibion, Gorodnichenko, Weber 2020b
  3. Came with large fiscal response, requiring program evaluation
     - eg government spending: this paper
     - eg stimulus checks: Coibion, Gorodnichenko, Weber 2020a

- Many things we still do not know, but we do know this:
  - Yuriy Gorodnichenko’s research output is demand-determined!
This paper

- Estimates cross-CBSA fiscal multipliers by lockdown status

\[ \Delta N_i = \alpha + 1_{Lockdown_i} + \beta_1 \Delta G_i + \beta_2 \Delta G_i 1_{Lockdown_i} + \epsilon_i \]  

- $\Delta N_i$ is 04/20 − 04/19 employment
- $\Delta G_i$ is (05/19-04/20) − (05/18-04/19) DOD spending
- $1_{Lockdown_i} = 1$ if CBSA $i$ had more than 0.75 week of SAH order
This paper

- Estimates cross-CBSA fiscal multipliers by lockdown status

\[ \Delta N_i = \alpha + 1_{Lockdown_i} + \beta_1 \Delta G_i + \beta_2 \Delta G_i 1_{Lockdown_i} + \epsilon_i \]  

- \(\Delta N_i\) is 04/20 – 04/19 employment
- \(\Delta G_i\) is (05/19-04/20) – (05/18-04/19) DOD spending
- \(1_{Lockdown_i} = 1\) if CBSA \(i\) had more than 0.75 week of SAH order

- Main findings:
  - \(\beta_1 \gg 0\): about 22 jobs per million USD spent in a year
  - \(\beta_1 + \beta_2 \simeq 0\): “broken multiplier” for locked-down CBSAs
  - For consumption, \(\beta_{1c} \simeq \beta_{2c} \simeq 0\): no spillover to \(C\) either way
My discussion

1. Empirical strategy
2. Implied output multipliers
3. Understanding the mechanism

- Key point: $\beta_1 \sim \beta_2 \sim 0$ looks like the norm here: why?
Empirical strategy

- Usual concern in running (1): $\Delta G_i$ not randomly assigned
  - Standard solution is Bartik $\Delta G_i = \gamma_i \Delta G$ [Nakamura-Steinsson 2014]
  - Here $\Delta G = 0$... run OLS instead
Empirical strategy

- Usual concern in running (1): $\Delta G_i$ not randomly assigned
  - Standard solution is Bartik $\Delta G_i = \gamma_i \Delta G$ [Nakamura-Steinsson 2014]
  - Here $\Delta G = 0$... run OLS instead

“While our specification does not produce unbiased estimates in normal times, we proceed under the assumption that it can provide evidence of state dependence if such state dependence exists”

- I am not sure why that should be true
  - Is this a statement about magnitudes or just signs?
  - Maybe write down a simple model to clarify?
Magnitudes at other times: $\beta_1 \approx \beta_2 \approx 0$

Is average multiplier zero except in April? What does Bartik IV give?
Choice of split

- Choice of split for $1_{\text{Lockdown}_i}$ is very uneven
  - Not locked down has $N = 116$ CBSAs with mean pop of 97.5k
  - Locked down has $N = 824$ CBSAs with mean pop of 337k
  - So locked down group has 24 times more pop

- Baseline justified by tradeoff between power and size, but I am not sure what should be special about 0 SAH weeks

- Underlying theories would likely be more consistent with cts effect

- Could run a continuous, maybe nonlinear version?

\[
\Delta N_i = \alpha + \beta_1 \Delta G_i + \beta_2 \Delta G_i \text{SAH}_i + \beta_2 \Delta G_i (\text{SAH}_i)^2 + \epsilon_i
\]
What is so special about 0?

Figure 5. Coefficient on DOD spending as a function of SAH cutoff.

Notes: The figure shows the sensitivity of estimated coefficients $\beta$ (black line; no lockdown) and $\beta + \beta'$ (blue line; lockdown) in specification (1) to alternative cutoffs (in terms of the duration of stay-at-home (SAH) orders; SAH is measured in weeks) used to define the group of lockdown (restricted) cities. The red line shows the number of cities (CBSAs) classified as being in a lockdown.

- Looks very nonlinear. What are the 0 CBSAs? $\beta_1 \approx \beta_2 \approx 0$ else?
Implied output multipliers

- Baseline employment effect in no-lockdown cities is

\[ \Delta N_i = 22 \text{ jobs}/$1m \ DOD \ spending \]

- Translate into output multiplier, with Okun elasticity of 1: [Chodorow-Reich 2019]

\[ \Delta Y_i \approx \frac{Y}{N} \Delta N_i \]

- Output per worker of $150k in 2020: fiscal multiplier of 3.3
Implied output multipliers

- Baseline employment effect in no-lockdown cities is

\[ \Delta N_i = 22 \text{ jobs}/\$1\text{m DOD spending} \]

- Translate into output multiplier, with Okun elasticity of 1:
  [Chodorow-Reich 2019]

\[ \Delta Y_i \simeq \frac{Y}{N} \Delta N_i \]

- Output per worker of $150k in 2020: fiscal multiplier of 3.3
  - Seems large relative to existing studies
  - Could make calculation more precise (eg use $Y/N$ for DOD)

- Ultimately must explain:
  - Why \( \beta_1 \simeq \beta_2 \simeq 0 \) most of the time
  - Why \( \beta_1 \) so large in this particular event
Broken high-MPC channel?

- What happened in April/June 2020 in 0-SAH CBSAs?
  \[ Y = C + I + G + NX \]

- If \( C \) did not respond in no-lockdown cities but output multiplier was 3, what did?
  - Measurement error in Chetty consumption data?
  - Response of private investment?
Broken high-MPC channel?

- What happened in April/June 2020 in 0-SAH CBSAs?

\[ Y = C + I + G + NX \]

- If \( C \) did not respond in no-lockdown cities but output multiplier was 3, what did?
  - Measurement error in Chetty consumption data?
  - Response of private investment?

- If \( C \) did not respond in locked-down cities but output multiplier was 0, what did?
  - What about at other times?
Exploiting granularity

- Alternative is to exploit granularity of employment data
  - Where was employment increased? Defense jobs? Nontraded sectors?
  - Traded employment should be $\sim 0$ since this is cross-sectional
  - [Auclert-Dobbie-Goldsmith-Pinkham 2019]

- Use same granularity to ask: why are multipliers 0 at other times and in locked down cities?
  - Do DOD contracts not create defense-related jobs, or is there an offset in other employment?
Conclusion

▶ Thought provoking paper on important topic!
▶ Not (yet) the definitive study on COVID multipliers
▶ Can use granularity of employment data and do more to reconcile with existing literature estimates