

Modeling the Consumption Response to the CARES Act

Christopher D. Carroll Edmund Crawley Jiri Slacalek
Matthew N. White

May 20, 2020

Presentation at JHU Modeling and Policy Town Hall

Viewpoints and conclusions stated in this paper are the responsibility of the authors alone and do not necessarily reflect the viewpoints of the Federal Reserve Board or the ECB.

About this Project

Modeling Topic: Timing and Magnitude of Consumer Spending

Quick Takeaways:

- Big negative effect on spending during lockdown
- Consumer “stimulus” part of CARES act was large

⇒ when lockdown ends, pretty substantial cash-on-hand

- Detailed distributional data: history/models
 - ⇒ lots of spending

Gaps:

- Computational (Programming) Resources
- Integration With Epidemiological Model Inputs

Interesting Finding:

- The UI Component Is Big Enough – While It Lasts

econ-ark.github.io/Pandemic	<i>HTML version of paper</i>
Interactive-Jupyter-Notebook	<i>Allows user to modify some assumptions</i>
github.com/econ-ark/Pandemic	<i>Full codebase; explore all assumptions</i>
LaTeX subdirectory of ↑	<i>PDF version of paper</i>
LaTeX subdirectory of ↑	<i>Presentation slides</i>

The CARES Act directly impacts household balance sheets:

- \$1,200 to every adult (means tested)
- \$600 per week *additional* unemployment benefits, for up to 13 weeks (\$7,800)

Compared to 10 years ago, we now have good models of how household consumption responds

Contribution of paper:

- How is this time different?
- What does a carefully calibrated consumption model say?

What's Old - Baseline Model

Rich stochastic lifecycle model made up of high school dropouts, high school graduates and college graduates, matching:

- Their income profiles (trends and uncertainty)
- Liquid wealth distribution
 - matched using patience heterogeneity

⇒ Annual Marginal Propensity to Consume (MPC) ≈ 0.5

Matches *both* micro and macro phenomena

- ?
- ?

What's New: (1) 'Deep' Unemployment

Want to experiment with different expectations (and realities) about the length of pandemic-related unemployment.

Two types of unemployed:

- 1 'Normal' Unemployed: $2/3$ probability of finding a job each quarter - expected unemployment duration 1.5 quarters
- 2 'Deep' Unemployed: $1/3$ probability of returning to 'normal' unemployed state each quarter - expected unemployment duration 4.5 quarters

What's New: (2) 'Lockdown' Consumption

C during lockdown is restricted:

- Many types of C less desirable, or illegal
- Calibration: 11 percent C reduction (travel, restaurants, etc)
- Captured by reduction in the marginal utility of C

⇒ Households defer some of their spending into the future

Calibrating the Pandemic

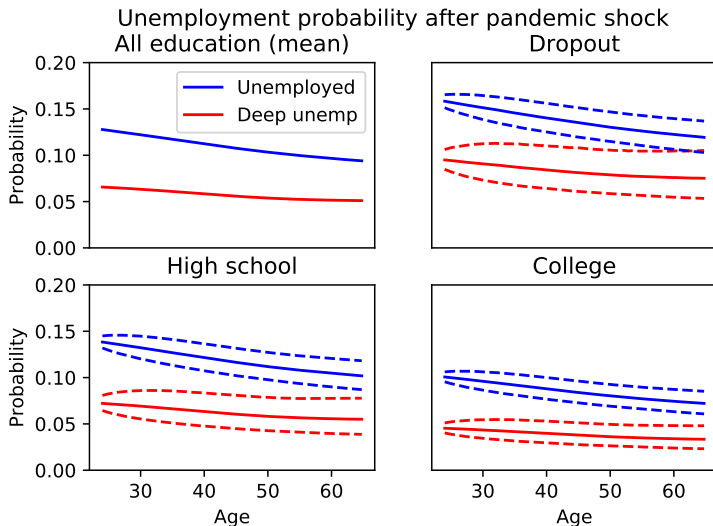
Two scenarios:

- Short-Lived: 'Lockdown' lasts two quarters on average
 - unemployment 15%
 - One-third is 'deep unemployment'
- Long, Deep: The 'lockdown' lasts four quarters on average
 - unemployment 22%
 - Mostly deep unemployment

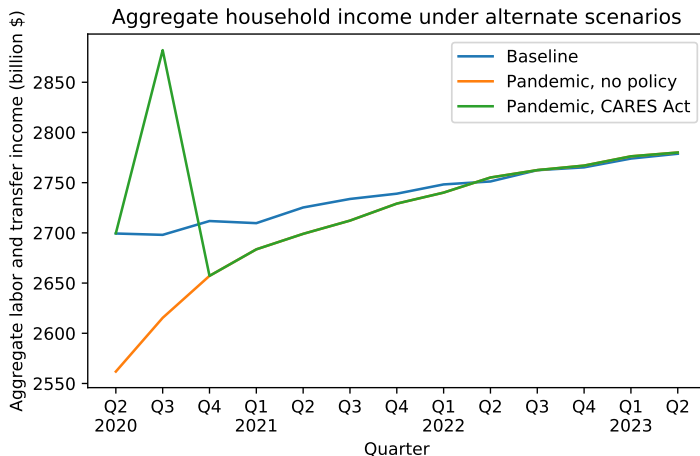
We invite you to make your own assumptions:

Interactive-Jupyter-Notebook *Allows user to modify some assumptions*
github.com/econ-ark/Pandemic *Full codebase*

Unemployment skews young, unskilled and low income

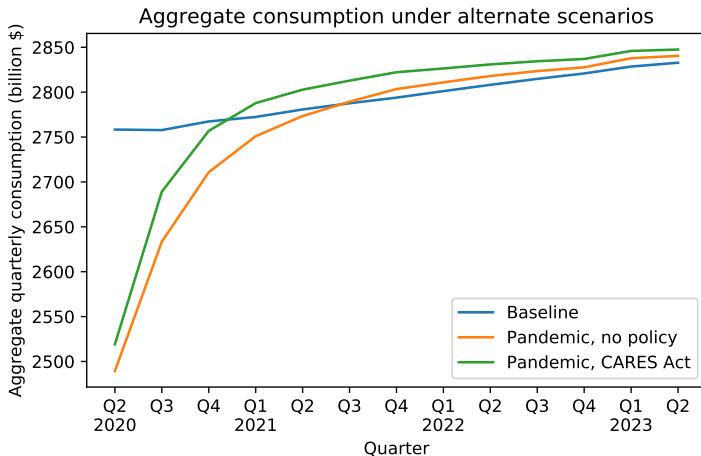


Aggregate Labor and Transfer Income

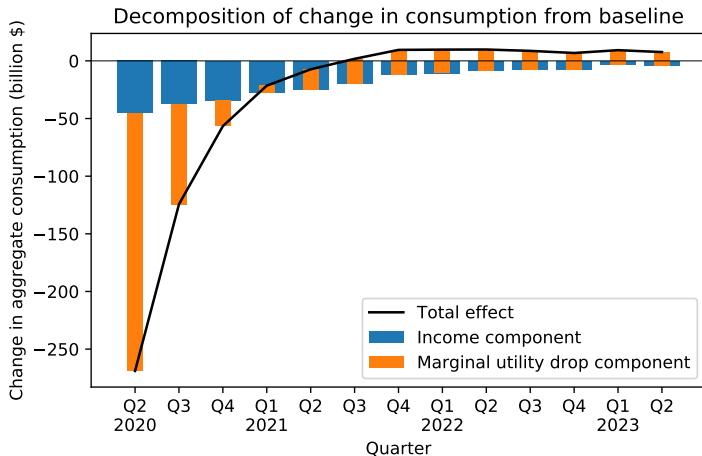


Assumes: Stimulus check delayed one qtr; 25 percent spend before check

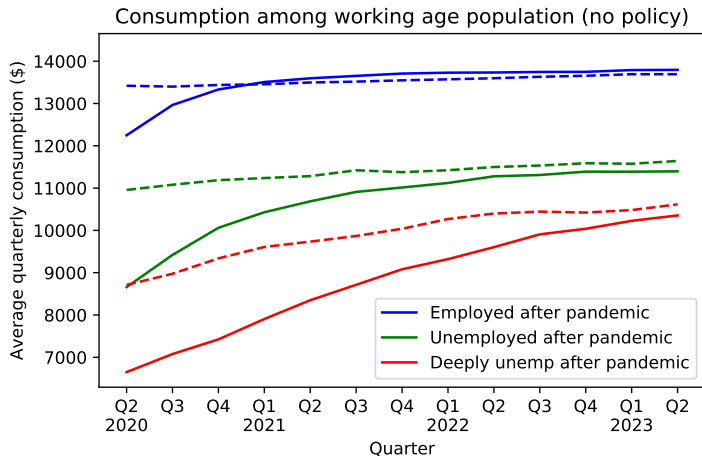
Aggregate Consumption Response



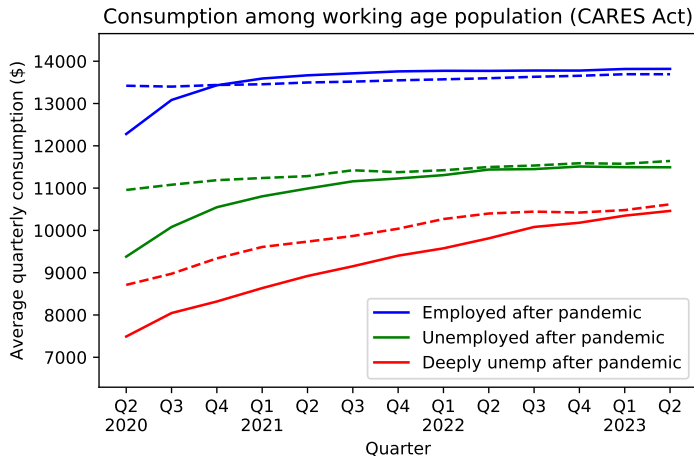
Consumption Response Decomposition



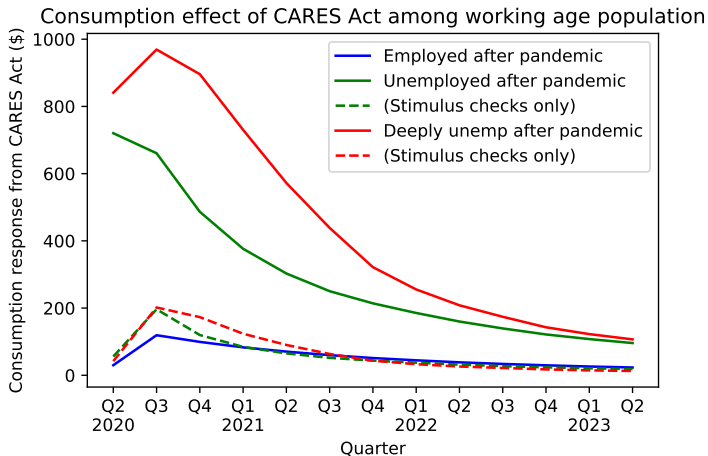
Consumption Response By Employment Type



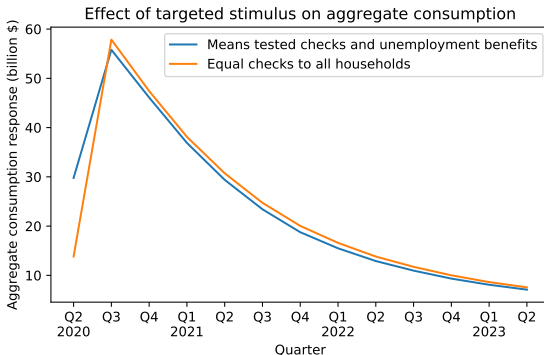
Consumption Response By Employment Type



Consumption Response By Employment Type

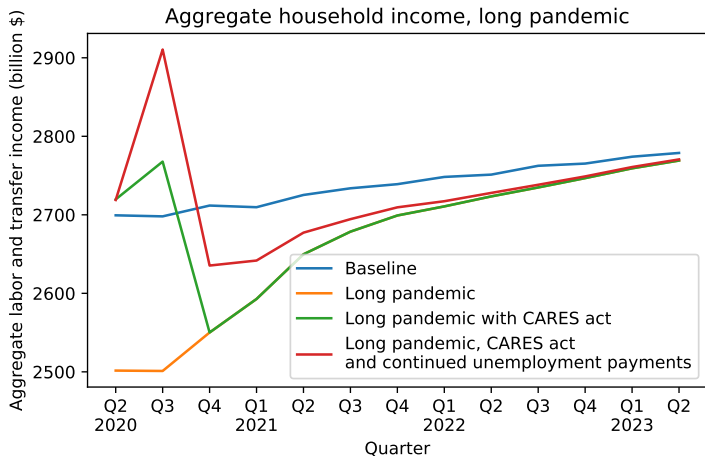


Is Targeting Useful In The Aggregate?

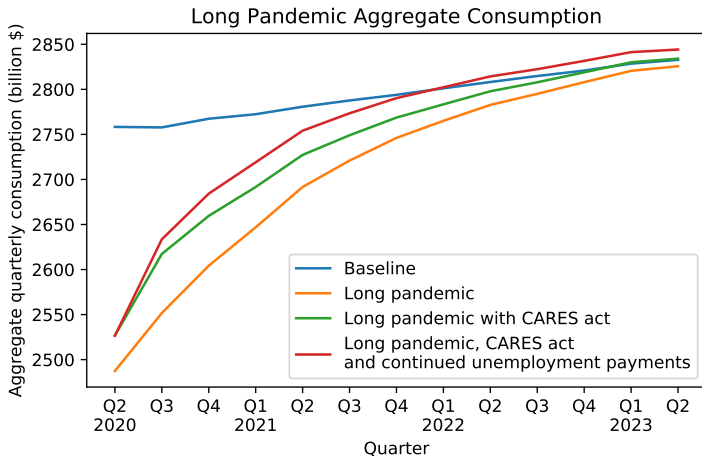


- Deep unemployed have lower MPCs
- UE benefits are generous - average MPC lower than marginal

Deep, Long Pandemic: Income



Deep, Long Pandemic: Consumption



Short-lived lockdown: CARES Act sufficient for swift C recovery

Long, deep lockdown: Further action to prevent big C drop

Check out the dashboard:

<https://econ-ark.org/pandemicdashboard>