ECONOMIC IMPACT PAYMENTS AND HOUSEHOLD SPENDING DURING THE PANDEMIC

Discussion by Matthew Rognlie, Northwestern

Brookings Papers on Economic Activity
Fall 2022
SUCCESSOR TO JOHNSON, PARKER, SOULELES (2006) AND PARKER, SOULELES, JOHNSON, MCCLELLAND (2013), AMONG OTHERS

NEEDED TO WORK HARDER THIS TIME

- Little variation in timing, no random variation
- Use cross-sectional variation in receipt and amount

ULTIMATELY CONVINCING, DESPITE WEAKER INTERNAL VALIDITY

- Stronger external validity than various studies using administrative data
Table VI: Estimated MPCs on CE-measured non-durable goods and some services

<table>
<thead>
<tr>
<th></th>
<th>Full Sample, Three-months of receipt</th>
<th>Recipients Only, Three-months of receipt</th>
<th>Full Sample Three months of receipt and subsequent three months</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001 Economic Rebates</td>
<td>0.386</td>
<td>0.247</td>
<td>0.691*</td>
</tr>
<tr>
<td></td>
<td>(0.135)</td>
<td>(0.213)</td>
<td>(0.260)</td>
</tr>
<tr>
<td>2008 Stimulus Payments</td>
<td>0.121</td>
<td>0.308</td>
<td>0.347</td>
</tr>
<tr>
<td></td>
<td>(0.055)</td>
<td>(0.112)</td>
<td>(0.155)</td>
</tr>
<tr>
<td>2020 EIP 1</td>
<td>0.102</td>
<td>-0.062</td>
<td>0.124</td>
</tr>
<tr>
<td></td>
<td>(0.028)</td>
<td>(0.072)</td>
<td>(0.068)</td>
</tr>
<tr>
<td>2020 EIP 2</td>
<td>0.083</td>
<td></td>
<td>0.153</td>
</tr>
<tr>
<td></td>
<td>(0.039)</td>
<td></td>
<td>(0.104)</td>
</tr>
<tr>
<td>2021 EIP 3</td>
<td>0.009</td>
<td>-0.030</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.018)</td>
<td></td>
<td>(0.047)</td>
</tr>
</tbody>
</table>

Source: Johnson et al. (2006), Parker et al. (2013), and Parker et al. (2022) and current paper. The * denotes a large MPC driven in part by one outlier in spending on food.
Table V: The longer-term response of consumer expenditures to EIP receipt

<table>
<thead>
<tr>
<th></th>
<th>Panel A: EIP1</th>
<th></th>
<th>Panel B: EIP2</th>
<th></th>
<th>Panel C: EIP3</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Strictly non-durables</td>
<td>Nondurables</td>
<td>All CE goods and services</td>
<td>Strictly non-durables</td>
<td>Nondurables</td>
<td>All CE goods and services</td>
</tr>
<tr>
<td>EIP_{t}</td>
<td>0.075</td>
<td>0.102</td>
<td>0.234</td>
<td>0.103</td>
<td>0.083</td>
<td>0.247</td>
</tr>
<tr>
<td></td>
<td>(0.020)</td>
<td>(0.028)</td>
<td>(0.059)</td>
<td>(0.031)</td>
<td>(0.039)</td>
<td>(0.090)</td>
</tr>
<tr>
<td>EIP_{t-1}</td>
<td>-0.011</td>
<td>-0.080</td>
<td>-0.017</td>
<td>0.030</td>
<td>-0.013</td>
<td>0.107</td>
</tr>
<tr>
<td></td>
<td>(0.020)</td>
<td>(0.028)</td>
<td>(0.070)</td>
<td>(0.038)</td>
<td>(0.045)</td>
<td>(0.124)</td>
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<tr>
<td>Implied cumulative fraction of EIP spent over two three-month periods</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.139</td>
<td>0.124</td>
<td>0.452</td>
<td>0.235</td>
<td>0.153</td>
<td>0.601</td>
</tr>
<tr>
<td></td>
<td>(0.051)</td>
<td>(0.068)</td>
<td>(0.158)</td>
<td>(0.086)</td>
<td>(0.104)</td>
<td>(0.257)</td>
</tr>
</tbody>
</table>

Large fraction spent within 6 months, especially for EIP2, though big error bars and below some previous estimates

Crazy low for EIP3. Possibly hard to disentangle lagged effects of EIP2 and EIP3 given limited independent variation? Or something else iffy about EIP3 #s?
Not too surprising given:

- households with much more liquidity than usual
- limited consumption opportunities during pandemic

My question: did this **diminish** or merely **delay** the transfer multiplier?

- If **delay**: maybe payments did less than usual on impact, but continue to **fuel demand right now**?
Three groups:

- **Hand to mouth**: consume all income immediately
- **Target**: aim for a given bond target, consume fraction of gap between bond and target each quarter (microfound with diminishing utility from bonds)
- **Long-term savers**: standard representative agent, hold any income forever and consume interest ‘r’ on it

Expectations can be myopic or rational

- Calibration: $r = 0$, $\beta = 1$, government either increases debt permanently or pays back in far future (at date we’ll ignore)
- In background: sticky wages, ultimately demand-determined production
SIMPLE MODEL OF DYNAMIC MULTIPLIERS

➤ Three groups: Why both? Needed to match intertemporal MPCs!
   ➤ Hand to mouth: consume all income immediately
   ➤ Target: aim for a given bond target, consume fraction of gap between bond and target each quarter (microfound with diminishing utility from bonds)
   ➤ Long-term savers: standard representative agent, hold any income forever and consume interest ‘r’ on it

➤ Expectations can be myopic or rational

➤ Calibration: $r=0$, $\beta=1$, government either increases debt permanently or pays back in far future (at date we’ll ignore)

➤ In background: sticky wages, ultimately demand-determined production
Result: the cumulative multiplier on a transfer, assuming no monetary feedback (i.e. \( r \) constant), is always

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1 - \frac{\text{share of transfer given to saver}}{\text{marginal share of output earned by saver}}
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\]

➤ Why? Multiplier logic, just cumulative over time:

➤ Non-savers ultimately spend what they receive, that spending creates income, the non-savers will ultimately spend everything that doesn’t leak to saver, and so on…
The Cumulative Transfer Multiplier

Result: the cumulative multiplier on a transfer, assuming no monetary feedback (i.e. \( r \) constant), is always

\[
1 - \text{share of transfer given to saver} / \text{marginal share of output earned by saver}
\]

Implication: for the cumulative multiplier, the distinction between hand-to-mouth and target households doesn’t matter, even though this is a big deal for the impact multiplier.
ILLUSTRATIVE EXAMPLE, CALIBRATED FOR PRE-PANDEMIC

➤ Assume shares of transfer received by (rest to savers):
  ➤ Hand-to-mouth: 20%
  ➤ Target: 60%

➤ Assume target households consume 20% of excess bonds each quarter

  \[ Aggregate \ 1\text{-qtr \ MPC \ out \ of \ transfer}: \]
  \[ 20\% \times 1 + 60\% \times 0.2 = 0.32 \]

➤ Assume marginal shares of output:
  ➤ Hand-to-mouth: 10%
  ➤ Target: 40%

  \[ Cumulative \ transfer \ multiplier: \frac{80\%}{50\%} = 1.6 \]
OUTPUT EFFECT OF DATE-0 TRANSFER: ROUNDS OF SPENDING

Impact spike driven by hand-to-mouth consumers

More rounds needed to get long-term effect, which is mostly "indirect" (via multiplier) rather than direct
IF ALL NON-SAVERS WERE HAND-TO-MOUTH...

The entire cumulative multiplier of 1.6 happens on impact (so 4x larger impact multiplier!), then nothing.
IF ALL NON-SAVERS WERE TARGET HOUSEHOLDS...

Extremely protracted, slow-moving multiplier, with impact multiplier 1/2 as large as benchmark...
BACK TO OUR MAIN CASE
UNDER THE HOOD: EXCESS SAVINGS "FILTERING" DOWN TO SAVERS

Those with high MPCs spend, leaving bonds in the hands of those with low MPCs - so excess savings become steadily less potent for aggregate demand.
FILTERING OF SAVINGS: EASY TO SEE IN THE DATA!

Average checking account balance and contribution from top 20%

1st round of stimulus
2nd round of stimulus
3rd round of stimulus

Bottom-80% balances spike with checks, but dwindle; top-20% balances just keep growing!

From Aggarwal, Auclert, Rognlie, Straub (2022), based on JP Morgan Chase data
MORE FILTERING IN THE DATA: CREDIT CARD DEBT ROARING BACK?

Big drop followed by much more-rapid-than-usual increase; savings not persistent, “target” households going back to their usual condition?
MODIFY OUR EXAMPLE TO GET LOWER MPCs

➤ Assume hand-to-mouth and target households temporarily have lower MPCs

➤ Hand-to-mouth: **0.5 instead of 1** for 4 quarters, then quickly phased-in recovery to 1

➤ Target: **0.1 instead of 0.2** for 4 quarters, then quickly phased-in recovery to 1

➤ Could result endogenously from more liquidity, or from shock to consumption
SAME CUMULATIVE MULTIPLIER, BUT MUCH SLOWER-MOVING!

Half the impact multiplier, but 50% larger effect after 10 quarters!
At 8 quarters non-savers still have 40% of excess savings, vs. 25% before - much more potent for aggregate demand!
This is one narrative of the last 2.5 years

➤ Huge fiscal interventions

➤ Some just provided relief, offset negative shock

➤ Didn’t instantly create excess demand problem, because MPCs were (temporarily) low, and impact multipliers smaller than usual

➤ But this just meant delay, not a diminished multiplier

➤ Bigger lagged demand impact than usual, and we’re suffering the inflationary consequences now
DID THIS EXAMPLE MISS SOMETHING?

➤ We gave “hand-to-mouth” and “target” households temporarily low MPCs, but assumed they would revert to type and consume excess savings

➤ unlikely they’ll hold excess liquidity forever!

➤ Alternative view: if they don’t spend out of extra income, maybe they’ll stow it away in long-run savings?
BUT WHAT KIND OF LONG-RUN SAVINGS?

➤ Vehicle with the broadest potential is retirement accounts, but no big change apparent there
  ➤ e.g. “employee and employer 401(k) contributions remain relatively steady” - Munnell and Chen (2021)

➤ Two possibilities jump out:
  ➤ housing (e.g. using EIPs and excess savings more generally for down payments)
  ➤ retail stock market investment (see Greenwood, Laarits, Wurgler 2022)
  ➤ … and both the housing and stock markets surged!
NEEDED: LOOKING BEYOND THE CONVENTIONAL MPC

➤ Gabaix and Koijen “inelastic markets hypothesis”: investing $1 in stock market increases aggregate value by $5
➤ … likely some (3%-7%) MPC out of that capital gain
➤ Saving in equity or housing, rather than consuming, doesn’t avoid pressure on aggregate demand—it’s just redirected!

\[
dY_0 = \frac{1}{1 - MPC - z'\text{MPS}} (\partial C + z' \partial A)
\]

From work in progress by Auclert, Rognlie, Straub, Wu: in a simple setting, the aggregate multiplier isn’t just \(1/(1-MPC)\), but depends on pass-through coefficients \(z\) - how much, ultimately, of $1 invested in an asset finds its way back to aggregate demand.
CONCLUDING THOUGHTS

➤ Great paper, capping many years of important work

➤ MPCs during the crisis were lower than usual
  ➤ but maybe spending just delayed
  ➤ and maybe redirected toward booming asset markets
  ➤ ... both with consequences today

➤ Agenda going forward: to understand the full multiplier process, study flows across time and across assets