Where are the missing workers
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THIS DISCUSSION REPRESENTS MY OWN VIEW AND NOT THAT OF THE BOARD OF GOVERNORS OF THE FEDERAL RESERVE SYSTEM OR ITS STAFF. I WOULD LIKE TO THANK EMILY GREEN AND MOLLY HARNISH FOR HELP WITH THE EXHIBITS
What is the purpose of this exercise

- Labor supply is very tight. Do we expect a recovery or has something changed post-pandemic that means the new level is permanent.
- Answering this depends in part in whether we think the current behavior of the LFPR and workweek is unusual relative to pre-existing trends and the state of the business cycle.
- Answer also depends on whether changes brought on by the pandemic are likely to be persistent or not.
- Are there changes we might expect going forward that haven’t been fully realized?
What to Abraham and Rendell do?

- Decomposition of the change in total hours into LFPR and weekly hours
- Decompose changes in LFPR and workweek into explained and unexplained components
- Identify potential explanations for the shortfalls and review the literature on the topic, plus extra analysis.

My goal?

- Provide some additional context for their decompositions,
- Identify low hanging fruit for researchers going forward.
Benchmarking: What do AR do?

- Control for between group evolution of the population: Aging, sex, and education
- Control for pre-existing trends within group
- Cyclical position of economy: they assume it is the same
  1. Labor market could be tighter than pre-pandemic, e.g. V/U high
  2. LFPR has long lags, up to four years. Level may not have fully recovered
- Use existing population controls
Alternative Benchmark
Aaronson et al, 2014

- The model as we estimated it back in 2014
- Modifications
  - The trends and the LFPR data account for revisions to pop controls
  - Cyclical component estimated using aggregate data and trend
- Would not be considered state of the art nearly 10 years later
  - Treatment of the younger cohorts
  - Treatment of education
Model performance

LFPR versus trends in Aaronson et al 2014

Model predictions

LFPR vs. predicted LFPR

<table>
<thead>
<tr>
<th>Quarter</th>
<th>1980q1</th>
<th>1990q1</th>
<th>2000q1</th>
<th>2010q1</th>
<th>2020q1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent</td>
<td>60</td>
<td>61</td>
<td>63</td>
<td>64</td>
<td>65</td>
</tr>
</tbody>
</table>

- LFPR with revised population controls
- Predicted values
- Alternate trend, revised

Source: Bureau of Labor Statistics; Aaronson, Cajner, Fallick, Galbis-Reig, Smith, and Wascher 2014; author's calculations.

Change in LFPR

<table>
<thead>
<tr>
<th></th>
<th>Accounting for trend</th>
<th>Accounting for prediction</th>
</tr>
</thead>
<tbody>
<tr>
<td>AR</td>
<td>-0.9</td>
<td>-0.26</td>
</tr>
<tr>
<td>SA</td>
<td>-1.2</td>
<td>-0.75</td>
</tr>
</tbody>
</table>
Model perspective on group LFPRs

Trend, predicted, and actual LFPR by age group

Prime-age female
Prime-age male

Index (2007Q1 = 100)

Quarter

Note: Dashed line at 2020Q1.
Source: Bureau of Labor Statistics; Aaronson, Cajner, Fallick, Galbis-Reig, Smith, and Wascher 2014; author's calculations.
In their analysis this turns out to be a very important component, but they have less to say about it.

- There has been far less attention paid to hours in the literature on the pandemic than to the participation rate.

The paper clearly identifies this as a place where more work is needed.

But, can we provide some more guidance for this future work?
What different hours measures tell us?

- CPS measures usual hours worked and hours worked last week.
- AR measure hours worked last week, but for people who have a job but are absent, they include a zero.
  - What does this measure tell us? How much are people actually working. It is buffeted by week to week shocks.
  - Seems likely it could be heavily influenced by COVID, which the authors provide some evidence for.
  - Also affects the variance of hours.
- Alternative is to look at usual hours, which may have more to say about people’s desired hours of work
COVID and Hours

Hours with Job vs. COVID Cases

- Total COVID cases (left)
- Hours with job (right)

Note: Hours data were seasonally adjusted using the X-13 method. Shading shows approximate dates of COVID waves.
Can we say anything about desire to work?

Note: All series are centered 3-month moving averages. Data were seasonally adjusted using X-13 seasonal adjustment. Source: Bureau of Labor Statistics; author's calculations.
Population is also an important explanation for missing workers.

### B. Decomposition of the current labor force shortfall

<table>
<thead>
<tr>
<th>Millions of people</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total shortfall</td>
<td>3.5</td>
</tr>
<tr>
<td>LFPR</td>
<td>2.1</td>
</tr>
<tr>
<td>Population</td>
<td>1.4</td>
</tr>
<tr>
<td>Excess deaths since COVID</td>
<td>.5</td>
</tr>
<tr>
<td>Net migration slowdown since COVID</td>
<td>.9</td>
</tr>
</tbody>
</table>

Note: The labor force shortfall is calculated over the period from 2019:Q4 to 2022:Q4.

Source: Current Population Survey; CDC mortality statistics; staff calculations.
Playbook going forward

- The definitive starting point for thinking about the labor force post pandemic
- Paper has highlighted the huge lapse in our understanding of how weekly hours are evolving.
- Also gaps in thinking about how participation will evolve going forward.
- Continued work on the how the increase in the social safety net during the pandemic affected labor supply welcome
- Remote work? Child care?
- Who is working more?