TRACKING AND NAVIGATING THE PANDEMIC ECONOMY

Michael Spence
The five stages of the "Smirk Curve":

- **Early Warning and Preparation**: Epidemic initiation is recognized and the economy is yet to be affected.
- **Emergency Response**: Epidemic growth accelerates, and the economy contracts.
- **Trough**: Epidemic growth decelerates, and the economy remains in a trough.
- **Recovery**: Epidemic is contained at low level and the economy recovers gradually.
- **Vaccination**: Vaccine is widely deployed and the "Pandemic Economy" ends.

**Pandemic Economy Evolution**

Time
Contraction, Distribution, Policy Response

- Monetary policy and fiscal “stimulus”
- Main targets: medical capacity, buffering shock, redistribute the balance sheet damage
- Programs are large: implementation varies
- Move a fair amount of the damage to the public sector balance sheet – Italy example
- Magnitudes: USA case: 25-30% of 2019 GDP and income
  - 1.6 trillion dollars for a quarter.
  - If recovery takes 7 quarters, damage is somewhere between 6.4 and 11 trillion dollars
- Distributional impacts adverse
- Unemployment probably 25%
- 39% for households with income below $40K

Michael Spence for INET
Table 1: Share of jobs that can be done at home, by metropolitan area

<table>
<thead>
<tr>
<th>Top five</th>
<th>Unweighted</th>
<th>Weighted by wage</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Jose-Sunnyvale-Santa Clara, CA</td>
<td>0.51</td>
<td>0.66</td>
</tr>
<tr>
<td>Washington-Arlington-Alexandria, DC-VA-MD-WV</td>
<td>0.50</td>
<td>0.64</td>
</tr>
<tr>
<td>Durham-Chapel Hill, NC</td>
<td>0.46</td>
<td>0.57</td>
</tr>
<tr>
<td>Austin-Round Rock, TX</td>
<td>0.46</td>
<td>0.58</td>
</tr>
<tr>
<td>San Francisco-Oakland-Hayward, CA</td>
<td>0.45</td>
<td>0.58</td>
</tr>
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<table>
<thead>
<tr>
<th>Bottom five</th>
<th>Unweighted</th>
<th>Weighted by wage</th>
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</thead>
<tbody>
<tr>
<td>Grand Rapids-Wyoming, MI</td>
<td>0.29</td>
<td>0.37</td>
</tr>
<tr>
<td>Lancaster, PA</td>
<td>0.29</td>
<td>0.36</td>
</tr>
<tr>
<td>Bakersfield, CA</td>
<td>0.29</td>
<td>0.36</td>
</tr>
<tr>
<td>Stockton-Lodi, CA</td>
<td>0.29</td>
<td>0.33</td>
</tr>
<tr>
<td>Cape Coral-Fort Myers, FL</td>
<td>0.28</td>
<td>0.34</td>
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Table 2: Share of jobs that can be done at home, by industry

<table>
<thead>
<tr>
<th>Top five</th>
<th>Unweighted</th>
<th>Weighted by wage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational Services</td>
<td>0.83</td>
<td>0.71</td>
</tr>
<tr>
<td>Professional, Scientific, and Technical Services</td>
<td>0.80</td>
<td>0.86</td>
</tr>
<tr>
<td>Management of Companies and Enterprises</td>
<td>0.79</td>
<td>0.86</td>
</tr>
<tr>
<td>Finance and Insurance</td>
<td>0.76</td>
<td>0.85</td>
</tr>
<tr>
<td>Information</td>
<td>0.72</td>
<td>0.80</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>Bottom five</th>
<th>Unweighted</th>
<th>Weighted by wage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation and Warehousing</td>
<td>0.19</td>
<td>0.25</td>
</tr>
<tr>
<td>Construction</td>
<td>0.19</td>
<td>0.22</td>
</tr>
<tr>
<td>Retail Trade</td>
<td>0.14</td>
<td>0.22</td>
</tr>
<tr>
<td>Agriculture, Forestry, Fishing and Hunting</td>
<td>0.08</td>
<td>0.13</td>
</tr>
<tr>
<td>Accommodation and Food Services</td>
<td>0.04</td>
<td>0.07</td>
</tr>
</tbody>
</table>

Hospitality workforce about 16.7 million
Testing rates in economies at different income levels

- High income
- Upper-Middle income
- Lower-Middle income
- Low income
Trends of Regional Percentages of COVID-19 Cases

- Eastern Europe
- Sub-Saharan Africa
- Rest of Asia
- Latin America and the Caribbean
- North America
- Oceania
- Western Europe
- MENA
- Eastern Asia
Mobility, business and sector shutdowns reduce demand and supply.

Risk and risk aversion separately reduces demand, especially in sectors that entail contact.

Reducing risk:
- Reduce infection per contact – physical distancing
- Reduce number of contacts for a given level of economic activity – large gatherings
- Reduce prevalence among people in circulation – test, track, isolate, digital

Hard part is demand – and risk.
LUOHAN ACADEMY PANDEMIC ECONOMY TRACKING PROJECT

• Real time tracking data will go live on their website soon
• The graphs that follow come from that project as it gets up and running
• https://www.luohanacademy.com/
• It is based in Hangzhou, and has access to ecommerce and mobile payments data
• Much of the mobility data comes from Google
• https://www.google.com/covid19/mobility/
• For USA, by state and county, start date 2/15/2020
PANDEMIC ECONOMY TRACKING GRAPHS

- Real time data - daily
- Vertical axis: contraction estimated from daily mobility data
  - Proxy for economic contraction
  - Actual contractions larger based on a few cases
- Horizontal axis: days to double for confirmed cases
  - Proxy for the rate of spread
- Shaded area: three consecutive days in which recoveries exceeding new confirmed cases
  - 75% of those occurrences came in 10 - 20 day doubling range
- Time: days from the start to the bottom, to the start of upturn in economic activity, to the present on whatever day you are looking at it.
First wave: East Asia
Second wave: Europe

[Graph showing the percentage of recovered cases in different European countries (DEU, FRA, LTU, SWE, SVN, AUT) over time. The graph indicates the number of days required for each country to reach certain recovery percentages.]

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Third wave: Africa