Globalization, Climate Change, and Cleantech Supply Chains in the Age of Covid-19

Jonas Nahm, ISEP Webinar, April 15 2020
Subindices (Jan 1 2020 = 100)

Real estate floor space sales
- Jan 1: 100
- Wuhan shutdown: 2020 Mar 23
- 2019*: 52

Power plant coal consumption
- 2020: 71
- 2019*: 100

Container freight
- 2020: 70
- 2019*: 100

Traffic congestion
- 2020: 71
- 2019*: 100

Air pollution

*2019 values at same number of days before/after the lunar new year
Sources: WIND; EntGroup; FT research
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Satellite-based NO2 levels before, during and after the Chinese New Year holiday

- **Before 2019**
- **During 2019**
- **After 2019**

- **Before 2020**
- **During 2020**
- **After 2020**

Latitude: 30°N, 35°N, 40°N
Longitude: 105°E, 110°E, 115°E, 120°E, 125°E

mol/cm²
Covid-19 and Climate

- Fact 1: Emissions reductions are temporary, and smaller than you’d think
- Fact 2: Green stimulus share will likely be too small
- Fact 3: Covid-19 is undermining globalization, and that’s bad for emissions
Fact 1: Emissions reductions are temporary, and smaller than you’d think
Emissions reductions are temporary, if past crises are any guide.

They are also likely to only amount to ~4 percent to global emissions.
COVID-19 will have no detectable impact on global temps in 2020

- Projected 2020 CO2 concs: 414.2 ppm
- With a 5% emissions reduction: 414.1 ppm
Fact 2: The green stimulus share will likely be too small
Unprecedented stimulus funding in the post-Covid recovery could trigger global investments in decarbonization.

A Golden Opportunity?
After the Great Financial Crisis, no overwhelming climate push

- FY2009 - FY2010, some $500 billion spent on “green” projects, 16 percent of global stimulus spending. Energy investments accounted for roughly 11 percent.

- In the United States, $787 billion committed under the 2009 American Recovery and Reinvestment Act, less than $80 billion committed to green investment. (CSIS 2010).

- These numbers are based on projected top line spending, actual percentage of green stimulus estimated closer to 5 percent.
Carbon temptation

- Temptation to fund construction projects, which increased global emissions by 5 percents in 2010 recovery (Peters 2010)

- In China, shelved coal power plants could quickly be activated to spur growth and employment

- European Airlines asking for carbon taxes to be paused, German carmakers push back on climate targets

- In the United States, airlines and oil sector key stimulus targets
Fact 3: Covid-19 is undermining globalization, and that’s bad for emissions
Will the Coronavirus End Globalization as We Know It?
The Pandemic Is Exposing Market Vulnerabilities No One Knew Existed

By Henry Farrell and Abraham Newman     March 16, 2020
1 Avoid the manufacturing trap
2 Collaborate with China
The political logic of green industrial policy

- Climate policy requires vast fiscal/regulatory resources to
  - incentivize behavioral change
  - offset costs of switching to new energy sources
  - compensate losers
Avoid the manufacturing trap

- Political need to build coalitions by promising local economic benefits
- Unique political status of manufacturing jobs
- Public funds primarily offered for local goods/products/services
  - Historically, proliferation of protectionism in clean energy policy
  - Trade barriers
  - Local content rules
In 2015, 44 US state programs with local content requirements

- Requirements to
  - use locally-locally-manufactured equipment (Michigan, Delaware)
  - use locally-generated electricity
  - grow local feedstock for biofuel

- Internationally: countervailing duty & anti-dumping disputes

- Can we avoid the manufacturing trap in the post-Covid stimulus packages?
Fixing the climate crisis will require collaboration with China

- China produces 66% of the world’s solar panels
- Chinese wind turbine manufacturers now represent approximately 35% of global supply
- China is the largest supplier of (and market for) electric vehicles
- Chinese firms make 69% world’s supply of lithium-ion batteries
Collaborative advantage in renewable energy innovation

Cumulative Global Wind and Solar PV Manufacturing (in MW)

- Wind turbine manufacturing
- Solar PV manufacturing

Chinese firms enter wind and solar sectors

Source: Earth Policy Institute, 2013.
Cost declines because of collaboration with China

Source: Lazard
Covid-19 and Climate

- Lesson 1: Current emissions reductions demonstrate the scale of the climate challenge
- Lesson 2: Green stimulus is an opportunity but won’t get us around the politics
- Lesson 3: If we have any hope of preventing the worst consequences of climate change, we need to find a way to work with China
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