

Impact of COVID-19 and the future of supply chain and transportation systems

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Committee Hearing
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- COVID-19 impact and trends: how they might shape the future of supply chain and transportation systems?
 - Retail sector
 - Food and agribusiness
- Broader supply chain trends and anticipated changes

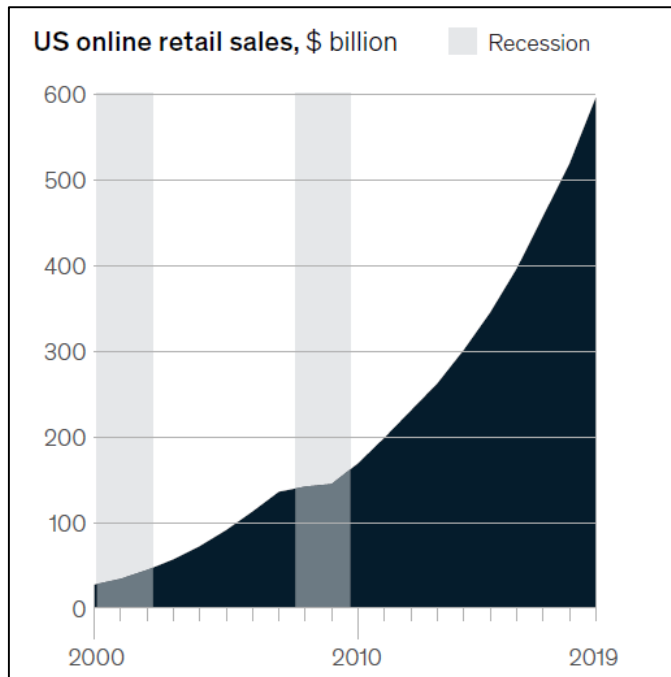


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Impact on retail supply chains

The pandemic has significantly altered people's purchasing behaviors



Source: McKinsey 2020

- E-commerce and online purchases were growing substantially even before COVID
 - *The pandemic has accelerated that trend and also opened up online purchases for new categories*
- These changes “atomize” traditional retail supply chains as the emphasis shifts from stores toward small deliveries to homes

Implications for supply chain and transportation systems

Small parcel volume

- The *global small parcel market is expected to more than double* between 2019 and 2026 (103 billion parcels to around 220-260 billion by 2026)
 - Amazon's small parcel volume will grow at 30 percent annually between 2020-24 (Pitney Bowles, 2020)

Shorter transportation hauls

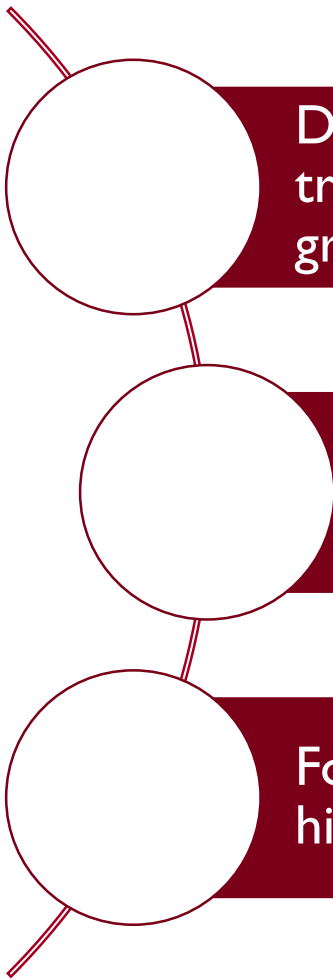
- Customers' demand for quick delivery also creates the need for smaller warehouses closer to their homes
 - Trucks' *average length of haul have reduced by 25 percent* over ten years (McKinsey 2020)

Collectively, these point to a *transformative change in transportation modes and volumes* over the next decade

Increased pressure on local transportation networks from last-mile distribution

Potential for a substantial *increase in carbon emissions*

Transportation policy questions



Do we have the *required capacity* within our local and regional transportation networks to handle the higher volumes resulting from the growth of online channels?

Would the higher volumes and delivery time pressures justify the creation of *dedicated lanes* for delivery vehicles and logistics providers?

For carbon accounting purposes, *who would be assigned responsibility* for the higher emissions – retailers selling the products or logistics providers?

Implications for supply chain and transportation systems

TECH

Amazon wins FAA approval for Prime Air drone delivery fleet

(Source: CNBC 2020)

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Tech

Nuro set to be California's first driverless delivery service

(Source: BBC 2020)

- These newer last-mile transportation methods have *substantial policy implications* with respect to monitoring and oversight
- Managing the multiple last-mile delivery systems will require *tighter cross-agency coordination* at local, state, and federal levels

- A wider adoption of electric last-mile transportation will require *investments in charging infrastructure*
- Key policy questions including taxation, charging fee etc.
- *Potential for public-private partnership*

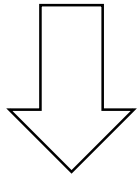
New GM Electric-Truck Business Targets Delivery Market

Division dubbed BrightDrop will sell electric trucks and services to package-delivery operators; FedEx is first customer

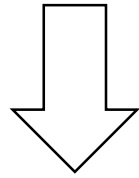
(Source:WSJ 2021)

Implications for supply chain and transportation systems

- Handling the large return volumes will require investments in developing the right reverse logistics infrastructure (e.g., processing, transportation resources)



Further pressure
on local
transportation
networks



Further
increase in
carbon
emissions

RETAIL

That sweater you don't like is a trillion-dollar problem for retailers. These companies want to fix it
(Source: CNBC 2019)

30% return rate for online sales
vs.
8% for brick-and-mortar

The growth in online sales is likely to result in a massive increase in return volumes



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Impact on food and agribusiness supply chains

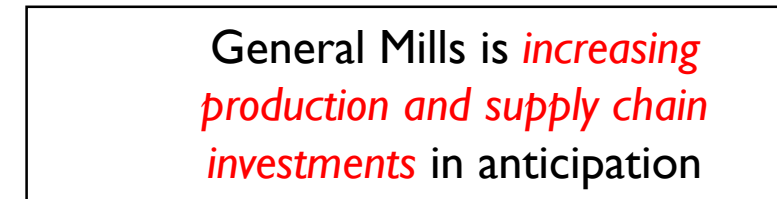
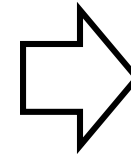
The pandemic has significantly altered people's eating habits – moving away from eating at restaurants and schools to eating at home



(Source: OpenTable 2021)

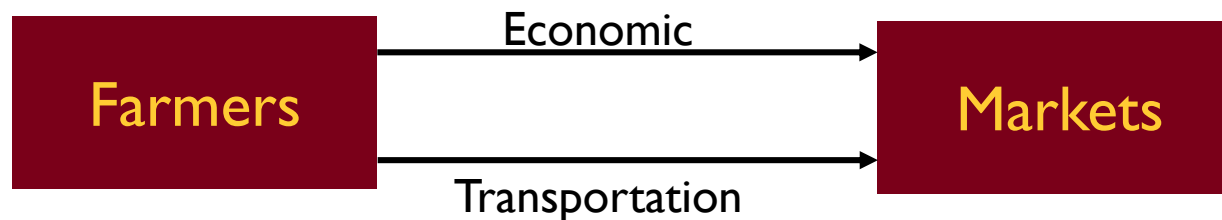
- The “food away from home” demand is certainly expected to rebound as we emerge from the pandemic
- However, many experts believe that the demand for *“food away from home” may never go back to pre-pandemic levels*
 - A % of the “food away from home” demand might shift to the “food at home” category in the long-run

Implications for supply chain and transportation systems

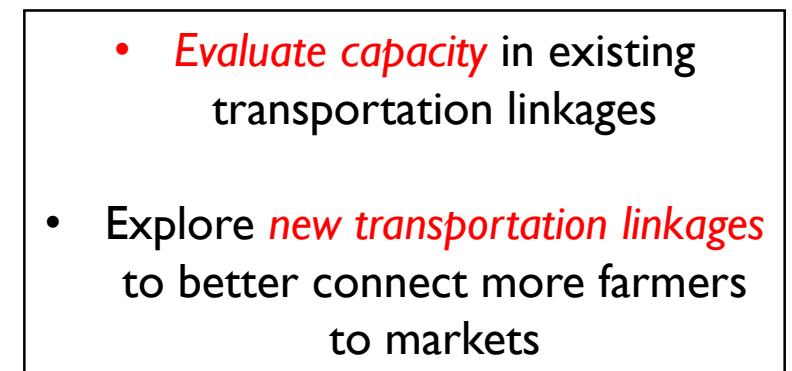


A portion of this surge in demand for cereals and packaged food is expected to stick

- Meeting this surge in production and demand will require higher transportation capacity not only for finished products but also for ingredients

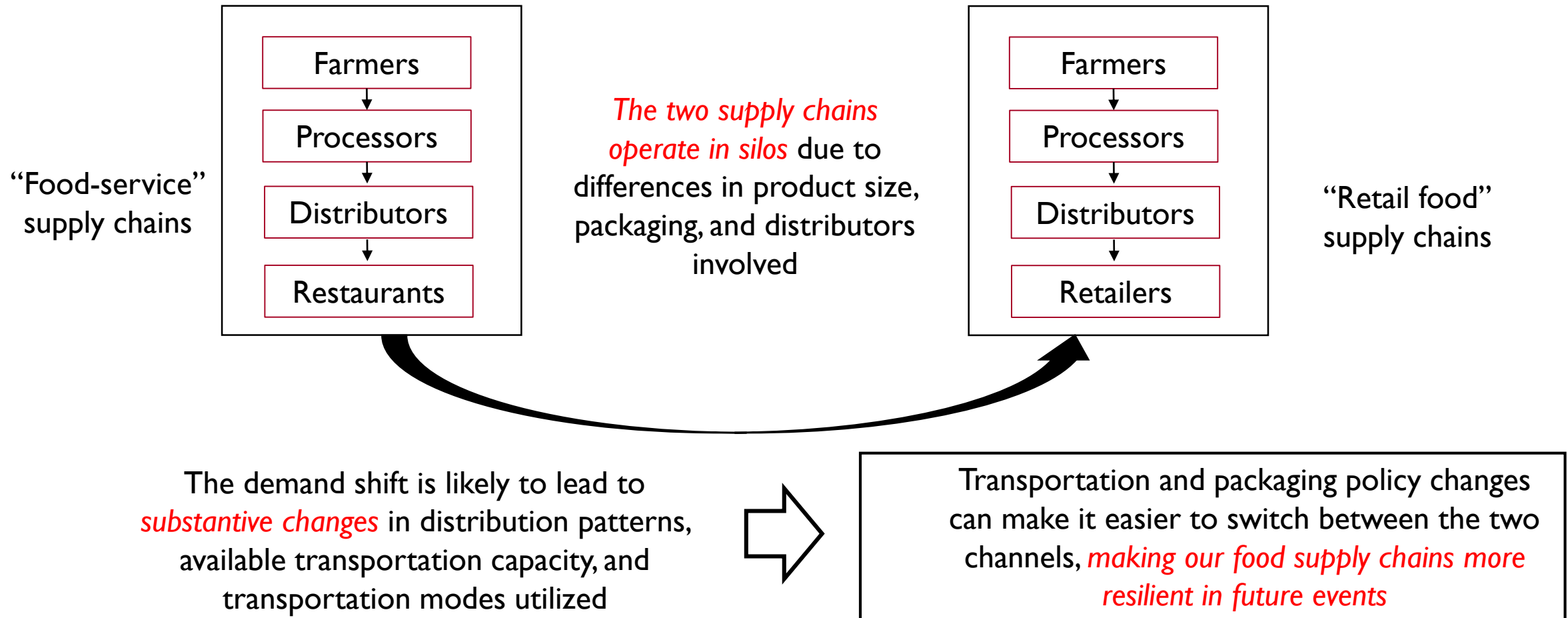


Need to strengthen and expand market linkages for farmers to fully benefit from the rise in “food-at-home” demand



Implications for supply chain and transportation systems

- The pandemic also exposed the inflexibility of our food and agribusiness supply chains



- The next decade will bring major changes in the transportation landscape in terms of transportation modes, haul lengths, role of technology in the last mile, and the realignment of transportation networks due to shifts in demand
- Key policy implications
 - Managing and *coordinating the traditional and technology-enabled transportation* modes
 - Developing *inter-agency coordination plans* at the local, state, and federal levels
 - *Leveraging technology-enabled last-mile solutions* to meet growing demand in a sustainable and equitable way



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THANK YOU !

Questions or comments?
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