Emerge and Recover from Novel Coronavirus (COVID-19) Crisis

Snapshot Highlights – April 14–22, 2020

About This Document

Given the fluid situation, this document is prepared to provide a snapshot of the state of uncertainties in supply chains in the wake of the COVID-19 crisis, particularly given that the federal government and several states are discussing plans to restart their economies. With few exceptions, data are based on a review of literature published during April 14–22, 2020, including managerial journals, industry reports, and relevant web resources. Content was analyzed to discern key developments at the time of this review to get supply chain managers up to speed on changing landscape and actions companies should be taking in view of business reopening and new normal in the crisis aftermath.

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State of Uncertainties Amid the COVID-19 Crisis

Common Path, Yet Various Shapes of Recovery

The Common Path

- Disease progression path: Key influence on public health responses
  - Common disease progression path

Disease progression by phase

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Transmission</th>
</tr>
</thead>
<tbody>
<tr>
<td>Majority of cases can be linked to known chains of transmission (ie, cases can be managed individually)</td>
<td>Majority of cases involve an unknown source of infection and infection rate is accelerating</td>
</tr>
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<table>
<thead>
<tr>
<th>Magnitude</th>
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<tbody>
<tr>
<td>Handful of new cases per day</td>
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<table>
<thead>
<tr>
<th>Growth</th>
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<tbody>
<tr>
<td>Percentage growth may be high, but absolute number of cases remains within the capacity of public-health systems</td>
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</table>

Source: Craven et al. (2020)

- Common public health response phases. While each nation is on its own journey—with differences based on the wide range of geographic, demographic, societal, political, and economic factors that result in variation—the basic shape of the response journey is the same everywhere, following three phases (Gjaja et al. 2020).
  - Flatten phase: Containment. The initial stage of response takes place when a nation or area is locked down in order to reduce the peak caseload in an effort to “flatten the curve,” and to avoid overwhelming the health care system. Strict physical distancing, effective use of personal protective equipment (PPE), bans on gatherings, and the cancellation of all but essential activity are hallmarks. The United States, most of Europe, and an increasing number of locations around the world are currently in this phase (Gjaja et al. 2020).
  - Fight phase: Partial recovery. Once a sizeable, sustainable decline in new cases and new infections is reached, and elected and public health officials feel that the situation is under control, it is possible to consider reducing some restrictions to restore a moderate level of economic activity, while maintaining physical distancing. Close monitoring for upticks in infections and new cases is still a hallmark, as a vaccine is not yet available (Gjaja et al. 2020).
- **Future phase: Full recovery.** The ultimate goal is to reach the Future phase, at which point a vaccine is approved, available, and widely administered, or at least a highly effective treatment is developed. In this phase, economic activity can be fully restored (Gjaja et al. 2020).

- **Public health responses: Key influence on economic activities.** People and organizations alike are adopting new behaviors. There has been a massive shift to remote work and consumers across demographics are purchasing dramatically more goods online (Gjaja et al. 2020).
  - **Trend: US retail sales.** While certain industries (e.g. CPG, grocery, general merchandise, e-commerce) that support a “hunker-down” economy are doing well, most other parts of the economy are in shambles. Sectors including energy, industrial, consumer discretionary, and large portions of retail are seeing unprecedented drops in sales (Mulqueen 2020).

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<table>
<thead>
<tr>
<th>Category</th>
<th>2020 Sales</th>
<th>2019 Sales</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clothing/Accessories</td>
<td>30%</td>
<td>25%</td>
<td>5%</td>
</tr>
<tr>
<td>Furniture</td>
<td>20%</td>
<td>18%</td>
<td>2%</td>
</tr>
<tr>
<td>Food Service/Drinking Places</td>
<td>15%</td>
<td>12%</td>
<td>3%</td>
</tr>
<tr>
<td>Sporting Goods</td>
<td>10%</td>
<td>8%</td>
<td>2%</td>
</tr>
<tr>
<td>Gasoline Stations</td>
<td>5%</td>
<td>4%</td>
<td>1%</td>
</tr>
<tr>
<td>Electronics/Appliances</td>
<td>2%</td>
<td>2%</td>
<td>0%</td>
</tr>
<tr>
<td>Misc Store Retail</td>
<td>1%</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td>Retail and Food Services</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Source: Mulqueen (2020)
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- **Trend: Spending on food and household goods amid COVID-19.** Because of COVID-19, non-discretionary (essential) products are in high demand while discretionary (non-essential) spending is down. In terms of essential goods, spending on food and household goods shows different trends in different countries, depending on the stages of disease progression. In most markets, spending is stabilizing, but remain elevating in the United States, Germany, and the UK (BCG 2020b).
Restarting Economies during the COVID-19 Crisis

- **Restarting economies: COVID-19 is atypical and complicated.** Unlike typical economic recessions where the downturn is followed by a trough and then the recovery, the economic condition during the COVID-19 crisis is being driven by the initial forced shutdown of the economy, followed by the containment, and eventually a restart. In the United States, the shutdown began at the end of March, and the country is now primarily in the containment phase (Fisher 2020).

<table>
<thead>
<tr>
<th>Supply Chain Disruption Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hurricanes</td>
</tr>
<tr>
<td>- Specific region is impacted.</td>
</tr>
<tr>
<td>- Impacts last through specific time period.</td>
</tr>
<tr>
<td>- Recovery efforts begin upon season ending.</td>
</tr>
<tr>
<td>COVID-19 Pandemic</td>
</tr>
<tr>
<td>- Every region is impacted, but not in the same way.</td>
</tr>
<tr>
<td>- Impacts are multi-phased and there is no specific end date.</td>
</tr>
<tr>
<td>- Recovery efforts are challenging as the effects of COVID-19 are far-reaching and happening in waves.</td>
</tr>
</tbody>
</table>


- **US still in containment, restarts plan uncertain.** Many countries, including the United States, begin to consider lifting restrictions and restarting their economies. For example, Italy and Spain have announced some intention to lift some restrictions in April, but without specific dates stated (BCG 2020a). In the United States, plans to restart economies and decisions about which specific measures to deploy, when, and where (nation-wide, state-wide, local-specific) remain uncertain,
both because forecasting disease progression is difficult and the restart timing is expected to vary significantly by regions within the country (Gjaja et al. 2020).

**Factor of containment period.** The measures taken by the United States and nations around the world to manage the COVID-19 pandemic — restricting travel, shuttering nonessential businesses and implementing universal social distancing policies — are having severe economic consequences. In general, the pace of recovery is directly correlated to the duration of shutdown and containment measures in which the longer the period lasts, the longer markets stay in recession, and the slower the pace of recovery would be (Fisher 2020; FTR 2020).
Various shapes of recovery. Depending on the severity of the crisis, economic circumstances, and government containment measures, various possible shapes of economic recovery could materialize across geographic regions and business sectors (Gjaja et al. 2020).

- **Four common shapes: V, U, W & L.** Past recessions and recoveries have followed four common shapes: V, U, W and L (Rodeck 2020).
  - **V-shaped recovery: Steep decline, quick recovery.** The best-case scenario for the COVID crisis is a V-shaped recession in which the economy will rebound (the second half of the “V”) as quickly as it has declined (the first half of the “V”), with minimal long-lasting financial damage (Lin 2020; Rodeck 2020).
  - **U-shaped recovery: Long period between decline and recovery.** In a U-shaped recovery, it takes many months, if not years, for the economy to recover. The long, flat stretch of sideways growth comprises the bottom of the U shape. The Great Recession of 2008 is a good example of a U-shared recession (Lin 2020; Rodeck 2020).
  - **W-shaped recovery: Quick recovery, second decline.** In a W-shaped recession, the economy begins to recover rapidly, but then falls into a second period of decline. Also known as a “double-dip” recession, W-shaped recovery is might occur if, coronavirus containment measures are lifted, resulting in an improvement in the economy, and then fell victim to another coronavirus outbreak, and thus the reinstitution of containment measures (Lin 2020; Rodeck 2020).
  - **L-shaped recovery: Extended downturn.** The worst-case economic scenario for the COVID-19 crisis is that it causes an L-shaped recovery. In this outcome, the economy sinks and then stays on the ocean floor for a prolonged period of time, creating the long shape of the L (Lin 2020; Rodeck 2020).
Possible uncommon shapes: Swoosh & Inverted square root

- **NIKE Swoosh-shaped recovery.** The Swoosh shape was described by Bloomberg as a situation in which spending slowly resumes, with economic limits eased much more gradually than they were imposed (Lin 2020).

- **Inverted square root-shaped recovery.** Coined by George Soros in 2009, this term refers to a recession in which the economy hits bottom, automatically rebound some, and then step down (Lin 2020).

**What’s Happening? — Truck Freight Market as Economic Barometer**

Trucking serves as a barometer of the US economy, representing 71.4 percent of tonnage carried by all modes of domestic freight transportation, including manufactured and retail goods. Trucks hauled 11.49 billion tons of freight in 2018. Motor carriers collected $796.7 billion, or 80.3 percent of total revenue earned by all transport modes (ATA 2020). As such, trucking freight data can signal changes in consumer behavior and sentiment, like the surge in demand for household staples and nonperishable foods caused by the COVID-19 pandemic. Overall picture shows increased volatility in the marketplace beyond what is predictable based on historical patterns like seasonality and day of the week. The timing of an economic restart will have a big impact on freight transport demand looking forward (DAT 2020).

**Truck Freight Volume**

The impact of COVID-19 on truck freight market was not felt until March and initially, the result was a surge in freight volumes, reflecting the response to high demand for items such as non-perishable food and paper products, as well as emergency medical supplies. Truck freight volume in April reflects ATA Chief Economist Bob Costello observation that March was the storm before the calm as more states issue stay-at-home orders and more businesses close that has resulted in an April decline in trucking operations (ATA 2020; DAT 2020; HDT 2020; Mulqueen 2020).

- **Spot load availability.** Load availability in the spot market for truck freight were almost uniformly lower during the week ended April 17 (week 15), but the week-over-week volume declines generally were not as steep as they were the week before. The slower deterioration suggests that the spot market might be approaching its trough. How long the market stays at or near bottom depends on how much longer the nationwide economic shutdown continues (FTR 2020).

  - **Dry van.** Dry van load availability was down about 19% after falling nearly 37% the week before, dropping to its lowest level since the end of 2015 (FTR 2020).

  - **Refrigerated/Reefer.** Refrigerated loads dropped 22% from the week before, but that is the smallest week-over-week drop since the segment’s week 11 surge. Refrigerated load availability is the lowest since March 2016 (FTR 2020).

  - **Flatbed.** Flatbed load availability declined nearly 15% after falling nearly 35% in week 14. In just five weeks, flatbed loads have plunged from the highest level since June 2018 to the lowest level since September 2016 (FTR 2020).

  - **Specialized.** Specialized was the only segment to see any positive movement in week 15. Specialized spot load availability recovered all its losses in week 14 to land slightly above week 13 levels (FTR 2020).
Load-to-truck ratios

**FTR total Market Demand Index.** The total Market Demand Index – the ratio of loads available to trucks available in the Truckstop.com system – in week 15 was at its lowest level since January 2017, but it is only that strong because truck availability remains far below the five-year average and even below 2018. Total load availability is lowest since February 2016; while truck availability, trucks posted in the spot market, barely changed during the week ended April 17 (week 15) (FTR 2020).
DAT Load-to-truck ratios. Load-to-truck ratios continue to decline for both dry vans and reefers during the week ended April 17 (week 15). Dry van ratios dropped below 2019 and 2017 levels for the same time period, marking the first time in three years with a weekly average ratio below 1.0 loads per truck. While a low van ratio is not unusual this time of year, a sub-1.0 number means there are more trucks than loads on the board. Load volumes have fallen below multi-year lows and capacity is flooding into the spot market, most likely due to lack of freight in the contract segment (Adamo 2020; DAT 2020; Fleet Owner 2020).

Load posts and truck posts. Mirroring the load-to-truck ratio data, load posts have declined sharply for both dry van and reefer, but more severe for reefer as commercial food services shut down, the grocery and food products that shipped to schools, universities, and restaurants are no longer needed. While demand for refrigerated transportation by supermarkets and big-box stores continue to re-stock inventory at an accelerated pace, but that no longer offsets the loss of the food service freight volume. Truck postings are also up and have surpassed load posts in the previous week for both dry van and reefer (Adamo 2020).
Commercial truck fleet activities in six states. New data from the American Transportation Research Institute gives a snapshot of how commercial fleet activity is being affected by the COVID-19 outbreak. The analysis looks at truck activity across six states between February 9 and April 18 with the use of real-time truck GPS data (HDT 2020).

Source: Adamo (2020)
Truck Freight Rates

- **Spot rate trends.** Spot rates have fallen below 2019 levels in both dry van and reefer markets, with shorter-term moving average rates pulling the longer-term rates down. This recent trend is in sharp contrast to spot rate spike in March when truckers try to keep pace with demand as grocery stores scrambled to stock their shelves with paper goods, food, cleaning supplies, and other household essentials (Adamo 2020). While the downward trend in reefer rates shows no sign of slowing, it could turn around quickly if there is a strong volume increase driven by produce at the end of April (DAT 2020).
NOTE: Charts show 7-day and 3-day rolling, weighted averages of spot truckload rates, updated daily, and illustrated by year. The average helps to smooth out day-of-week effects, but it is plotted daily to show how things are changing in the extreme near term. This visualization style is similar to a technical stock analysis, where shorter and longer time windows are compared to highlight shifts in momentum and direction (Adamo 2020).

Spot truckload rates: National average rates for April. Compared to March, the average van rate in April is down almost 7.5 percent (Fleet Owner 2020).

- **Van:** $1.72 per mile, 15 cents lower than the March average
- **Flatbed:** $2.00 per mile, down 19 cents compared to March
- **Reefer:** $1.99 per mile, down 20 cents compared to March
Preparing for Recovery

Leading organizations recognize that preparation for recovery must start now. Below are key actions in preparing for supply chain restart.

- **Gain a realistic view of supply chain network.** Gaining a clear understanding of the supply chain situation is critical (Hirt et al. 2020; Riskmethods 2020). Each supplier should be contacted to understand the current state of asset utilization and plans for the start-up. Map the time for recovery and input these times into the supply chain models to understand the bottlenecks. Options may be evaluated like alternate sourcing, bill of materials, and the discontinuance of products (Cecere 2020).

- **Develop scenarios for recovery**
  - **Take cues from countries further ahead in the crisis progression phase.** China and Korea are many weeks ahead of Western countries in their experience of crisis and recovery. By studying what happened in these markets, leaders can better predict which shape of recovery are likely to materialize (Gjaja et al. 2020; Reeves et al. 2020).
  - **Build simulation and what-if capabilities.** Build simulation models to understand the intricacies and assumptions for the restarting of the economy (Cecere 2020).

- **Move from reacting to tracking and acting.** Create a set of indicators that serves as an early-warning system to signal which scenario is emerging (Hirt et al. 2020; King and Wald 2020; Riskmethods 2020).
  - **Implement demand sensing.** A double whammy—economic downturn and the pandemic—are shaping demand in an uncharted territory manner, making commonly used aggregate market sensing and traditional demand data insufficient. Recovery planning will require market-by-market demand sensing and encompass deeper data inputs beyond common data sources that do
not go far enough to understand the unprecedented impacts of COVID-19. In today’s war against the coronavirus, social sentiment data and consumer/shopper/user insights must come from geographies, local markets, stores or end users to get an early read on demand changes and understand the underlying causals of purchase intent (Cecere 2020; Steutermann 2020).

**What Can Be Sensed?**

- **Common:**
  - Transactional history
  - Shipment in-transit
  - Open orders
  - Daily consumption data
  - Daily customer inventory data

- **Less Common:**
  - Attribute-based modeling
  - Weather pattern data
  - Syndicated data
  - Social sentiment data
  - Consumer/Shopper/User insights

Source: Gartner

Source: Steutermann (2020)

- **Track freight carrier conditions.** Examples of carrier-related metrics companies should be tracking are:
  - **General carrier performance.** These are a combination of multiple metrics that form the carrier performance scorecard, such as carrier adherence to on-time delivery, carrier delays, average length of delays, and total carrier costs averaged per shipment. These are essential metrics to maintaining a positive relationship throughout disruption and prepare for recovery (Jessop 2020).
  - **Percent of carriers with lower-than-average capacity.** Shippers should track the percent of carriers with declines in available capacity to stay informed of the overall health of carrier performance (Jessop 2020).
  - **Percent of carriers with available, mode-specific capacity.** Shippers must track the percent of carriers with available capacity across specific modes. Understanding availability of capacity within modes is essential to taking advantage of multimodal transportation options and manage freight rates (Jessop 2020).

- **Evaluate inventory health.** Evaluate inventory health weekly. Don’t depend on historic DRP and MRP signals. Translate demand sensing data into inventory mix health weekly through the recovery (Cecere 2020).

- **Determine strategic moves for recovery.** This action means not only rebooting the supply chain and positioning the business for different economic recovery scenarios, but also healing the organization. For many, it will mean an extra focus on cost optimization, but in combination with the need to fill the supply chain gaps exposed by the crisis. Many of these gaps will require the need to pitch for investment (Uskert 2020). Below are strategic tips in this respect.

- **Act proactively.** In the current pandemic lockdown, many valuable assets are idled, especially among retailers and businesses that are capital and fleet intensive. One countervailing benefit is the lowered cost of renovation and retrofitting. In this environment, companies can invest in value-boosting initiatives with a lower risk of sales forfeiture today than in the future—such as making stores attractive and enhancing production efficiencies (King and Wald 2020).
Create supply agility. Given variability and uncertainty, build agility and adaptation into your supply base and supply chain (Gjaja et al. 2020).

Build resilience in freight movement. Examples of strategies shippers should implement include:

- **Exercise optimal use of contracted and spot freight carriers.** Rely on data to make decisions about whether to use spot or contracted freight carriers; while working with more carriers to secure capacity in both spot and contracted rates (Cerasis 2020).

- **Consolidate.** Consider working with nearby essential businesses to consolidate freight and avoid delays in shipping (Cerasis 2020).

- **Leverage 3PLs.** Work with third-party logistics providers (3PLs) to rapidly increase available freight management resources (Cerasis 2020).

- **Protect drivers.** Work to reduce risk to drivers by encouraging appropriate measures, such as social distancing, when drivers are waiting or otherwise utilizing your amenities during loading/unloading (Cerasis 2020).
References


