The impact of COVID-19 on global supply chains and the transport sector*

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The ”Big Picture” of COVID-19 impact on world economy in end-March 2020
OECD estimates on 2 March 2020 on the impact of COVID-19 on GDP for years 2020 and 2021

OECD Base scenario: temporary blow

• Severe, short-lived downturn in China, where GDP growth falls below 5% in 2020 after 6.1% in 2019, but recovering to 6.4% in 2021.
• In Japan, Korea, Australia, growth also hit hard then gradual recovery.
• Impact less severe in other economies but still hit by drop in confidence and supply chain disruption.

Domino scenario: broader contagion

• Intensity of China impact repeated in northern advanced economies severely hitting confidence, travel, and spending.
• Global growth could drop to 1.5 per cent in 2020, half the rate projected before the virus outbreak.
• Recovery much more gradual through 2021.
OECD estimates on 2 March 2020 on the impact of COVID-19 on GDP for years 2020 and 2021
Global recession almost “inevitable”

- Service-oriented economies particularly negatively affected, with more jobs at risk
- Countries like Greece, Portugal, and Spain that are more reliant on tourism (more than 15% of GDP) will be more affected by this crisis
- Countries more reliant on exports will suffer disproportionately (e.g. Finland)
- The report also attempts a rough estimate of the potential global economic costs of COVID-19 under three different scenarios: a shutdown of 1.5 months (from mid-March to end of April), of 3 months (lasting until mid-June), and of 4.5 months (until end of July.)
- In a mild scenario an average impact of -3.5% of GDP is expected for all countries analyzed.
  - The U.S. expected to enter into a recession, and the crisis is expected to cost it nearly 3% of its GDP
  - Most European countries will face significant recessions, seeing contractions of their GDP of 2% to 3%, causing significantly increased unemployment
  - China the only country with a GDP growth, slashed from a pre-crisis estimate of 6% to below 3%
- If crisis measures are extended, each additional month of shutdowns will cost 2%-2.5% of global GDP.
  - If extreme COVID-19-related measures last until mid-June 2020, the U.S. will see its GDP fall almost 4%. Italy and Germany will see their GDP fall close to 6%, and the UK more than 5%. (➔ Finland would suffer more)
- If it lasts until the end of July 2020, the average decline in GDP would be close to 8%. And the decrease in GDP could, in some cases, be higher than 10%.
Macroeconomic (country) estimates based on COVID-19 impacts*:

- **The World Bank**
- **ECB** European Central Bank
- **EIB** European Investment Bank
- **OECD** and ITF at the OCED (International Transport Forum)
- **ASEAN**
- **Fitch** ratings*
- **Standard & Poors***
- **McKinsey 25 March 2020**

See also e.g.:
- Christian Odendahl and John Springford (26 March 2020) “The Two Economic Stages of Coronavirus”, Centre for European Reform,

*) All other Open access, but these may require registration
How does COVID-19 impact on trade and supply chains look like now*

*) March 2020
Coronavirus outbreak has cost global value chains $50 billion in exports by February 2020

According to UNCTAD estimates on 8 March 2020, the most affected sectors include precision instruments, machinery, automotive and communication equipment.

Source: UNCTAD estimates • Estimates are based on a drop of Chinese supply in February 2020 as measured by the Chinese PMI. The list does not include Taiwan Province of China and Hong Kong, SAR of China
A new UNCTAD analysis of how the coronavirus pandemic will affect global foreign direct investment (FDI) prospects shows that the negative impact will be worse than previously projected on 8 March.

Updated estimates of COVID-19’s economic impact and revisions of earnings of the largest multinational enterprises (MNEs) now suggest that the downward pressure on FDI flows could range from -30% to -40% during 2020-2021, much more than previous projections of -5% to -15%.

Since then, 61% of the top 100 MNEs that UNCTAD tracks have issued earnings revisions that confirm the rapid deterioration of global prospects. And 57% have warned of the global demand shock’s impact on sales, showing that COVID-19 is causing problems beyond supply chain disruptions after a production slowdown in parts of China.

In addition, the top 5,000 MNEs, which account for a significant share of global FDI, have now seen downward revisions of 30% on average for 2020 earnings estimates. And the trend is likely to continue.

The hardest-hit sectors are the energy and basic materials industries (-208% for energy, with the additional shock caused by the recent drop in oil prices), airlines (-116%) and the automotive industry (-47%).

See also UNCTAD’s Investment Monitor, March 2020 here
IHS Markit Eurozone PMI®: COVID-19 outbreak leads to largest collapse in business activity ever recorded

Key findings:

• Flash Eurozone PMI Composite Output Index(1) at 31.4 (51.6 in February). Record low (since July 1998).

• Flash Eurozone Services PMI Activity Index(2) at 28.4 (52.6 in February). Record low (since July 1998).

• Flash Eurozone Manufacturing PMI Output Index(4) at 39.5 (48.7 in February). 131-month low.

• Flash Eurozone Manufacturing PMI(3) at 44.8 (49.2 in February). 92-month low.
Supply value chains cannot be established overnight. It takes time and effort to qualify potential suppliers in areas of manufacturing quality, capacity, delivery, cost and their ability to respond to engineering or demand changes.

Thus, supply value chains are designed for longer-term needs. Once they are established, it can be difficult to change them quickly to adapt to unpredictable disruptions.

**Backward and Forward Global Value Chain (GVC) participation, selected developing economies, 2015 (% in total gross exports)**

**Explanation:**
30% to 45% of the export value from these countries is first imported as inputs.

**Backward GVC participation:**
Import of inputs to produce the goods and services the economy exports.

**Forward GVC participation:**
Export of domestically produced inputs to partners involved in the later stages of production.

Source: WTO 2020
The COVID-19 crisis has intensified the competition for valuable supply sources in several industrial sectors, such as in electronics and mechanical manufacturing. This has shifted the bargaining power from Original Equipment Manufacturers (OEMs) to suppliers. This means that countries with a high share of Backward Global Value Chain participation tend to be hit hard by trade disruptions.

Backward and forward Global Value Chain (GVC) participation, selected developing economies, 2015 (% in total gross exports)

- **Backward GVC participation:** Import of inputs to produce the goods and services the economy exports.
- **Forward GVC participation:** Export of domestically produced inputs to partners involved in the later stages of production.

Source: [WTO 2020](#)
How do transport and supply chains meet the impact of COVID-19 in general?

Source: WEF 2020
The COVID-19 pandemic has reminded corporate decision-makers that there is a need to develop new business strategies in their future supply chain designs.

The KPIs to be considered for future supply value chain designs will likely contain both traditional metrics such as:

- cost,
- quality and
- delivery,

and new performance measures including (also known as the 3Rs):

- resilience,
- responsiveness, and
- reconfigurability.

The COVID-19 crisis has intensified the competition for valuable supply sources in several industrial sectors, such as in electronics and mechanical manufacturing.

This has shifted the bargaining power from Original Equipment Manufacturers (OEMs) to suppliers.

This means that countries with a high share of Backward Global Value Chain participation tend to be hit hard by such a disruption.

Source: WEF 2020
Supply Risk and Recovery: The frequency and severity of supply chain disruptions are steadily increasing

Supply chains (SC) are vulnerable to a broad range of threats, including pandemics, extreme weather, cyberattack, and political crises.

The vulnerability of SCs has been highlighted by major incidents (COVID-19, the Petya cyberattack in 2017) and the hurricanes that hit the US in 2017 with estimated $200 billion in damage.

Ironically, the susceptibility of supply chains has been heightened by business practices, such as single-sourcing of supplies, inventory centralization, just-in-time replenishment, and the concentration of freight traffic at hubs. These improve economic performance, but also create greater risk exposure and lower resilience.

As a result of the globalization of SCs and a tighter coupling of logistical processes, the damaging effects of disruptions now spread much further and faster, and have a broader impact.

The human cost of SC disruption can also be high, as with the tsunami that hit Indonesia in 2018. In addition to the direct loss of life during natural disasters and military conflicts, death and suffering can occur when SCs relied upon to deliver medical and essential supplies are fractured.

The impact of COVID-19 on the functioning of GVCs encouraged SC professionals to seek out more robust supplier-monitoring systems that may help build resilience. In the corporate world, the management of SC risk is being given greater priority; risk auditing and business continuity planning are now widespread, particularly among larger companies.

However, strategic risk is not always adequately addressed at an operational level - and there is little evidence that companies are effectively reversing the long-term trends that have made their supply chains more vulnerable.

Source: WEF 2020
Insights from McKinsey* on how COVID-19 affects supply chains and on how firms could try to cope with the consequences

*) 16 and 25 March 2020
Supply chains are being disrupted around the world, but the full impacts have not yet been felt

<table>
<thead>
<tr>
<th>Supply—production</th>
<th>Logistics—transportation</th>
<th>Customer demand</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Situation today</strong></td>
<td><strong>60% China flights suspended</strong>&lt;sup&gt;6&lt;/sup&gt; Commercial flights account for ~50% of air cargo capacity, some airlines converting flights for cargo&lt;sup&gt;6&lt;/sup&gt;</td>
<td><strong>20.5% decline in retail sales</strong> China consumer sentiment since January sharply lower; online/express deliveries up</td>
</tr>
<tr>
<td>~80% plants restarted Across China, ex-Hubei, with large enterprises restarting, albeit with partial capacity, at much higher rate than smaller ones</td>
<td>1.4M idle containers 5.5% of global container capacity affected by reduced demand</td>
<td><strong>60% truck capacity available</strong> 1–14 day quarantine- and capacity-induced increase in freight transport times</td>
</tr>
<tr>
<td>66% BDI increase Baltic Dry&lt;sup&gt; Index&lt;/sup&gt;®&lt;sup&gt;6&lt;/sup&gt; higher since CLNY&lt;sup&gt;3&lt;/sup&gt; but at 10% lower levels compared to March 2019</td>
<td><strong>2x TAC index</strong> TAC index rate +27% for U.S.–China, +93% EU–China&lt;sup&gt;7&lt;/sup&gt;, +37% China–U.S., and +45% for China–EU since CLNY&lt;sup&gt;3&lt;/sup&gt;</td>
<td><strong>MED</strong> Demand for express last-mile delivery has spiked in China due to quarantine and social distancing</td>
</tr>
<tr>
<td><strong>What to expect</strong></td>
<td><strong>MED</strong> Demand for express last-mile delivery has spiked in China due to quarantine and social distancing</td>
<td><strong>MED</strong> Europe and U.S. sentiments evolving, but localized</td>
</tr>
<tr>
<td><strong>MED</strong> Parts and labor shortages leading to further supply chain disruptions (e.g., decreased production capacity) Other regions will be facing production capacity reductions Customer pressure for prioritization</td>
<td><strong>7,000 TEU/week reduction</strong> Volumes will return as factories restart, may see peak for restocks Future capacity 2.3% reduction for a Asia-U.S. route from May due to sea freight alliance revisions</td>
<td><strong>MED</strong> Europe and U.S. sentiments evolving, but localized</td>
</tr>
<tr>
<td><strong>MED</strong> Impact on freight will take an extended period of time to correct with slower ramp-up Logistics capacity returns but faces constraints; near-term price increases</td>
<td><strong>5% global air traffic decrease</strong>&lt;sup&gt;4&lt;/sup&gt; Decline in capacity available due to travel ban on commercial flights YoY global air freight belly capacity reduction of 14% in March 2020&lt;sup&gt;6&lt;/sup&gt; Rates likely to continue to increase</td>
<td><strong>MED</strong> Europe and U.S. sentiments evolving, but localized</td>
</tr>
<tr>
<td><strong>High</strong> Trucking capacity constraints in China likely to ease Declines at U.S. ports foreshadow declines in U.S. intermodal (rail)</td>
<td><strong>High</strong> Demand slump may persist Inventory “whiplash”—7–8 weeks for auto, 2–4 weeks for high-tech Inventory hoarding and demand spikes due to uncoordinated actors exacerbate supply chain</td>
<td><strong>MED</strong> Europe and U.S. sentiments evolving, but localized</td>
</tr>
</tbody>
</table>

Source: Baidu, WSJ, Bloomberg, Alphaliner, Quartz, TAC Index, IATA, Seabury Consulting, A.P. Moller-Maersk Group of Denmark, Agility Logistics, Press search

McKinsey & Company 48
B: There are multiple end-to-end immediate supply chain actions to consider in response to COVID-19

1. Create transparency on multi-tier supply chain
   - Determine critical components, and determine origin of supply
   - Assess interruption risk and identify likely Tier 2+ risk
   - Look to alternative sources if suppliers in severely affected regions

2. Analyze available inventory
   - Estimate inventory along the value chain, including spare parts/re-manufactured stock
   - Use after-sales stock as bridge to keep production running

3. Optimize production and distribution capacity
   - Assess impact on operations and available resource capacity (mainly workforce)
   - Ensure employee safety and clearly communicate with employees
   - Conduct scenario planning and assess impact on operations based on available capacity

4. Estimate realistic final customer demand
   - Work with S&OP to get demand signal to determine required supply
   - Leverage direct communication channels with direct customer
   - Use market insights/external databases to estimate for customer's customers

5. Leverage available logistics capacity
   - Estimate available logistics capacity for air/sea/road/rail
   - Accelerate customs clearance
   - Change mode of transport and pre-book air/rail capacity given current exposure
   - Collaborate with all parties to jointly leverage freight capacity

Source: McKinsey COVID-19 Briefing Note
B: Supply chain actions to consider in the next two to four months

**Continuously improve material supply stability**
- Evaluate alternative sourcing for all materials impacted—availability of suppliers, additional cost due to logistics, tariffs, estimated component price increases.
- Enhance the demand verification process to correct inflated demand to mitigate the whiplash effect.
- Provide continuous support to small and mid-sized tier 2-3 suppliers in financial trouble.
- Assess regional risks for current and backup suppliers.

**Kick off designing resilient supply chain for the future**
- Establish a supply chain risk function.
- Digitize process and tools to integrate demand, supply, and capacity planning.
- Trigger the new supply network design for resilience.
- Codify the processes and tools created during the crisis management as formal documentation.
- Convert war room into a reliable risk management process.

**Build collaborative relationships with external partners**
- Work with public agencies to explore opportunities for support.
- Engage investors and other stakeholders to improve transparency and get help.

Source: McKinsey COVID-19 Briefing Note
Example of market information on COVID-19 in the public domain

March 2020
The Observatory was opened on 26 March 2020; find it [HERE](#)

Supported by the:

**UNECLAC**, United Nations Economic Commission for Latin America and the Caribbean

**UNESCAP**, United Nations Economic and Social Commission for Asia and the Pacific

**UN ESCWA**, United Nations Economic and Social Commission for Western Asia

**ECO Secretariat**, the Economic Cooperation Organization

**IRU**, the International Road Transport Union
Global supply chains integrities under pressure as the Coronavirus outbreaks increase and extend beyond China with large reported increases in Korea and Italy. Overall port operations in China remain normal, exception being Wuhan’s barge service. All carriers report reefer plug shortages in Shanghai, Tianjin and Ningbo.

Local Chinese governments have restricted truck operations and imposed a 14 day self-quarantine for those crossing city or province boarders, impacting capacity and rates. Globally normal port operations including Korea and Italy.

Carriers have announced blank sailings to counter the resulting cargo supply/demand imbalances. New cancellations are announced by the carriers without the usual notice periods. This in turn has created equipment imbalances now impacting the global capacity.

DHL Global Freight (DGF) has declared “Force Majeure” for the Europe-Asia trade lanes with immediate effect as the situation is unforeseeable and beyond our reasonable control. We will continuously review this position and will communicate any updates, including a potential widening of the “Force Majeure” scope as deemed appropriate.

Any carrier imposed surcharges (with different naming conventions) will be communicated pro-actively and with full transparency and billed forward as Emergency Cost Recovery Surcharges.

Return of normal post-Lunar New Year cargo flows not foreseen until March/April [2020]
DHL Ocean freight market update, March 2020

ECONOMIC OUTLOOK GDP GROWTH BY REGION

<table>
<thead>
<tr>
<th>Region</th>
<th>2020F</th>
<th>2021F</th>
<th>2022F</th>
<th>2023F</th>
<th>2024F</th>
<th>CAGR (2021-24)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EURO</td>
<td>1.1%</td>
<td>1.2%</td>
<td>1.5%</td>
<td>1.6%</td>
<td>1.6%</td>
<td>1.5%</td>
</tr>
<tr>
<td>MEA</td>
<td>2.7%</td>
<td>2.7%</td>
<td>2.9%</td>
<td>3.2%</td>
<td>3.4%</td>
<td>3.2%</td>
</tr>
<tr>
<td>AMER</td>
<td>1.9%</td>
<td>1.9%</td>
<td>1.6%</td>
<td>1.6%</td>
<td>1.6%</td>
<td>1.7%</td>
</tr>
<tr>
<td>ASIA</td>
<td>4.2%</td>
<td>4.3%</td>
<td>4.3%</td>
<td>4.4%</td>
<td>4.4%</td>
<td>4.4%</td>
</tr>
<tr>
<td>DGF World</td>
<td>2.5%</td>
<td>2.6%</td>
<td>2.6%</td>
<td>2.7%</td>
<td>2.9%</td>
<td>2.8%</td>
</tr>
</tbody>
</table>

DHL TRADE BAROMETER

1) real GDP, Global Insight, Copyright © IHS, Q4 2019. All rights reserved. 2) Demand growth = Port-to-Port Container Traffic growth. Supply growth = Fleet Growth. Source: Drewry Maritime Research. 3) Drewry, In USD/40ft container, including BAF & THC both ends, 42 individual routes, excluding Intra-Asia routes. 4) Shanghai Shipping Exchange, in USD/20ft container & USD/40ft cntr for US routes, 15 routes from Shanghai. 5) Source: DHL. 6) DHL Global Trade Barometer. Jan 19, index value represents weighted average of current growth and upcoming two months of trade; a value at 50 is considered neutral, expanding above 50, and shrinking below 50.
IATA’s assessment (24 March 2020)

• The International Air Transport Association (IATA) updated its analysis of the revenue impact of the COVID-19 pandemic on the global air transport industry.

• Owing to the severity of travel restrictions and the expected global recession, IATA now estimates that industry passenger revenues could plummet $252 billion or 44% below 2019’s figure. This is in a scenario in which severe travel restrictions last for up to three months, followed by a gradual economic recovery later this year.

• IATA’s previous analysis of up to a $113 billion revenue loss was made on 5 March 2020, before the countries around the world introduced sweeping travel restrictions that largely eliminated the international air travel market.

• “The airline industry faces its gravest crisis. Within a matter of a few weeks, our previous worst case scenario is looking better than our latest estimates. But without immediate government relief measures, there will not be an industry left standing. Airlines need $200 billion in liquidity support simply to make it through. Some governments have already stepped forward, but many more need to follow suit,” said IATA’s Director General and CEO, Alexandre de Juniac.

• See also IATA’s briefing

Travel restrictions are closing down international aviation
Markets with severe* restrictions cover 98% of global passenger revenues

*Including quarantine for arriving passengers, partial travel ban, border closure

Source: IATA
In road freight transport, most European borders are currently free of major slow-downs, with some exceptions that you can find on the map. **Situation as at Sun 29 Mar 2020 18:00 (CET)**

Real-time updates available at (public domain):

Seaports: UNCTAD’s guidelines for safe operations in ports on 26 March 2020
Baltic Sea Ports and Shipping by BPO on 30 March 2020

Example of a Crisis Protocol for Seaports proposed by UNCTAD

<table>
<thead>
<tr>
<th>LEVEL 1</th>
<th>International Emergency declared</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARTIES INVOLVED</td>
<td>Collaborators, Clients, Partners</td>
</tr>
<tr>
<td>ACTIONS</td>
<td>Test communication channels</td>
</tr>
<tr>
<td></td>
<td>Identify isolation areas throughout the port</td>
</tr>
<tr>
<td></td>
<td>Engage in preventive campaigns against COVID-19 and follow WHO recommendations</td>
</tr>
<tr>
<td></td>
<td>Communicate key messages internally</td>
</tr>
<tr>
<td></td>
<td>Prepare messages to answer customer concerns</td>
</tr>
<tr>
<td></td>
<td>Maintain direct communication with relevant National Authorities (Public Health, Migration, Navy, etc.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LEVEL 2</th>
<th>International Emergency declared</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARTIES INVOLVED</td>
<td>Collaborators, Clients, Partners, Media</td>
</tr>
<tr>
<td>ACTIONS</td>
<td>All actions mentioned in Level 1, and in addition:</td>
</tr>
<tr>
<td></td>
<td>Organize the distribution of antibacterial gel dispensers (Clean Hands) in all access points and critical areas of the port</td>
</tr>
<tr>
<td></td>
<td>Strengthen internal campaign that promotes the importance of COVID-19 prevention and follow WHO recommendations</td>
</tr>
<tr>
<td></td>
<td>Suspend guided visits to the port (students, clients, etc.)</td>
</tr>
<tr>
<td></td>
<td>Inform clients about compliance with security protocols of their cargo</td>
</tr>
<tr>
<td></td>
<td>Maintain direct communication with community leaders</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LEVEL 3</th>
<th>International Emergency declared</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARTIES INVOLVED</td>
<td>Collaborators, Clients, Partners, Media</td>
</tr>
<tr>
<td>ACTIONS</td>
<td>All actions mentioned in Level 1 and 2, and in addition:</td>
</tr>
<tr>
<td></td>
<td>Introduce remote work when possible in relation to the area concerned</td>
</tr>
<tr>
<td></td>
<td>Isolate suspected person in the designated areas and organize transfer to a dedicated Medical Center</td>
</tr>
<tr>
<td></td>
<td>Disinfect the area of interaction of the isolated person</td>
</tr>
<tr>
<td></td>
<td>Notify the suspected person’s relatives</td>
</tr>
<tr>
<td></td>
<td>Send a statement to the company’s employees informing the situation and the measures adopted by the authorities and that operations continue as normal</td>
</tr>
<tr>
<td></td>
<td>Issue Press Release for the media</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LEVEL 4</th>
<th>International Emergency declared</th>
</tr>
</thead>
<tbody>
<tr>
<td>PARTIES INVOLVED</td>
<td>Collaborators, Clients, Partners, Veda</td>
</tr>
<tr>
<td>ACTIONS</td>
<td>All actions mentioned in Level 1, 2 and 3, and in addition:</td>
</tr>
<tr>
<td></td>
<td>Limit access to port premises only to critical staff</td>
</tr>
<tr>
<td></td>
<td>Trace working contacts of confirmed cases in the previous 2 weeks</td>
</tr>
<tr>
<td></td>
<td>Deploy remote communication for all employees</td>
</tr>
<tr>
<td></td>
<td>Inform national health authorities of sick staff members and seek their advice</td>
</tr>
<tr>
<td></td>
<td>Proceed with confirmed cases among staff members in line with recommendations from national health authorities and WHO</td>
</tr>
</tbody>
</table>

A key takeaway: all ports in the region stay operational and were very quick in responding to the restrictions applied by governments and governmental agencies.
How do various type of major disruptions affect the transport sector?

Some simplified and generic illustrations
A generic illustration of the demand & composition dynamics upon disruptions in freight & logistics and passenger transport

The type of disruption or disaster is decisive on what type of and how severe the impacts will be (see next slide).

E.g. COVID-19 has caused a simultaneous and an almost global drop in both (industrial or mobility) demand and supply.

As transport demand for passengers and freight is derived from the underlying mobility needs, the change in transport services is typically much bigger than the change in the underlying demand.

COVID-19 has certainly proved this true especially in air travel, passenger shipping and long-distance bus and rail as well as in commuter traffic – not to speak of cruise shipping.

Source: Lauri Ojala 2020
The impact (of COVID-19) will be different for each transport mode, and differs also between domestic and international transport/logistics services.

E.g. in scheduled air traffic up to 90% or more of flights have been cancelled in many parts of East and South Asia and Europe.

40% to 50% of air freight volumes e.g. in Asia has been so-called belly cargo. Now passenger aircraft have been refitted to freight for longhaul routes b/w U.S., Europe and Asia. In early March 2020, 2M empty containers are stuck in China, and container shipping capacity substantially lower than in December 2019.

Ferry operations have practically lost all passengers, freight operations maintained.

Long-distance as well as local bus and rail travel declined over 50%, in many cases over 90%.

Source: Lauri Ojala 2020
A generic illustration on response dynamics in freight & logistics demand, when capacity becomes constrained

Scaleable either at the firm (micro), industry (meso) or e.g. national security of supply level (macro)

<table>
<thead>
<tr>
<th>Logistics impact of the disruption</th>
<th>Abundant</th>
<th>Constrained</th>
<th>Not available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport distances may grow, while modes &amp; types remain the same</td>
<td>Regular freight levels and other logistics costs</td>
<td>More expensive freight or other logistics costs</td>
<td>Depending on the severity and duration of the disruption, substituting products needed and/or creating own transport or logistics capacity. Government intervention and ransoning required.</td>
</tr>
<tr>
<td>Transport distances grow, more expensive modes &amp; types required</td>
<td>Market-based freights; logistics cost grows by distance and/or more expensive modes/types</td>
<td>Significantly higher logistics costs compared to a normal situation</td>
<td></td>
</tr>
<tr>
<td>Transport distances and/or times grow significantly, much more expensive modes &amp; types required</td>
<td>Costs of available logistics options extremely high</td>
<td>Unbearably high logistics costs; substitutes are needed</td>
<td></td>
</tr>
<tr>
<td>No transport options available, or they are extremely expensive</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Lauri Ojala

See also: Hybrid CoE 2019
How long will this last?

– well, too early to say:

nobody seems to have the answer right now, only good or less good guesses...
A back-of-the-envelope "questimate"* of the Short, Medium and Long term broader impacts of COVID-19 on e.g. most EU countries as well as those with a high Backwards GVC participation

Almost exclusively negative impacts

Predominantly positive impacts

*) N.B. This is purely for illustration purposes, and reflects the Author’s personal "questimate" in end-March 2020

Source: Lauri Ojala 2020
What type of financial or economic help is on offer?
Some of the largest help packages since mid-March 2020

• On Thu, 26 March 2020, G20 economies announced to pump US$5,000 billion into the world economy as part of a joint pledge to use all policy tools available to cushion the impacts of the global COVID-19 pandemic.

• ECB (European Central Bank) injected an additional 870 billion euro – about 7% of the euro area’s GDP – into financial markets to address the challenge. Through its refinancing lines it is also making up to 3,000 billion euro in liquidity available, at the lowest interest rate it has ever offered: -0.75%.

• IMF (International Monetary Fund) ready to deploy US$1,000 billion in lending capacity
  • On 25 March 2020, IMF launched a Tracker of fiscal, monetary or macro-financial policies Governments are taking in response to COVID-19 covering 186+ economies.

• The EIB Group (European Investment Bank) has proposed a plan to mobilise up to €40 billion of financing.

Some indicative policy actions
<table>
<thead>
<tr>
<th>Passenger or freight</th>
<th>COVID-19 impacts</th>
<th>Policy responses exemplified</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mode</strong></td>
<td><strong>Vehicle / service</strong></td>
<td><strong>Mobility</strong></td>
</tr>
<tr>
<td>Road transport</td>
<td>Bus, Taxi, Minivans</td>
<td>Very negative</td>
</tr>
<tr>
<td></td>
<td>Road haulage</td>
<td>Negative to Mixed</td>
</tr>
<tr>
<td>Rail transport</td>
<td>Very negative for passengers; mixed to negative for freight</td>
<td>Rapid need of financial assistance to service providers: loan guarantees, tax cuts, payment deferrals and/or cash handouts. If there is Government ownership in rail or air transport operations, eligible subsidies or capital endowments to operators. Also government purchases of air transport capacity e.g. for repatriation of nationals, supply of emergency and medical products. Very large lay-offs to be expected especially in airlines but also in rail passenger operations. Significant impact also on air traffic control capacity, where large lay-offs already taking place. This may also partly happen in rail network management. It is extremely important not to compromise safety and security in these.</td>
</tr>
<tr>
<td>Air transport</td>
<td>PAX &amp; belly cargo</td>
<td>Catastrophic for passengers and belly cargo</td>
</tr>
<tr>
<td></td>
<td>Cargo only</td>
<td>Positive to Mixed</td>
</tr>
<tr>
<td>Maritime transport</td>
<td>Cruise shipping</td>
<td>Catastrophic</td>
</tr>
<tr>
<td></td>
<td>PAX &amp; cargo</td>
<td>Very negative for passengers Negative on cargo</td>
</tr>
<tr>
<td></td>
<td>Cargo only</td>
<td>Negative to mixed due to cargo type &amp; route</td>
</tr>
</tbody>
</table>

**Source:** Lauri Ojala, Update 29 March 2020
## COVID-19: Severity of impacts and policy responses exemplified in the transport sector

- **A more fine-grained illustration of Slide 27**

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<table>
<thead>
<tr>
<th>Mode</th>
<th>Vehicle type</th>
<th>PAX</th>
<th>Freight</th>
<th>Type or speed of impact</th>
<th>Mobility</th>
<th>Financial</th>
<th>Social inclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road transport</td>
<td>Taxis and minivans</td>
<td>Primary use</td>
<td>Parcels and courier shipments possible</td>
<td>Immediate on intracity and commuter traffic</td>
<td></td>
<td></td>
<td>Very negative</td>
</tr>
<tr>
<td></td>
<td>Bus</td>
<td>Local</td>
<td>Widely used: parcels and special goods</td>
<td>Immediate on passenger mobility, parcel logistics</td>
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<td></td>
<td></td>
<td>Intercity</td>
<td></td>
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<td></td>
<td></td>
<td>International</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Light vehicles</td>
<td>Local</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Intercity</td>
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<tr>
<td></td>
<td></td>
<td>Domestic heavy vehicles</td>
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<tr>
<td></td>
<td></td>
<td>International heavy vehicles</td>
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</tr>
<tr>
<td>Road haulage (Light &lt; 3.5 ton; Heavy &gt; 3.5 ton)</td>
<td>Exclusive use</td>
<td>Mail, parcels &amp; courier</td>
<td>Immediate on passenger mobility</td>
<td>Positive to Mixed: due to industry they serve; despite border closures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rail transport</td>
<td>Local</td>
<td>Exclusive</td>
<td>Mail, parcels &amp; courier</td>
<td>Immediate on intracity and commuter traffic</td>
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<tr>
<td></td>
<td>Intercity</td>
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</tr>
<tr>
<td></td>
<td>International</td>
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<td></td>
</tr>
<tr>
<td>Air transport</td>
<td>Domestic passenger routes</td>
<td>Primary use</td>
<td>Mail, parcels &amp; courier</td>
<td>Increased demand to rapid loss of belly cargo capacity</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Short haul</td>
<td>Mail, belly cargo (high unit value)</td>
<td>Immediate on passenger mobility &amp; loss of belly cargo capacity</td>
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<tr>
<td></td>
<td>Long haul</td>
<td>Belly cargo</td>
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<tr>
<td></td>
<td>Charter</td>
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<td></td>
<td>Scheduled</td>
<td>Mail, parcels &amp; courier</td>
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<td></td>
<td>Heavy lift</td>
<td>Special cargoes</td>
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<tr>
<td></td>
<td>Cruise shipping</td>
<td>Exclusive</td>
<td>Immediate and devastating</td>
<td>Catastrophic</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Passenger cruise ferries</td>
<td>Primary</td>
<td>Roll on-off cargo</td>
<td>Immediate on passenger mobility &amp; loss of belly cargo capacity</td>
<td></td>
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</tr>
<tr>
<td>Maritime transport</td>
<td>Container shipping</td>
<td></td>
<td>Containers</td>
<td>Decreased demand on most short sea shipping routes</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Dry bulk</td>
<td></td>
<td>Large bulk shipments</td>
<td>Negative to Mixed: due to cargo type</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Liquid bulk</td>
<td></td>
<td>Special cargoes</td>
<td>Mixed</td>
<td></td>
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<tr>
<td></td>
<td>Other</td>
<td></td>
<td></td>
<td>Mixed</td>
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<td></td>
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</tr>
<tr>
<td>Source: Lauri Ojala</td>
<td>Update 29 March 2020</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Some useful sites to follow
Some useful sites to follow on COVID-19 response and info:

• Selected UN Agencies on COVID-19:  IMO  ICAO  UNECE (Europe)  UNESCAP (Asia Pacific)
  • UNECE Observatory on Border Crossings due to COVID-19 launched on 26 March 2020

• EU Mobility and Transport  (European Commission)
  • European Maritime Safety Agency  EMSA listings on MS actions

• Impacts on road haulage by  IRU

• Aviation industry by IATA:  https://www.iata.org/en/

• Baltic Sea Ports and Shipping by BPO (30 March 2020)

• Major logistics firms update their COVID-19 status constantly; see e.g.:
  • DB Schenker  DHL  DSV  CEVA  UPS  FedEx
  • Wilhelmsen COVID-19  Global Port Restrictions Map  (a very good one!)
  • Bolloré COVID-19  IMPACT UPDATE  March 27th, 2020
  • Kuehne & Nagel  https://www.kn-portal.com/updates_on_coronavirus
  • Maersk:  https://www.maersk.com/stay-ahead
  • Ti Coronavirus March 2020  updates
  • Zipline Logistics,  2020 Q2 Freight Market Update,  24 March 2020
Selected sources

• DHL Ocean freight market update (March 2020)
• Hybrid CoE (2019) **HANDBOOK ON MARITIME HYBRID THREATS** — 10 Scenarios and Legal Scans
• IATA (24 March 2020) *Deeper Revenue Hit from COVID-19*
• McKinsey (25 March 2020)
• McKinsey (16 March 2020) **COVID-19 Briefing Note**
• UNCTAD (26 March 2020) *Coronavirus could cut global investment by 40%*
• WEF a) (March 2020), World Economic Forum
• WEF b) (23 March 2020), *How China can rebuild global supply chain resilience after COVID-19*

Selected Video presentations:

• MIT video briefing “A Coronavirus Briefing - The Impact of COVID-19 on Business and Supply Chain”, 16 March 2020, 56 minutes
Thank you – and take care!

I got the flight path via:

Jan Hoffmann, UNCTAD, 27 March 2020

-Lauri