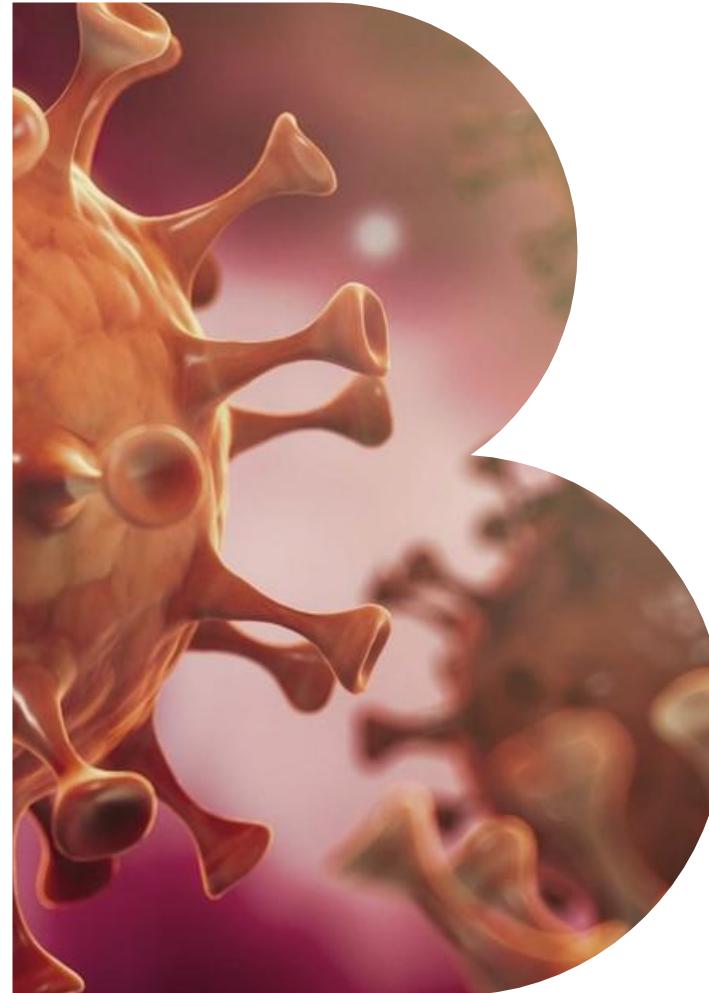


# Implications of Covid19 on rail supply industry

Webinar



October 29, 2020



In today's webinar, we will discuss implications of Covid19 on rail supply and draw a picture of the new normal within the industry

## Content

A



### Implications of Covid19 on rail supply industry

- > **Short-term** – Negative effects across all segments leading to significant drop in revenues
- > **Long-term** – Return to pre-crisis level from mid 2021 onwards

B



### The new normal

- > **Ramp-up** – Protective measures required across all areas
- > **Institutionalization** – Adapting to a “new normal” while leveraging a window of opportunity for a new leadership

C



### Conclusions and Q&A

- > **Need for action** – Long-term economic viability and adaptation of working methods to be taken into focus
- > **Your questions**

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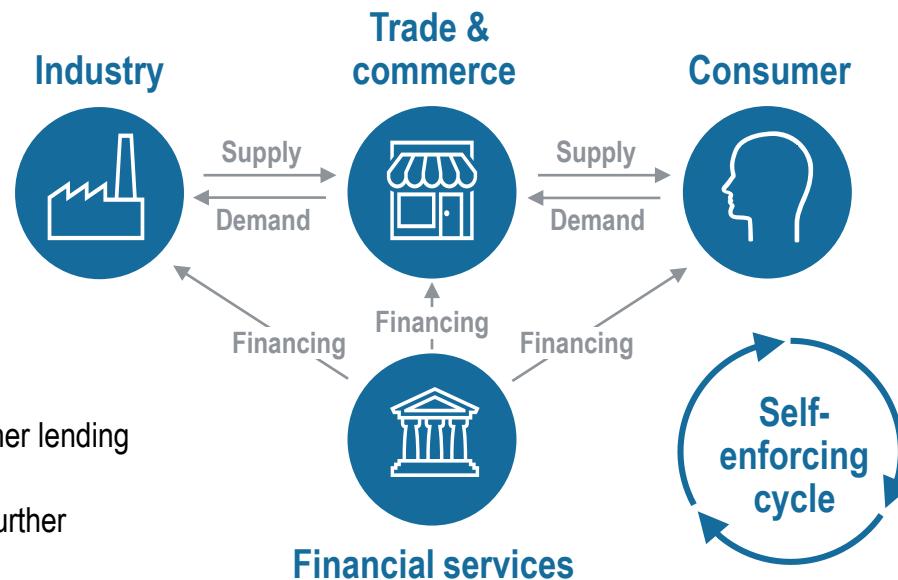
- > **Need for action** – Long-term economic viability and adaptation of working methods to be taken into focus
- > **Your questions**

# COVID-19 has triggered an economic crisis – Negative impact on most parts of the economy

## COVID-19 macro impact

### Supply shock

- > Plant shutdowns and logistics bottlenecks reduce supply of consumer and industrial goods
- > Businesses reduce investment activities



### Demand shock

- > Partly self-imposed quarantine measures curtail consumer spending
- > Decline in consumer confidence and consumption

### Credit crunch

- > Business and consumer lending is hampered
- > Liquidity constraints further reduce investments and consumption

### Capital markets

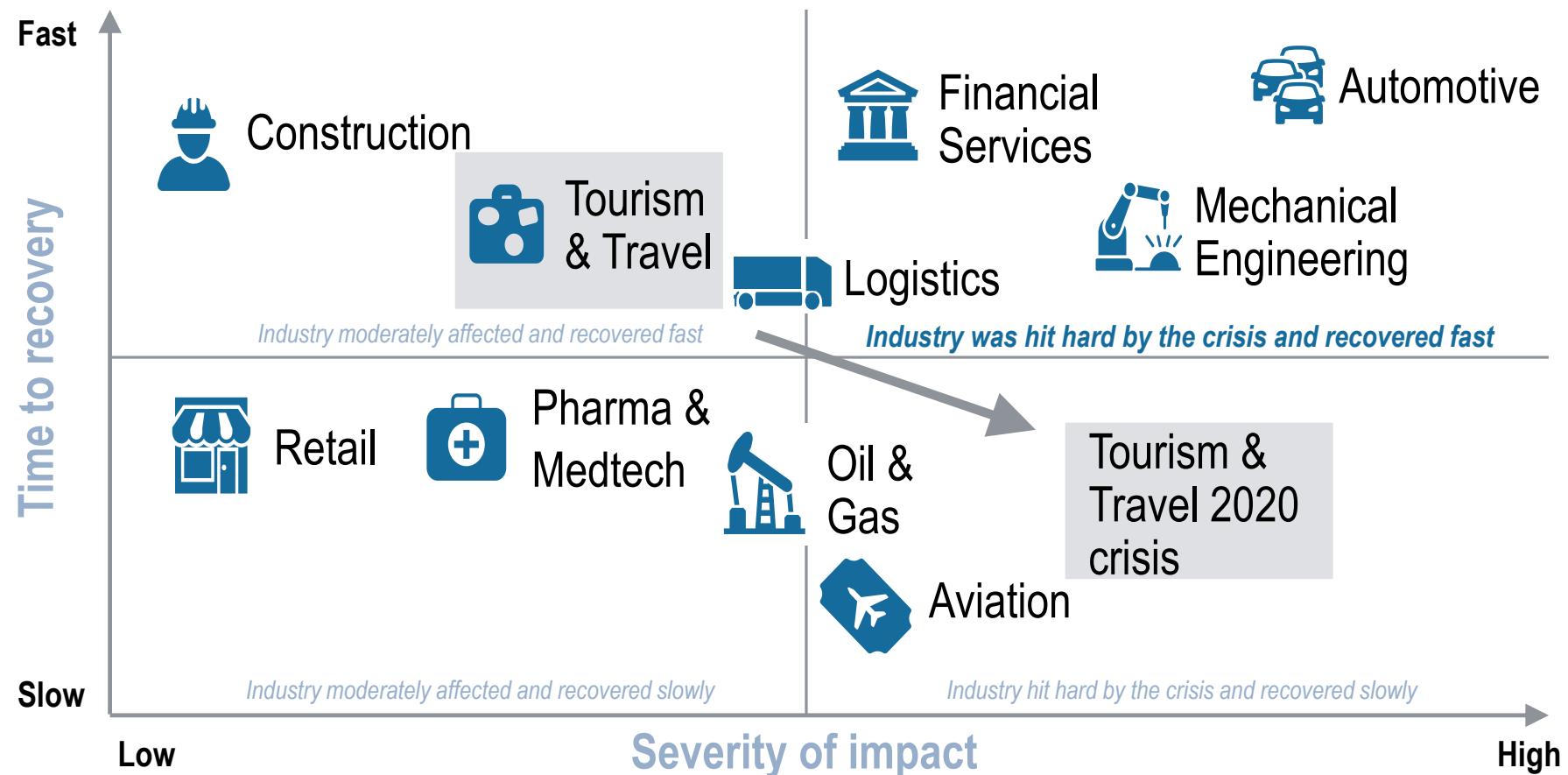


Anticipation of negative impact from COVID-19 on global economy:

- > Little impact so far due to flooding of markets by central banks
- > Potential third wave if bond markets falter

In historic economic crises, it was particularly the mechanical engineering and automotive sectors that were hit hardest and longest

Impact and time to recovery from financial crisis 2008 by industry



# COVID-19 pandemic will have a more severe and long-lasting impact compared to financial crisis 2008, also in the transportation sector

## COVID-19 impact on transportation industries

### Airlines



- > Unprecedented cut in demand – hit first and longest
- > Incumbents cut capacity structurally. Largest LCC will gain even more aggressively, building on strong cash position and flexibility.

### Airports



- > Disruption among airlines triggers structural knock-on effect on traffic and income patterns at airports
- > Challenges reach beyond short-term bridging and management of lockdown, structurally challenging cost and investment-strategies

### Aerospace



- > Due to lower air traffic demand for new aircrafts declines
- > First disruptions, e.g. canceled merger between Boeing and Embraer, already observable

### Tourism



- > Historically strong liquidity constraints at incumbents turn critical
- > Incumbent business models (esp. tour operators) not able to absorb necessary cost out. Market consolidation and fall-out accelerates

### Cargo



- > Sea freight supply chains heavily disrupted until Q4 2020. Partial replacement with air-freight possible, increasing rates expected
- > Land transport in Europe only with minor disruptions

### Rail & Public transport



- > Significant decrease of passenger volume in short term
- > Impact on New mobility trends, e.g. car-sharing, not yet foreseeable in the long run. In short-term major decline in demand observable

Thai Airways to be restructured under bankruptcy court

Colombian airline Avianca files for bankruptcy in US court

Vancouver International Airport announces more layoffs as COVID-19 grounds airline industry

Coronavirus: Airport handlers warn ministers of 10,000 jobs axe 'within hours'

Delta Airlines Joins Pandemic Plane Purge, Shockingly Dumps Boeing 777

Agoda cuts 1,500 jobs in Asia

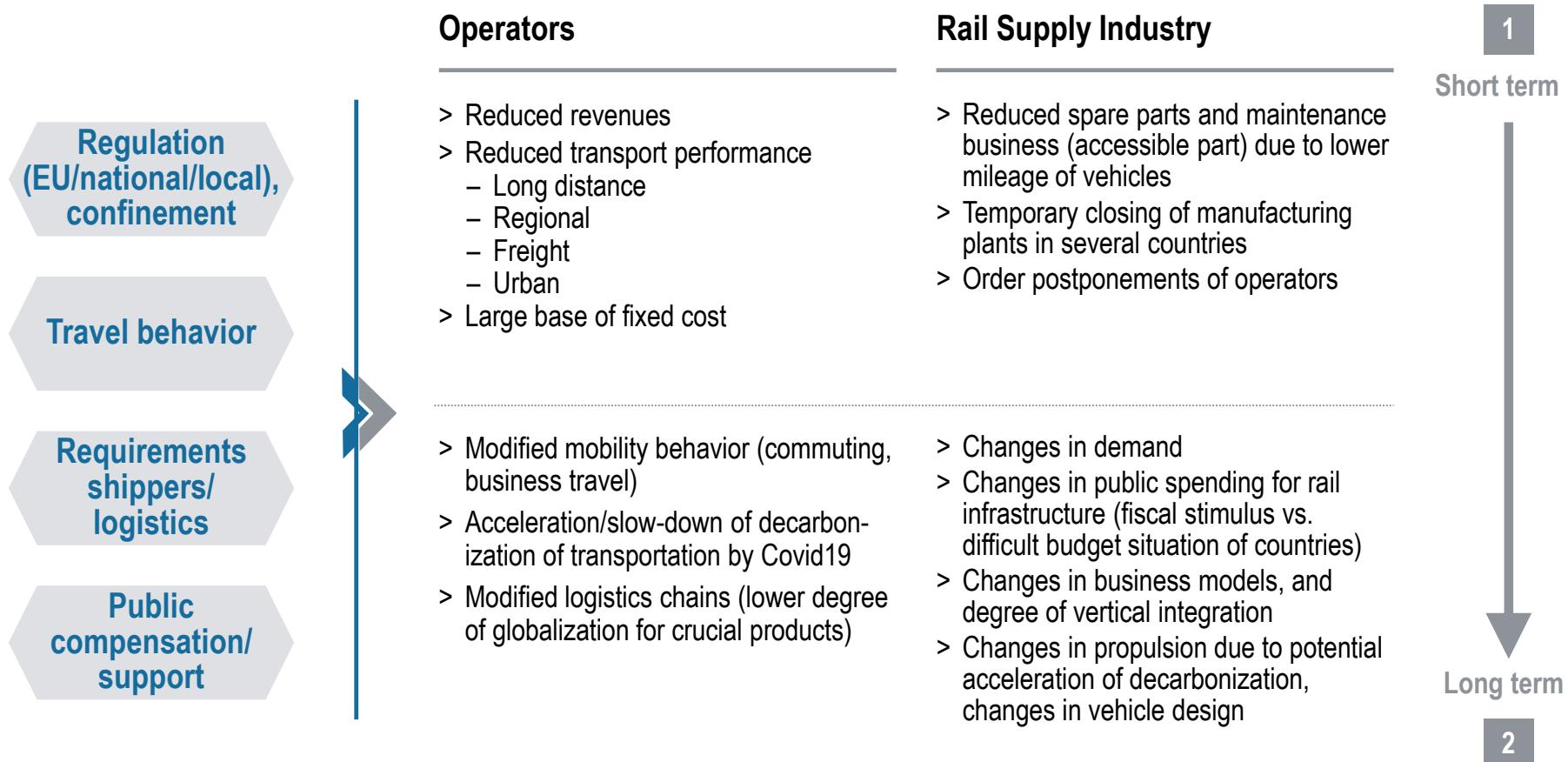
Cargo Aircraft Roar To Life, Reaching Record Utilization As Coronavirus Creates Urgent Demand For Air Freight

Airbnb is laying off 25% of its employees

Coronavirus Layoffs: Uber Sheds Another 3,000 Employees, Closes 45 Offices Amid Pandemic

# We assessed the Covid19 impact on rail supply from a short- and long-term perspective taking into account effects on operators

## Implications of Covid19 on rail supply industry



# Around the world, COVID-19 had a severe impact especially on passenger rail services – Freight segment affected less strongly

## COVID-19 impact on rail traffic in various countries (1/2)<sup>1)</sup>

|   | <b>Urban</b><br>  | <b>Regional</b><br>  | <b>Long-distance</b><br>  | <b>Freight</b><br>  | <b>Current status</b>  |
|---|--|---|--|--|--|
| <b>Germany</b><br>     | <ul style="list-style-type: none"> <li>&gt; Reduction of operations to weekend schedule</li> <li>&gt; Cancellation of add. 'rush hours' services</li> </ul>          | <ul style="list-style-type: none"> <li>&gt; Capacity reduced to ~50%, PAX volume down to 15%</li> <li>&gt; Selected lines suspended (e.g. Dortmund-Aachen)</li> </ul> | <ul style="list-style-type: none"> <li>&gt; Capacity reduced to ~75%, PAX volume down to 15%</li> <li>&gt; Several lines suspended, e.g. ICE Sprinter</li> </ul>                               | <ul style="list-style-type: none"> <li>&gt; Volume down by ~36% (link to seaports down by 20%)</li> <li>&gt; Volume of FMCG up, industry goods down (e.g. automotive)</li> </ul> | <ul style="list-style-type: none"> <li>&gt; Full PAX service</li> <li>&gt; 60% of pre-crisis demand</li> </ul>   |
| <b>Switzerland</b><br> | <ul style="list-style-type: none"> <li>&gt; Slight reduction of schedule</li> <li>&gt; Sunday schedule extended to Saturday</li> </ul>                               | <ul style="list-style-type: none"> <li>&gt; Almost no suspension of lines, but reduced frequency</li> <li>&gt; Trains operate with max. trainset length</li> </ul>    | <ul style="list-style-type: none"> <li>&gt; Capacity reduced to ~75%, PAX volume down to 10%</li> <li>&gt; Significant amount of connections suspended</li> </ul>                              | <ul style="list-style-type: none"> <li>&gt; SBB Cargo operated at normal capacity</li> <li>&gt; Volume of FMCG up, industry goods down (e.g. automotive)</li> </ul>              | <ul style="list-style-type: none"> <li>&gt; Full PAX service from June</li> <li>&gt; PAX volume 2/3 of pre-crisis demand</li> </ul>                    |
| <b>USA</b><br>        | <ul style="list-style-type: none"> <li>&gt; E.g. New York reduced metro service by 25%</li> <li>&gt; Ridership down 95% YoY</li> </ul>                               | <ul style="list-style-type: none"> <li>&gt; E.g. Philadelphia activated 'winter storm' schedule and reduced capacity by 25%</li> </ul>                                | <ul style="list-style-type: none"> <li>&gt; Amtrak has suspended services in several regions</li> <li>&gt; PAX volume down by 95%</li> </ul>   | <ul style="list-style-type: none"> <li>&gt; Cargo volumes down 7% in Q1</li> <li>&gt; 25% volume drop expected for Q2</li> </ul>   | <ul style="list-style-type: none"> <li>&gt; Starting June 1, step-by-step reboot</li> <li>&gt; Return to full service level unclear</li> </ul>         |
| <b>Canada</b><br>    | > n/a  | <ul style="list-style-type: none"> <li>&gt; Several regions suspended lines or services with reduced frequency</li> </ul>   | <ul style="list-style-type: none"> <li>&gt; E.g. VIA Rail several services suspended, e.g. Toronto-Vancouver, or reduced to one train/day</li> </ul>   | <ul style="list-style-type: none"> <li>&gt; Total carload down by ~14% in CW 15 YoY</li> <li>&gt; Crude oil transport up 45% YoY</li> </ul>                                      | <ul style="list-style-type: none"> <li>&gt; Reboot of long-distance service from June</li> </ul>   |
| <b>France</b><br>    | <ul style="list-style-type: none"> <li>&gt; Strong reduction of operations, e.g. Paris operated only 30-50% of metro lines, focusing on serving hospitals</li> </ul> | <ul style="list-style-type: none"> <li>&gt; Operators have cut services down to 15-20% of normal capacity in alignment with curfew</li> </ul>                         | <ul style="list-style-type: none"> <li>&gt; TGV and Intercités service has been reduced to ca. 10% of normal levels</li> <li>&gt; Travel without important reason limited to 100 km</li> </ul> | <ul style="list-style-type: none"> <li>&gt; SNCF was operating at ~70% capacity</li> <li>&gt; Customer demand has been met by 95% during crisis</li> </ul>                       | <ul style="list-style-type: none"> <li>&gt; Full level of freight and regional rail services</li> <li>&gt; TGV services at 70%, demand -50%</li> </ul> |

1) During first wave in spring 2020

Source: Press research, company websites

However, most countries and public transport operators plan to return to 'normal' levels of operation within the next few weeks

## COVID-19 impact on rail traffic in various countries (2/2)<sup>1)</sup>

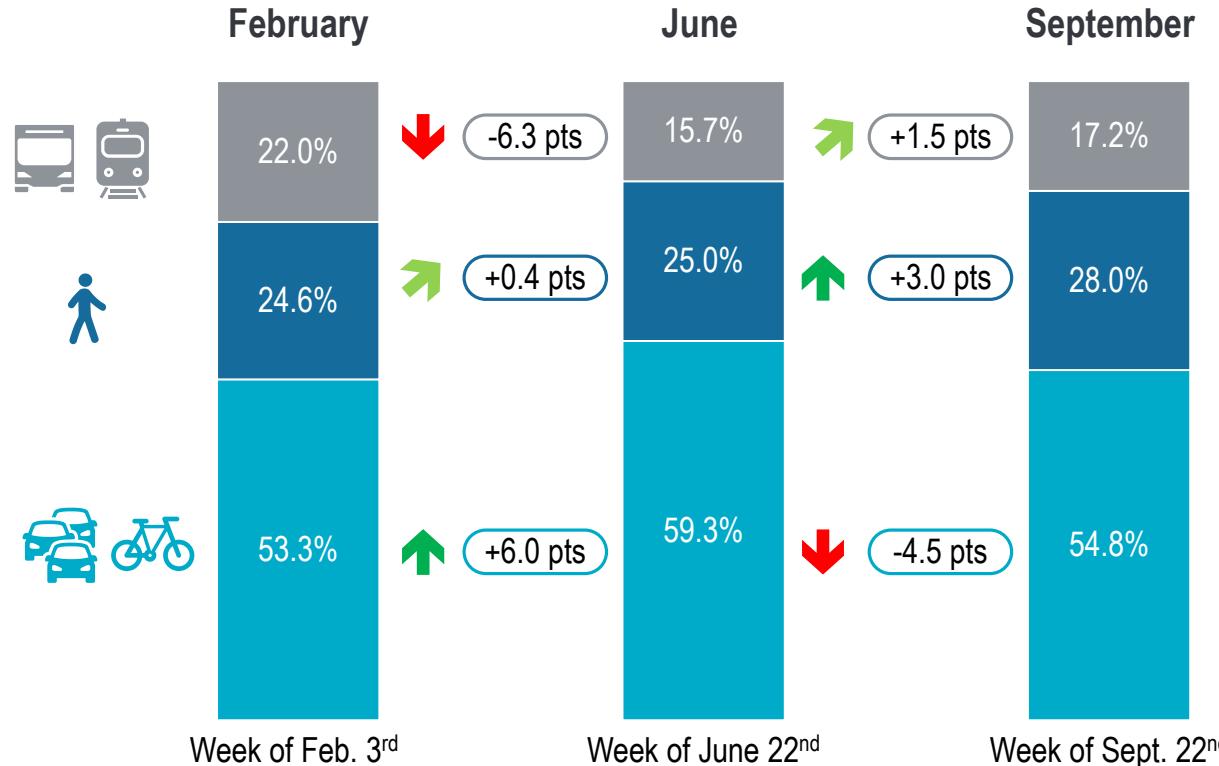
|  | <b>Urban</b><br>   | <b>Regional</b><br>  | <b>Long-distance</b><br>   | <b>Freight</b><br>  | <b>Outlook</b>  |
|--|---|---|---|--|---|
| <b>Australia</b><br>  | <ul style="list-style-type: none"> <li>&gt; State-wide decline of public transport</li> <li>&gt; Ridership down by 40-45%</li> </ul>                          | > n/a   | <ul style="list-style-type: none"> <li>&gt; Several operators (e.g. Journey Beyond) have temporarily ceased all operations</li> </ul>               | <ul style="list-style-type: none"> <li>&gt; Several operators report negative impact due to COVID-19 crisis</li> </ul>                                 | <ul style="list-style-type: none"> <li>&gt; Full PAX service from June</li> </ul>   |
| <b>India</b><br>  | <ul style="list-style-type: none"> <li>&gt; All means of urban public transport suspended</li> </ul>  | <ul style="list-style-type: none"> <li>&gt; All PAX operations currently suspended</li> </ul>   | <ul style="list-style-type: none"> <li>&gt; All PAX operations currently suspended</li> </ul>   | <ul style="list-style-type: none"> <li>&gt; No suspension of cargo trains</li> <li>&gt; Freight companies operate at ~60% capacity</li> </ul>          | <ul style="list-style-type: none"> <li>&gt; Starting May 11, step-by-step reboot</li> <li>&gt; Return to full service level unclear</li> </ul>    |
| <b>Russia</b><br>  | <ul style="list-style-type: none"> <li>&gt; Moscow metro's ridership down by ~ 80%</li> </ul>   | <ul style="list-style-type: none"> <li>&gt; Amount of commuter ridership down by ~65%</li> </ul>  | <ul style="list-style-type: none"> <li>&gt; A total of 53 connections are suspended, others reduced</li> <li>&gt; PAX volume down by 50%</li> </ul> | <ul style="list-style-type: none"> <li>&gt; Freight volume down by ~6% in March YoY</li> </ul>   | <ul style="list-style-type: none"> <li>&gt; Return to full service from May</li> <li>&gt; PAX demand 80% of pre-crisis level</li> </ul>           |
| <b>Brazil</b><br>   | <ul style="list-style-type: none"> <li>&gt; Certain restrictions in place but no shutdown of public transport</li> <li>&gt; Ridership down by ~70%</li> </ul> | <ul style="list-style-type: none"> <li>&gt; Certain restrictions in place but no shutdown of public transport</li> <li>&gt; Ridership down by ~70%</li> </ul> | > n/a   | <ul style="list-style-type: none"> <li>&gt; Impact on freight business far less severe compared to PAX</li> <li>&gt; Volume reduced by ~30%</li> </ul> | <ul style="list-style-type: none"> <li>&gt; Official reopening of economy on May 11</li> <li>&gt; Reboot of public transport from June</li> </ul> |
| <b>ICU</b> <ul style="list-style-type: none"> <li>&gt; Freight segment far less affected by COVID-19 crisis than passenger business</li> <li>&gt; Despite severe current capacity cuts in PAX segment, most countries have already plans in motion to reboot public transport very soon</li> </ul> |   |   |   |  |   |

1) As of April 30

Source: Press research, company websites

Up by 3.5 percentage points since February, pedestrian travel is the big winner in the post-confinement situation.

Evolution of the number of trips per mode for Paris/Ile de France<sup>1)</sup>



### **Walking, the big winner of the back-to-school season**

**Walking is increasingly favored** for routine journeys (no load break, reliability of travel time).

- > Walk often used **in addition to public transport** (e.g. to avoid a change)
- > Pedestrian trips of +3 km up **+200% over the period**



### **The "autocalypse" did not materialize**

- > **Fewer car journeys** are reducing the traffic congestion feared for the return to school

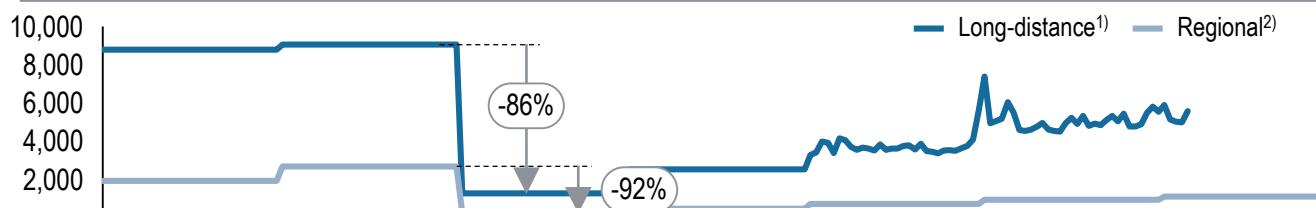


1) Based on a reference sample for one week each

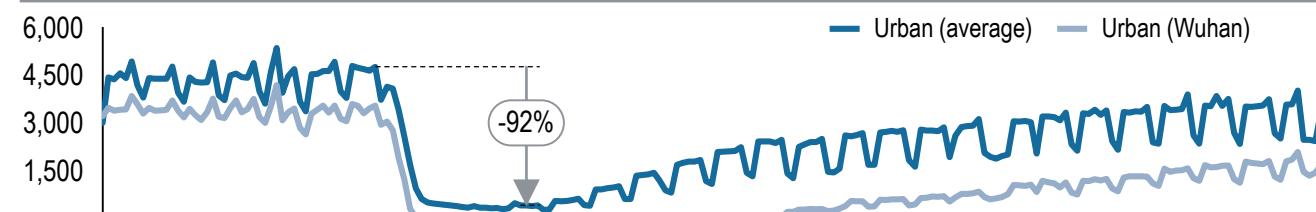
# Case study China: With the outbreak of COVID-19, passenger traffic dropped significantly – National freight traffic is less affected

Daily traffic development in China from 01/20-07/20<sup>1)</sup>

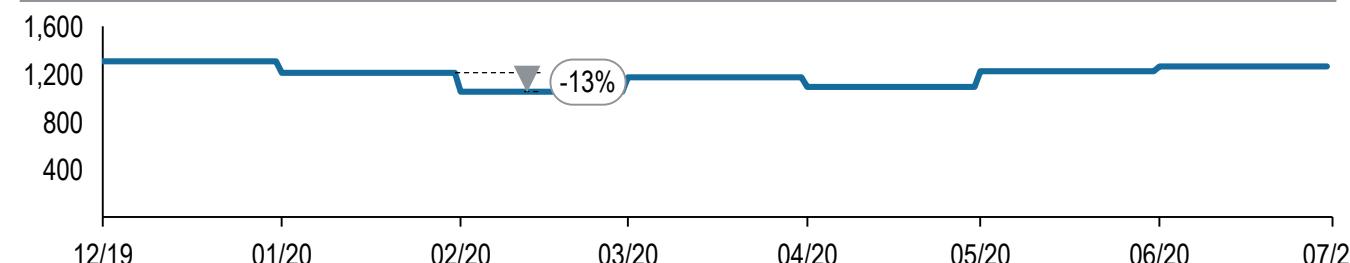
Interurban passenger [long distance: 1,000 pax, regional: 100 pax]



Urban passenger [1,000 pax]



Freight [10,000 tons]



1) Data only available until end of May;

2) Data based on Guangzhou-Shenzhen Railway

- > The outbreak and subsequent reactions by the government **have an immediate effect across all transport segments** – Urban passenger traffic is affected the most (both in terms of severity and duration)
- > While freight traffic is (almost) **back to normal by the end of March**, passenger traffic across all segments is still **significantly below its respective pre-crisis levels**
- > Experts predict that passenger traffic will be back to normal by summer 2020
- > However, **long-distance travelling will face additional restrictions** due to hygienic reasons (e.g. trains will leave the middle seat vacant)

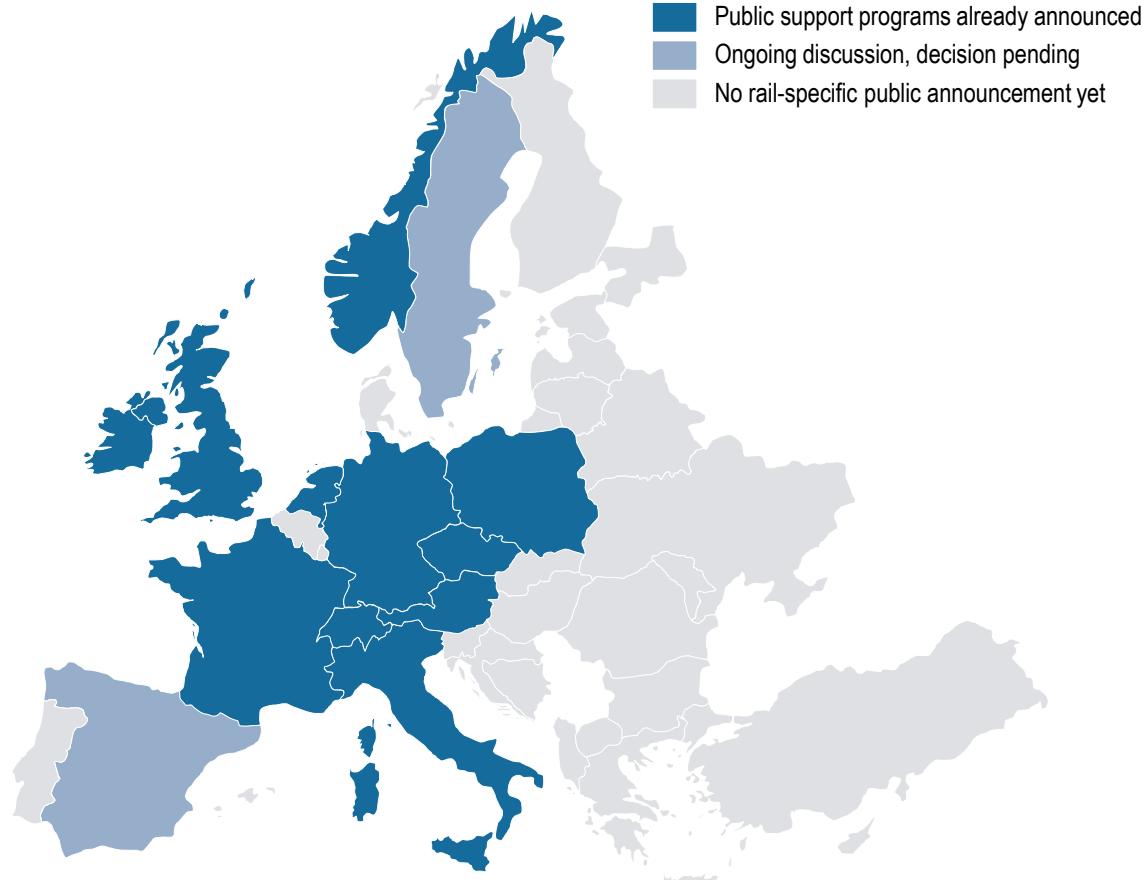
# Case study China: Nevertheless, investments in new construction and equipment is expected to continue in short to mid term

## Four hypothesis on implications for rail supply market in China

|  |  |
|--|--|
| <b>Railway investment is expected to maintain its scale</b>                | <ul style="list-style-type: none"><li>&gt; Railway investment seen as <b>important tool for "compensating shortcomings"</b>, in particular in current complex economic situation and increasing downward pressure</li><li>&gt; Therefore, domestic railway investment is expected to continue to <b>maintain a scale of over CYN 800 bn in 2020</b> – maybe even increase over the coming years to stipulate investments</li></ul>             |
| <b>Equipment market to remain stable with opportunities in maintenance</b> | <ul style="list-style-type: none"><li>&gt; Under framework of asset investment of CNY 800 bn, new equipment market is <b>estimated at about CNY 100 bn</b>. As demand grows, <b>new car purchases should remain stable</b></li><li>&gt; Additionally, as railway vehicles maintain high-load operations, <b>maintenance actives will occur earlier</b> than expected (in particular with regards to EMUs)</li></ul>                            |
| <b>Urban rail investment will maintain a growth trend</b>                  | <ul style="list-style-type: none"><li>&gt; Urban rail with a CAGR of investment of 18.9% from 2011 to 2018 – Expectations are that investment in <b>urban rail will continue on this growth path</b> (Approval of projects restarted)</li><li>&gt; Through the <b>support with special bonds from the government</b>, many projects can be started within the next five years driving growth of urban rail in China</li></ul>                  |
| <b>Intercity railways to offer further market opportunities</b>            | <ul style="list-style-type: none"><li>&gt; To achieve goals from the "Outline for the Construction of Nation with Strong Transportation System", integrated systems are required – <b>Development of intercity railways as key target</b></li><li>&gt; Yangtze River Delta, Pearl River Delta, Beijing-Tianjin-Hebei, Shandong Peninsula, Chengdu-Chongqing and other regions will become important markets, also for rail equipment</li></ul> |

Several European countries have started governmental programs to mitigate short-term effects – Other countries expected to follow

## Governmental reactions



- > As negative short-term effects put pressure on rail operators, major countries have **started support programs** (e.g. Germany, Austria, UK, Netherlands, Switzerland, France)
- > On top of that, the **European Union** announced **further increases of existing support programs**
  - Connecting Europe Facility will be increased by EUR 1.5 bn to EUR 14.5 bn to support the financing of rail/urban transport
  - Deadline by which member states must transpose EU law on rail safety and interoperability (4th Railway Package) will be postponed until Oct 31

# Case study DACH-region: Variety of governmental support for rail has already been announced – Austria slightly behind

## Examples for fiscal stimulus in DACH region<sup>1)</sup>

|   | <b>Germany</b>  | <b>Switzerland</b>  | <b>Austria</b>   |
|---|---|---|--|
| <b>Incumbent specific</b>   | <p>&gt; Increase in DB equity by EUR 5 bn and raise of debt limit to EUR 30 bn</p>  | <p>&gt; SBB Cargo intends to apply for state aid</p>  | <p>&gt; ÖBB Rahmenplan announced by government (focus infrastructure, EUR 17.5 bn)</p>   |
| <b>Passenger</b><br>         | <p>&gt; EUR 2.5 bn rescue package to support regional transport operators</p> <p>&gt; Government allows federal states to grant subsidies to public transport companies to compensate for the sharp drop in fare revenues</p> | <p>&gt; 10-year extension of CHF 11 bn guarantee for public transport, which was due to expire (government guarantees repayment and interest)</p> <p>&gt; SBB and partners will procure up to 500 new single-deck regional trains</p> | <p>&gt; <i>No announcements yet</i></p>  |
| <b>Cargo</b><br>            | <p>&gt; Enlarged funding for national rail freight transport program, e.g. EUR 30 in 2020, further EUR 72 m to until 2024 for digitalization, automation and modern vehicle technology</p>                                    | <p>&gt; Full utilization of budget for combined freight transport in 2020/21 (budget will be distributed among corona-related lower numbers of trains and consignments)</p>   | <p>&gt; <i>No announcements yet</i></p>  |
| <b>Infra-structure</b><br> | <p>&gt; Stepwise reduction of the renewable energy surcharge on railway power supply</p> <p>&gt; Increased support of EUR 150 m for retrofitting of traction units of all railway undertakings to ERTMS</p>                   | <p>&gt; Additional funds for all infrastructure managers of rail network amounting to CHF 1.2 bn</p> <p>&gt; Framework credit of CHF 300 m for co-financing freight transport facilities in the years 2021-2024</p>                   | <p>&gt; Public financing of long-distance connection between Vienna and Salzburg (of Westbahn and ÖBB)</p> <p>&gt; Contract has a volume of EUR 48.3 m for three months (EUR 40 m for ÖBB, EUR 8.3 m for Westbahn)</p> |

1) As of October 22<sup>nd</sup>, 2020

# Overall, significant negative short-term effects are to be observed across all segments of the rail supply industry

## Short-term impact on rail supply industry

### Rolling stock

- > Delays in delivery of new vehicles due to temporary plant closings in certain countries (e.g. E, I, F)
- > Delays in tenders for rolling stock, isolated order cancellations

### Services

- > Sharp drop in rolling stock maintenance business due to reduced mileage
  - Lower spare parts volumes and labor (if outsourced by operator)
  - Advancing maintenance jobs only to a limited extent

### Infrastructure

- > Temporary closing of rail infrastructure construction sites in several countries
- > Limited impact on rail infrastructure spending (CAPEX and maintenance)

### Rail control

- > Delays in tenders for new rail control equipment, isolated order cancellations

- 
- > **Significant drop in revenues**
  - > **Imbalance in inventories (excess and scarcity depending on sub-system/component)**
  - > **Threat of penalties due to delays**



# Looking ahead, most rail supply industry players expect the industry to return to normal levels latest in the midterm

## Results of COVID-19 impact survey

### COVID-19 impact on rail industry<sup>1)</sup>

| Impact      | Description  | Results |
|-------------|--|---------|
| Negligible  | Rail operations will return to normal within a few month   | 10%     |
| Small       | Rail operations will return to normal within a few month but isolated rail project might be postponed or cancelled | 26%     |
| Medium      | Demand for new rail products decreases short-term (0-3 years) but will recover in the midterm (3-6 years)          | 60%     |
| Strong      | Demand for new rail products decreases and will stay below normal (> -10%) even in the midterm (3-6 years)         | 3%      |
| Very strong | Demand for new rail products decreases severely (> -10%) even for the midterm (3-6 years)                          | 0%      |

1) n=59

Source: COVID-19 survey

### Survey among European rail suppliers

### Positive outlook from respondents

"The need to reduce passenger density could increase the numbers and the quality of trains with positive effects on the rail supply industry"

"The current crisis will not affect the industry to such an extent that it could change the current fundamental direction of economic and sustainable development"

"Rail will remain the backbone of the future of mobility in Europe"

"New opportunities related to less airline traffic and innovative solutions could develop"



# Long-term effects for rail operators remain uncertain – However, no significant negative effect expected

## Hypotheses on selected key questions

Will SARS-CoV-2 **accelerate or slow-down the shift** from other transportation modes **to rail** due to its ecological advantages?

- > Recovery plan of EU Commission currently in discussion contains funds of EUR 40 bn for a "renaissance de rail", incl. revival of night trains
  - > On the other hand, also EUR 60-80 bn funds for environmentally friendly car traffic
  - > Burden of increasing debt for next generations as key argument to address climate change
- 



Will the crisis lead to **increased public spending** for rail as part of a fiscal stimulus program or will the tight public budget situation of all countries lead to savings?

- > Many countries with environmental focus as a main objective of fiscal stimulus programs (e.g. shown by statements of government officials in
  - > However, so far few programs announced with dedicated additional funds for rail
- 

Will **manufacturing** increasingly be **localized** (again), thus leading to lower demand in freight transports?

- > Negative impact mainly on container sea shipping (goods from Far East)
- > Increasing manufacturing in Europe as potential trigger for additional rail freight demand
- > Effect most likely limited to goods/systems critical for safety and security

# Changed mobility behavior with negative total effect, however rail passenger volumes expected to grow nevertheless

## Long-term effect passenger rail transport



### Commuting habits

- > Role of car as preferred mode of transportation in Covid-19 crisis to reduced back to normal
- > Amount of people working from home expected to remain higher than before Covid
- > Level of e.g. 12% vs. 5% - compared to 28% maximum level during crisis would lead to pkm reduction of 1.2% in France and 2.7% in Germany
- > Impact on car commuting as well



### Business travel

- > Reduction of business travel due to higher acceptance of Video Conferences
- > Impact larger on airlines than on rail (higher ticket price of flights)
- > Negative impact of 5-10% less business travels by rail leads to pkm reduction by 0.6% in France and 1.2% in Germany



### Competition from airlines

- > Financial difficulties of airlines lead to reduction of offer, especially on short-haul connections where rail can capture market share gains
  - Permanent grounding of aircrafts, e.g. 10% of LH fleet
  - Public support for Air France depending on reduction of capacity on several short-haul flights
- > However, number of passengers for shift limited (e.g. 0.3-0.5% of total pkm in France or Germany)



**Total pkm reduction by ≈ 1.5-3.5% (calculated for GER, FR), reduces pkm growth of rail to around 1% per year<sup>1)</sup>**

1) Ministry of Transportation in France, Operator websites, Roland Berger

# The effects of COVID-19 could accelerate mobility trends or lead to a partial reversal – It is still too early to say whether they will sustain

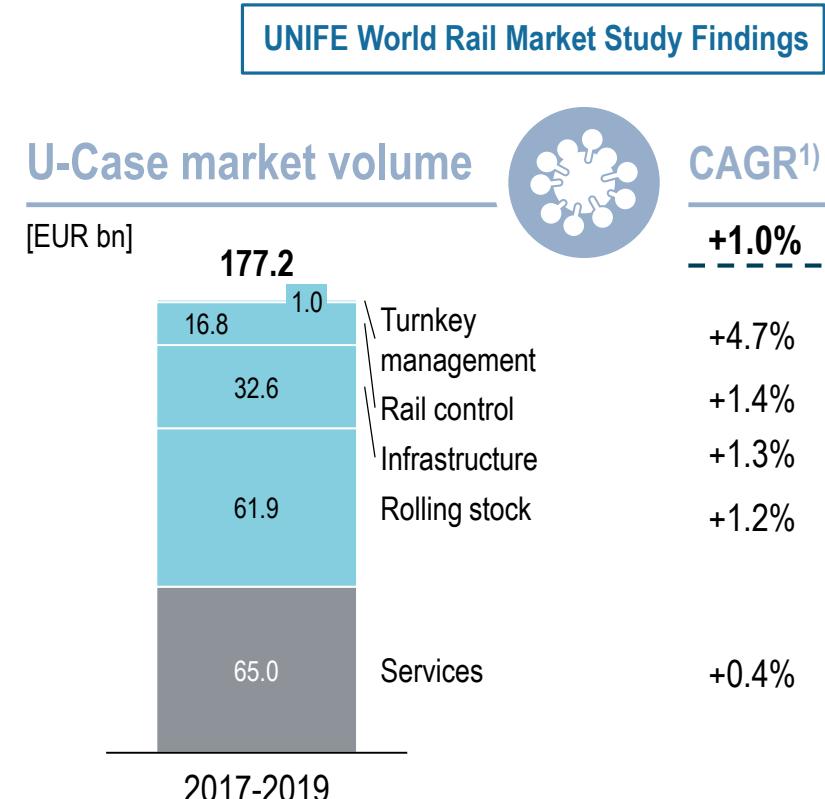
## COVID-19 crisis' impact on selected mobility trends

|   | <b>Impact short-term</b>  | <b>COVID-effect likely to last?</b>  | <b>Implication</b>  |
|---|---|--|---|
| <b>Shared car-based mobility</b><br>(ride hailing, ride sharing)            |    | Contact avoidance, confinement<br>                      | Consumers may want to avoid contact w/ others in small space<br>Non-automated mobility services likely to suffer due to driver as an infection risk   |
| <b>Individual car-based mobility</b><br>(car-sharing, car rental)           |    | Contact avoidance, confinement<br>                      | When applying caution limited infection risk<br>Rather low effects, since needed by business travelers, incumbent rental companies could advertise "new normal" hygienics to differentiate from cheap ones                    |
| <b>Public transport</b> (subway, busses, tram, ride pooling <sup>1)</sup> ) |    | Limited demand, confinement<br>                         | Depending on changes to "density" and etiquette in the public<br>Since public transport is needed to cope with commuting demand, more opportunity for new offers like "automated disinfection" <sup>2)</sup> )                |
| <b>Micro-Mobility</b>   |   | Contact avoidance, confinement<br>                      | Financing endangered, travel behavior changes (tourist)<br>Completely open, could receive a boost as alternative to public transport, could fail financially as curfew and missing tourists drive current usage close to zero |
| <b>Urban logistics/parcel deliveries</b>                                    |   | Increase in E-Commerce<br>                             | Amazon as big winner; in general: push towards digital solutions to enable access to all available delivery capacity across operators   |
| <b>Food delivery</b>  |    | Increase in food deliveries<br>                       | Large amount of restaurants dying, behavioral change accelerating<br>Opportunity for "Black kitchen" (industrialized production of delivered food) in various tastes centrally, combined with delivery                        |
| <b>Autonomous ride-hailing</b><br>(where applicable)                        |    | No infection risk from driver, still shared space<br> | Benefits from "no driver" effect<br>With "automated disinfection" <sup>2)</sup> even more attractive  |
| <b>Own car</b>  |    | Safe space, if one needs to be mobile<br>             | "Safe space"<br>Effect might dissolve once there is a vaccine and traffic jams are even getting longer, since infrastructure investments might need to be reduced because of huge state deficits                              |

1) When integrated in public transport 2) Yangfeng was already in 2019 testing a solution for PBVs

# Despite a strong impact of COVID-19, the V-Case is regarded as most likely for the global rail market

## Total market development by scenario



1) Compound annual growth rate 2023-2025 vs. 2017-2019

# There are several reasons supporting that the V-Case is the most likely development for the rail supply market

## Argumentation for likelihood of V-Case

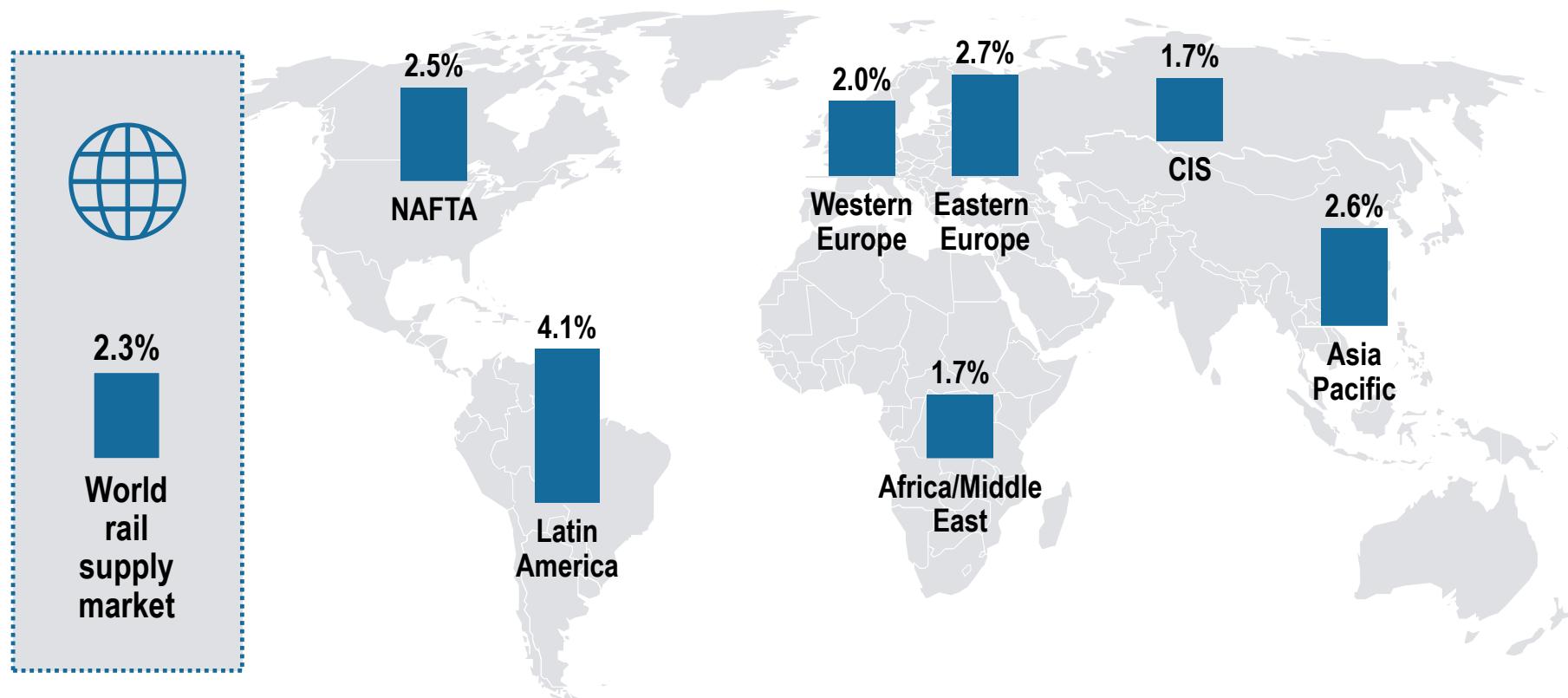
**UNIFE World Rail Market Study Findings**

| Main arguments                              | Reasoning  |
|---|--|
| <b>1 Order development in 2020</b>          | <ul style="list-style-type: none"> <li>&gt; Most railways and urban transport authorities continued to place new order volumes as expected throughout first half of 2020</li> <li>&gt; Only a small number of individual orders got cancelled or postponed, majority of tenders were carried out as planned</li> </ul>  |
| <b>2 Fiscal stimulus/ recovery programs</b> | <ul style="list-style-type: none"> <li>&gt; Large amount of unprecedented fiscal stimulus and recovery programs in all major rail countries</li> <li>&gt; Continuing support for short and long term rail projects as lever to compensate shortcomings of other means of transport</li> </ul>                           |
| <b>3 GDP forecasts</b>                      | <ul style="list-style-type: none"> <li>&gt; Forecasts predominantly expecting strong rebound already in 2021</li> <li>&gt; Positive growth in later years will offset the losses in 2020</li> </ul>   |
| <b>4 Vaccine development</b>                | <ul style="list-style-type: none"> <li>&gt; First releases of COVID-19 vaccine for human trials in several countries</li> <li>&gt; Experts expect vaccines to be successfully tested and ready to be distributed in 2021</li> </ul>   |
| <b>5 UNIFE survey results</b>               | <ul style="list-style-type: none"> <li>&gt; Expectation of majority of participants that impact of COVID-19 on order income in rail industry is small to medium</li> <li>&gt; Positive influence on trend towards shifting to rail, as assumed by many participants</li> </ul>                                        |

In the V-case all regions recover and remain at high levels in the long term until 2025

Total market growth rates per region [CAGR<sup>1)</sup>, %]

UNIFE World Rail Market Study Findings



1) Compound annual growth rate 2023-2025 vs. 2015-2017

# All market segments expected to grow – Services with slowest growth due to lockdown measures in place in 2020

Developments per product segment & predicted growth<sup>1)</sup>

**UNIFE World Rail Market Study Findings**



## Infrastructure

- > Strong growth in urban (esp. Asia Pacific) and VHS/ mainline segments; renewal and extension of mainline tracks constitute main demand, particularly in Europe

## Rolling stock

- > VHS/HS rolling stock continue to drive demand, followed by metro vehicles;
- > other segments also with positive growth outlook

## Rail control

- > Continued strong growth, especially within interurban segments;
- > On-going trend towards ATP (incl. CBTC) and ETCS technologies

## Services

- > Lockdown measurements in 2020 offset partly positive effects of growing installed base which drives spare parts and maintenance market



2.7%



2.6%



2.7%



1.8%

1) Compound annual growth rate 2023-2025 vs. 2017-2019

# Downward shift in the transition phase needs to be countered with effective measures both on revenue and cost side

## Countermeasures

### Exemplary measures

#### Revenues

- > **Redirect activities and initiatives** – Focus activities on countries not heavily affected by pandemic or those already over the crisis (e.g. Asian markets)
- > **Rethink product portfolio** – Pilot new business models. e.g. remote services in after sales business, refurbishment of older vehicles, etc.
- > **Closely monitor and lobby for governmental impulses** – Ensure additional revenues from new/additional/earlier executed projects (e.g. new lines)

#### Costs

- > Maintain **cost flexibility at all levels to overcome demand fluctuations**
  - Personnel cost measures (span of control reduction, etc.)
  - Procurement savings (e.g. look at suppliers hit by crisis / with overcapacities)
  - Process savings (e.g. through automation, RPA, IoT initiatives and other process savings in manufacturing facilities)
  - Further savings through looking at all non-essential cost items (e.g. decrease office space/rent, virtual meetings instead of travel, ...)
- > Ensure **adequate risk/contingency management** to prepare organization for potential second wave or local break outs of Covid19, e.g. de-risk supply chain, identify large customers at risk to take back orders, etc.



Measure portfolio

In today's webinar, we will discuss implications of Covid19 on rail supply and draw a picture of the new normal within the industry

## Content

A



### Implications of Covid19 on rail supply industry

- > Short-term – Negative effects across all segments leading to significant drop in revenues
- > Long-term – Return to pre-crisis level from mid 2021 onwards

B



### The new normal

- > Ramp-up – Protective measures required across all areas
- > Institutionalization – Adapting to a “new normal” while leveraging a window of opportunity for a new leadership

C

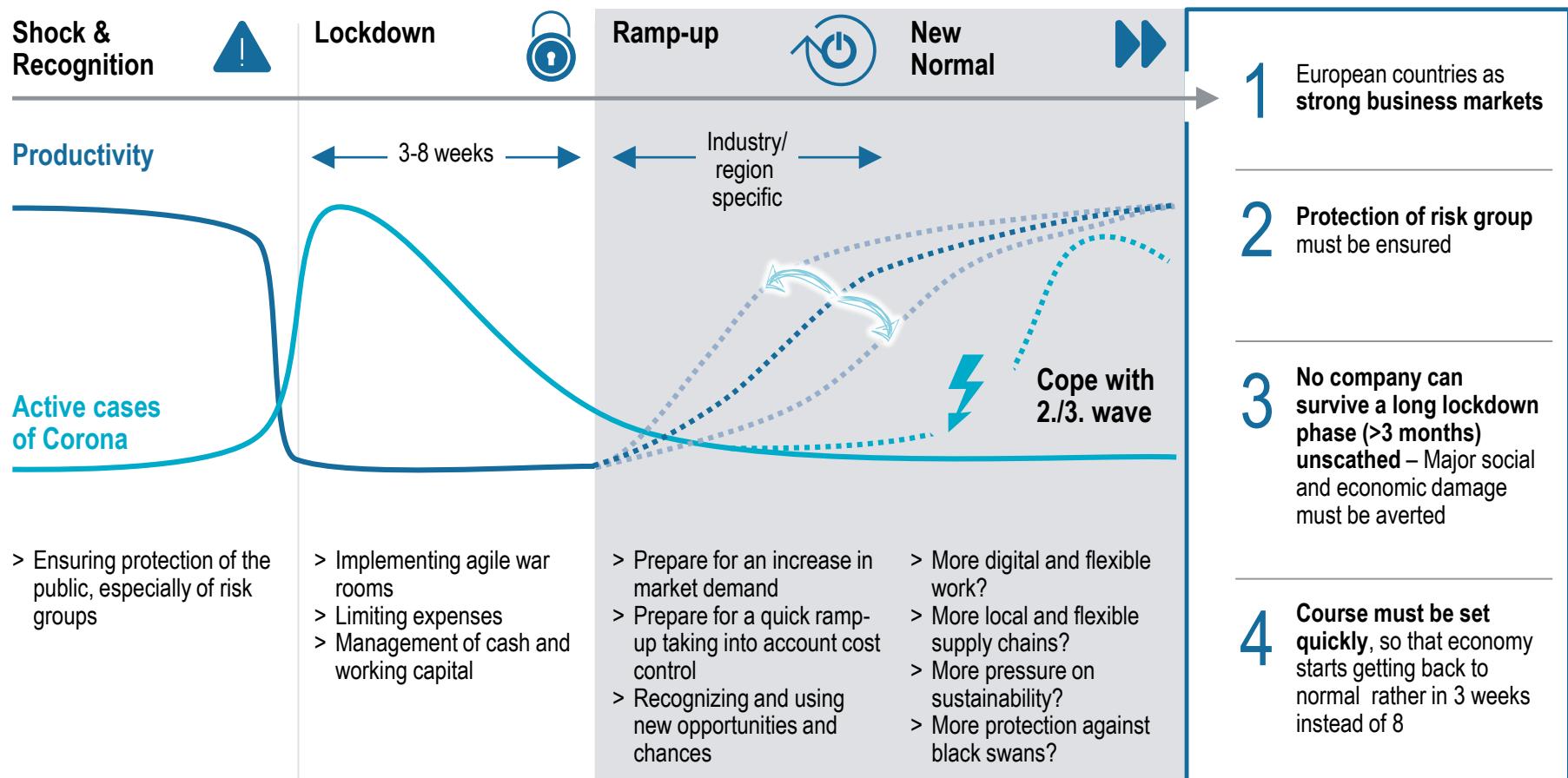


### Conclusions and Q&A

- > Need for action – Long-term economic viability and adaptation of working methods to be taken into focus
- > Your questions

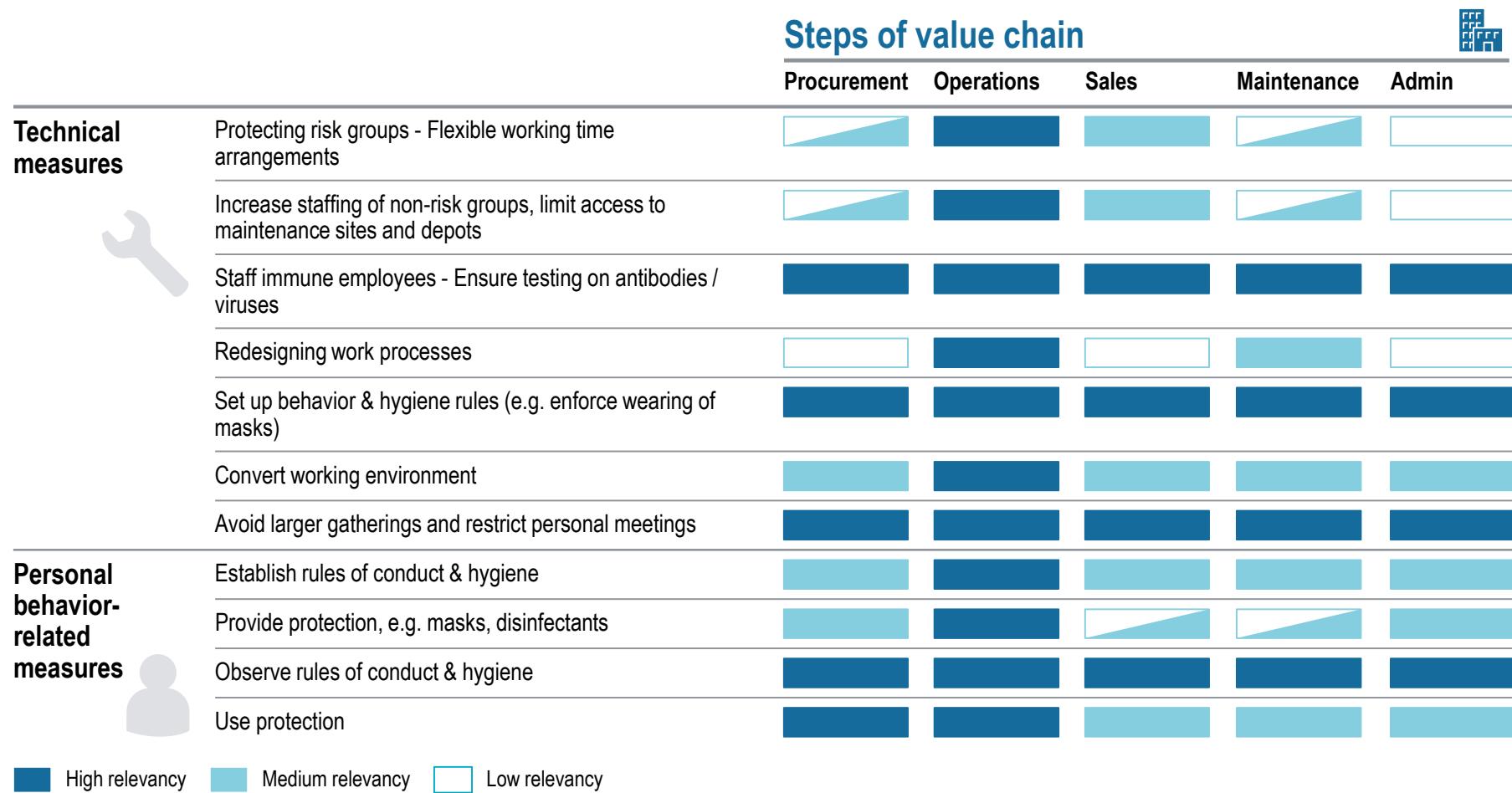
In the current ramp-up, rebooting follows national governments lifting lockdowns – Sequence and duration depending on country

## Development of Corona crisis

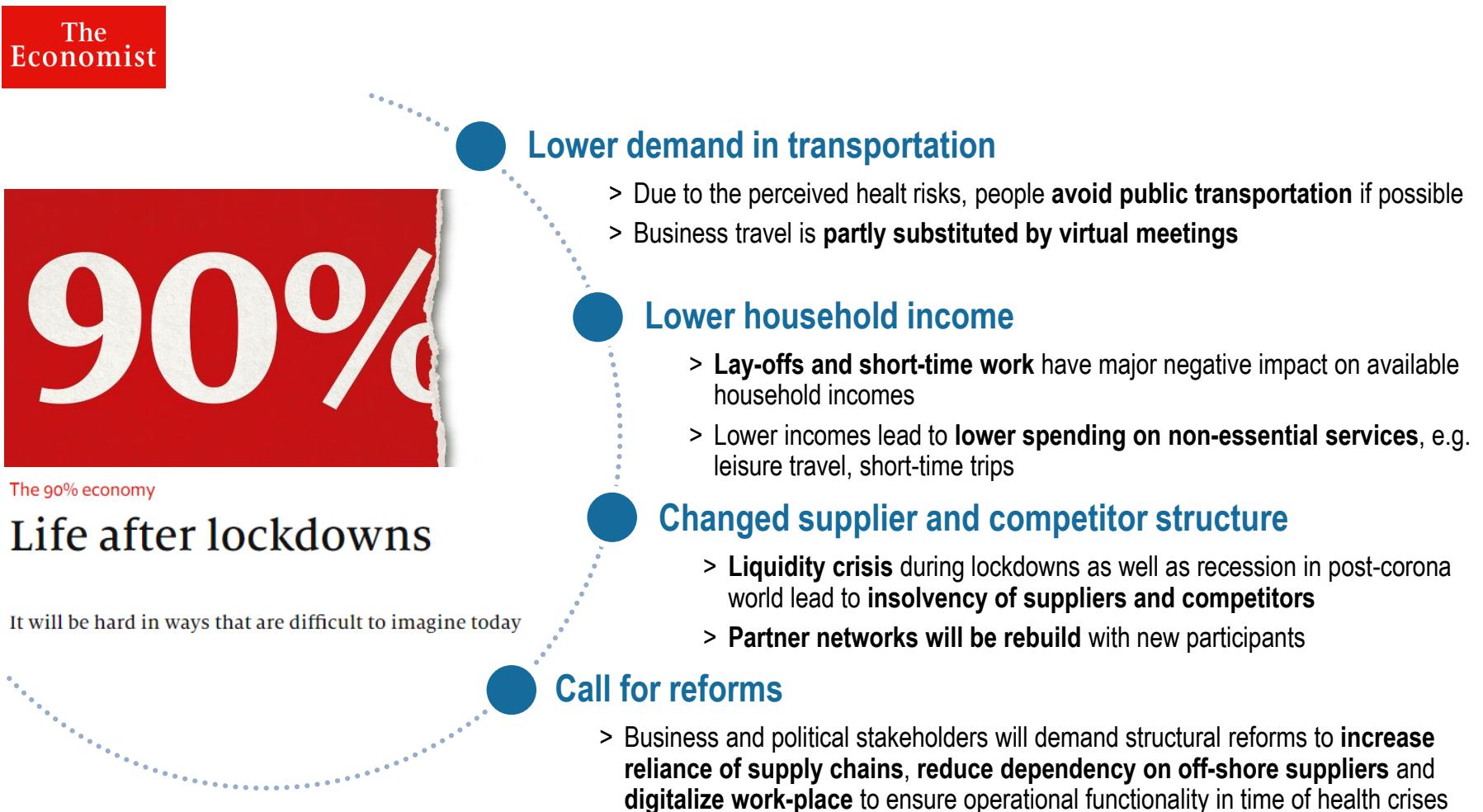


For a safe and quick ramp-up back to normal operations, all companies need to take protective measures across all areas

## Protective ramp-up measures

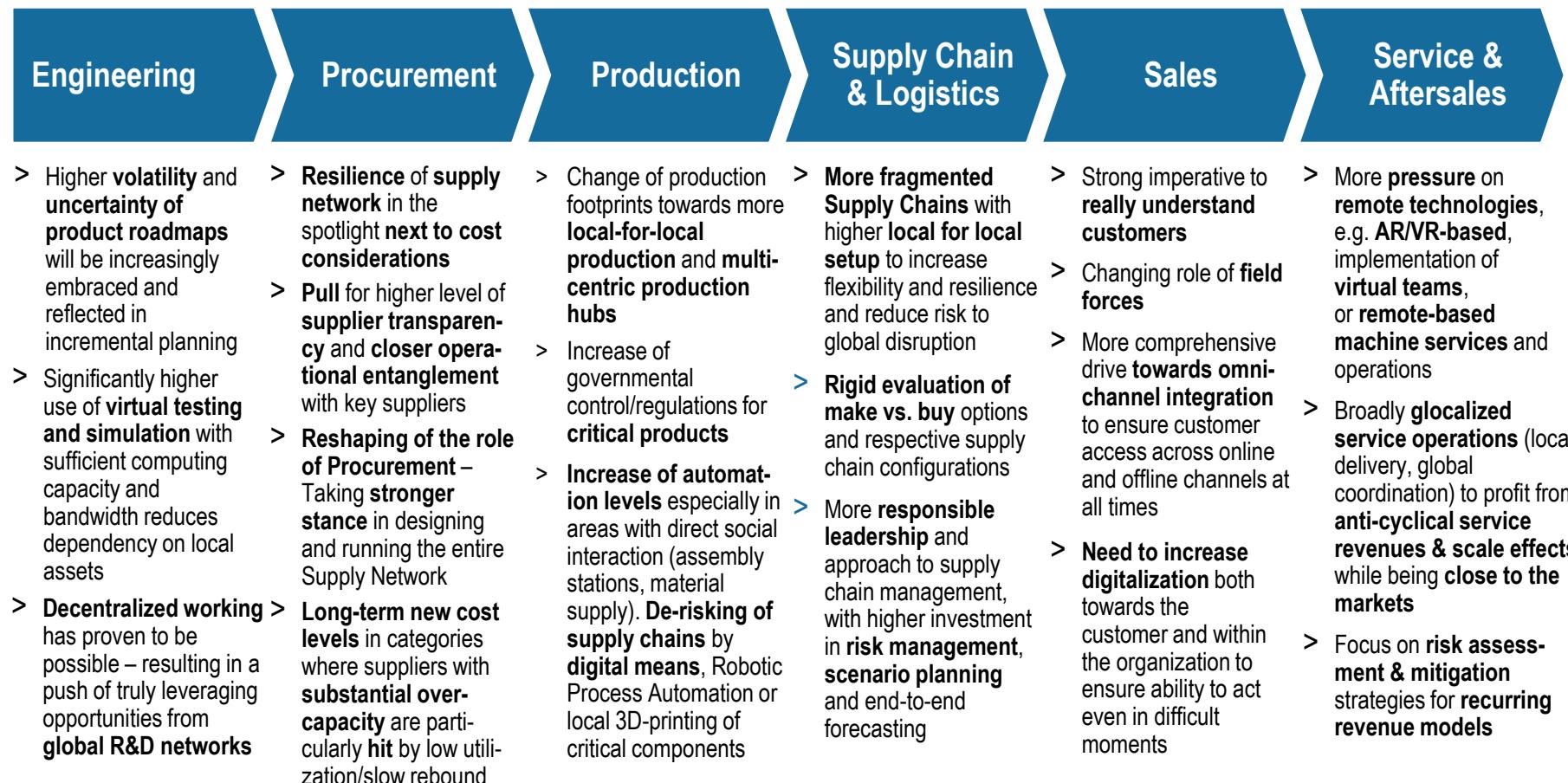


# The "new normal" is structurally different – Demand cut triggers structural knock on impact on market structures



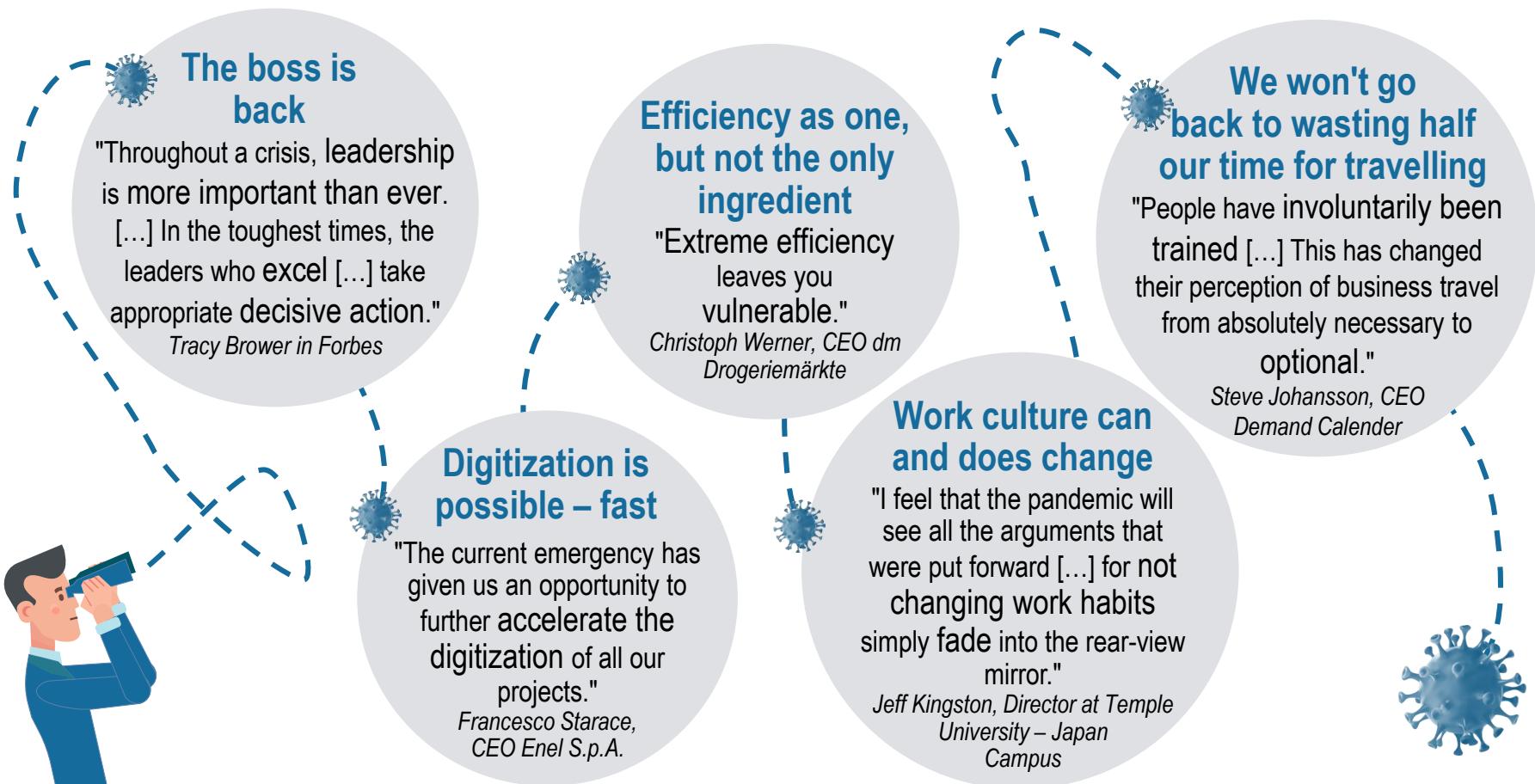
# In the mid- to long-term, the rail supply industry has to adapt to the "New Normal" along all steps of the value chain

## "New Normal" in rail supply – relevant changes



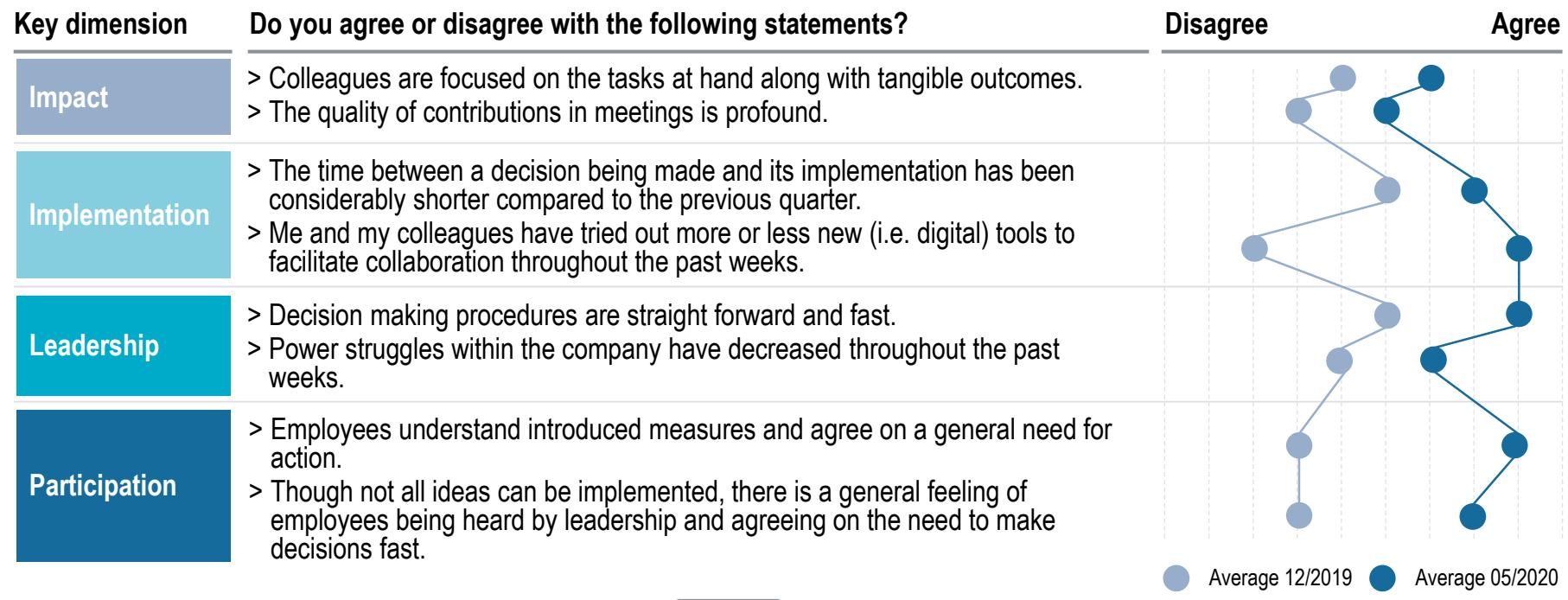
# Finally, the transition to new normal is a window of opportunity for a new leadership: Result-driven, braver and people-centered

## Leadership learnings during lockdown



# The lockdown forced many of us to rediscover a lost world of teamwork, decision making and simply getting things done

## Changes within the company during COVID-19



**Identifying and conserving the rediscovered lessons of "getting things done how it used to be" can leverage the crisis to become a key enabler for your organization post-COVID-19**

In today's webinar, we will discuss implications of Covid19 on rail supply and draw a picture of the new normal within the industry

## Content

A



### Implications of Covid19 on rail supply industry

- > **Short-term** – Negative effects across all segments leading to significant drop in revenues
- > **Long-term** – Return to pre-crisis level from mid 2021 onwards

B



### The new normal

- > **Ramp-up** – Protective measures required across all areas
- > **Institutionalization** – Adapting to a “new normal” while leveraging a window of opportunity for a new leadership

C



### Conclusions and Q&A

- > **Need for action** – Long-term economic viability and adaptation of working methods to be taken into focus
- > **Your questions**

After short-term crisis response, long-term economic viability and adaptation of working methods needs to be taken into focus

## Take-aways



In the **short-term**, rail supplier will face a **drop in revenues**, **imbalanced inventories** depending on systems/components and face **risk of penalties**



Differently directed effects create **uncertainties in long-term** (fiscal stimulus, local manufacturing, mobility behavior) – However, **return to pre-crisis level expected**



Rail suppliers therefore need to effectively counter these developments, in particular the transition phase with **respective measures on the revenue and cost side**



In the long-term, the rail supply industry has to **adapt to the patterns of the “new normal”** along all steps of the value chain



Transition to new normal does not only trigger need to act, but is a **window of opportunity for a new leadership**

We are happy to take your questions...



Q&A



Roland  
**Berger**  
THINK:ACT

