



PIARC Webinar

COVID-19

24 March 2021

Welcome!

Our Speakers today

- **Patrick Mallejacq**
 - Secretary General, PIARC
- **Tim Henkel**
 - Minnesota Department of Transportation, USA
- **Lincoln Flor**
 - World Bank
- **Fabio Pasquali**
 - ANAS S.p.A, Italie - Président du CT 1.2
- **Peter Plumeau**
 - EBP, USA
- **Frank Bruns**
 - EBP, Switzerland
- **Joseph Mahon**
 - Federal Reserve Bank of Minneapolis, USA
- **Dejan Makovsek**
 - Public Governance Directorate, OECD

Participation in the webinar.



Your camera and microphone must remain off.



You can ask questions in the chat. At the end of all presentations, Bingxin Yu (FHWA) will check the chat and ask questions to the panelists.



A limited number of questions can be answered due to the large number of participants.



Tip: Close the chat window to see the full presentations.

Basic rules for Zoom on line meetings



There will be presentations so **be sure to access from a device that allows you to see visuals** (i.e. a laptop or ipad)



Please **mute yourselves and keep the video off** during the presentations **to avoid background noises and connection overload**



Use the chat functionality and ask questions at any time. We will collect them and direct them during the Q&A session

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Next, hover your mouse over your name in the "Participants" list on the right side of the Zoom window. Click on "Rename".

Enter the formula Name, Surname (FR) and click on "OK".





Introduction to PIARC activities

Patrick Malléjacq

Secretary General, PIARC

#PIARCCOVID19



What is PIARC?

- **PIARC** is the new name of the **World Road Association**
- We were **founded in 1909** as a non-profit, non-political association
- **Our goal is to organise exchange of knowledge on all matters related to roads and road transport**
- We have 124 member governments, as well as regions, groups/companies and individuals.
- It is the first global forum for the exchange of knowledge, policy and practice on roads and road transport.



PIARC COVID-19 Response Team



Summary Terms of Reference (Revised PIARC Strategic Plan)

- To explore rapid sharing of knowledge and practice between PIARC members on COVID-19 impacts, responses & associated socio-economic crisis
- To propose and implement short-term actions to support PIARC members and transport professionals in COVID-19 mitigation and response
- To track the course of COVID-19 over time and advise on further actions to be taken by PIARC and others during the crisis and into the recovery
- To advise on medium- and long-term implications of COVID-19 on the roads and transport sector and how these should be reflected in PIARC activities
- To prepare and publish technical reports, surveys and other analysis on COVID-19, alone or in collaboration with other industry bodies & stakeholders

Currently established to **31st December 2021**, extendable as required

Current Membership

- Patrick Mallejacq, Secretary General, PIARC (Chair) (FR)
- Christos Xenophontos, Rhode Island DOT, TC 1.1 Chair (USA)
- José Manuel Blanco Segarra, Ministerio de Transportes, Movilidad y Agenda Urbana, TC 1.1 Spanish Secretary (ES)
- Jonathan Spear, Atkins, TC 1.1 WG 2 Leader (UK)
- Fabio Pasquali, ANAS S.p.A., TC 1.2 Chair (IT)
- Caroline Evans, National Transport Commission, TC 1.4 Chair (AU)
- Yukio Adachi, Hanshin Expressway Engineering Co, TC 1.5 Chair (JP)
- Andrea Simone, University of Bologna, TC 2.1 Chair (IT)
- Luis Miranda-Moreno, TC 2.1 Spanish Secretary (CA)
- Valentina Galasso, Deloitte Consulting, TC 2.4 Chair (IT)
- Martin Ruesch, Rapp Trans Ltd, TC 2.3 Chair (CH)
- Pascal Rossigny, CEREMA, TC 3.3 French Secretary (FR)
- Saverio Palchetti, ANAS S.p.A., TF 3.1 Chair (IT)
- Andrea Peris, Paraguay National Committee (PY)

More than twenty webinars... ... in English, French, and Spanish

Covid-19 Phase 0 – Economic consequences for a NRA



- The decrease of traffic
 - was higher in the toll motorway network than in the non-tolled motorways and the ordinary roads
 - was higher for light traffic than heavy traffic

Freight & Logistics

- On site: main concerns are
 - Drivers health and food
 - Employees health and safety (O&M is Egis Exploitation Aquitaine, 100 people)
 - Maintain area clean and secure
 - Service provider economic sustainability (limited turnover) – 4 service stations (total approx. 100 employees)



1. Ensuring employees health and safety

- Primary concern for contractors and their Professional Associations (PA)
- In many countries, recommendations were published regarding appropriate safety measures to be adopted by contractors
- Often drawn up jointly by government and PAs
- Either general or specific (e.g. in France, road contractors, pipe-fitters,...)
- Also differences urban/rural environment, building/infrastructure
- PAs have organized training sessions (mainly aimed at SMEs), pilot jobsites



COVID-19 & roads in Paraguay



RECOVERY

The road transport situation

- Generalisation of electronic toll collection on motorways and limitation of the loading of toll cards on line
- Prohibition of inter-city travel without highly justified authorization
- Abolition of collective means of transport except for taxis with only one passenger per taxi
- Limitation of vehicular movements in the residential area except for justified professional necessity

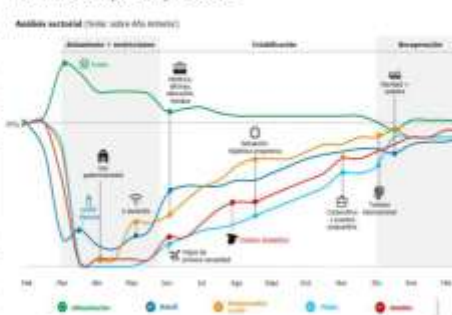


¿Cómo compara esta crisis contra 2008?

A diferencia de la crisis de 2008, que duró años, estimamos que la salida de esta crisis será cuestión de trimestres



Racional de recuperación por sectores



COVID-19 Transportation Impacts: New York City

Summary of Transportation Trends across Modes in NYC

Mode	Percent Change in Mid-March
Road Traffic	-50% speed -60% volume
Taxi	-91% ridership
Public Transit	
• Bus	-50% ridership
• Subway	-60% ridership
Trains	
• Metro North	-60% ridership
• Long Island Rail Road	-67% ridership

Many PIARC Partner Organisations agreed to join our Webinars as panelists



- In addition to many panelists from the network of PIARC members

PIARC Detailed Technical Report

- **COVID-19: initial impacts and responses to the pandemic from road and transport agencies**
 - In-depth analysis
 - Recommendations
 - Implementation measures
- Published in December 2020 (www.piarc.org)
- Languages: English, Spanish, French

<https://www.piarc.org/en/order-library/34613-en-COVID-19:%20initialimpacts%20and%20responses%20to%20the%20pandemic%20from%20road%20and%20transport%20agencies>



Webinar Topics & Setting the Stage

Post COVID – Planning for Economic Recovery



Agenda

- Topic #1: Transportation Trends and Planning Considerations
 - Tim Henkel, Minnesota DOT - “USA Transportation Trends and Planning Considerations”
 - Lincoln Flor & Lorena Sierra, World Bank – “International Trends and Issues Impacting Infrastructure Investment in Latin America”
- Topic #2: Predicting the Post-COVID-19 World
 - Fabio Pasquali, ANAS Italy – Topic Introduction and Perspective
 - Peter Plumeau, EBP USA & Frank Bruns, EBP Switzerland – “Post-Pandemic World: Role of Transportation Investment in Economic Recovery and Growth”
- Topic #3: Case Studies and Perspectives - Predicting the Post-COVID-19 Implications on Economic Development and/or Transportation
 - Tim Henkel - Topic Introduction and Perspective
 - Joseph Mahon, Mpls Federal Bank - “The Mid-West Economy in a Pandemic”
 - Dejan Makovsek, OECD – “Infrastructure for Post-COVID Economic Recovery”
- Conclusion & Closing Remarks

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Topic #1

USA Transportation Trends and Planning Considerations





Post COVID: Planning for Economic Recovery

Tim Henkel

Assistant Commissioner | Modal Planning and Program
Management Division

Technical Committee Member, Tech 1.2

24 March 2021

COVID-19 in the U.S.A

Changes Since October 14, 2020 AASHTO Presentation (Jim Tymon)

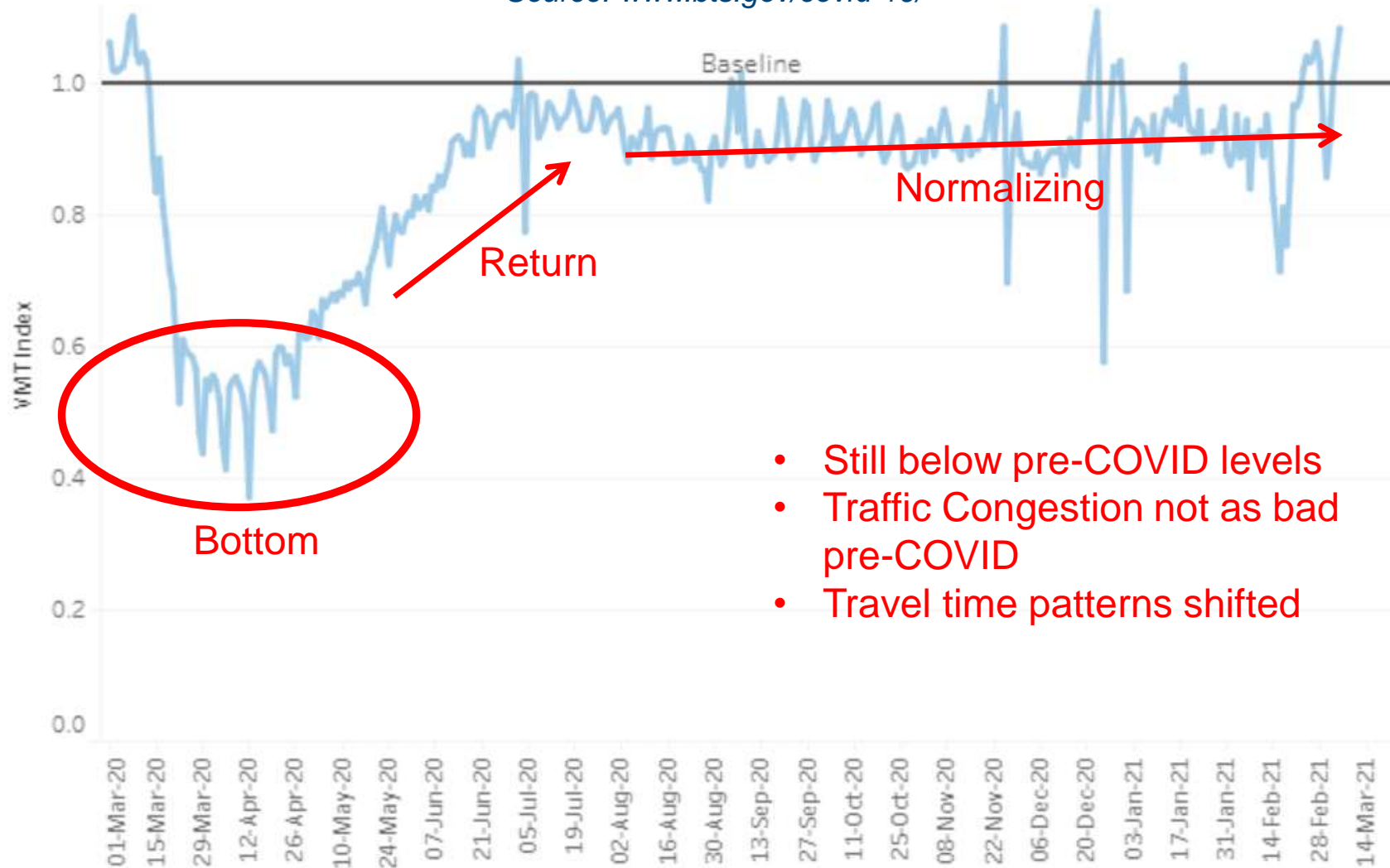
- ~~215,000 people have died in the U.S.A. from COVID-19~~
 - **539,000* deaths**
- ~~7,815,000 COVID-19 cases have been reported~~
 - **29,700,000* cases reported**
- ~~Number of COVID deaths per day peaked in mid-April~~
 - **Peaked on January 12, 2021 with 4,406 deaths per day**
- ~~Number of COVID cases reported per day peaked in mid-July~~
 - **Peaked on January 8, 2021 with 300,619 cases reported per day**

**Data are estimated as of March 19, 2021, rounded.*

COVID-19's Impact on Transportation

Passenger Vehicle Miles Traveled

Source: www.bts.gov/covid-19/

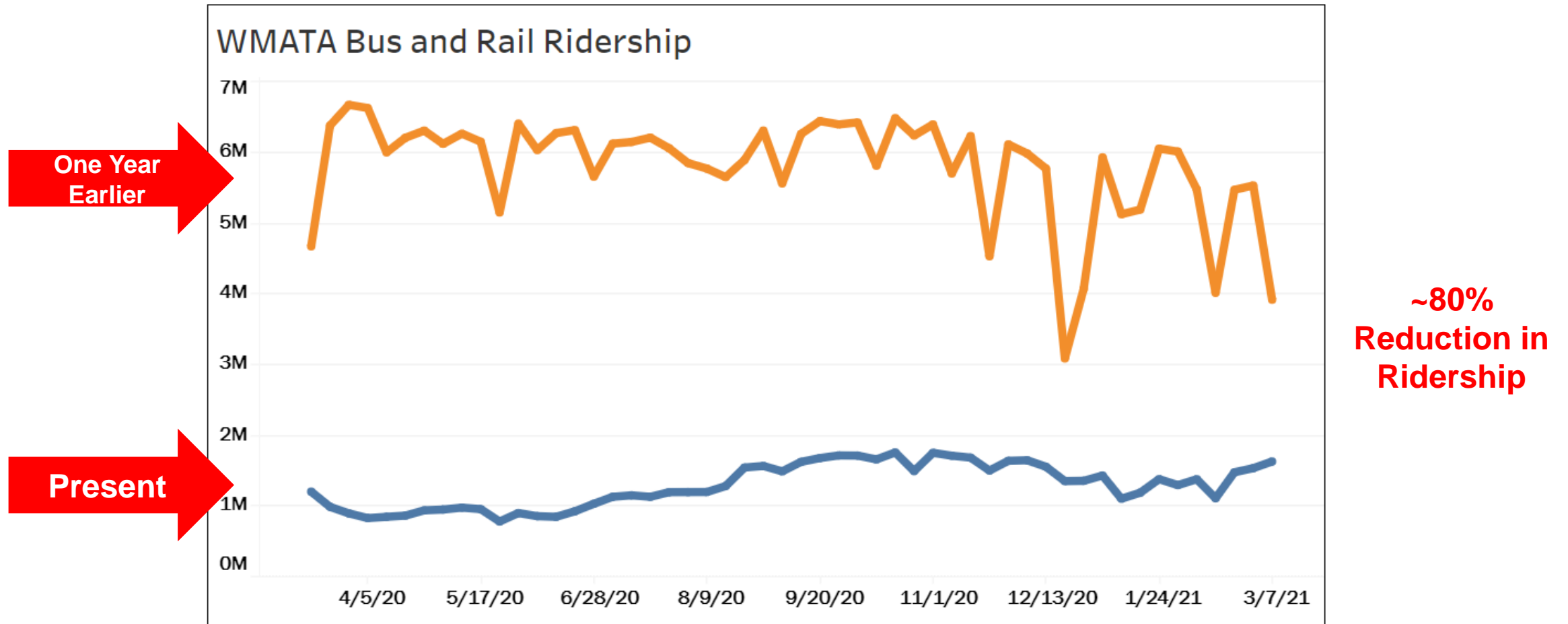


- Still below pre-COVID levels
- Traffic Congestion not as bad pre-COVID
- Travel time patterns shifted

COVID-19's Impact on Transportation

Transit Ridership (Washington, DC Region)

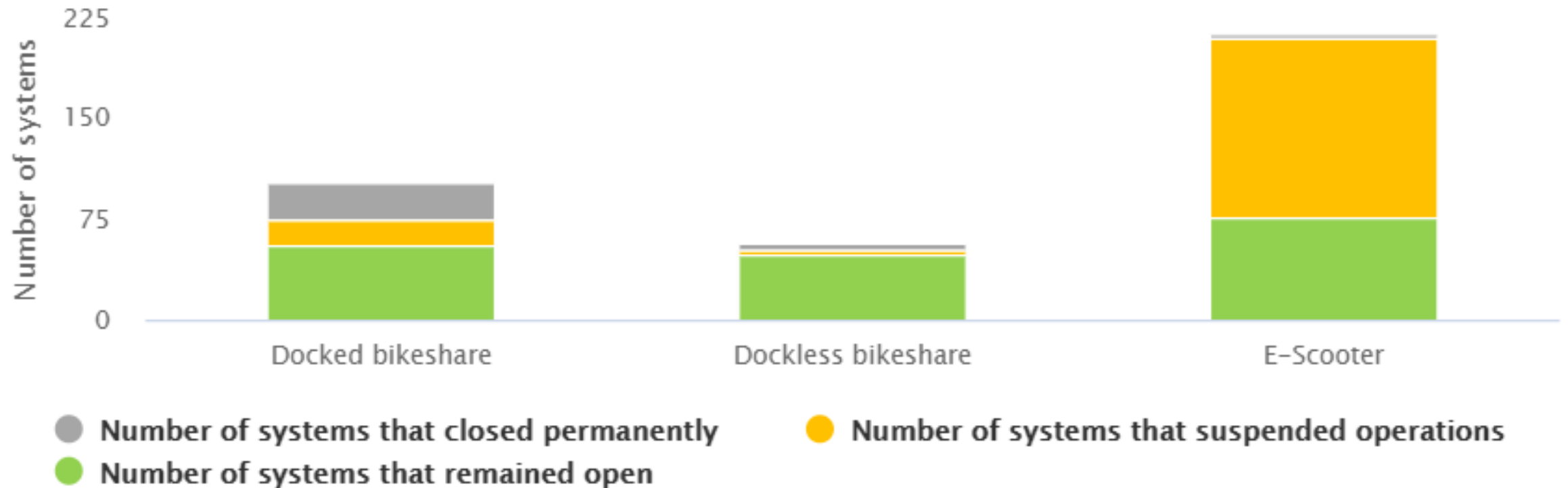
Source: www.bts.gov/covid-19/



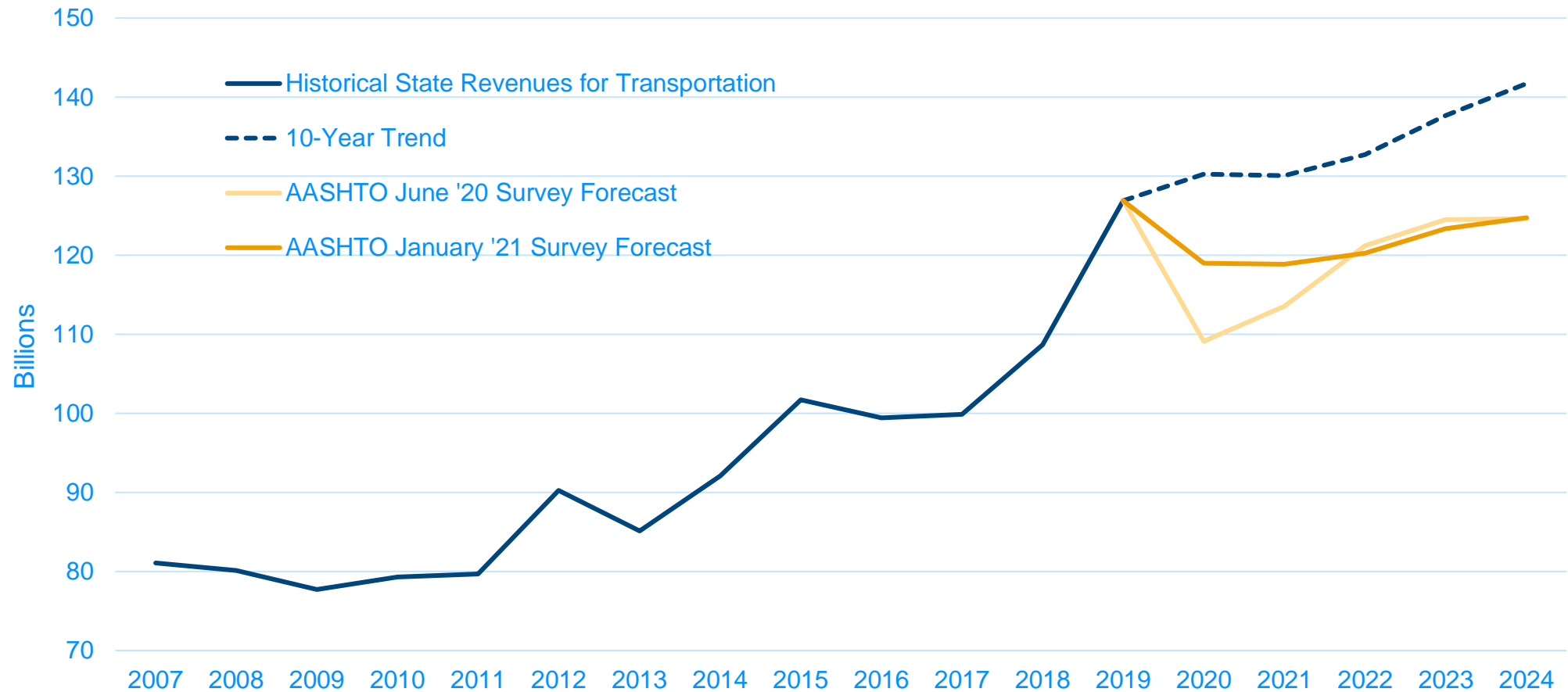
COVID-19's Impact on Transportation

Micromobility: Closure and Suspension

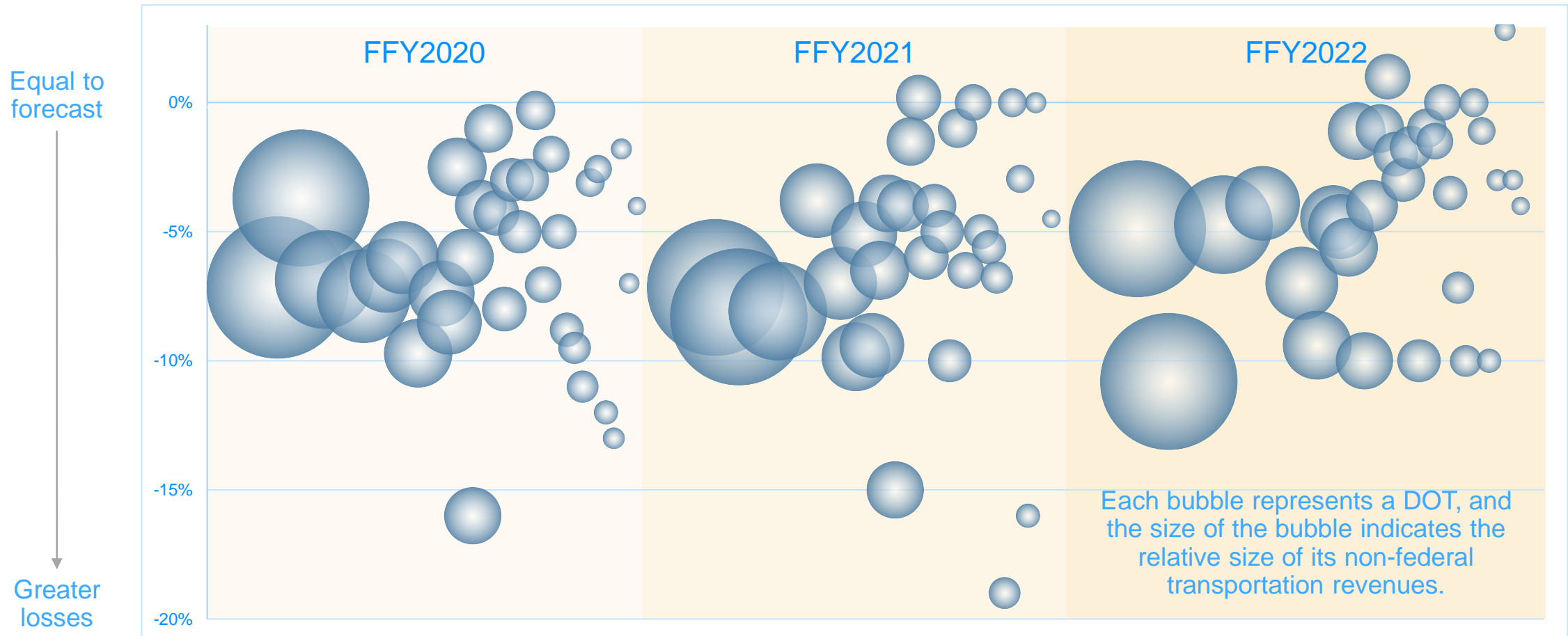
Source: www.bts.gov/covid-19/



US State Transportation Revenue Forecast



Estimated Percent Revenue (Loss)/Gain Compared to Pre-COVID Forecast



What Have We Learned Since March 2020

- COVID-19 Impacts Each State Differently
- As Traffic Decreased – Speeding, Crashes, and Fatalities Increased
 - ↑ Speeding = ↑ Crashes
 - ↑ Traffic Fatalities in CY2020
 - Significant concerns about transportation safety performance targets
- Traffic is Returning to Normal Levels
 - Congestion has been significantly reduced in most US cities
 - Washington, DC went from 4th to 12th in CY2020 as most congested city in the US.

Considerations for the Future

- How will the current travel patterns continue in the future?
 - Work from Home as a more significant “mode choice”
 - Reluctance to use transit for those that have the choice not to
 - Increased use of micromobility modes?
- New travel patterns coupled with social equity concerns
 - How do we ensure social equity is addressed moving forward in a new paradigm of transportation planning.
- De-carbonization of transportation
 - In the US, transportation funding is tightly coupled with gas tax.
 - Do we de-couple this and how is that done in an equitable manner?
- Planning for future scenarios
 - How long will current trends last?
 - How do we account for significant unknowns in the future?
 - How do we prepare for possible futures today?



Transportation Trends and Planning Considerations

Lincoln Flor & Lorena Sierra

Senior Transport Economist, World Bank

#PIARCCOVID19: Planning for Economic Recovery Post-COVID

March 24th, 2021

Lincoln Flor

- Senior Transport Economist, World Bank
- Economist and engineer, PhD (c) in Accounting and Business Sciences.
- PPP in transport infrastructure, urban transport, infrastructure reforms, governance and contract management.
- More than 20 years of experience working in PPP and economic regulation for transport infrastructure.
- Lecture in the Department of Economics at the Pontificia Universidad Catolica of Peru.
- Peruvian citizen



Agenda

- International trends and issues impacting infrastructure investment in Latin America
- Investment in infrastructure has potential to support growth, poverty reduction, and competitiveness
- Recovery strategies for a post-COVID



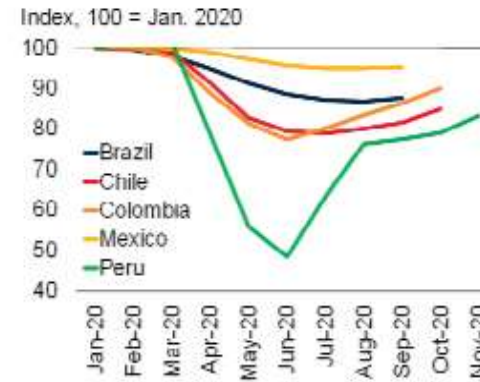
Fuente: PROINVERSIÓN, Perú

International trends and issues impacting infrastructure investment in Latin America...post pandemic or new pandemics?

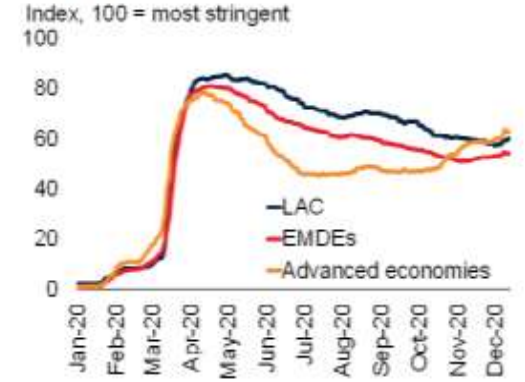
Copyright:

- Uncertainty in travel demand any many operators are broke in the region.
- The regional economy is expected to expand by a moderate 3.7 percent in 2021 (WB 2020)
- Infrastructure services have been affected in the short run and are expected to be significantly impacted in the medium and long terms
- Human capital is being eroded due to large number of workers being separated from their jobs for a prolonged period
- Policies have to boost productivity, enhance the labor market and promote infrastructure investments

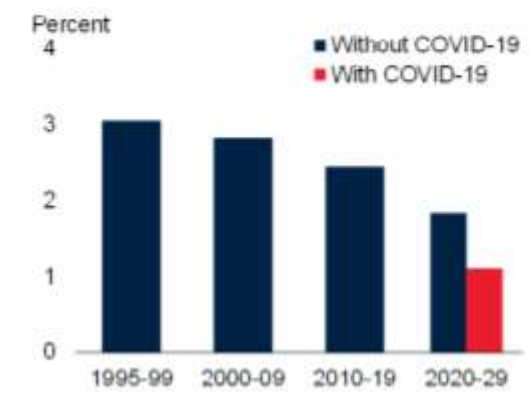
C. Employment



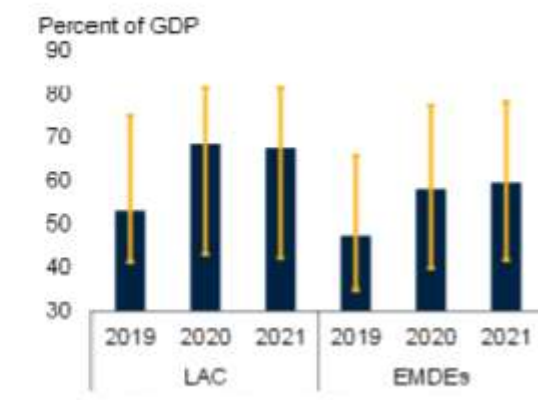
B. Stringency of COVID-19 mitigation measures



C. Potential growth

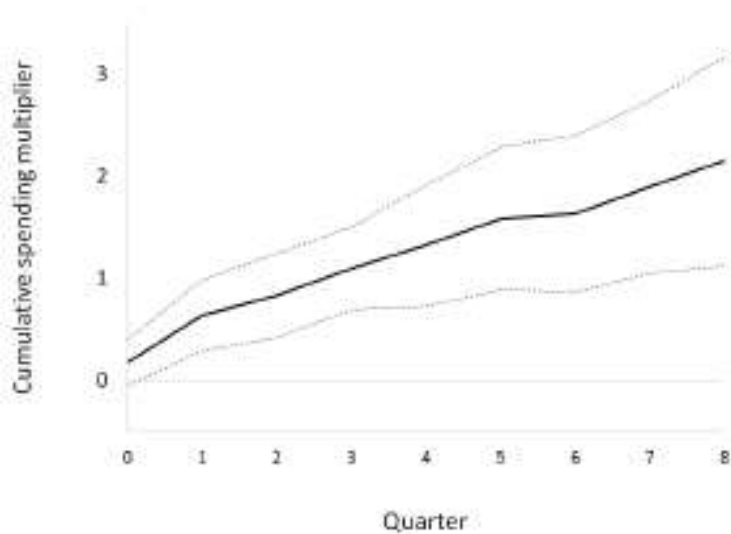


D. Government debt



Investment in infrastructure has potential to support growth, poverty reduction, and competitiveness

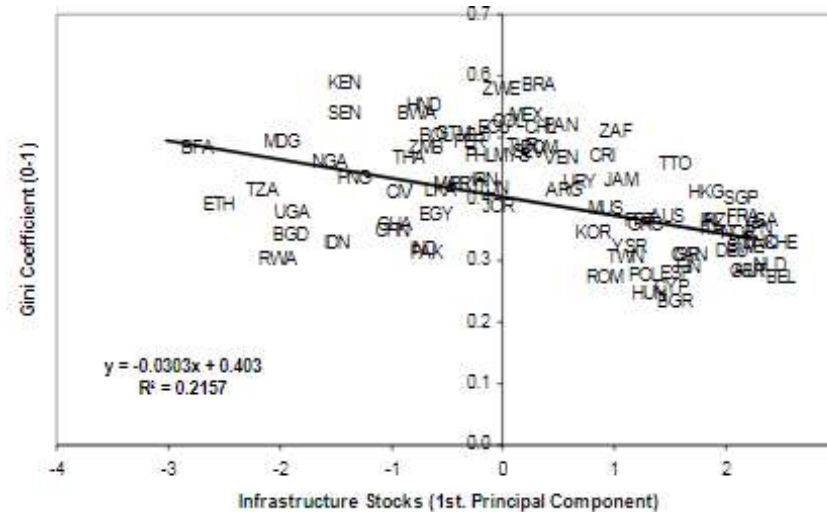
Effect of Public Investment on GDP
Evaluated at low ratio of initial stock of public capital to GDP



Evidence from European Countries. Evaluated at low, 5th percentile, initial stock of public capital over GDP ratios. Source: Izquierdo, A. et al. (2019). Is the Public Investment Multiplier Higher in Developing Countries? An Empirical Investigation. NBER.

↑
Growth

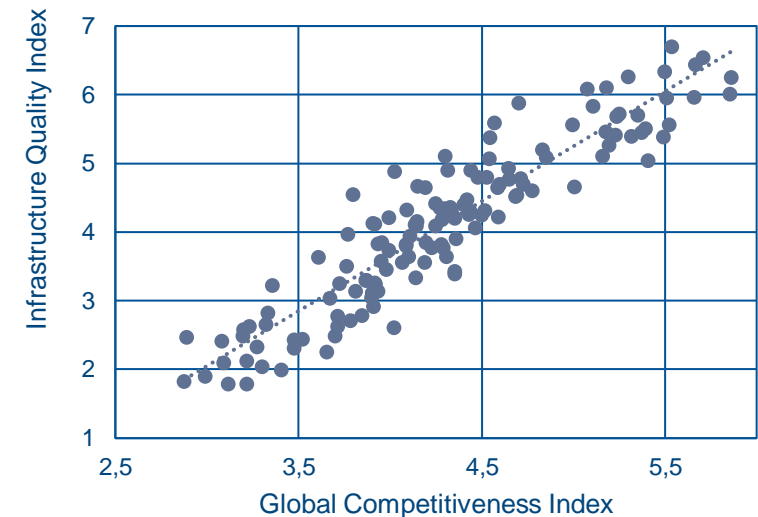
Infrastructure Stock vs Income Inequality



Source: Calderón, C. and L. Servén (2004) "The effects of Infrastructure Development on Growth and Income Distribution"

↓
Equity

Infrastructure Quality vs Country Competitiveness



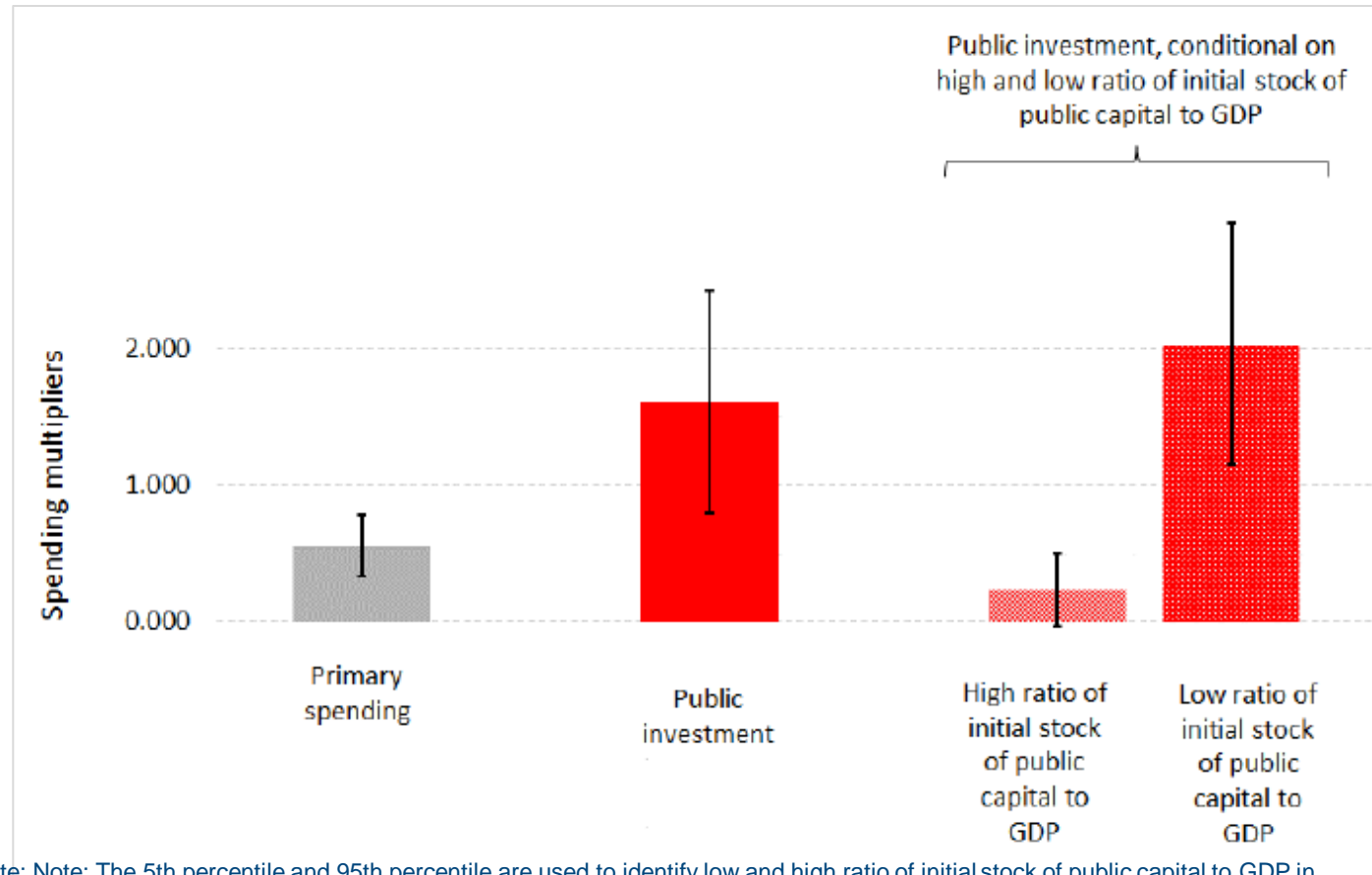
Source: World Economic Forum (2017). Perception-based infrastructure index.

↑
Competitiveness

Investment in infrastructure: evidence from Argentina

Under certain conditions infrastructure investment multipliers are larger than primary spending multipliers

Primary spending and public investment multipliers:
Evidence from Argentinean provinces



Note: Note: The 5th percentile and 95th percentile are used to identify low and high ratio of initial stock of public capital to GDP in Argentinean provinces, respectively.

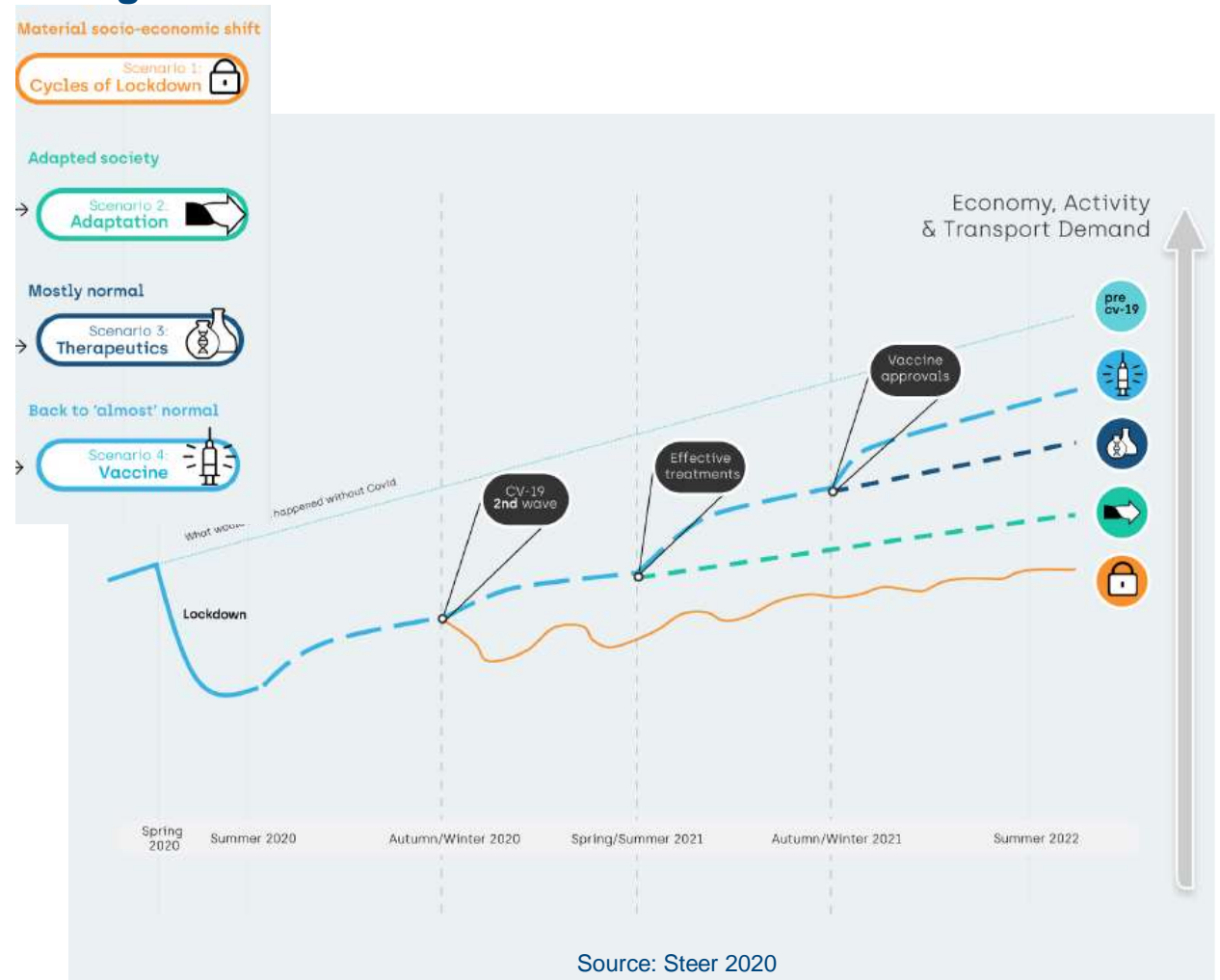
Source: Izquierdo, A. et al. (2019). Is the Public Investment Multiplier Higher in Developing Countries? An Empirical Investigation. NBER.

Jobs and Distributive Effects Infrastructure. Javier Morales (WB 2020)

Investment in infrastructure: evidence from Colombian PPP roads

Road sector risk assessment under COVID-19 and planning scenarios

- **Demand revenue risk:** In 4G PPP concessions, this risk is assumed by the government (except unsolicited proposals) through compensation mechanisms. In other concessions this risk is mitigated by other mechanisms: payments or contract extensions to compensate the revenues.
- **Construction risk and productivity.** In 4G concessions, this risk is assumed by the concessionaires and may affect part of their productivity and working capital. It may be reflected in variations to the work schedules, but in some cases this helps the execution of the project due to the lack of traffic in some sectors.
- **Liquidity risk.** This risk is managed by the concessionaires as toll collection which is the main source of liquidity. Shortages must be made up through other sources of financing or direct capital contributions.



Recovery strategies for a post-COVID19 era

In the Short Term: stimulus spending widely used by policymakers to respond to economic downturns and enhance the labor market

- May be an **efficient short-term fiscal stimulus** in situations of labor market slack and economic downturns.
- Critics would argue that (i) it may have a lasting negative impact on **public debt levels** and that (ii) it can lead to a **poor choice of projects** that are not economically justified in the long-term .
- Studies show that stimulus spending can be more effective when it is debt-financed, with low levels of public debt, in closed economies and fixed exchange rate regimes (Foster, 2020).

In the Long Term: transport infrastructure remains a deciding factor for the economic prospects of a country

- **Transport infrastructure** is a key element of the basics services of an economy. WB is enhancing transport infrastructure investments in the region.
- **Digital infrastructure (ICT)** has become a stronger driver of economic growth even more under extreme conditions.
- The success of **logistics cluster** (logistics region) depends on the close collaboration of industry, government and academia, in addition to advanced transport infrastructure.
- **Integration of transport infrastructure** becomes a key competitive factor. In order to secure the future flows of foreign direct investments, it becomes even more crucial to maintain, upgrade and expand transport infrastructure.

Recovery strategies for a post-COVID19 era

WORLD BANK SUPPORT

In general:

- The WB is swiftly supporting the efforts of LAC to address COVID-19-related impacts, through new operations and by redirecting funds from existing projects.
- Over the next 15 months, the WB's assistance will reach US\$160 billion globally. Much of this will benefit LAC government to better deal with the emergency and maintaining its investments.
- The WB delivered US\$4.6bn in COVID-related IBRD/IDA operations since April. Strengthening health systems, mitigating the pandemic's economic impact, and work with partners and the private sector to address supply chain issues and delivery.

Transport infrastructure investments and job creations:

- US\$1 bi invested in a typical infra LCR portfolio may create around **40,000 direct and indirect** annualized jobs. US\$1 bi may employ from 200,000 to 500,000 direct jobs in rural road maintenance - Schwartz, Andres and Dragoiu (2009).
- Other findings show that US\$1 bi invested in typical infra generate **35,000 direct jobs** – but when only considering large projects of more than \$1 million the potential is less, of about **13,000 direct jobs** (Pastor et al., 2020)
- In MENA, US\$1 bi invested may generate about **50,000 to 110,000 direct, indirect, and induced jobs** (Ianchovichina et al., 2012)

References

Análisis de riesgo por COVID-19 en la infraestructura y sector transporte en Colombia. September 2020, World Bank and Steer

Benchmarking Infrastructure Development 2020 Assessing Regulatory Quality to Prepare Procure and Manage PPPs and Traditional Public Investment in Infrastructure Projects. World Bank 2020

Global economics prospects. January 2020 World Bank

Jobs and Distributive effects infrastructure. Javier Morales (WB 2020)



Thank you!



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Topic #2

Predicting the Post-COVID-19 World





A new agenda for road planners



Fabio PASQUALI

Member of the **PIARC** Response Team

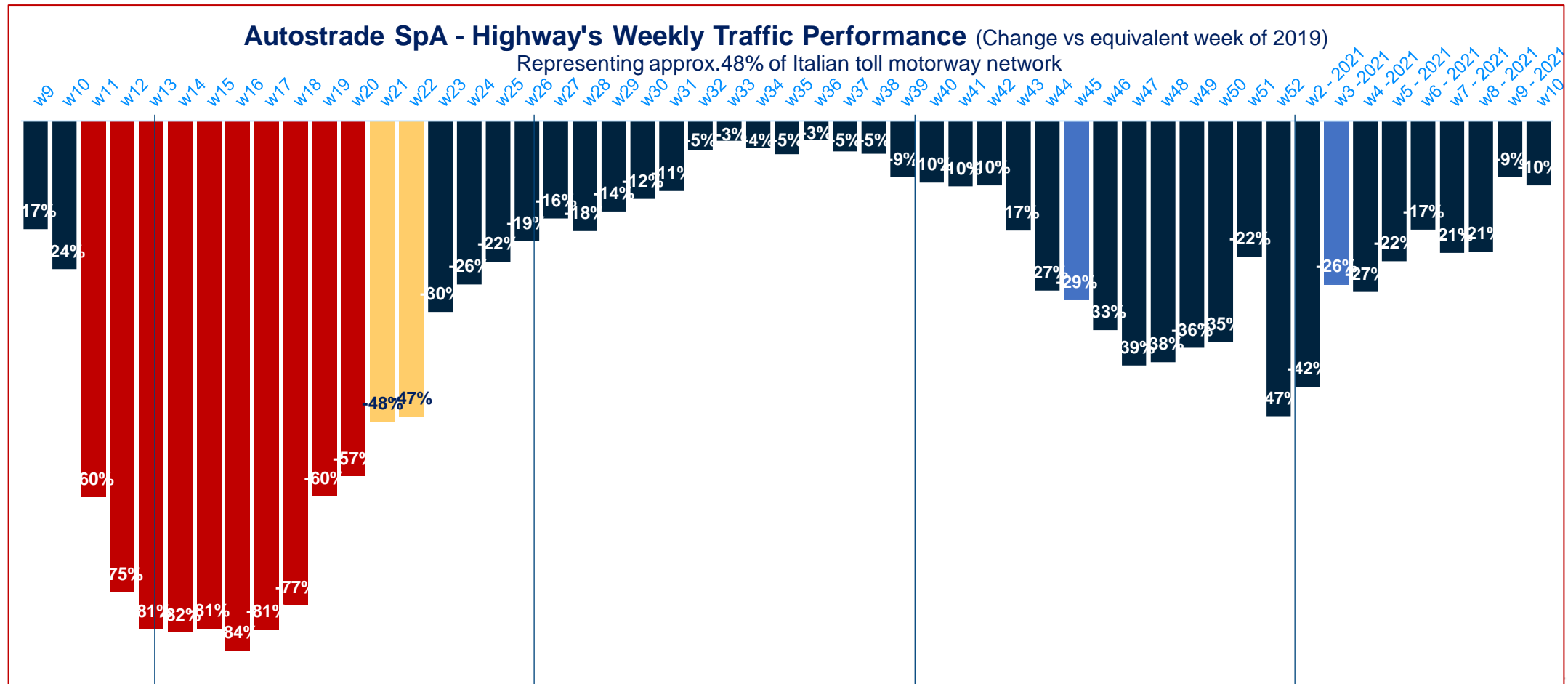
Chair of **PIARC TC 1.2** - Planning Road Infrastructure and Transport to Economic and Social Development

Head of Planning, **ANAS** (Italian State Road Agency)

Italy

Webinar 23 March 2021

In-Covid 19 Trends



Post-Covid 19 Trends – 1/3

- Travel behaviour → regular (in a broad sense) flows
 - Students)
 - Commuters) → Less trips
 - Businessmen)
 - Customers ??? e-commerce ?
 - HGVs (light and heavy) =
 - Leisure flows =
 - *Urban vs. non-urban areas makes a difference! (cycles, trottinettes, etc.)*
- Integration of infras
 - Intermodal hubs for passengers and goods
 - Collaboration between transport mode operators/administrative bodies
 - Possible transport service/management (hub, station, road) by road agencies/operators
 - ITS

Post-Covid 19 Trends – 2/3

■ Decarbonisation vs. revenue shortfall

- Increase of electric vehicles → decrease of oil excises
- Automatic drive vehicles «
- The scenario for high-GDP countries is a decrease of sources of revenue for NRAs
- Need to find new ways of funding
- A possible generalised road pricing
 - distance-based
 - emission-based
 - «logistics fee»

■ Road projects assessment and selection

- More scope for benefits from reduction of GhGs; Discount rates; Time values
- Innovation and integration as a pre-requisite
- Extracting value from different areas/assets

Post-Covid 19 Trends – 3/3

■ Funding and PPPs

- A new season for PPPs with more flexibility in contracts (i.e. force majeure), simplified procurement procedures some terms of the contract partially open, extra cost/revenues sharing, shorter franchises, reinforcement of the internal capabilities
- A wider scope for the concessions (JVs for multi-asset projects)

■ Road Agency options

- Defensive:
 - Looking for the lost revenues, concentrating on the maintenance backlog
- Aggressive (*)
 - Contracting out build & maintain projects (whole life asset assessment and procurement), based on AM
 - Leveraging on the acceleration of investments in infras
 - Collaborating with stakeholders in selecting new projects
 - Re-inventing project assessment parameters and CBAs

■ (*) Credits for some of these topics to: **The Role of Infrastructure Stimulus in the COVID-19 Recovery and Beyond**, by S. Castagnino, S. Subudhi, J. Sogorb and P. Colomar., September 2020 - Boston Consulting Group

Thank you for the attention! I'm ready for questions



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Post-Pandemic World: Role of Transportation Investment in Economic Recovery and Growth

24 March 2021

PIARC Webinar on Planning for Post-Pandemic Recovery

Peter Plumeau
President and CEO
EBP US

Frank Bruns
Senior Economist
EBP Switzerland

Mentimeter Questions 1-3

Visit: www.menti.com

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Participate Throughout the Presentation!

Presentation Overview

- Addressing Post-COVID Uncertainty in Transportation Investment
- Case Studies
- Conclusions

Transportation Investment – Understanding the Economic Connections

User Benefit → Transportation Benefit → Economic Effects

Standard Traveler Benefits

- Travel Time
- Travel Cost
- Safety

Wider Transport Benefits

- Reliability
- Accessibility
- Intermodal Connectivity

Productivity Elements

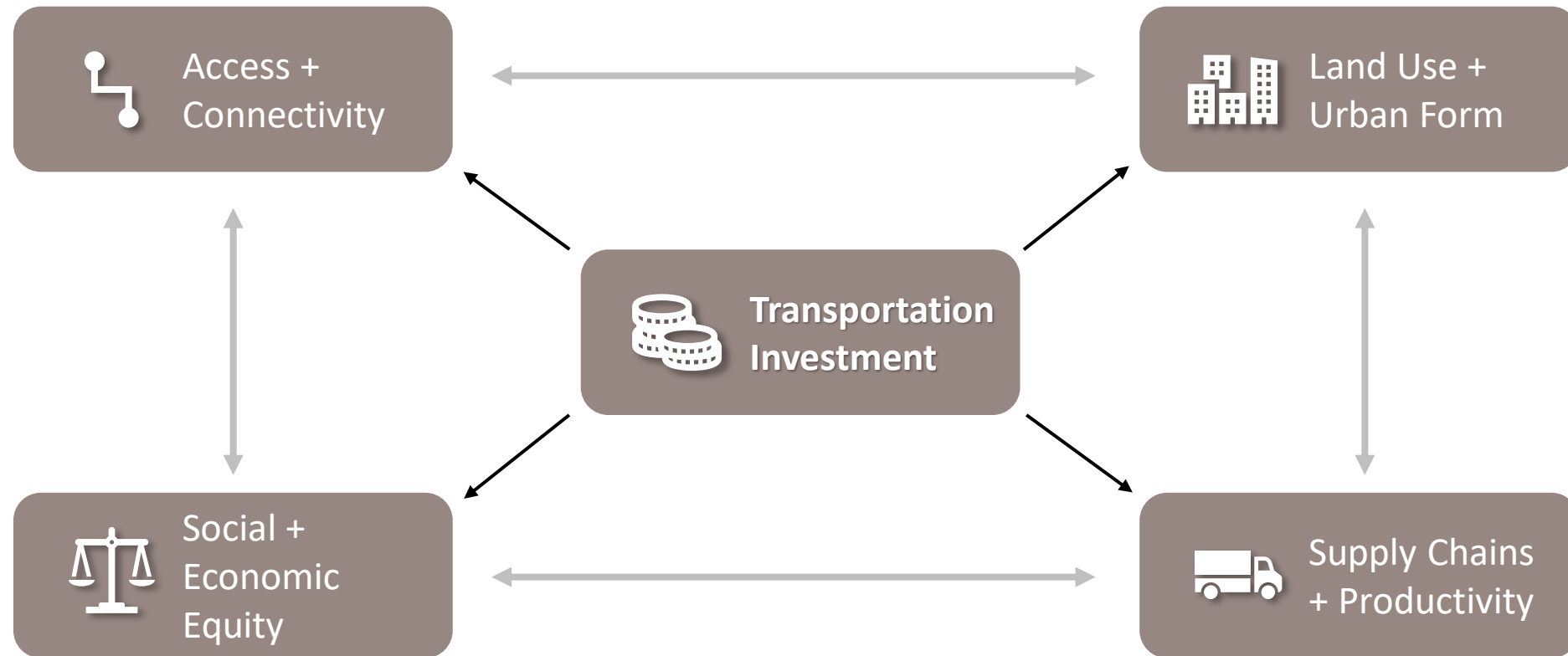
- Transport Efficiency
- Technology
- Agglomeration

Economic Impact

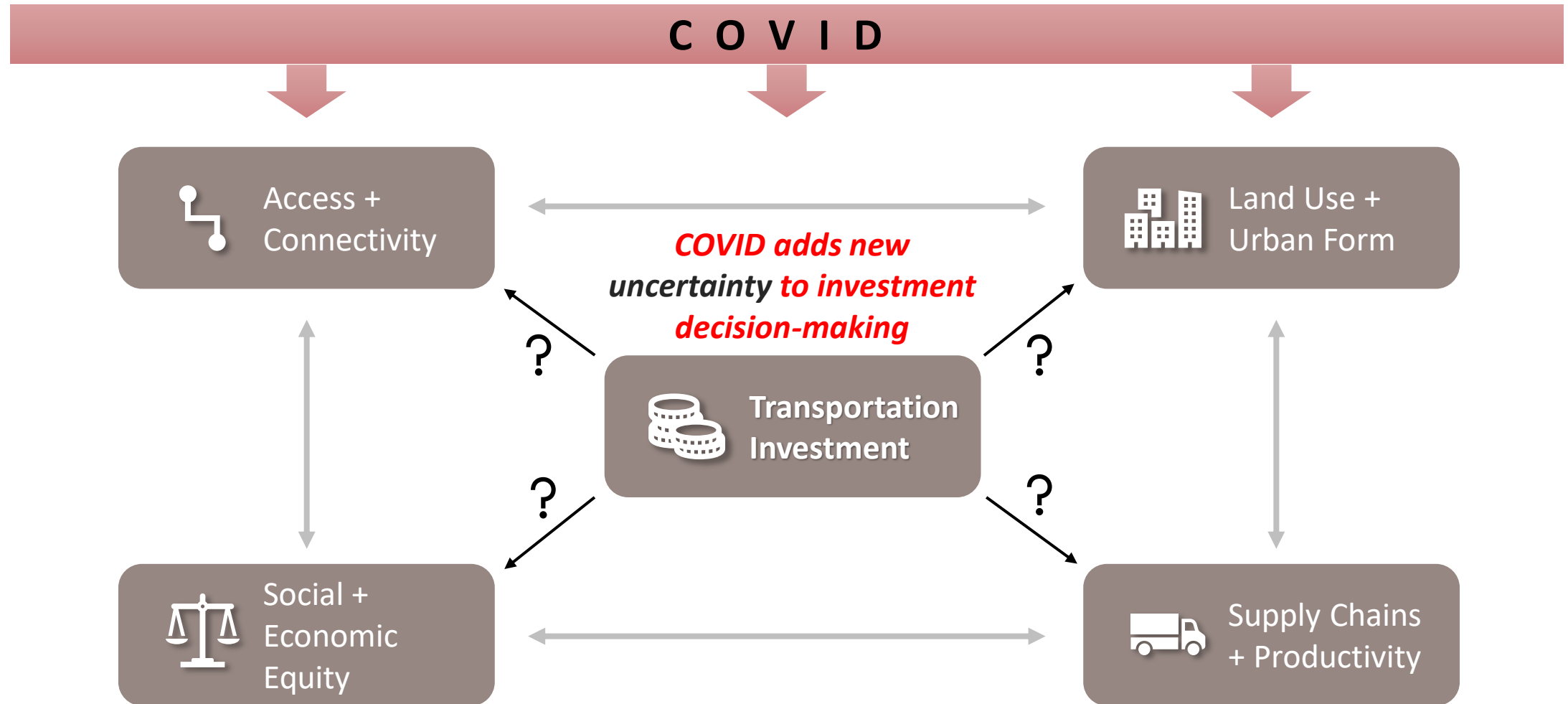
- Output
- GDP (Value Added)
- Employment
- Wage Income

Transportation Investment – A System of Impacts and Benefits

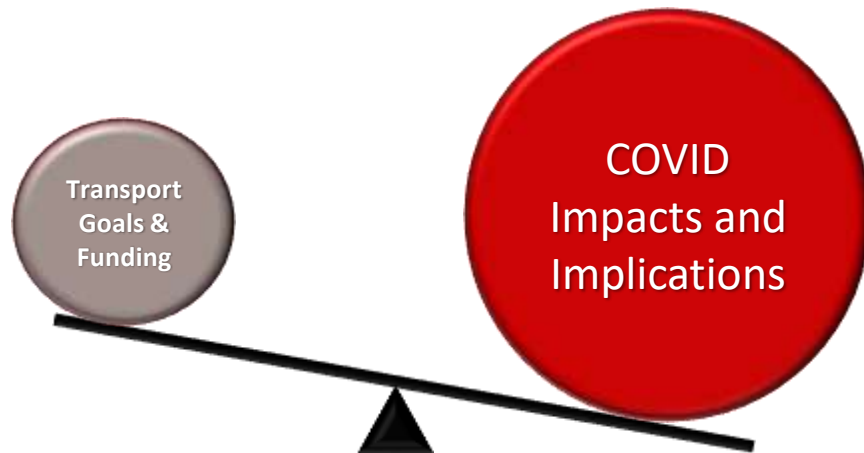
Our transportation investment policies and priorities drive a range of interconnected impacts and benefits



Transportation Investment – More Uncertainty Post-COVID



Addressing Post-COVID Uncertainty



What can we control?

- Transport investment goals & desired benefits
- Funding amounts & allocations

What can we not control?

- COVID prevalence
- “Direct” impacts on society, economy, behavior

What do we want our transportation investments to achieve (desired benefits)?

- Industrial growth?
- Livable communities?
- Low carbon mobility?
- Access to jobs and economic opportunity?

Addressing Post-COVID Uncertainty

How can we optimize post-COVID transportation investment and reduce uncertainty in prioritization and decision-making?

Understand COVID's observable impacts

- Travel behavior changes
- Supply chain and business changes
- Land use and urban development impacts

Leverage insights on COVID impacts through Investment Scenario Planning

- Mitigate uncertainty by assessing how future events may affect achieving goals and benefits
- Understand the impact of different resource allocations under a range of external (uncontrollable) conditions
- Identify best investment path to maximize probability of realizing desired transportation benefits

Mentimeter Question 4

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Case Study 1: Switzerland



COVID: Effects on Transportation Demand (Sources)

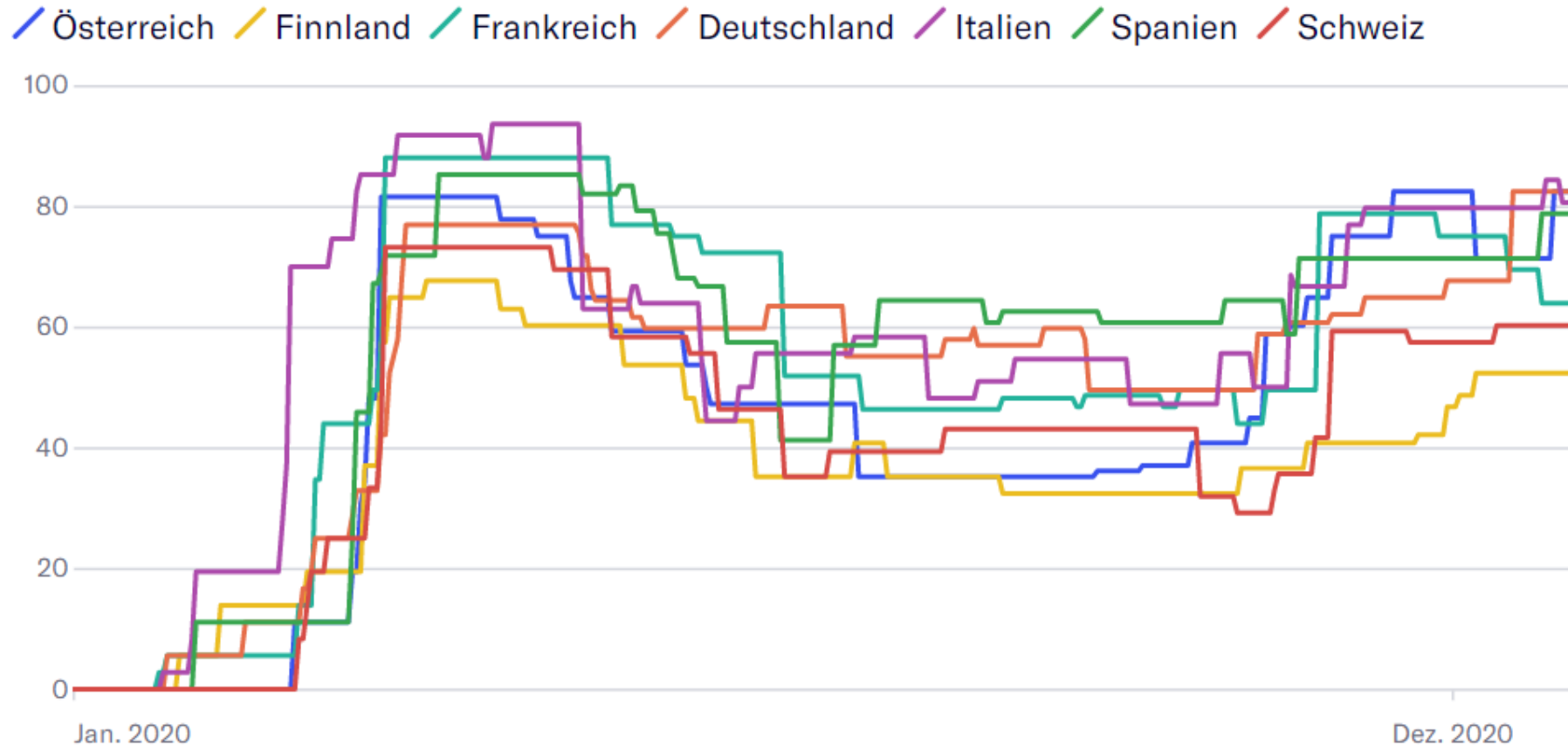
1) ETH Zurich, University of Basel, LINK, MOBIS-COVID19/36, Results as of 22/02/2021 (Second Wave) [Homepage](#)

- MOBIS: Research Project on Mobility Behavior from September 2019 and January 2020: (Logger and Travel Diary App ‘Catch-My-Day’, developed by MotionTag; 3700 participants;
- Since March 2020: 1’300 voluntary participants reinstall the GPS. Actually approximately 900 participants.

The results are shown in comparison to those of the first 4 weeks of mobility data from the original MOBIS Study which were recorded between 1st September and 15th November 2019, and thus serve as a baseline well before the pandemic hit Switzerland.

2) Mobilitäts-Monitoring COVID-19: Forschungsinstitut intervista AG, Auftraggeber Statistisches Amt des Kantons Zürich, Swiss National COVID-19 Science Task Force, KOF Konjunkturforschungsstelle der ETH Zürich, 16.03.2021

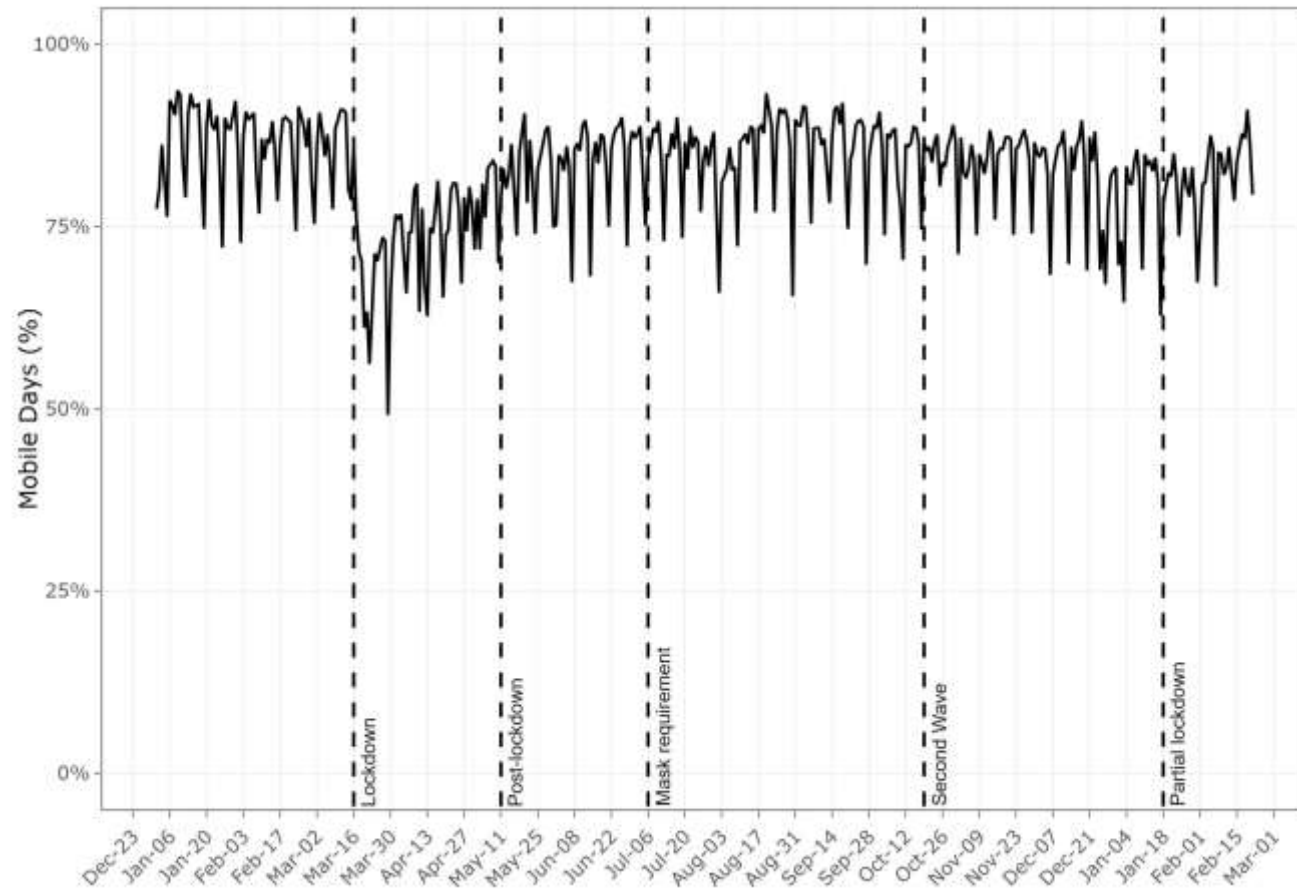
Switzerland: Moderate Restrictions Compared to Other Countries



Quelle: [Coronavirus Government Response Tracker](#)

NZZ / fsl.

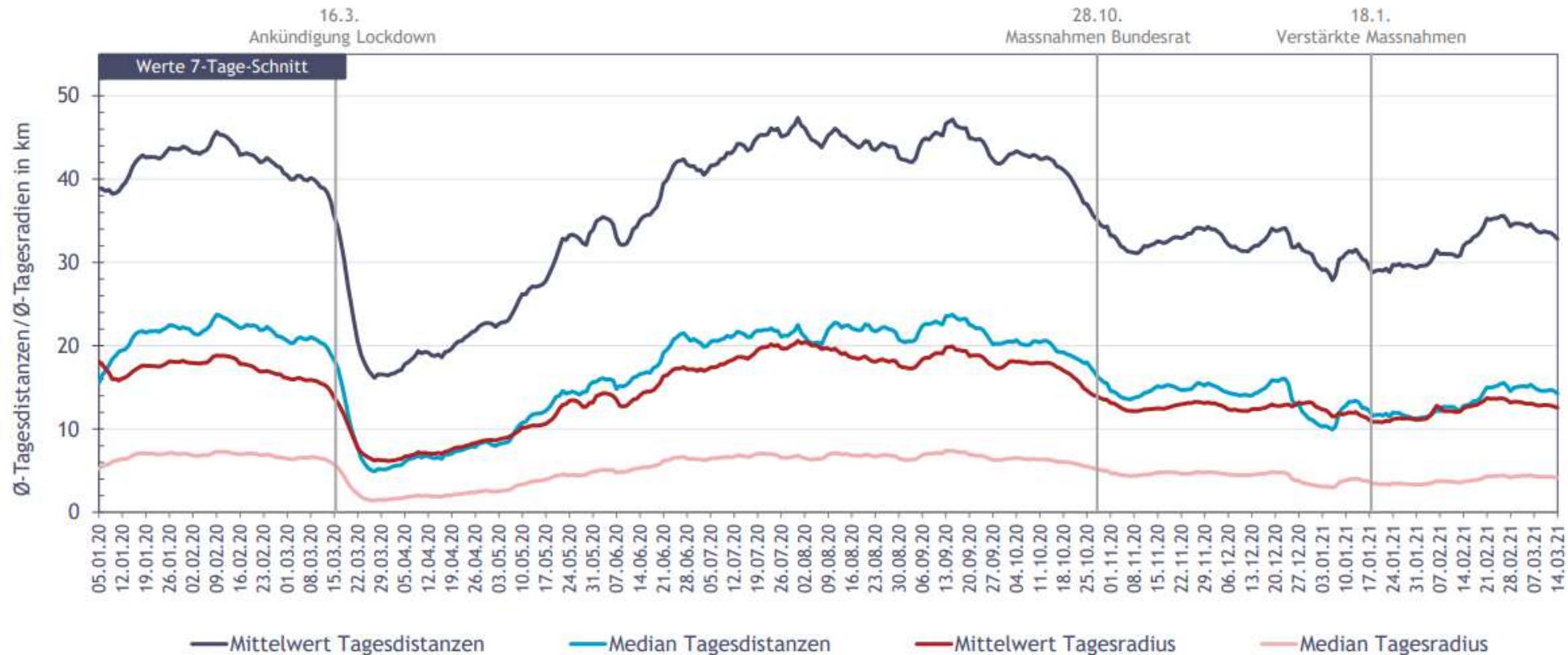
Reduction of Mobile Days



The share of active, i.e. mobile, days shows the anticipation of the lockdown and then the recovery and stabilization to about 80% in August. This is substantially below the 90+% share, which one can expect (Madre et al., 2007). This lower share must be a mixture of WFH, persons furloughed or newly unemployed (and still existing restrictions concerning public events).

100% Original MOBIS Study which were recorded between 1st September and 15th November 2019

Daily Trip Distances and Radius in Switzerland



Durchschnittliche tägliche Basis: n=2'561 Footprints-Panelisten

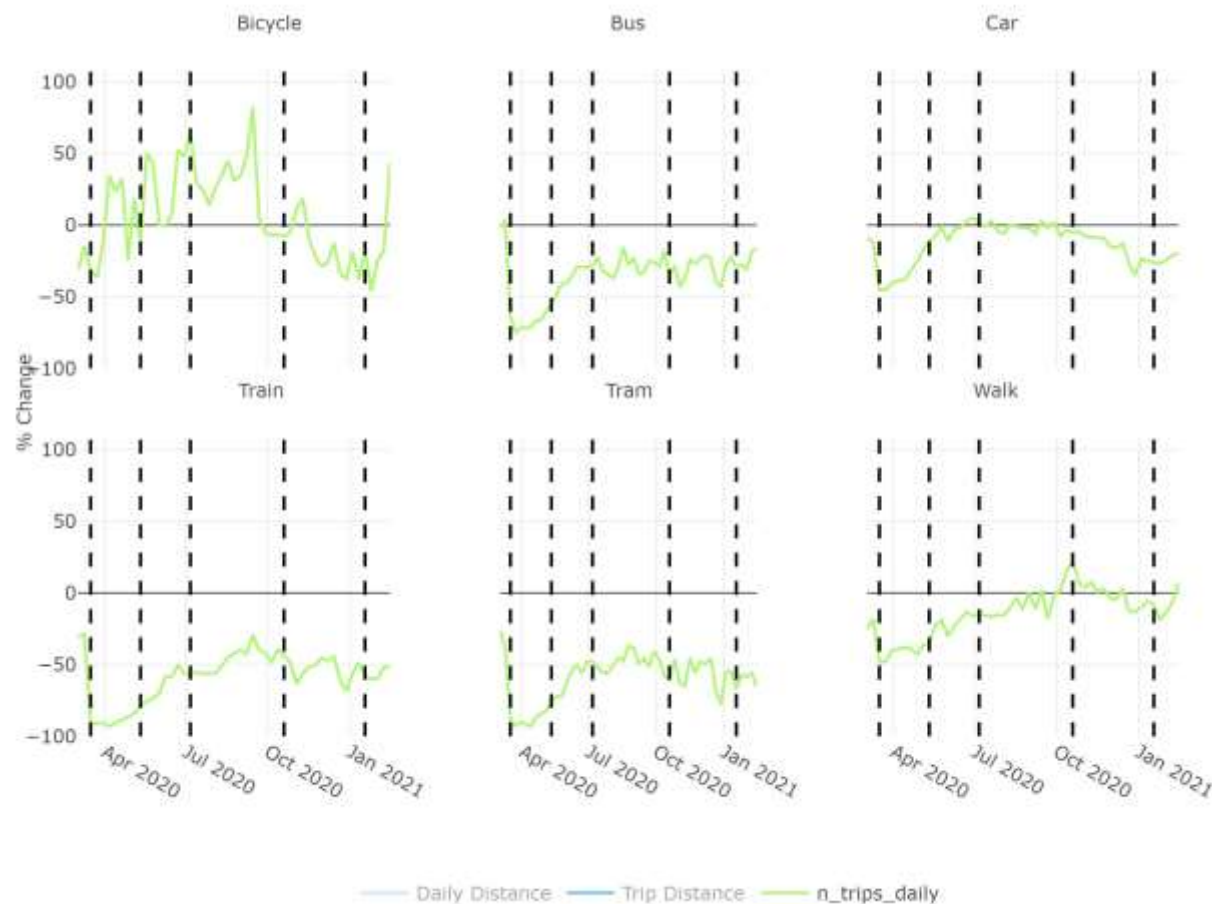
intervista AG | Statistisches Amt des Kantons Zürich, Swiss National COVID-19 Science Task Force, KOF Konjunkturforschungsstelle der ETH Zürich | Mobilitäts-Monitoring COVID-19 | 16.03.2021

10

Change in Daily Trip Distance by Mode



Change in Trips per Mode



The population has shifted away from space-efficient large vehicles, as buses, trams and trains. Usage is down between 40% to 60% of the 2019 ridership after a near complete avoidance in the first weeks after the lockdown.

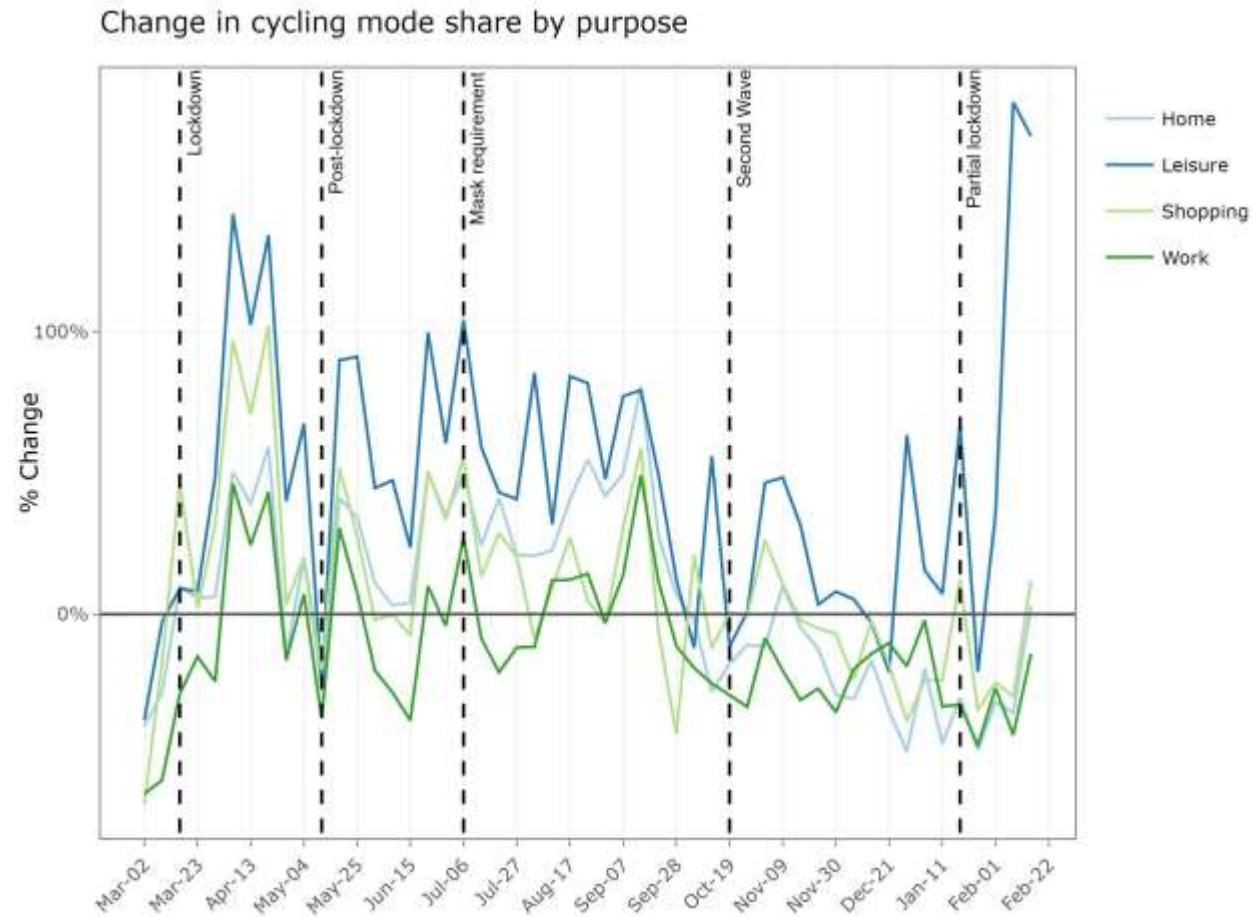
On average, car travel has fully recovered.

Equally, walking has fully recovered. It is worth noting that walking levels never dropped in the same way as for other modes.

The surprise was, and still is, the increased bicycle usage backed up by a boom in cycle acquisition during the good-weather months.

Base: Original MOBIS Study which were recorded between 1st September and 15th November 2019

Change in Bicycle Usage



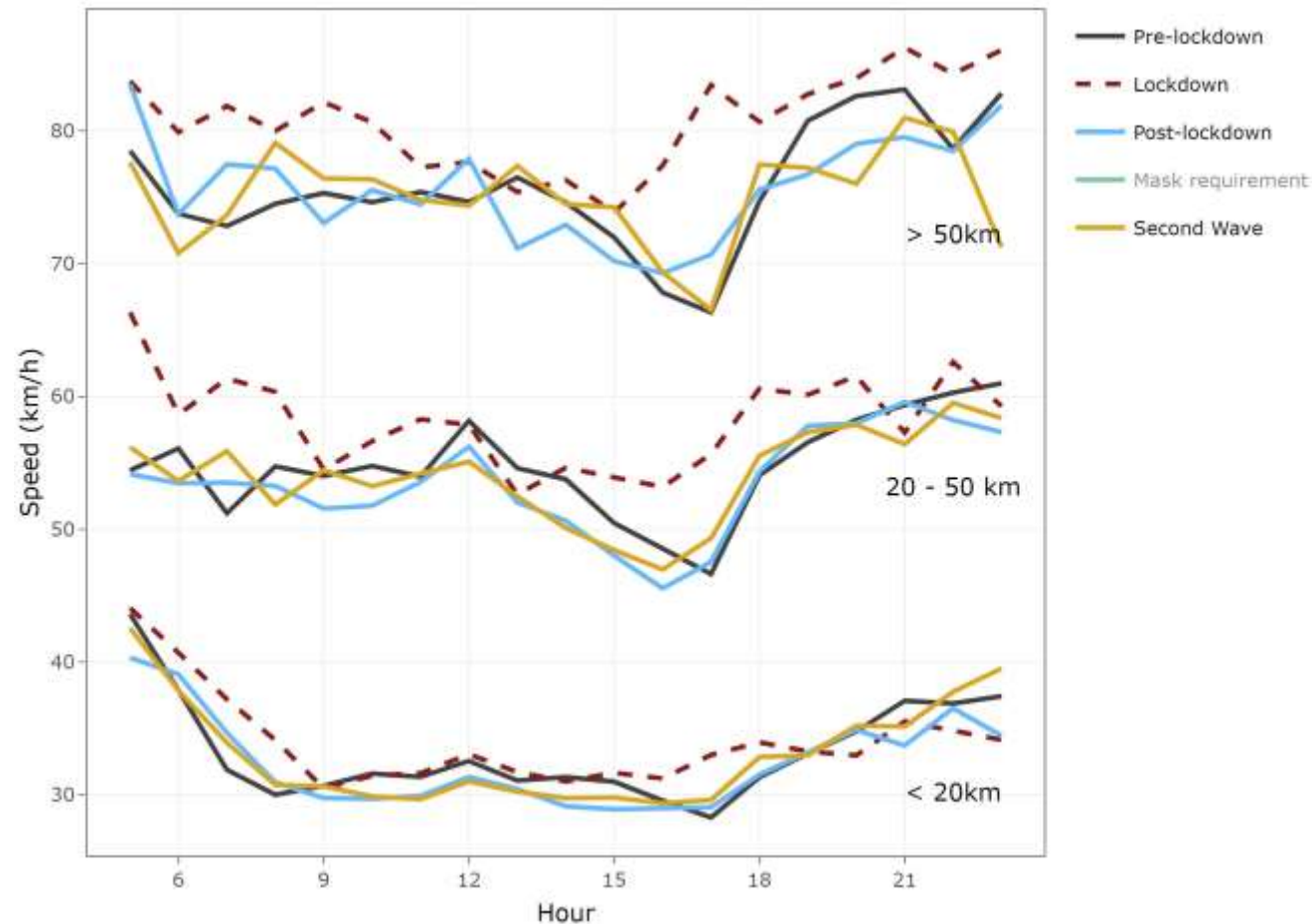
While the increase seemed initially to be mostly a fitness, leisure boom, the recent imputation of the trip purposes has shown that the cycle gained for all purposes with leisure and shopping the most prominent ones.

Commuting to work by bike also increased, but not as strongly (about 40% versus 60-80% for the other purposes).

The new freedom in time allocation is visible in the cycling for leisure during the day. Regression-based analyses indicate that the modal shifts are not driven by weather. The results are qualitatively similar when controlling for temperature and precipitation.

100% Original MOBIS Study which were recorded between 1st September and 15th November 2019

Road Travel Speeds



The graph shows the effect of the COVID-19 crisis on median car travel speeds during the week, i.e. excluding weekends and holidays. During the lockdown period from March 16th to May 11th, an increase in the peak-hour speeds was observed, indicating a decrease in overall congestion. **Since the relaxation of the measures, peak-hour speeds have returned to pre-COVID-19 values, a sign that congestion is back to usual levels.**

Summary of COVID Restrictions on Transportation Demand

- Walking and Car returned to pre-COVID values
- Bicycling became a winner of COVID for all trip purposes
- Public Transportation lost!
- Concerning Working from Home:
 - Working at home reduces trips compared to those who have to go to their workplaces, but the difference is not nearly as large as one would expect.
 - Total mileage is not reduced, as the persons used the liberated time for other travel.
 - Transportation Demand in Peak Hours is reduced.

What Might Remain in Post-Lockdown World?

Reasons for Change in Transportation Demand	Part of a Post-COVID World?
Ban of public sports and cultural events, Prohibition of gatherings/assemblies	No
Furloughed persons, unemployed persons	Yes, but hopefully only for a short time
Restrictions on restaurants, shops, number of guests in family etc.	No
Home teaching	No
Home office and video conferences	Yes (but in smaller scope)

Hypothesis of Consequences for Public Transport Investments in a Post-COVID Time

1. Individual transportation modes might be the winner, public transportation may suffer for a longer while.
2. Bicycle is a winner and on the agenda: Public Investments in bike infrastructure have a further argument (in addition to climate change policy und spatial efficiency)
3. Streets: Congestion is back even now and might increase in Post-COVID Time. But due to climate change policies, spatial efficiency, and ecology, few new streets will be built.
4. Public Transport:
 - A. More public funds are necessary to help public transportation providers to survive
 - B. Transportation demand effects that might remain in a post-COVID time harm public transport more than road traffic.
 - C. Important investments in public transportation were decided to increase capacity for commuters: With Working from Home and Video Conferences, these investments should be evaluated again, even when transportation demand increase to old level.

Case Study 2: Michigan USA



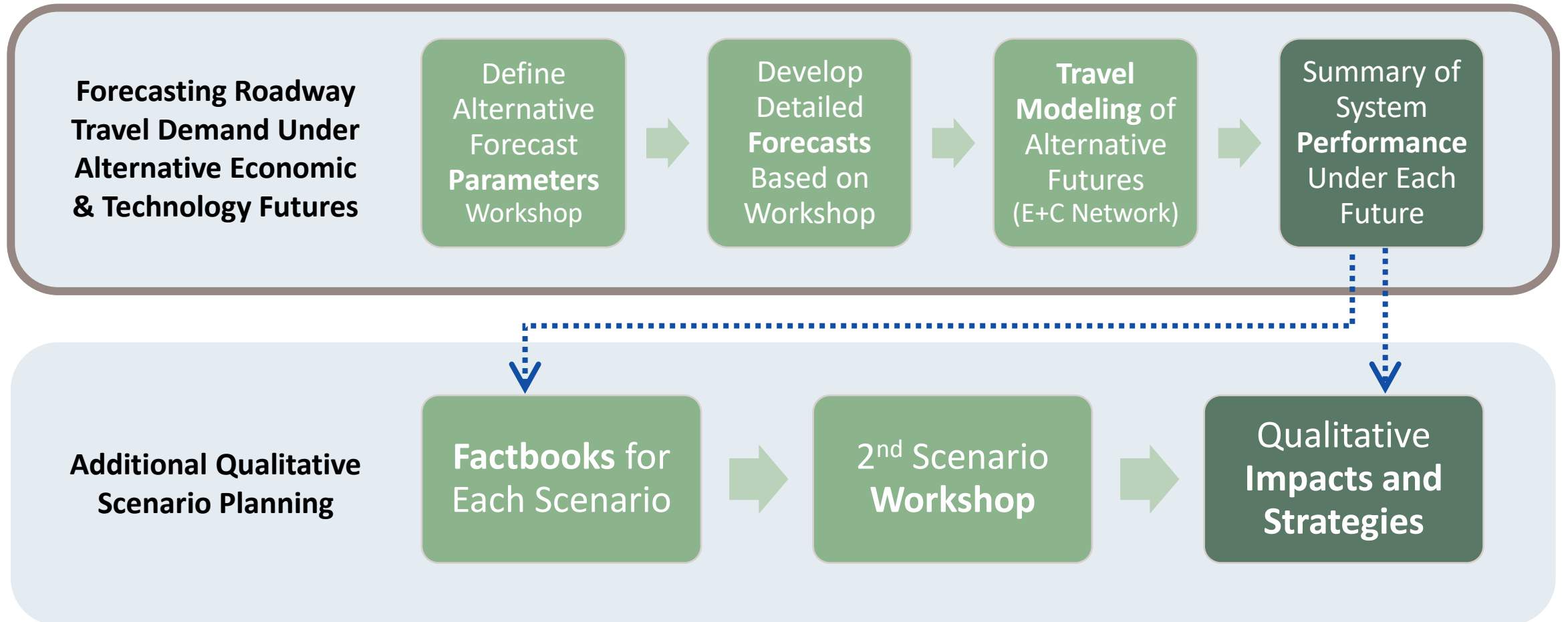
Case Study 2 – Scenario Development in Michigan

In this case study:

- Example of a scenario planning process
- Applications to post-COVID recovery
- How scenario planning for external conditions can be combined with investment planning and evaluation

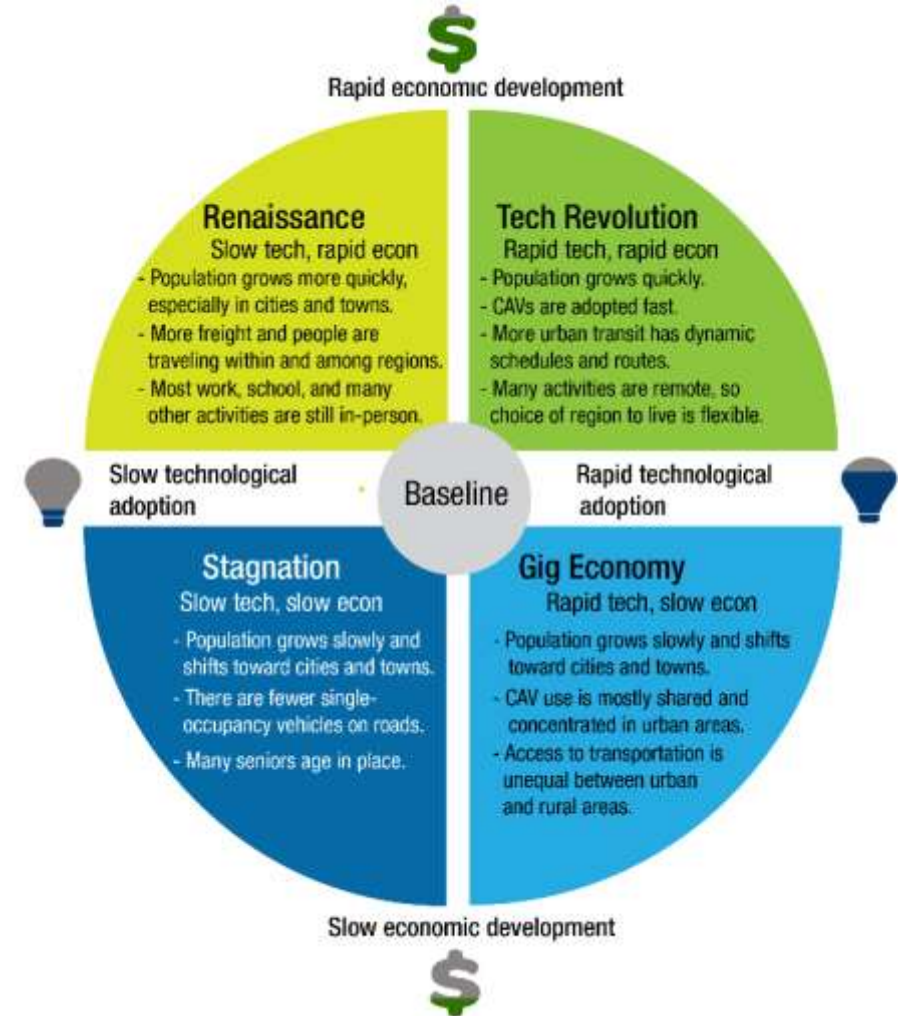


Approach – Technical and Qualitative Scenario Planning

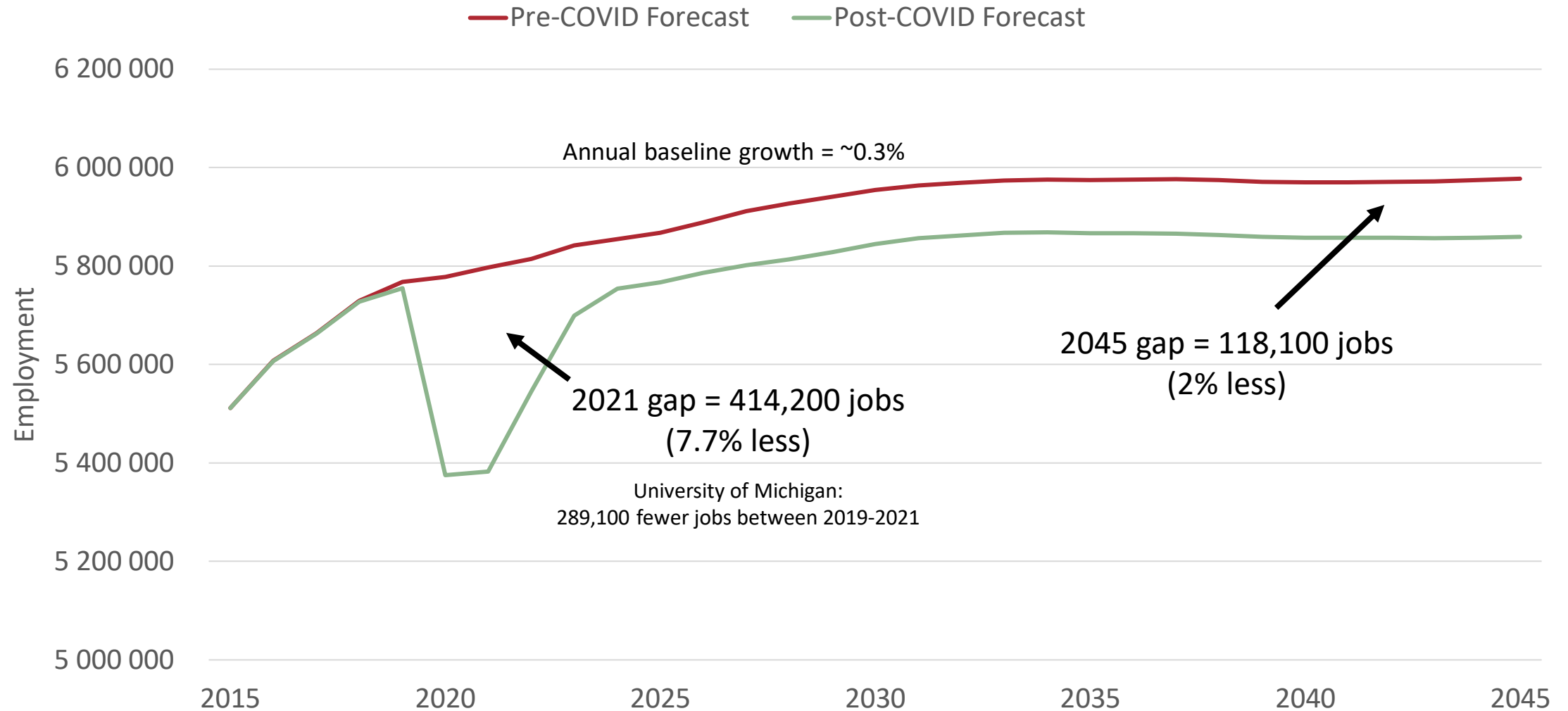


Components of the Quantitative Analysis

- Levels of growth (jobs and population)
- Location of growth (jobs and population)
- Technology effects (autonomous passenger, freight, and delivery)
- E-commerce and delivery
- Telework potential



Changes in Level of Growth



Questions Posted to Michigan Stakeholders

In 2045, how many **more jobs** will there be in Michigan under the **high growth** scenarios than there would have been otherwise?

No change from baseline 2045 (+0)
(+0.2% annual growth 2015-2045)



+8% more jobs than 2045 (+470,000)
(+0.5% annual growth 2015-2045)

In 2045, how many **fewer jobs** will there be in Michigan under the **low growth** scenarios?

-8% more jobs than 2045 (-470,000)
(-0.07% annual growth 2015-2045)

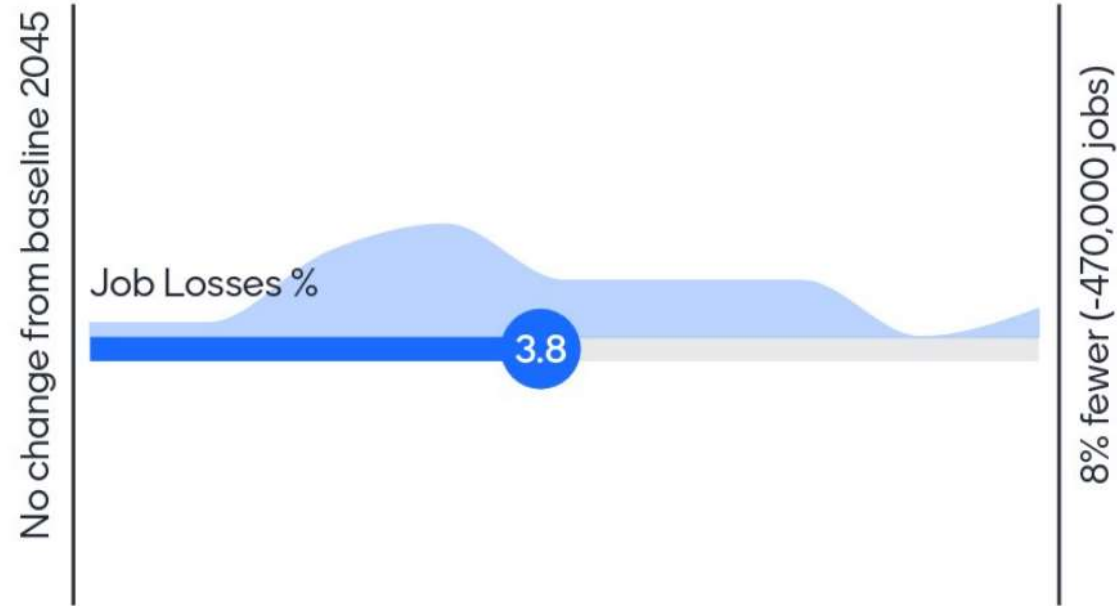


No change from baseline 2045 (+0)
(+0.2% annual growth 2015-2045)

Response at Workshop

In 2045, how many FEWER JOBS will there be in Michigan under the low growth scenarios?

Mentimeter



30



Mentimeter Question 5

Visit: www.menti.com

Enter the Code: **9452 4025**

Participate Throughout the Presentation!

Location of Growth (Urban-Rural)

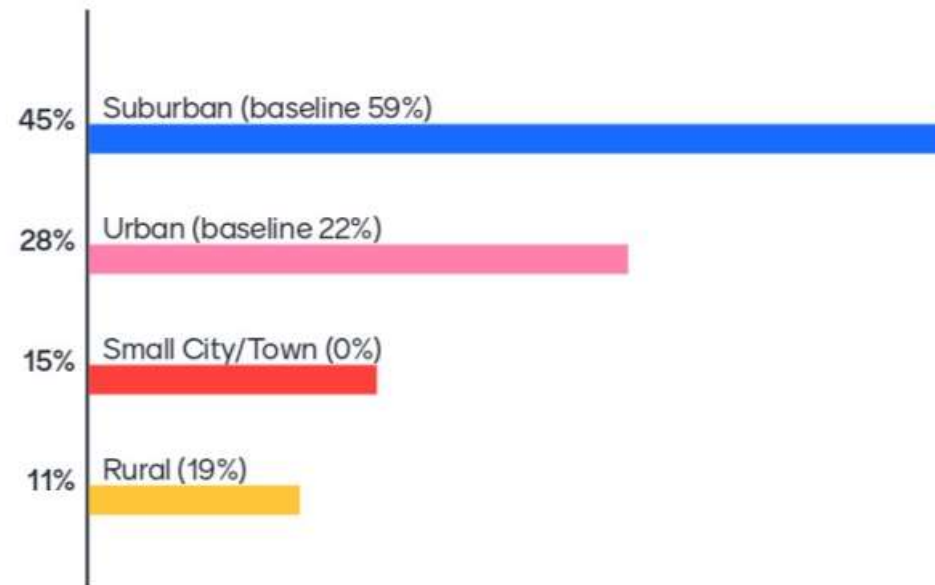


- Adjust areas of **employment & population change** relative to the baseline
- **Implication for Travel:**
 - Different spatial patterns of demand on network
 - Different mix of transport modes in different geographies
- Michigan used four state-wide geography types – scenarios could use specific subregions, etc.

Example Response from Workshop

Where do you think growth will happen in a RENAISSANCE (more urban) scenario?

Mentimeter



24

Thinking about Spatial Patterns in a Post-COVID World

Changes in Residential Preferences

- Will households with the option to choose want to live closer to family & friends?
- Will households seek more space to support permanent or temporary future work-from-home, education-at-home, lock-down conditions?
- Preference for outdoor space, etc., if urban amenities are restricted

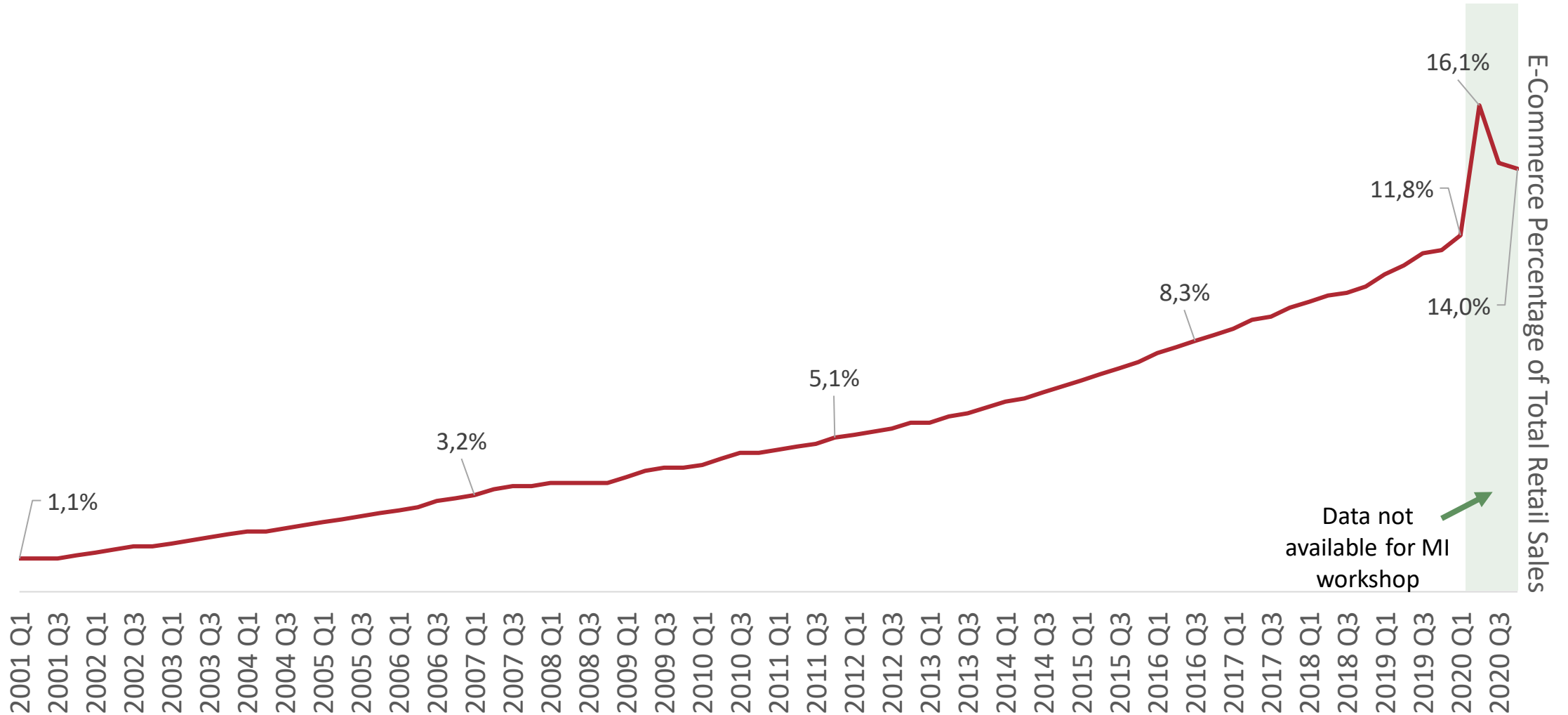
Changes in Business Location Choice

- Does more familiarity with web-conference tools, etc., decrease the returns to business locating close together?
- Will headquarters get smaller and more satellite offices grow?
- Will supply chains and demand for industrial space change?

Changes in Commute Patterns

- Will some businesses and industries keep staff fully remote?
- Will some businesses allow more part-time remote work? Will this increase average commutes?


E-Commerce as a Percent of Total Retail Sales in the U.S.



Source: Bureau of Labor Statistics (BLS), Current Employment Statistics (CES)

What we asked Michigan Stakeholders about E-commerce

- Considering that your 2015 model calibrated to 7%.
- Q4 2020 e-commerce sales are 14% of total retail.
- What will e-commerce share of total retail sales be in 2045?
 - A. 15% - mostly flat growth
 - B. 20% - physical retail remains prominent
 - C. 25% - historical e-commerce growth trend
 - D. 30% - aggressive market saturation



All the way through 2045! Is your forecast fixed like that too?

Response from Workshop



Mentimeter Question 6

Visit: www.menti.com

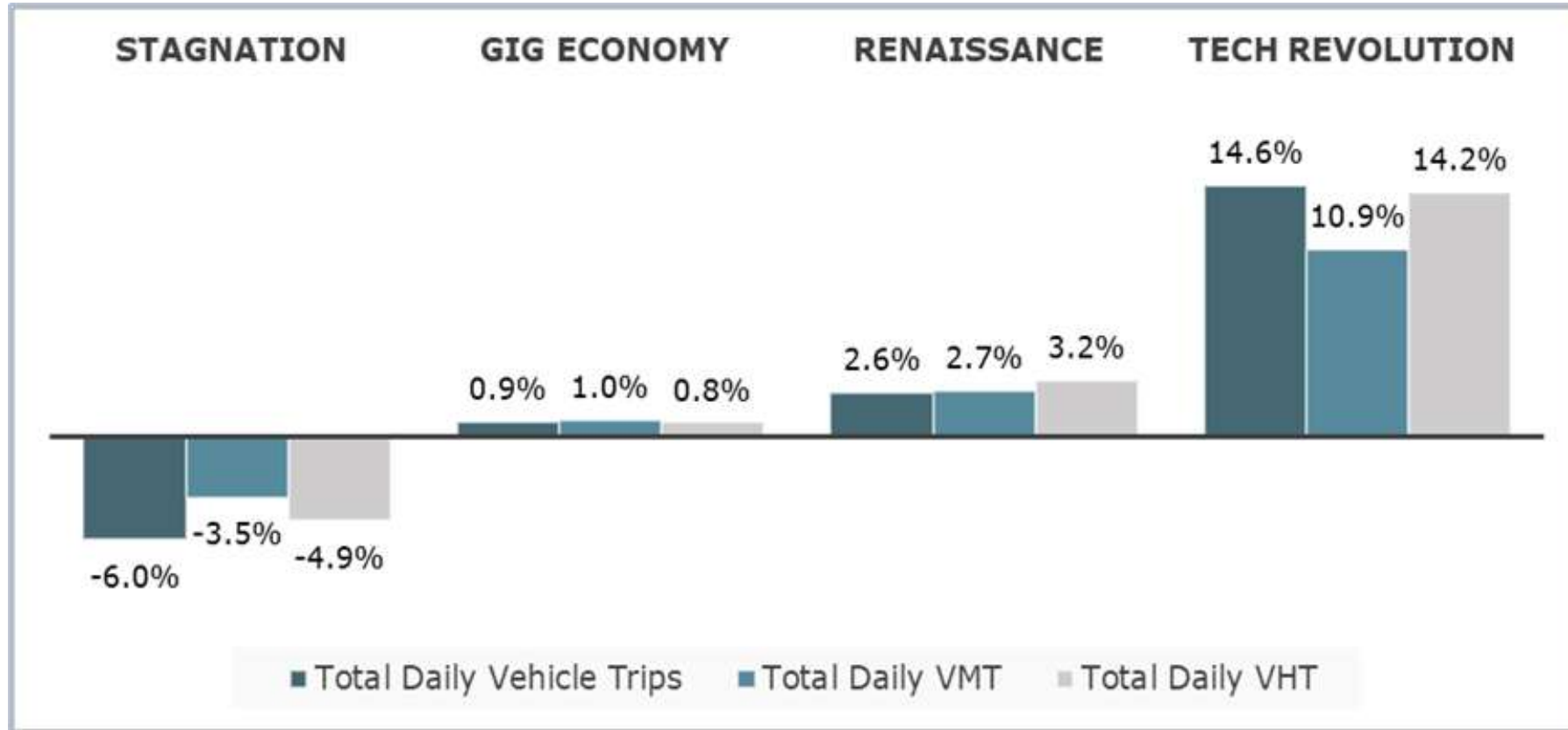
Enter the Code: **9452 4025**

Participate Throughout the Presentation!

Modeling Results for these Scenarios

- The scenarios also include a significant portion related to autonomous and connected vehicle technology that we don't discuss today.
- Telecommuting changes were deferred for inclusion in future modeling. For time today, we won't go into those scenarios either.
- The goal of this analysis was to assess statewide changes in travel demand and high-level needs. These scenarios could be used for corridor studies or project analyses, however.

Results for the Scenario Analysis (Statewide Aggregates)



Evaluation under Scenarios

- EBP is conducting a separate analysis for Michigan DOT looking at how different levels of investment across programs of work affect the economy and provide societal benefits.
- This type of investment evaluation can be conducted for programs or projects and is typically done under a single forecast future.
- However, studying which programs are valuable across futures (robust to uncertainty) can better help choose projects that will not result in stranded assets if things turn out differently than expected.

Mentimeter Question 7

Visit: www.menti.com

Enter the Code: **9452 4025**

Participate Throughout the Presentation!

Conclusions



- Transport investments are mostly in our control, but significant post-COVID uncertainty will remain
- Some of COVID’s impacts on transportation demand and behavior are likely permanent, while wider effects will play out over many years
- Decision-makers may consider significant “right-sizing” options to more cost-effectively align investments with future transport demand
- “Future-proofing” transportation plans means considering how different alternative futures affect the probability of achieving investment goals and wider economic benefits – goes beyond traditional benefit-cost analysis
- Scenario Planning using sound data can produce insights that help minimize the impacts of uncertainty on investment decisions

Topic #3

Case Studies and Perspectives - Predicting the Post-COVID-19 Implications on Economic Development and/or Transportation



THE MIDWEST ECONOMY IN A PANDEMIC

March 24, 2021

Joe Mahon

Regional Outreach Director



FEDERAL RESERVE BANK
OF MINNEAPOLIS

DISCLAIMER

The views expressed here are the presenter's and not necessarily those of the Federal Reserve Bank of Minneapolis or the Federal Reserve System.



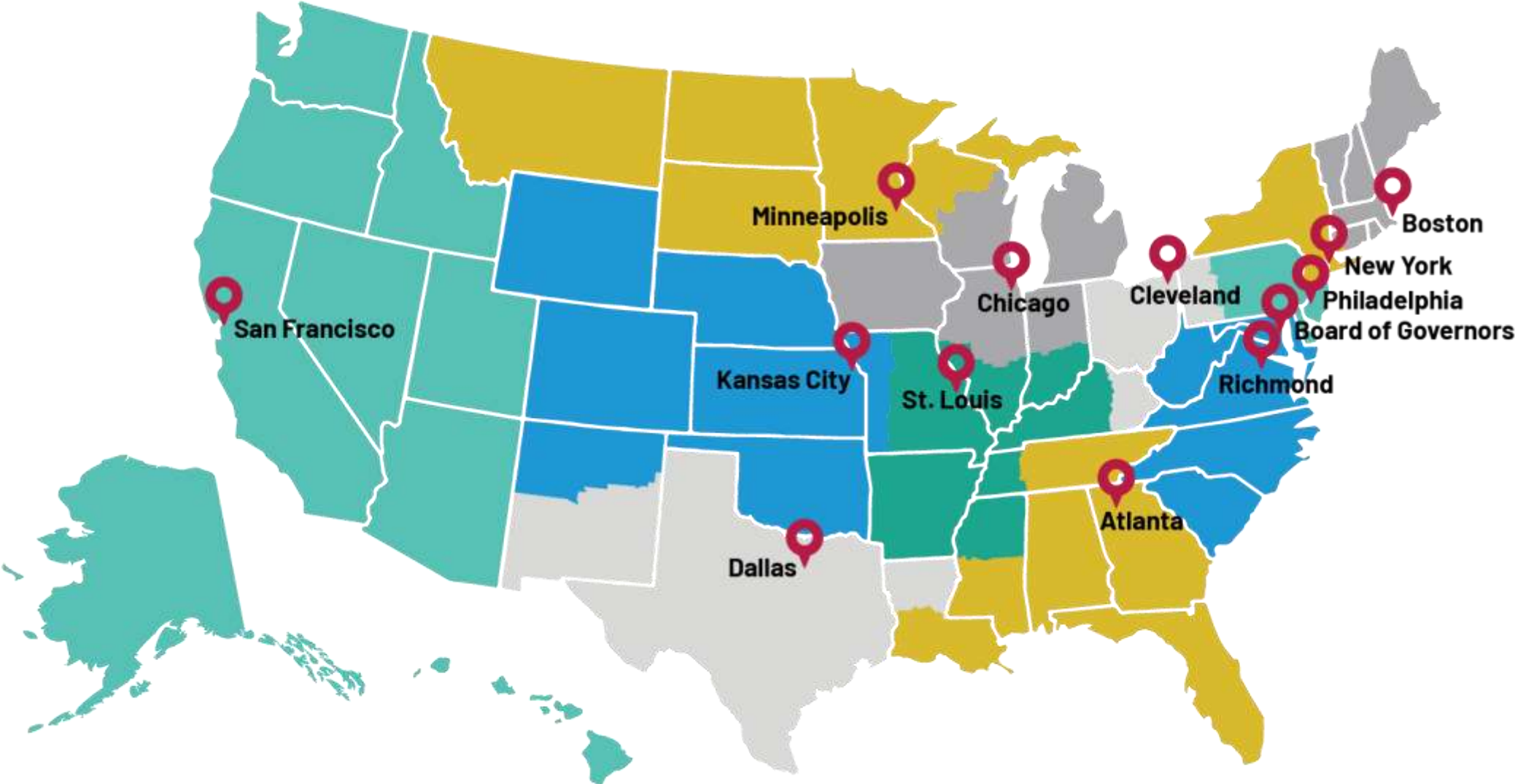


TODAY'S TALK

- **The data challenge & need for better real-time info**
- **Who's affected, and to what extent**
 - **Surveys + traditional data + new data**
 - **Manufacturing sector**
 - **Construction sector**
 - **Consumer sentiment, COVID & the outlook**



THE FEDERAL RESERVE





***MEASURING THE PANDEMIC
ECONOMY***

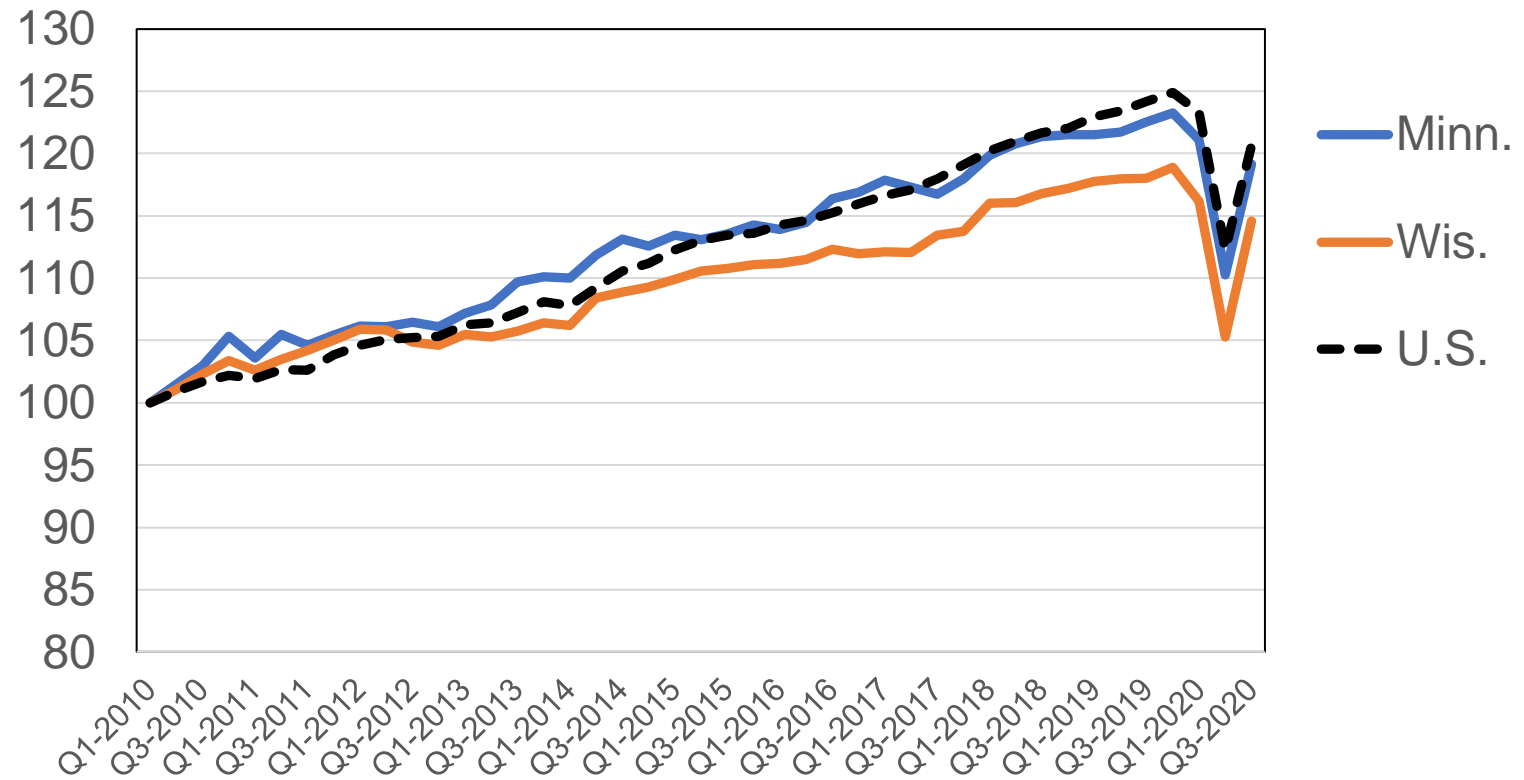
THE DATA CHALLENGE: NEW PROBLEMS, OLD DATA

Speed of pandemic
= Greater need for
real-time
information

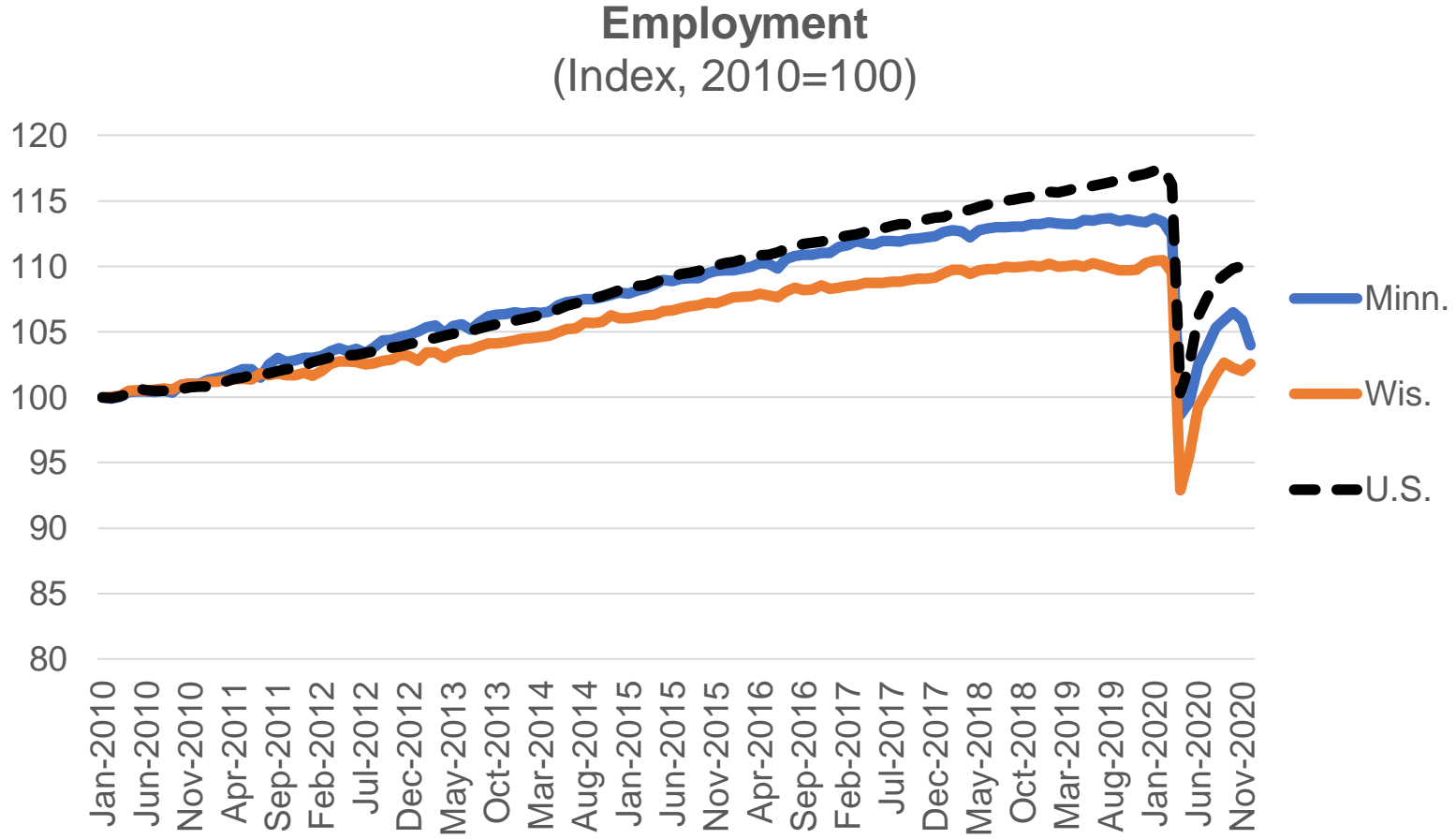
Most macro data
time-lagged = less
COVID-relevant

Trend: Even with
strong Q3,
economy still
notably lower than
pre-pandemic

Gross Domestic Product
2010 to 2020Q3, Index (Q1 2010 =100)



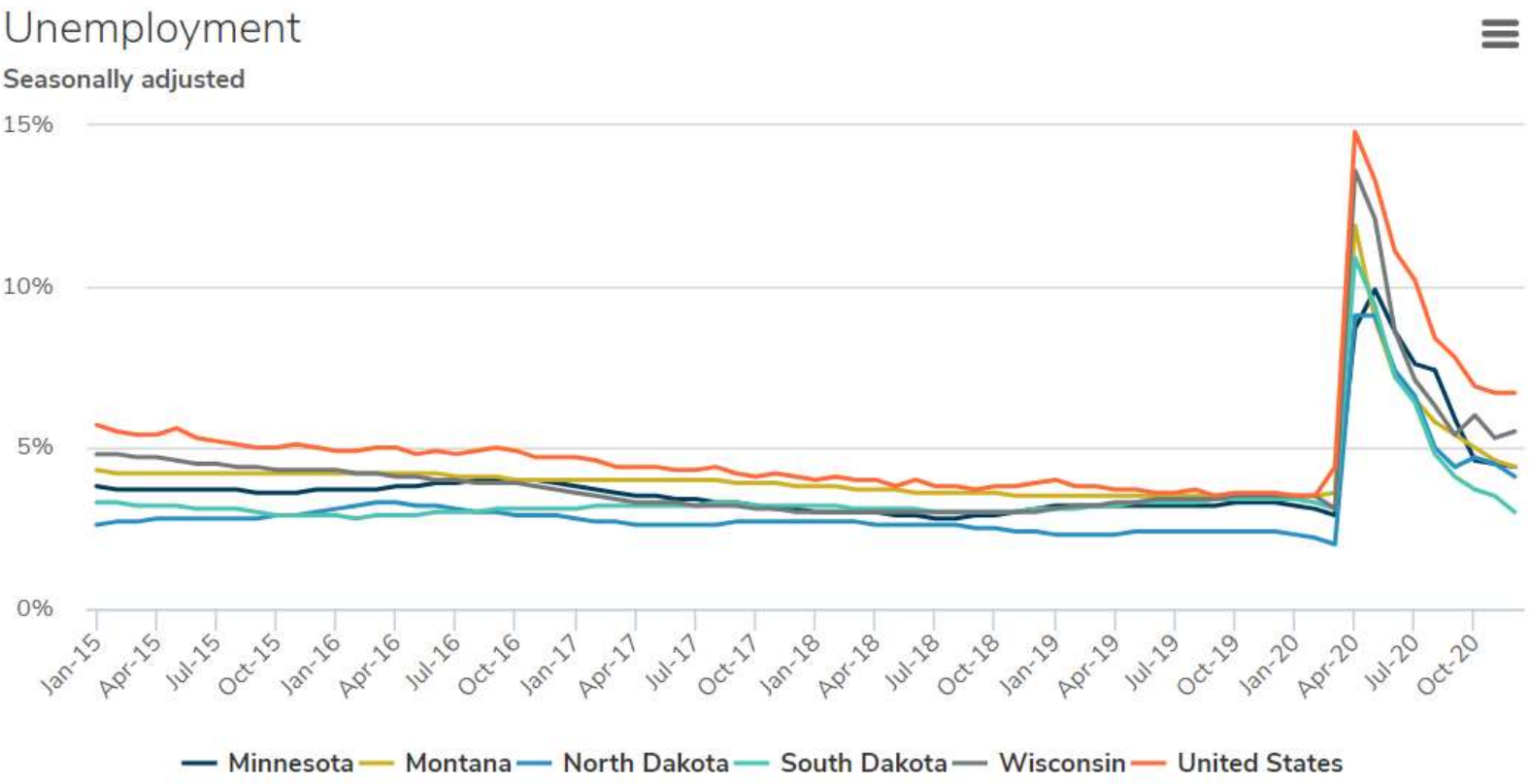
THE DATA CHALLENGE: NEW PROBLEMS, OLD DATA



Employment data somewhat more timely, but still almost two months old at state level.

PANDEMIC EMPLOYMENT

Unemployment recovering, but trajectory appears to be flattening



Source: Bureau of Labor Statistics via Haver Analytics

Updated February 2, 2021

A large, light teal outline of an eagle with its wings spread, set against a teal background. The eagle's head is turned to the left, and its tail feathers are visible on the right. The eagle is superimposed over a circular border containing several five-pointed stars. In the top-left corner, there is a small, dark teal horizontal bar.

MANUFACTURING

MANUFACTURING IN CONTRACTION

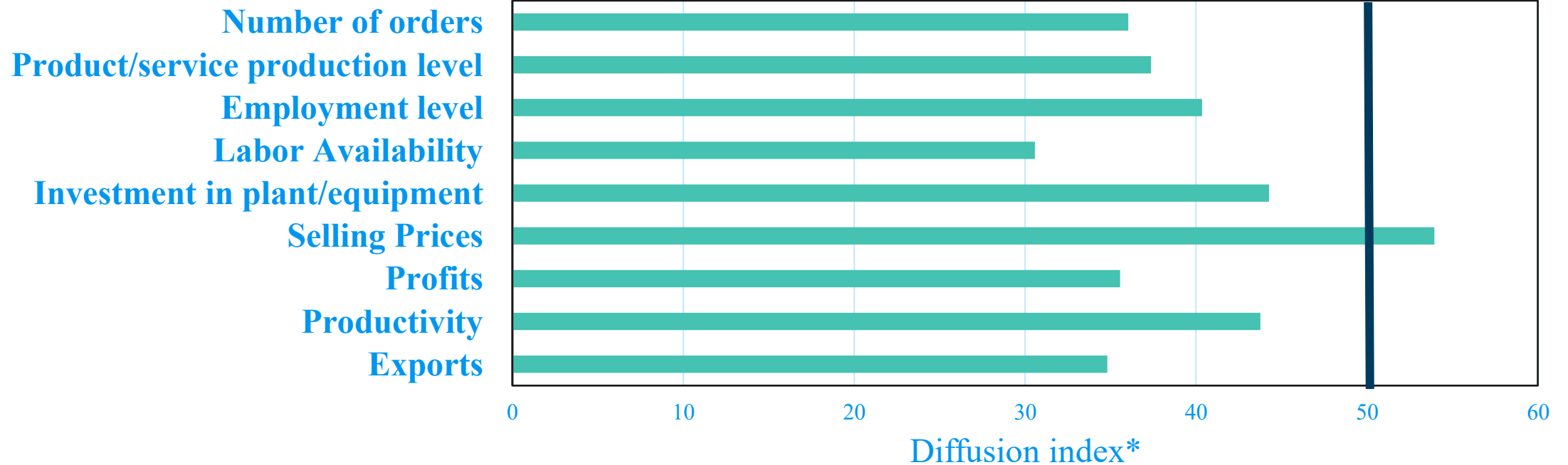
- **Ninth District survey**
 - **Conducted December and January, looking backward and forward one year**
 - **Random sample of manufacturers, polled via mail**
 - **Stratified by state and firm size**
 - **All states, 476 respondents**
- **Conducted in partnership with Minnesota DEED**



SURVEY RESULTS

NO SURPRISE, 2020 WAS DIFFICULT

2020 Performance

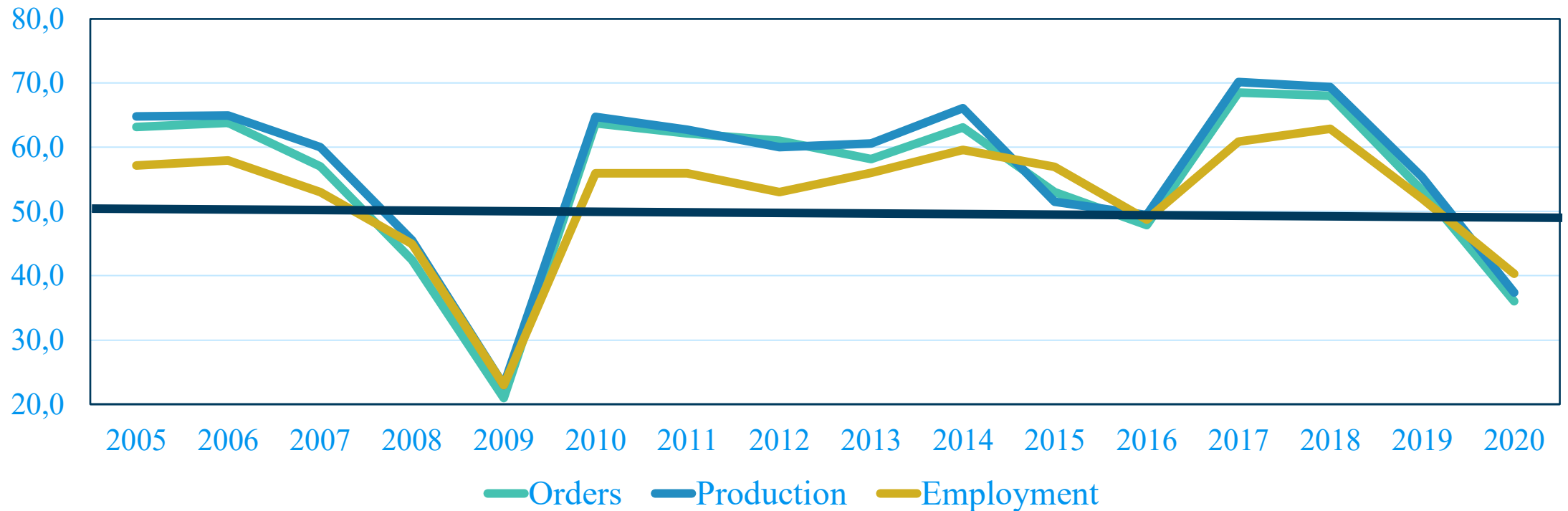


*Index number above 50 indicates expansion.
Index number below 50 indicates contraction.



SURVEY RESULTS

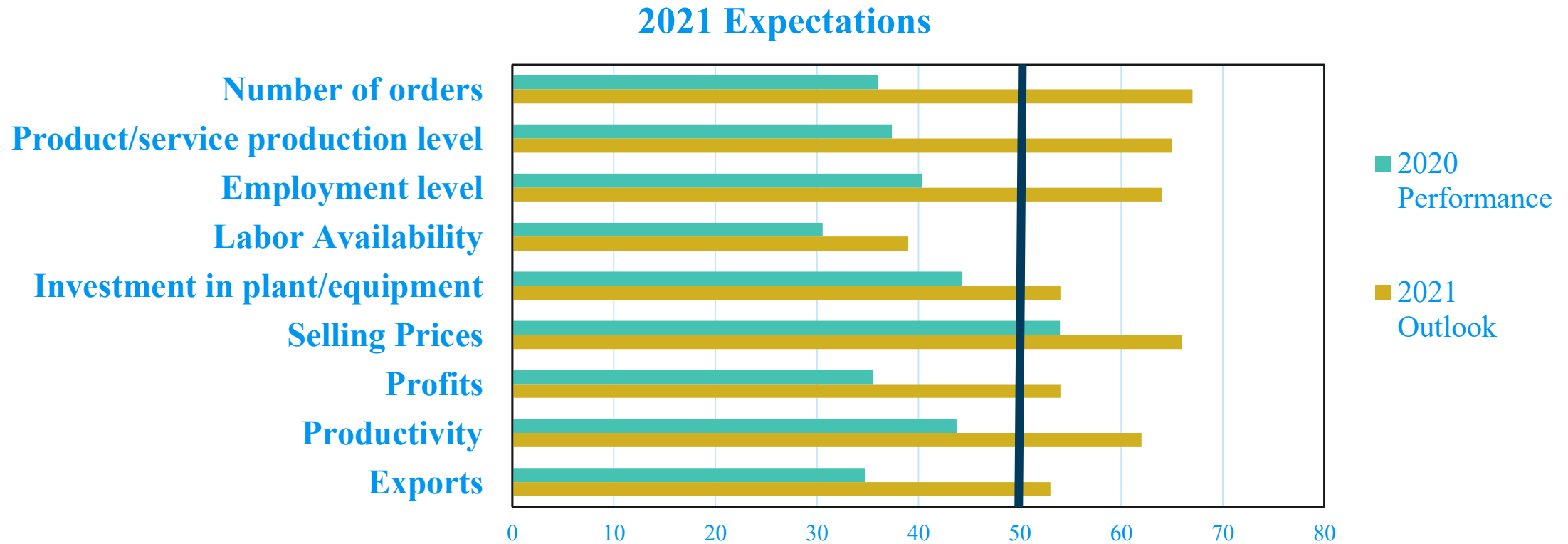
WORST RESULTS SINCE GREAT RECESSION



*Index number above 50 indicates expansion.
Index number below 50 indicates contraction.



2021 EXPECTATIONS CALL FOR GROWTH

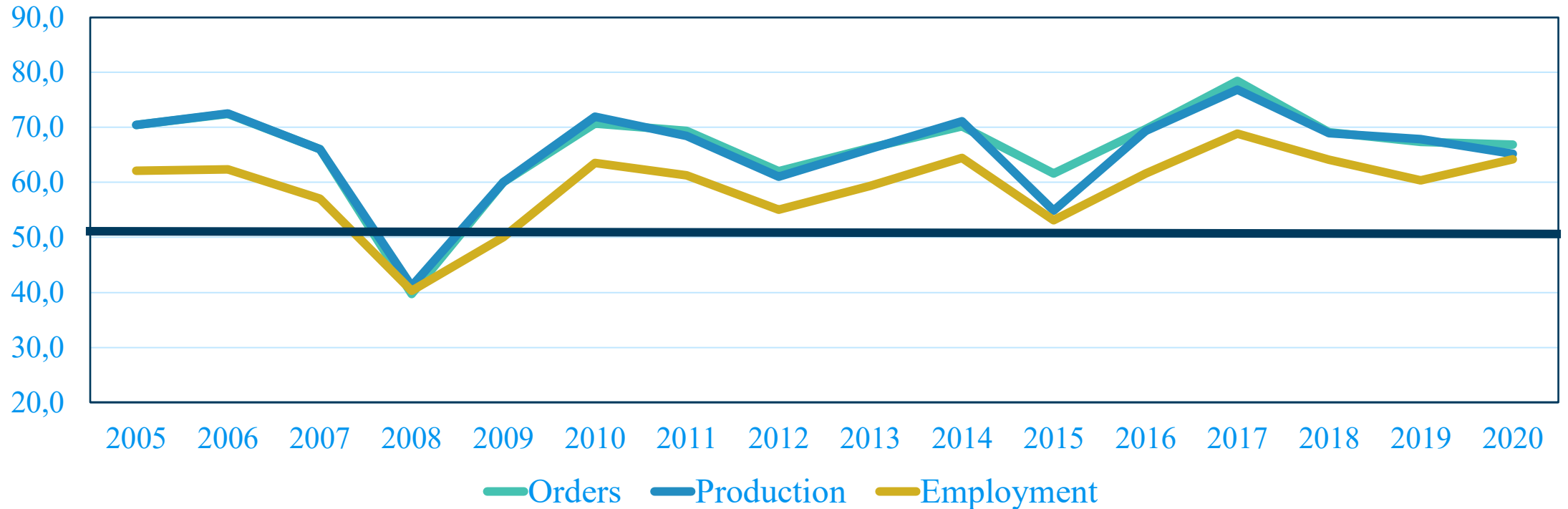


*Index number above 50 indicates expansion.
Index number below 50 indicates contraction.



SURVEY RESULTS

OPTIMISM CONSISTENT WITH “TYPICAL” YEAR

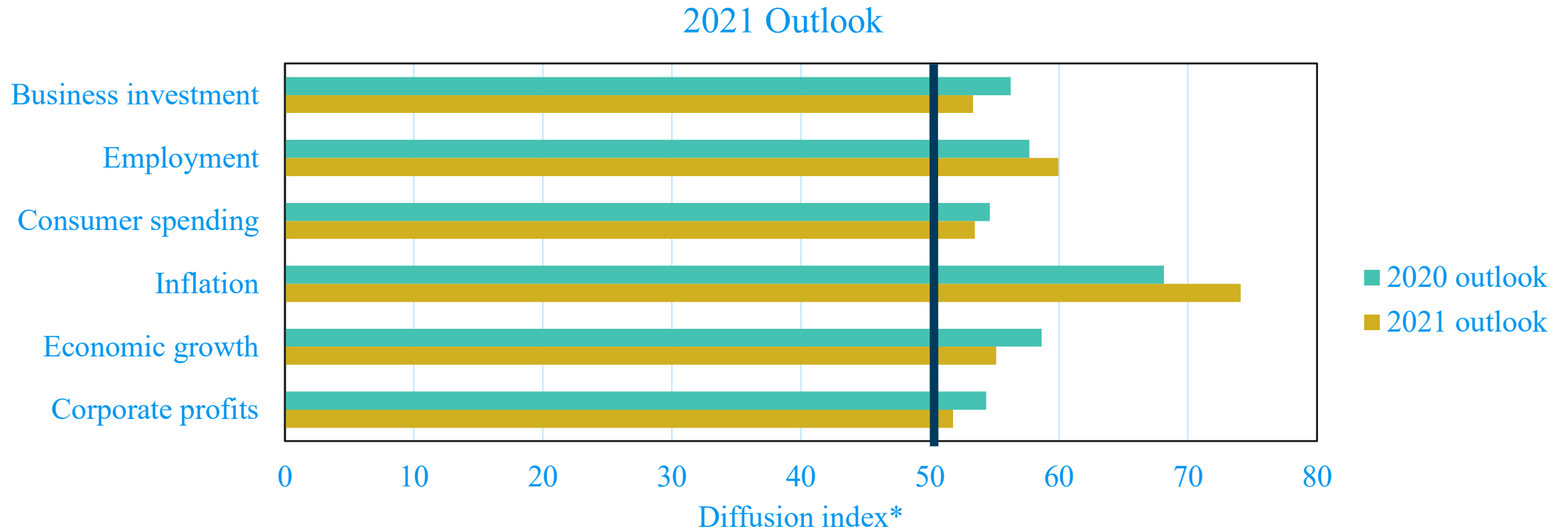


*Index number above 50 indicates expansion.
Index number below 50 indicates contraction.



SURVEY RESULTS

STATE ECONOMIC OUTLOOKS POSITIVE, BUT LESS SO THAN LAST YEAR



*Index number above 50 indicates expansion.
Index number below 50 indicates contraction.





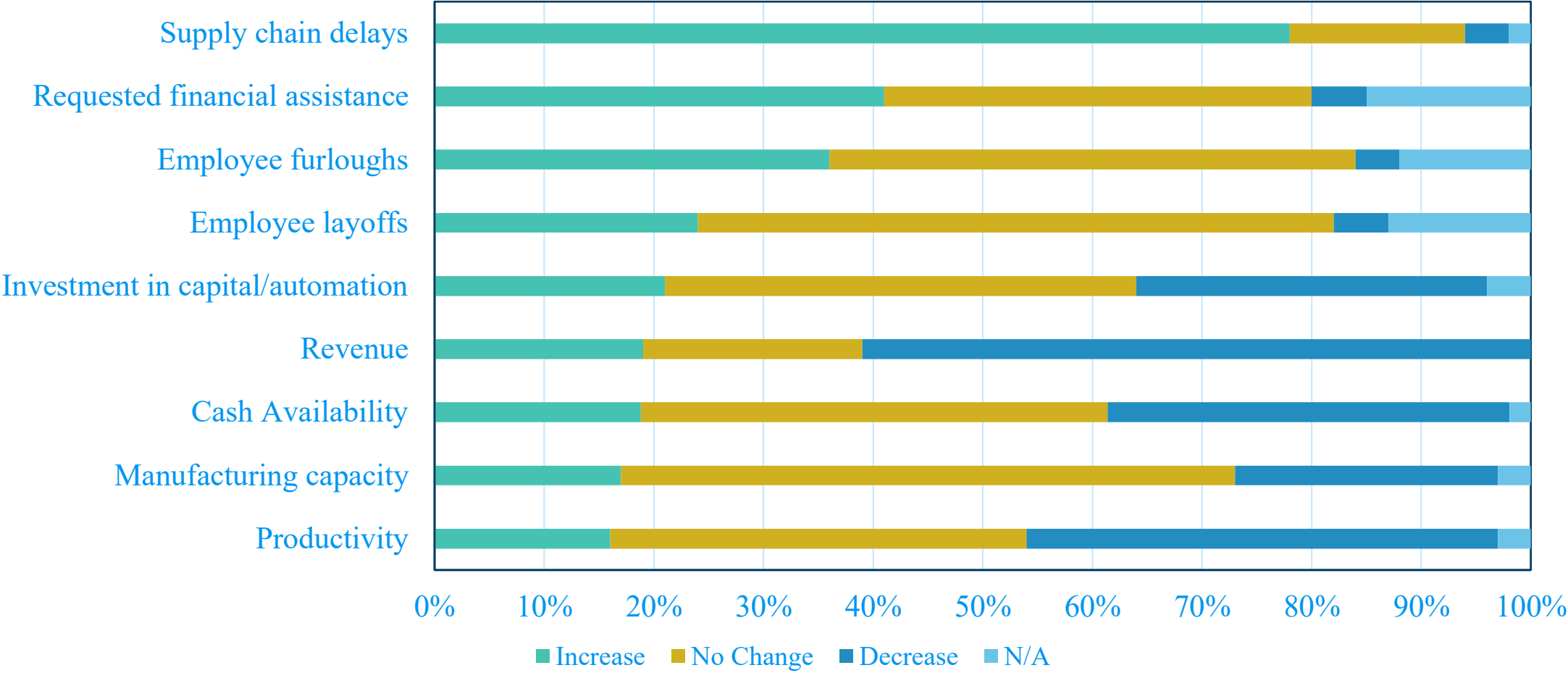
TODAY'S PRESENTATION

- The Federal Reserve
 - The Ninth District
- Manufacturing sector
- Survey results
 - 2020 a bad year
 - Outlook optimistic
- **Pandemic impacts**



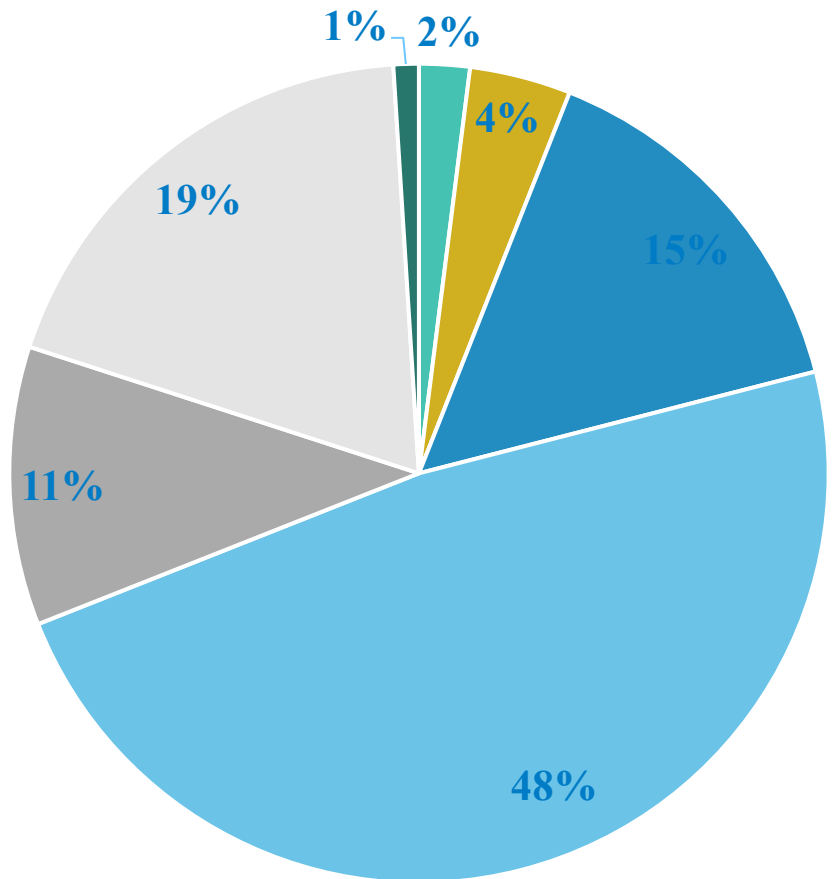
PANDEMIC IMPACTS

IMPACT OF THE COVID-19 PANDEMIC ON YOUR BUSINESS



PANDEMIC IMPACTS

IN YOUR OPINION, HOW LONG WILL IT BE BEFORE YOUR BUSINESS GOES BACK TO NORMAL OPERATIONS?



- 1 month or less
- 2-3 months
- 4-6 months
- More than 6 months
- I don't believe my business will go back to normal
- There has been little or no effect on my business
- Going out of business

A large, faint, light teal outline of an eagle is centered in the background. The eagle is shown in profile, facing left, with its wings spread. The head is turned slightly towards the viewer. The eagle's body is filled with a pattern of stars and curved lines, suggesting a globe or a map. The entire background is a solid teal color.

DIGGING INTO CONSTRUCTION

PANDEMIC OUTREACH

- Recent survey just one of several, regular quarterly surveys
 - Construction, hospitality/tourism, general business (2), & agricultural credit
- **Construction survey**
 - Conducted: February 16-22, 2021
 - Total responses: 503 from Minnesota, Dakotas, Montana, western Wisconsin and Michigan's Upper Peninsula
- Results are a snapshot
 - Not a scientifically sampled survey; interpret carefully





SURVEY TAKE-AWAYS

- Winter is normally slower, but survey suggests recent activity has slowed more than usual
- Rising input costs “are killing us”
- However:
 - Requests for proposals were net-positive for first time since start of pandemic
 - Cancellations & delays improving (though still net-negative)
 - Still hiring despite revenue slowdown
 - Insolvency low, firms generally financially stable





RECENT REVENUE TRENDS

RECENT REVENUE TRENDS

Recent revenue trends quite negative – year-over-year, qtr-o-qtr, & compared w/ October survey

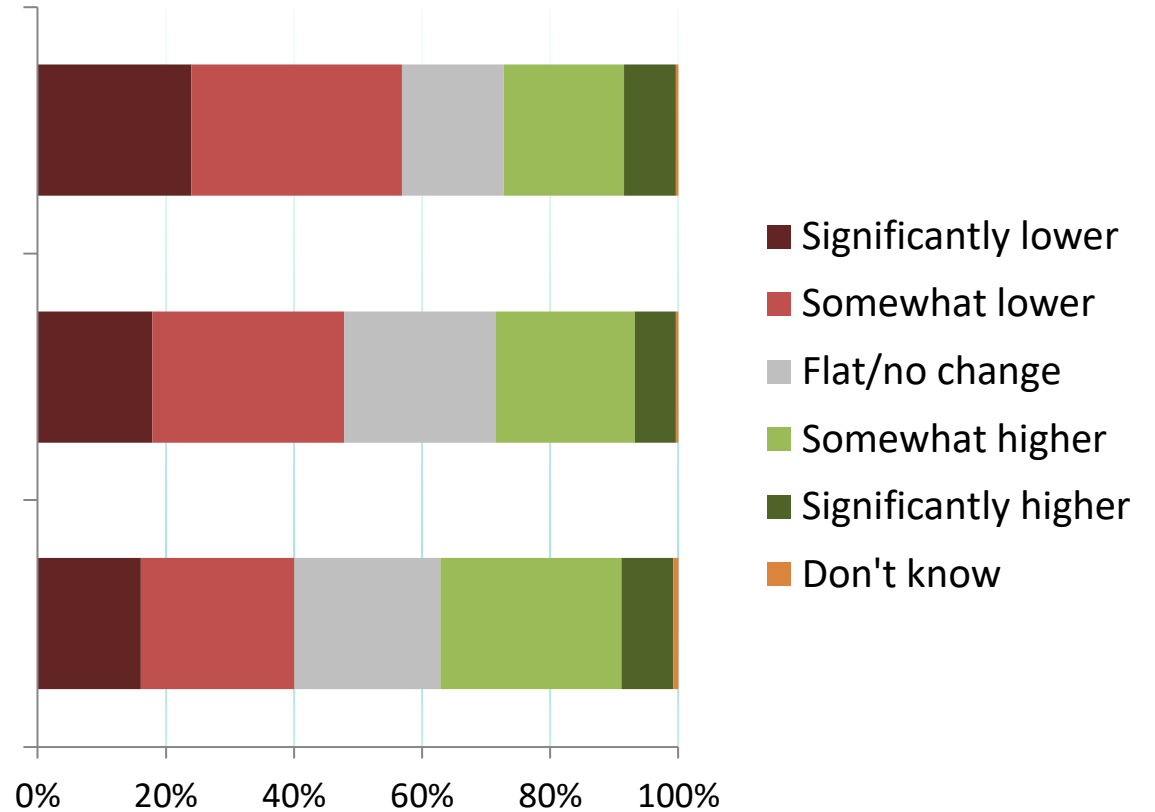
But future quarter is close to neutral (that's good!); other indicators suggest a (potential?) bottom

Please describe revenue trends over the last 3 months (mid-Nov to mid-Feb) compared with ...

The same period a year ago

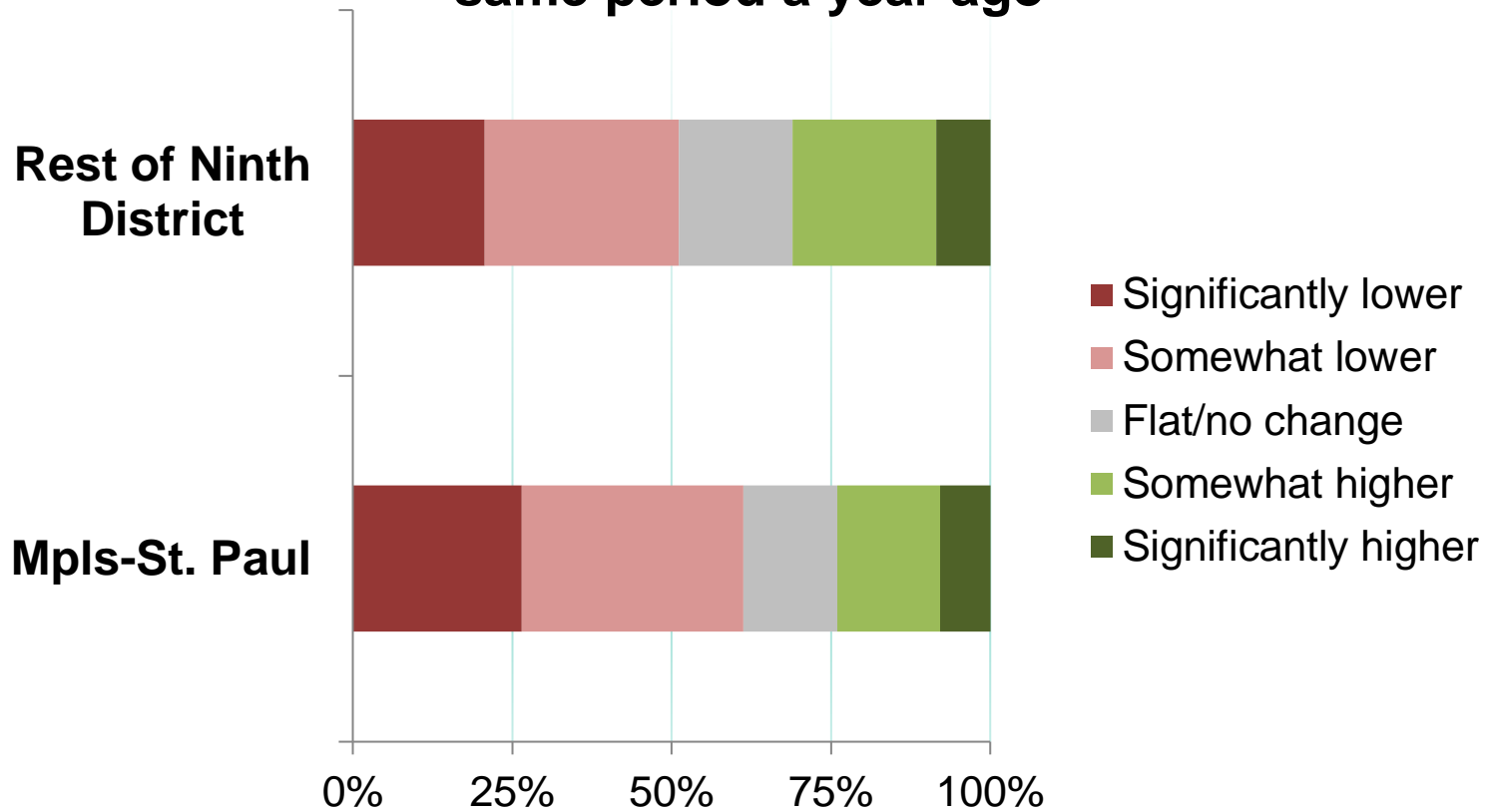
The previous three months (Aug-Sept-Oct 2020)

Expectations for the coming three months



REVENUE TRENDS, CONT.

Revenue over the last 3 months compared with same period a year ago



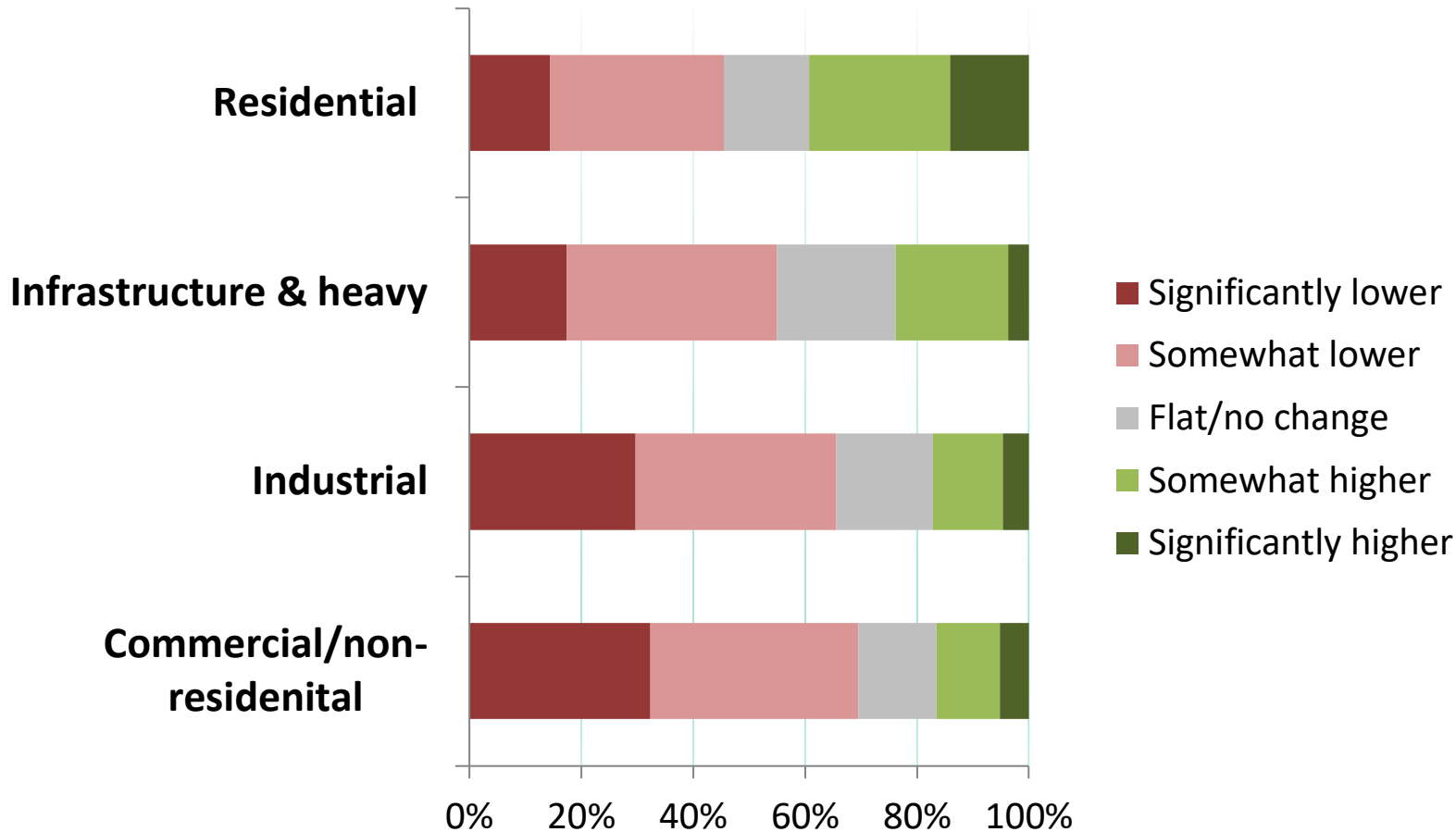
**Construction zone:
Proceed with caution!**

Combining non-Twin-Cities respondents suggests modestly less negative experience



REVENUE TRENDS BY CONSTRUCTION SECTOR

Revenue over the last 3 months compared with same period a year ago



Residential sector *least* negative; commercial sector *most* negative

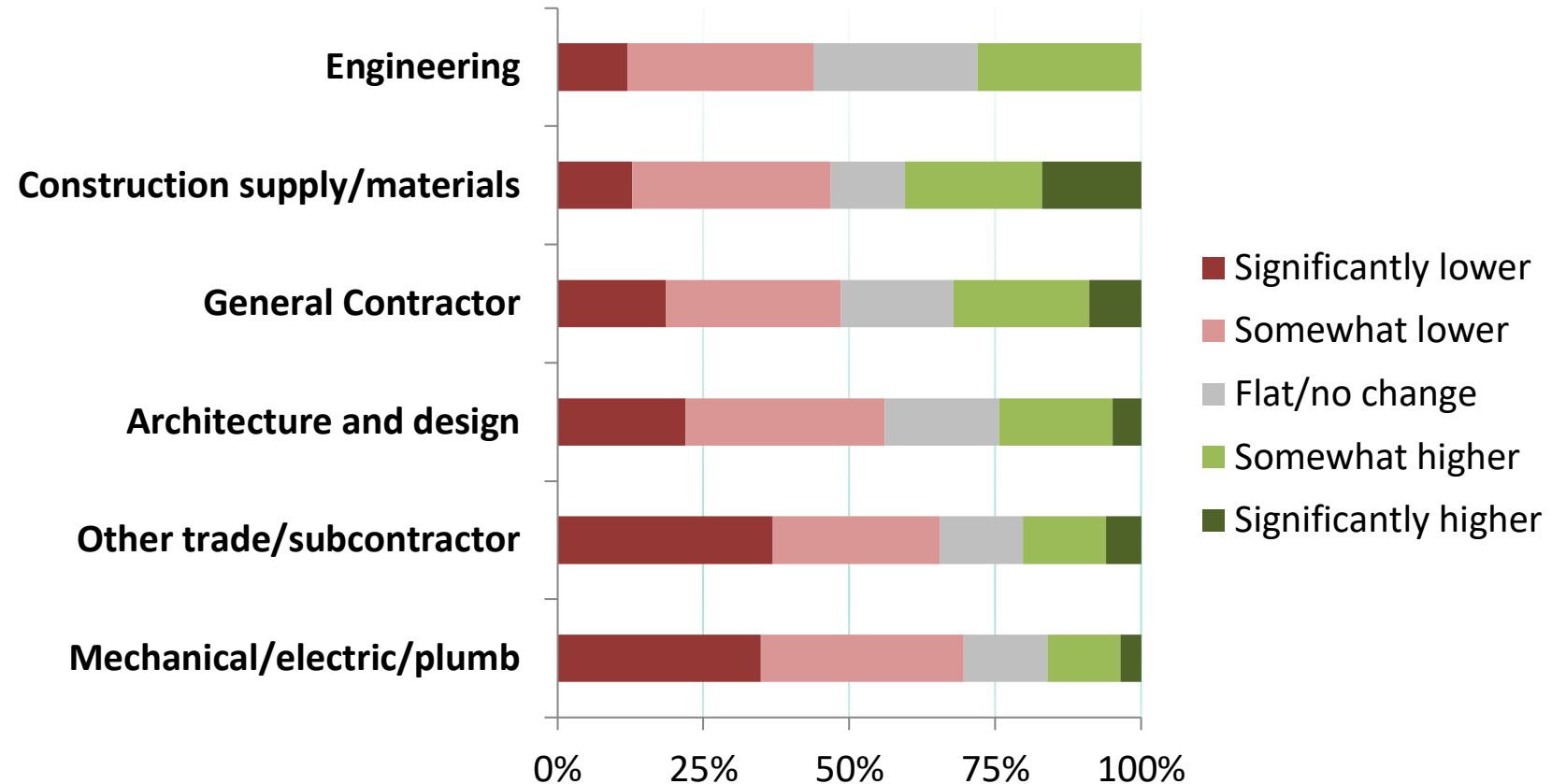
But y-o-y revenue trend more negative compared with October survey for *all* categories



REVENUE TRENDS BY FIRM TYPE

Revenue over the last 3 months compared with same period a year ago

Same story: Some firm types doing modestly better (or worse), but overall y-o-y revenue trend is lower/worse



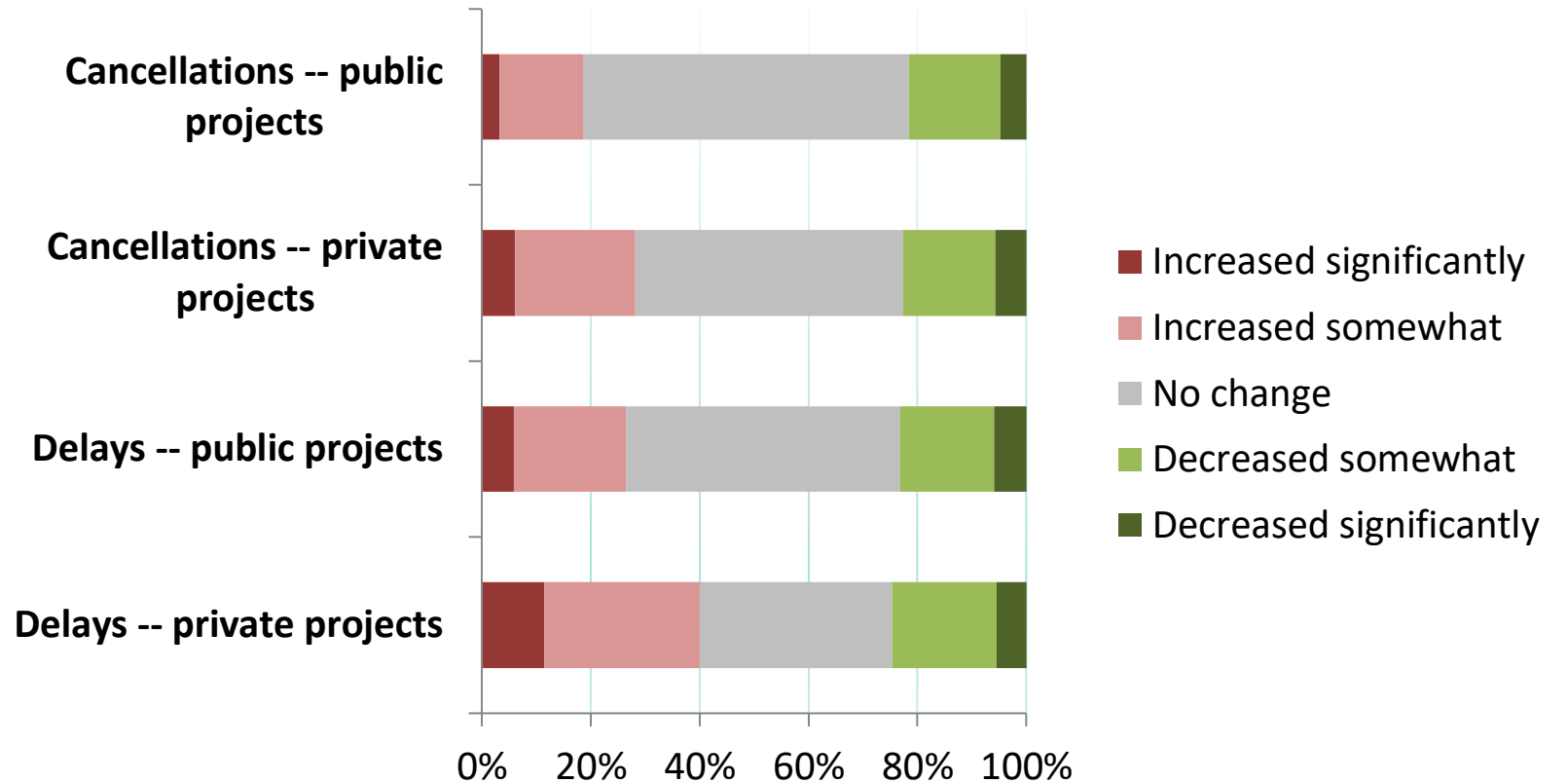
CANCELLATIONS & DELAYS

Cancellations and delays continue to affect many projects

Private projects more negatively affected than public projects

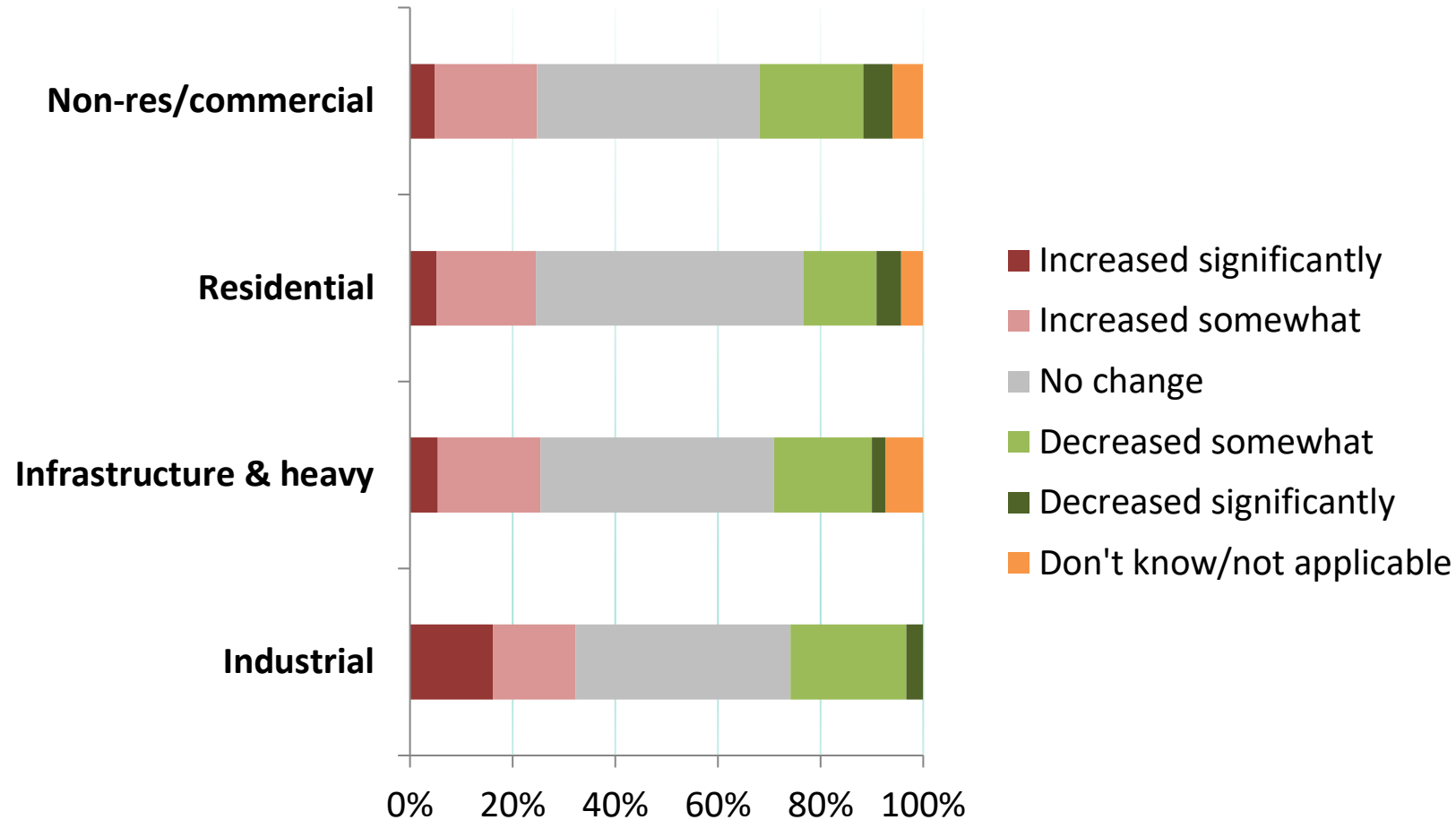
But category in general moving toward neutral stance

Project cancellations & delays compared with October levels



PROJECT CANCELLATIONS: BY SECTOR

Private project cancellations compared with October levels



Cancellations still prevalent, but category also climbing toward neutrality, including notable improvement since October survey



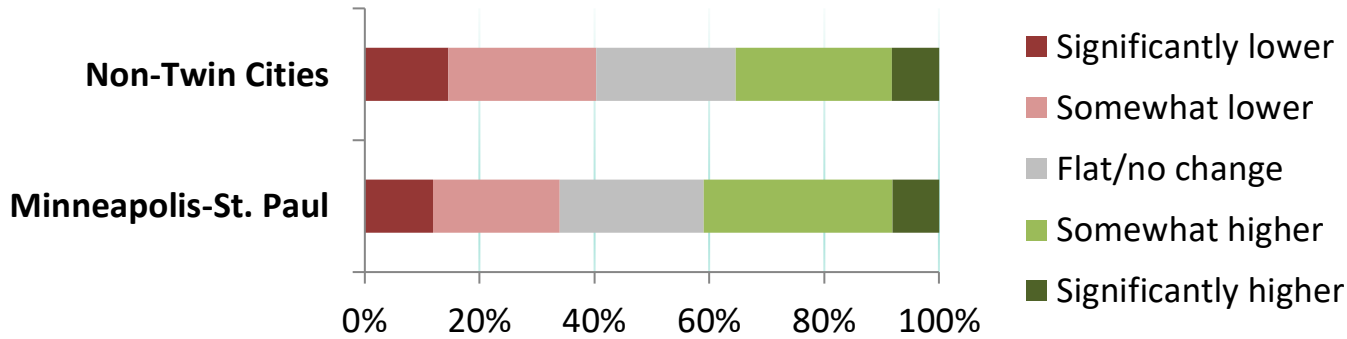


**FUTURE PIPELINE:
REQUESTS FOR PROPOSALS**

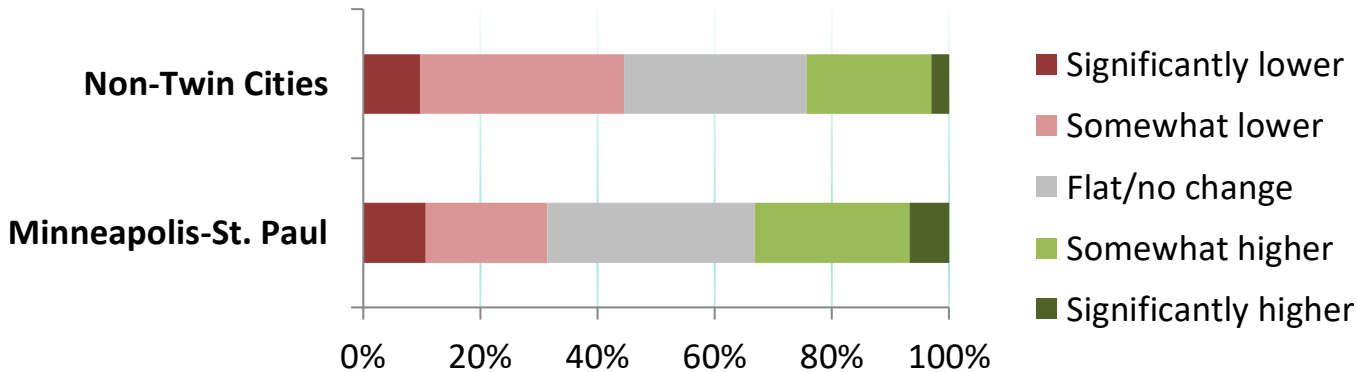
FUTURE ACTIVITY: REQUEST FOR PROPOSALS

Number of RFPs compared with October (non-null responses only)

Private project RFPs



Public project RFPs



Pipeline of future projects:

RFP levels appear to have (potentially) bottomed

RFPs for Mpls-St. Paul firms net-positive for the first time since start of pandemic

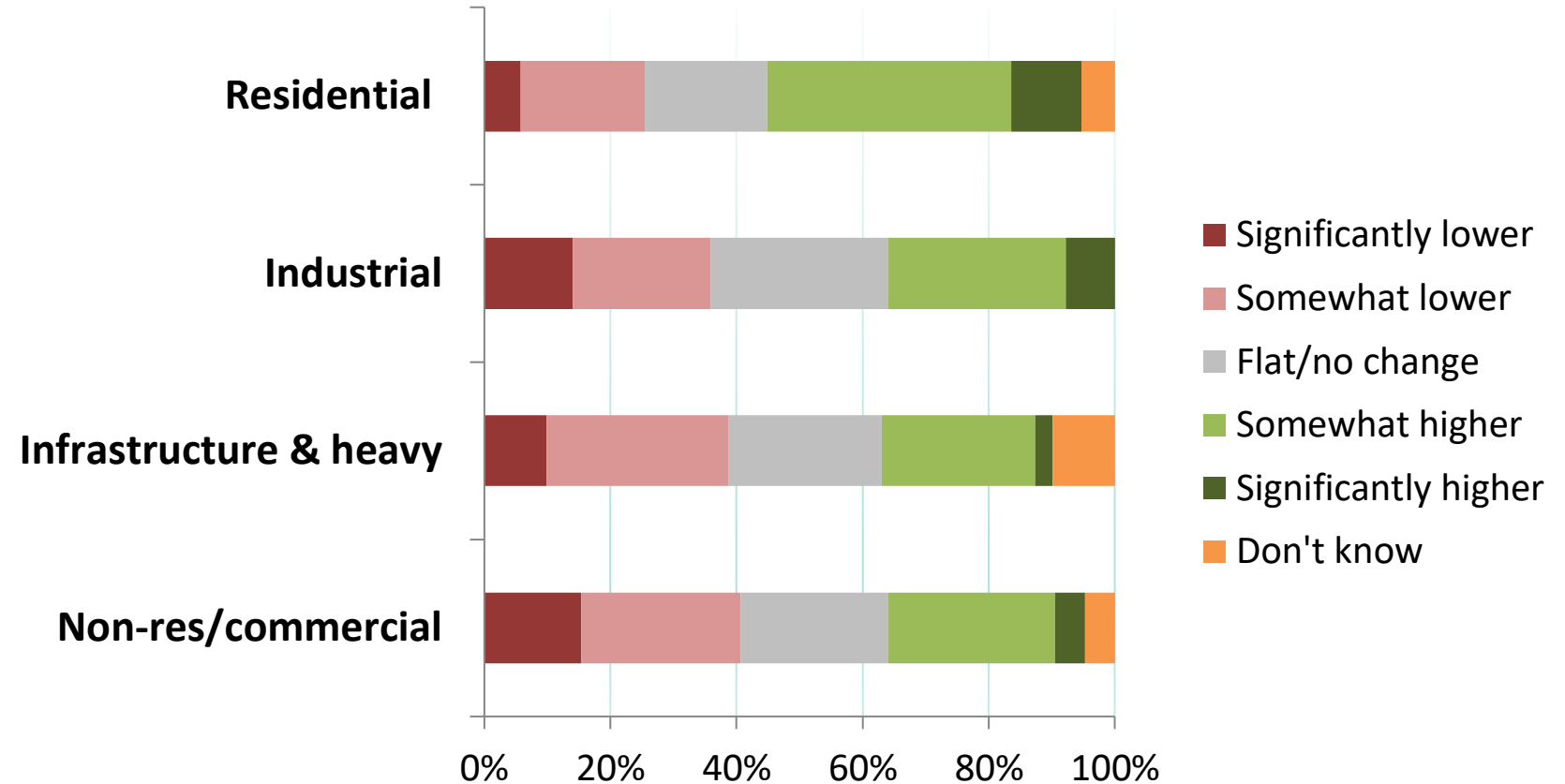
Public project RFPs more muted, especially for firms *outside* of Mpls-St. Paul



REQUEST FOR PROPOSALS – BY SECTOR

Residential RFPs still head and shoulders above other sectors, but others improved over October survey, and closer to neutral sentiment

Private-project RFPs compared with October levels



SURVEY WRAP-UP

- Firms say recent conditions have been difficult
 - Revenues down by virtually any comparison
 - Costs have been increasing significantly
- Some evidence of bottom
 - Levels of cancellations and delay improved
- Some good news:
 - Requests for proposals were net-positive for first time since start of pandemic
 - Hiring expectations are strong



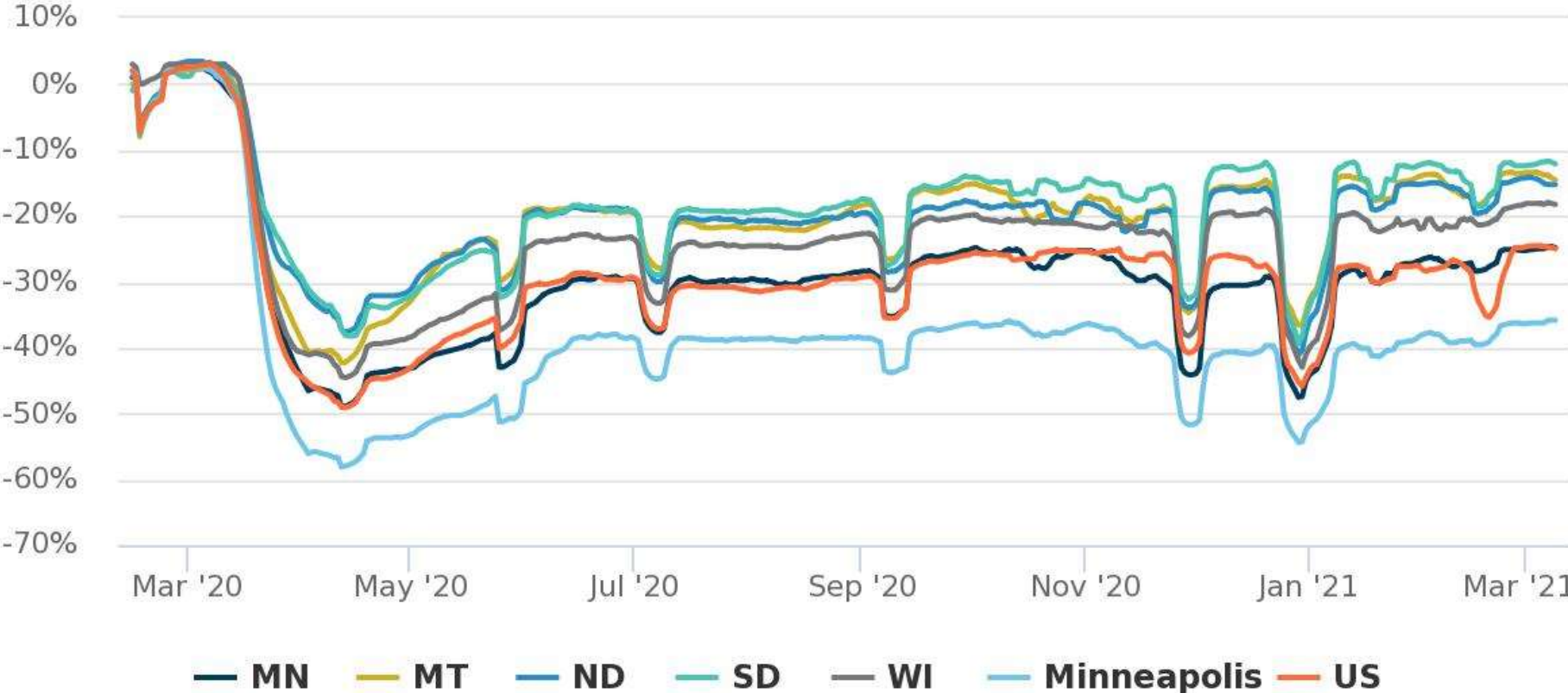


OTHER METRICS: MOBILITY

TRAVEL TO WORK REBOUNDS, STILL BELOW YEAR-AGO

Workplaces

Percent change from Jan-Feb 2020, seven-day rolling average



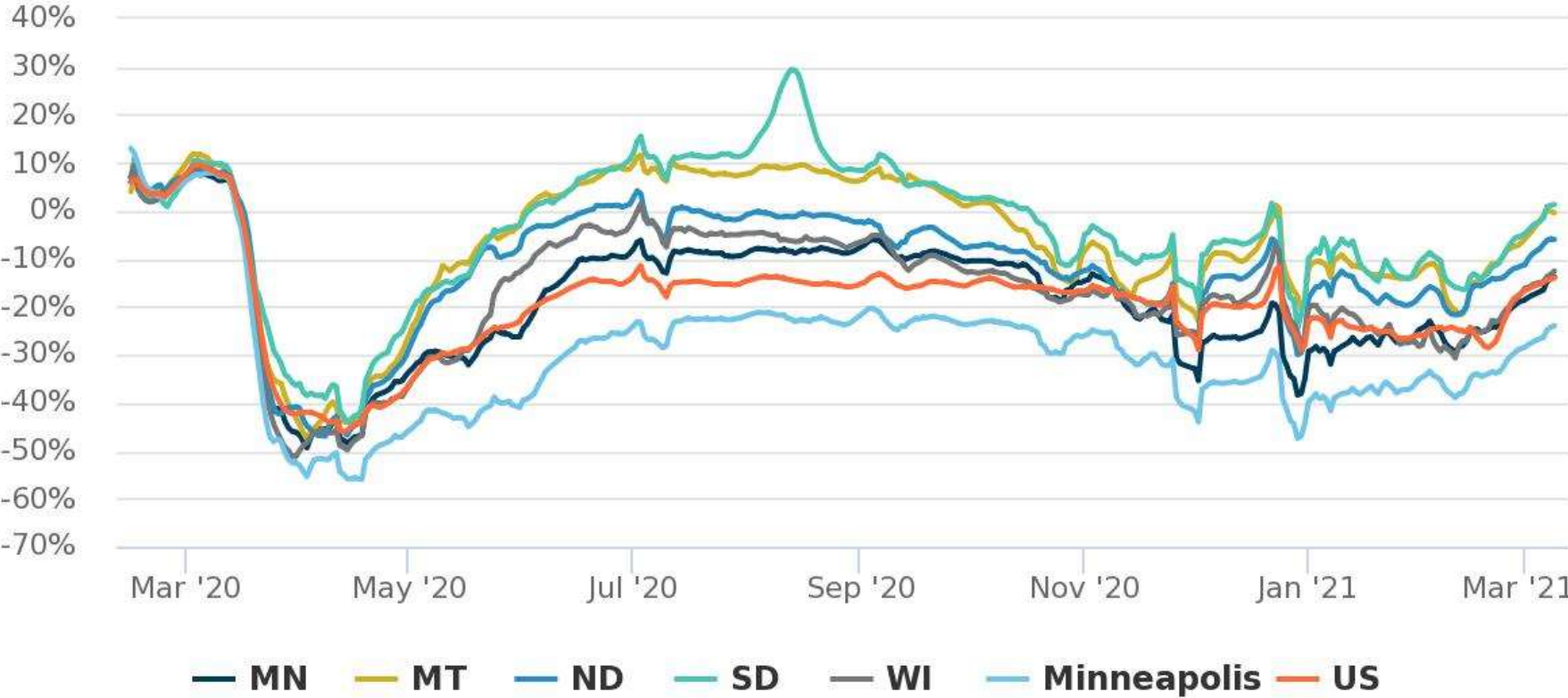
Source: Google Community Reports

Note

RECREATIONAL TRAVEL UP (BUT SO ARE CASES)

Retail and recreation

Percent change from Jan-Feb 2020, seven-day rolling average



Source: Google Community Reports

Note

TRAFFIC AND (ESP.) TRANSIT VOLUMES STILL DOWN

Minnesota auto traffic volume

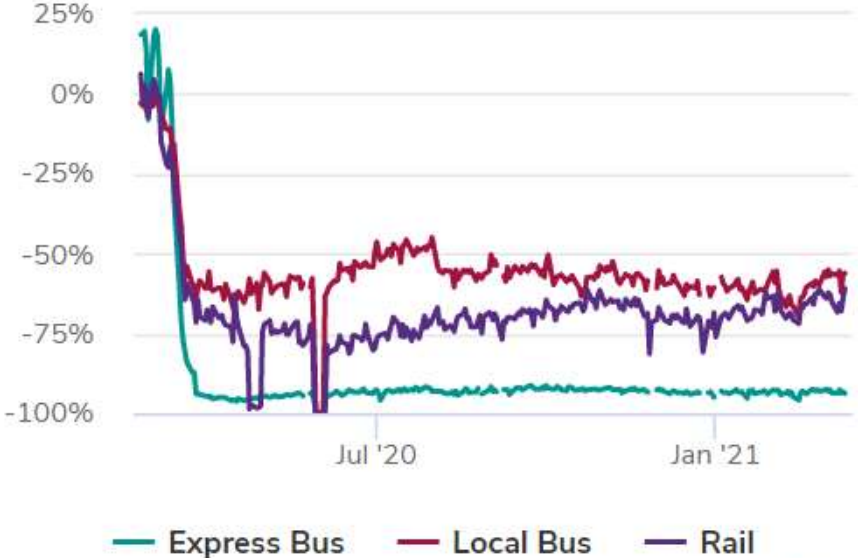
Compared with 2016-2019, 7-day moving average



Source: MnDOT

Minneapolis-St. Paul Metro Transit ridership

Compared with average weekday ridership 2/24/2020-2/28/2020



Source: Metro Transit

[Note](#)

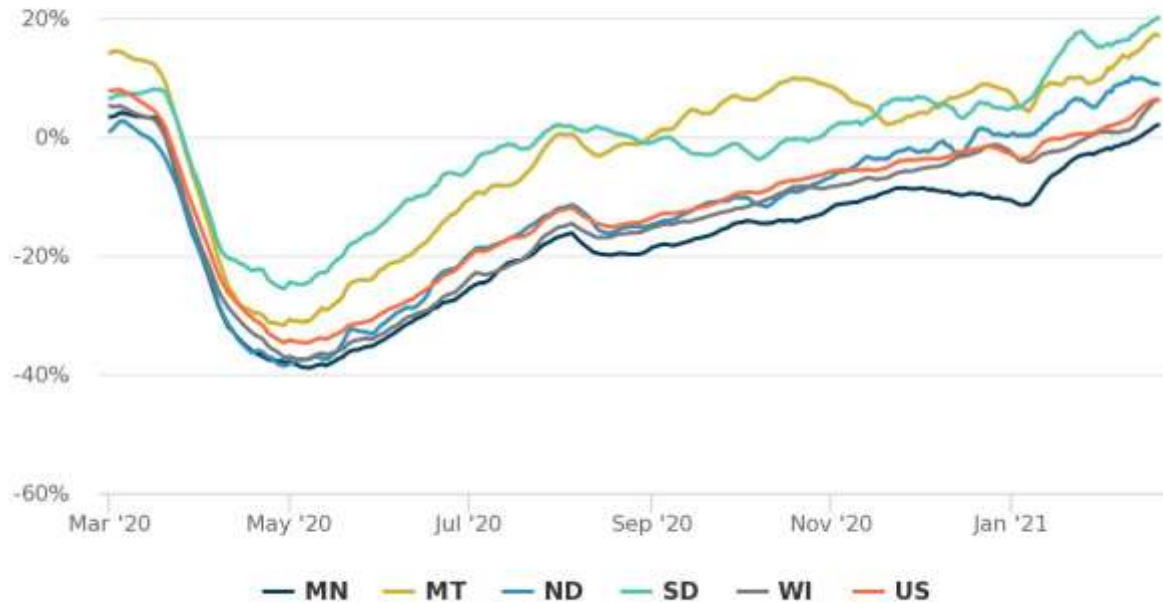


OTHER RESOURCES

COVID-19 and the Ninth District economy: A dashboard

Change in job postings

7-day moving average, YoY



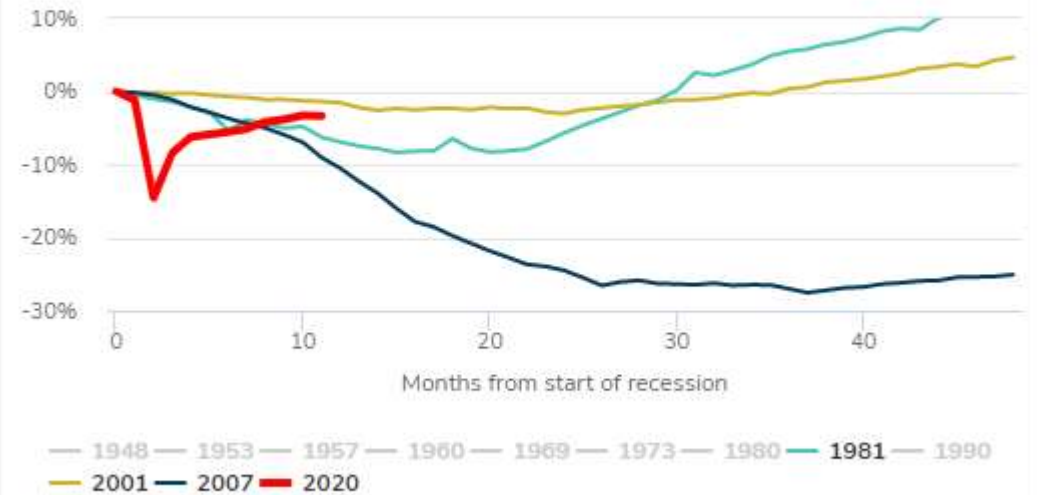
Source: Indeed

Note

The Recession in Perspective

Change in employment by industry

Construction



Source: Bureau of Labor Statistics





THANK YOU!
SPEECH REFERRALS
WELCOME!

@MINNEAPOLISFED

JOSEPH.MAHON@MPLS.FRB.ORG

OR CONNECT ON LINKEDIN

Infrastructure for Post-Covid Economic Recovery

Dejan Makovšek
Procurement Strategy Lead, GOV/IPP

24th March 2021

Context

- The first Covid response was about keeping the essential services running. Now the focus is on economic recovery!
 - To make a real difference, investment impact must come fast (next 4 years)
 - Can we ad hoc increase the volume of infra investment? Or shift towards greener, more resilient, equitable?
-

Investment in infrastructure can boost growth

Spending types	Cumulative Multiplier (within 2 to 5 years)
Public Spending (all forms of spending)*	0.98
Public Investment	1.53
Public Consumption	1.12
Transfers	0.84
Tax Interventions	0.49

Source: GIH & CEPS 2020.

Lessons from past crisis and growth stims

	Targeted	Timely	Temporar
Objectives	↓	↓	↓
Efficiency	Resources should be allocated to spending with higher benefits (economic and social) compared to costs.		
Equity	The impact of investment projects on different groups and sectors should be consistent with established political priorities.		
Effectiveness	The stimulus should be fast and big enough		

Source: IMF 2020.

Key points on project selection (I)

- Projects appraised pre crisis should have their assumptions reassessed
 - Behavioural changes that led to overestimation of demand were already underway before the crisis
 - The crisis may have accelerated the acceptability of teleworking
-

Key points on project selection (II)

- Capacity issues in project preparation and delivery?
 - The public sector (capacity and capability to appraise projects and manage contracts at central and regional government level)
 - The private sector (the construction sector has been subject to opposing forces – reduction of demand on one side and potential restrictions in cross-border mobility of workers on the other)
-

Key points on project selection (III)

- Some transport decarbonisation measures are not capital-intensive, but now is the best time for them!
 - Road space reallocation is a good option while traffic is suppressed in high-density areas
 - Not very beneficial, where traffic was low already before the crisis
-

Key points on project selection (VI)

- Can we #build back better and keep the TTT principles?
 - The best candidates are maintenance projects with low preparation requirements
 - Reprioritizing or replacing projects in pipelines in the short term is not realistic (focus in the next presentation)
-

There are trade-offs in project selection (I)

- (project preparation) **Speed vs efficiency.**
 - If “acceleration” means cutting corners in the project preparation processes, that will lead to problems later on
 - It is not possible to “accelerate” ad-hoc. Process optimization however, takes time.
-

There are trade-offs in project selection (II)

- **Equity vs efficiency** on a central government level
 - Allocating investment to places with already high economic density will yield the highest economic benefits. Those hit hardest by the crisis will be where density is lowest.
 - The short-term fiscal multiplier would not change.
 - Do we work with what we've got or seek a new political consensus?
-

There are trade-offs in project selection (III)

- **Equity vs efficiency** and allocation between central and regional government level
 - Allocating more funds to the regional government may help in achieving the “sufficient size” criterion of the infrastructure stimulus
 - At the same time, the capabilities of the regional governments are known to be more limited than those at the central government level.
-

Financing the infrastructure stimulus

- If a state can borrow, it should. If it can't, external aid will be necessary (foreign aid for developing countries, or IMF facilities)
 - Privately financing options exist, but extremely costly:
 - Privately financed infrastructure does not enable the state to invest (borrow) more
 - The great majority of PPP applications to date was in circumstances, where they can't achieve Value for Money.
 - Setting up PPPs takes time - is against the Timeliness objective
-

Private investment in infrastructure (I)



<https://www.itf-oecd.org/private-investment-infrastructure>

Thank you !

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Conclusions

- The COVID-19 pandemic has accelerated key societal trends that directly affect Transportation Economics and Planning for a Post-Pandemic Era
- Ensuring travel data and economic assumptions are valid will ensure travel model credibility.
- Social equity will become a more important consideration of transportation prioritization and planning.
- Permanent shifts to work-at-home patterns may significantly reduce vehicle highway travel.
- Scenario planning that accounts for wide-area and social economic drivers will be a critical part of effective transportation planning
- The pace of change requires planning, prioritization, and implementation to be agile and adaptive.

COVID-19: Next steps for PIARC

- **Further PIARC webinars are planned**
 - In April/May on Funding, Procurement and Transparency
- **Analysis of the survey that we organised in September**
- **Evaluate all measures that have been implemented in a hurry during the crisis**
- **Identify actual user needs and policy demands; i.e., what is the “new normal”**
- **All of our Committees are mobilized to share knowledge and best practice**

Next PIARC Congresses

Save the dates!

■ 16th World Winter Service and Road Resilience Congress

- Calgary, Canada, 8 – 11 February 2022
- Virtual format
- <https://www.piarc-calgary2022.org/>



■ 27th World Road Congress

- Prague, Czech Republic
- 2 – 6 October 2023





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