RISSB Horizons Program 3.0
Thursday 11th March 2021
Deakin Downtown,
Lvl 12, Tower 2 Collins Square
Melbourne, Australia

Covid-19 and the Future of The Urban Rail Market in Melbourne

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Public Transport Research Group
Monash Institute of Transport Studies
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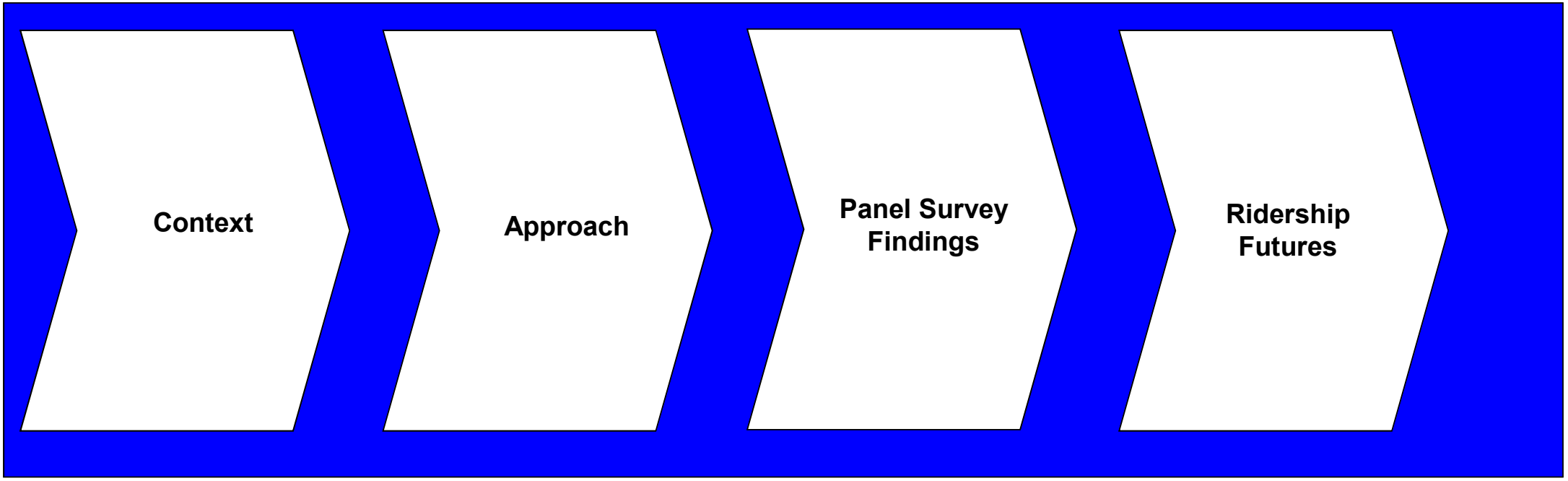
Agenda

- **Introduction**
- **Context**
- **Approach**
- **Panel Survey Findings**
- **Transit Ridership Futures**

This paper explores how Covid-19 will affect the future rail market in Melbourne



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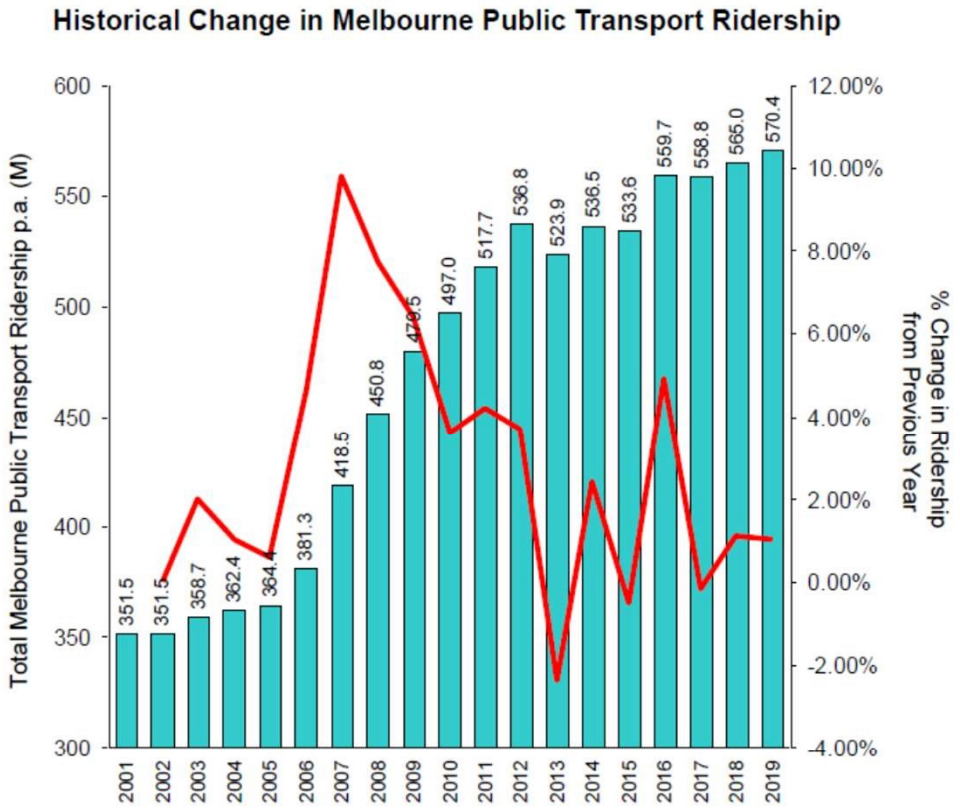
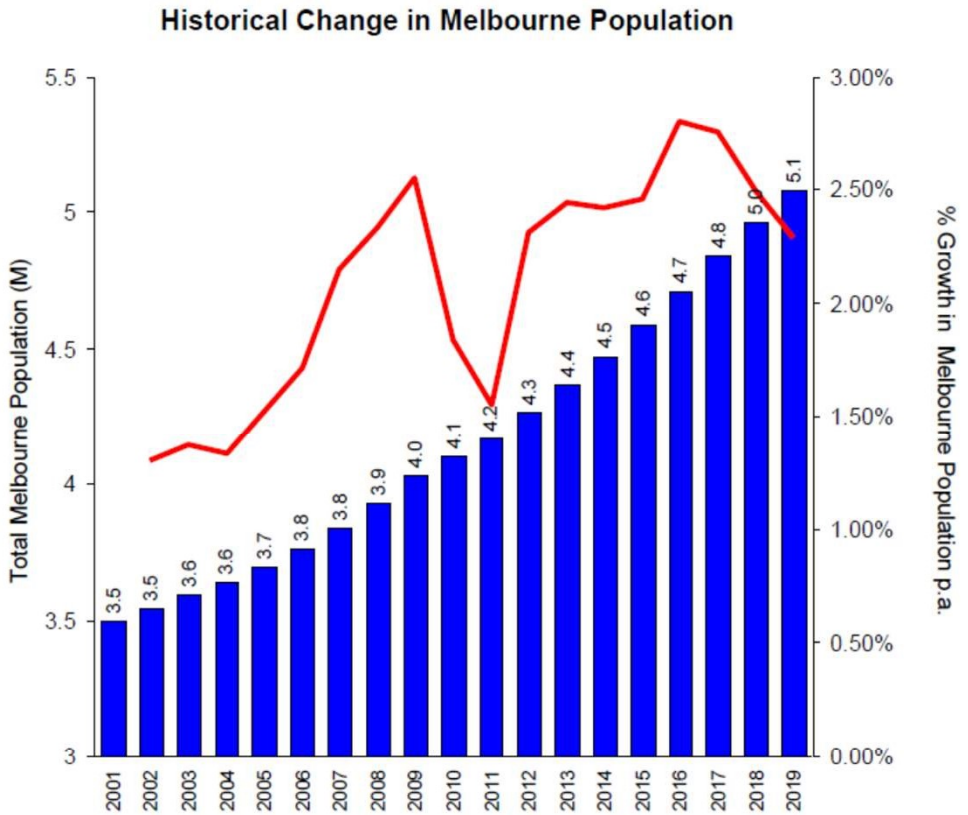
Transit Ridership Futures

Public transport ridership in Melbourne has been BOOMING – fuelled by a booming and increasing population growth rate



Note:

(1) Public Transport Victoria, Victorian Department of Transport and Transport Victoria Annual Reports



Note:

(1) Australian Bureau of Statistics – Estimated Regional Population

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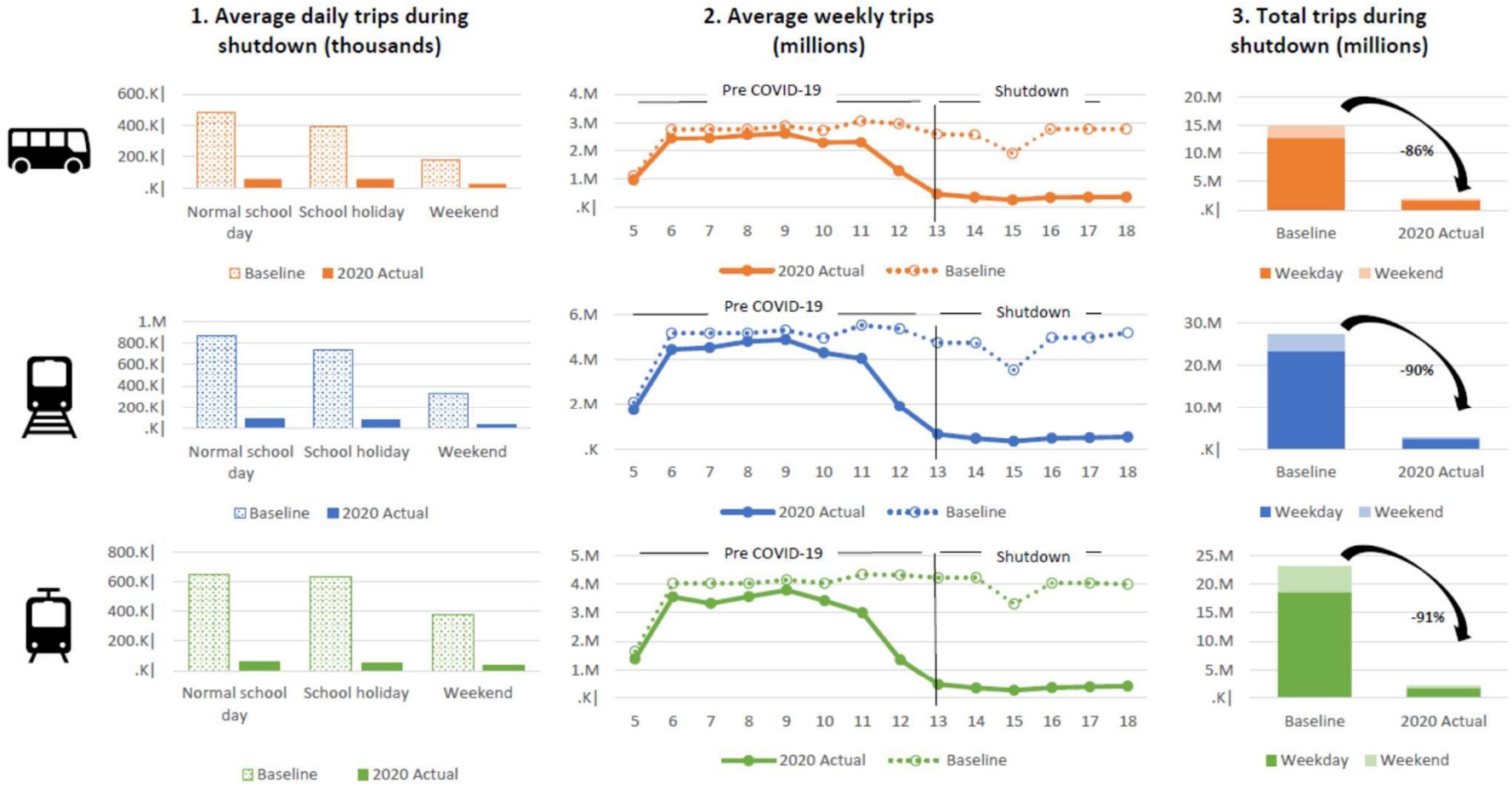
Then Covid-19, shutdowns and social distancing reduced ridership by over 90%



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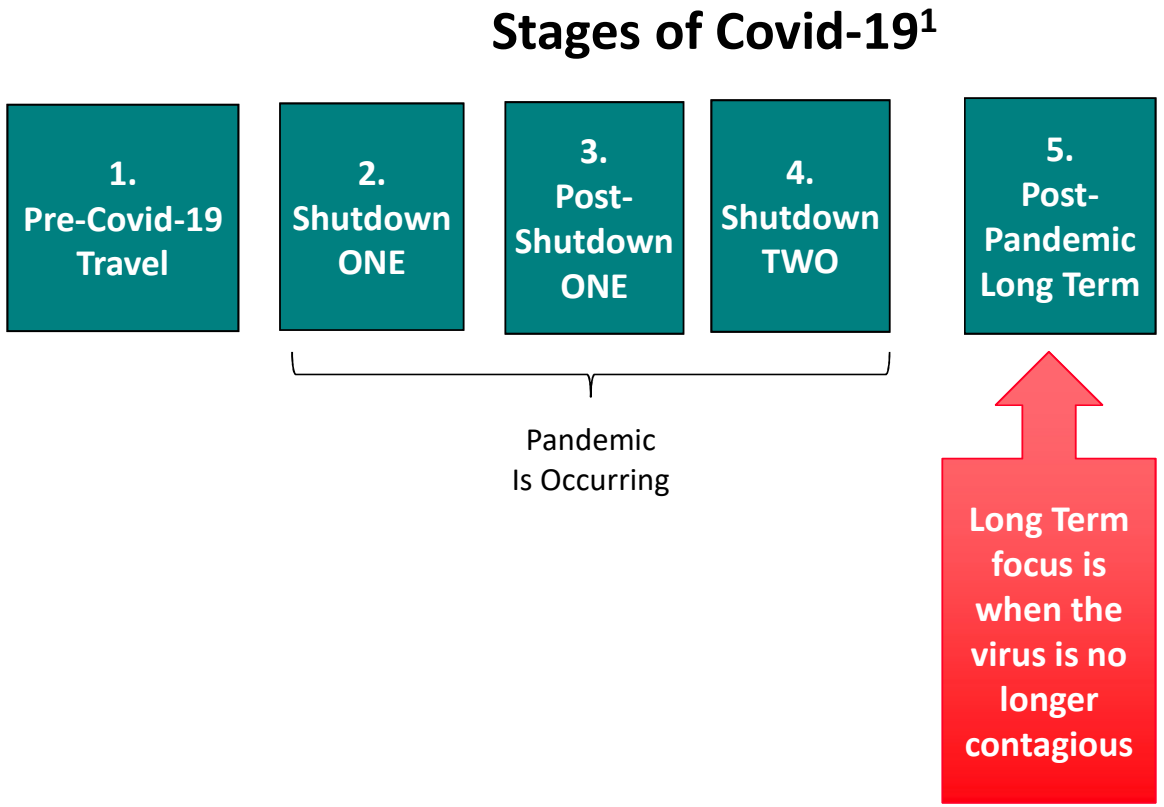
Monash Research Project Scope

- Objective:
  - Understand how C-19 has impacted travel including long term effects.
- Focus:
  - Melbourne, Australia



The online panel survey covers self reported travel by Covid period & Specific Issues affecting long term travel (from the Monash framework) – a sample frame is so results are representative

Online Panel Survey Questionnaire – Areas Covered

- 1. Pre - Shutdown
- 2. Shutdown One
- 3. Post – Shutdown One
- 4. Shutdown Two
- 5. Post – Pandemic

→

i. Employment
ii. Income
iii. Weekday activities
iv. Travel to Work and Study (Workers/Students)
v. Off Peak Travel (non Workers/Students)

D. Exploring Specific Long Term Impact Issues (The Monash Framework)

- Working from Home
- Tele-Video Conferencing
- Travel Modes
- Local Travel
- Home Deliveries/ Online Shopping
- Residual Public Transport Fear
- Impact of Lower Income
- Car Ownership/Use
- Residential Housing/Location

Sample Frame[1]

INNER MELBOURNE (n=700)

	Annual Personal Income , Before Tax				
	Nil Income	Less than	Between	More than	Total
Age Group	Target	Target	Target	Target	Total Target
18-29	53	96	83	16	248
30 - 44	12	43	86	79	220
45 and over	12	89	62	69	232
Total	**77**	**228**	**231**	**164**	**700**

MIDDLE MELBOURNE (n=700)

	Annual Personal Income , Before Tax				Total
Age Group	Target	Target	Target	Target	Total Target
18-35	37	73	92	36	238
36-54	17	43	87	90	237
55 and over	18	107	64	37	226
Total	**72**	**223**	**243**	**163**	**701**

OUTER MELBOURNE (n=700)

	Annual Personal Income , Before Tax				
	Nil Income	Less than	Between	More than	Total
Age Group	Target	Target	Target	Target	Total Target
18-35	26	87	97	24	234
36-53	15	64	101	56	236
54 and over	18	122	65	25	230
Total	**59**	**273**	**263**	**105**	**700**

GRAND TOTAL

	Annual Person Income, Before Tax				
	Nil Income	INCOME 1	INCOME 2	INCOME 3	Total
Age Group	Target	Target	Target	Target	Total Target
AGE GROUP 1	116	256	272	76	720
AGE GROUP 2	44	150	274	225	693
AGE GROUP 3	48	318	191	131	688
Total	**208**	**724**	**737**	**432**	**2101**

Note:

(1) Quotas in a sample aim to ensure representation of the community with respect to key/influential demographic and spatial criteria

(2) Statistical accuracy minimums are a sample of 600 to achieve a 95% confidence that any result is within 4% standard error.

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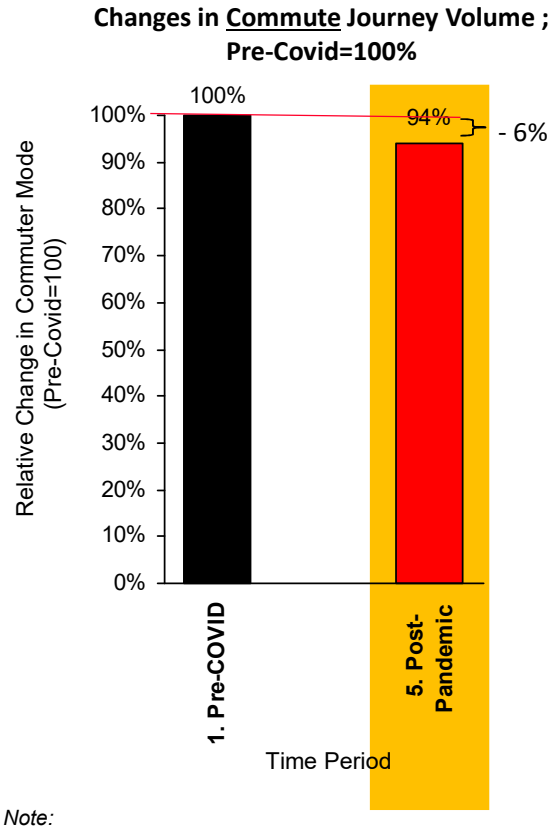
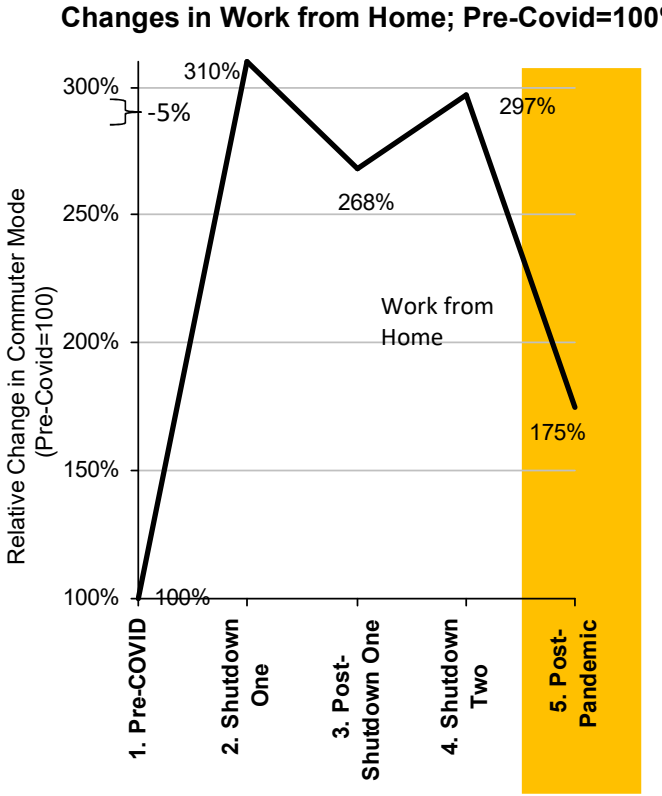
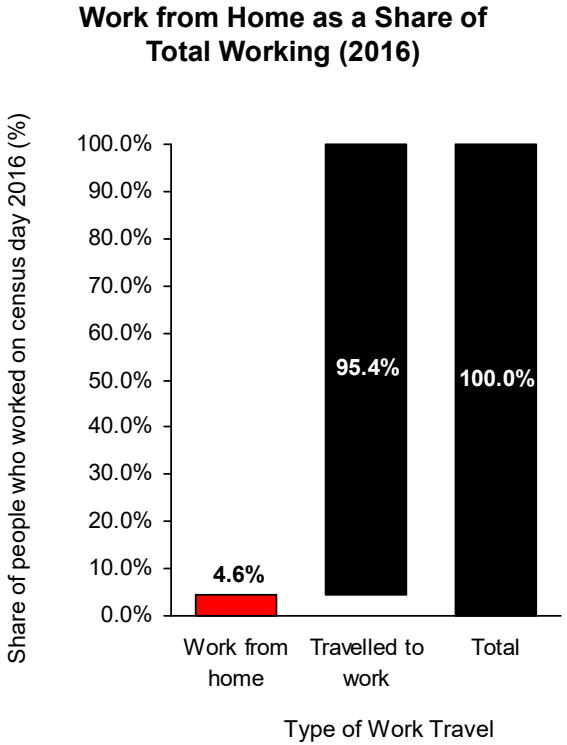
POST COVID total Commuting declines by 6% - mainly due to increased WFH – the scale of shift is small (6%) because WFH is small as a share of work

Post-Covid Total Travel Reduction and Links to WFH Growth







Note:

(1) Monash - August 2020 Online Panel –final sample - Self reported activity participation volume per week

(2) Weighted sample; representative of total Melbourne travel

Source:: Australian Bureau of Statistics, 2016 Census Journey to Work

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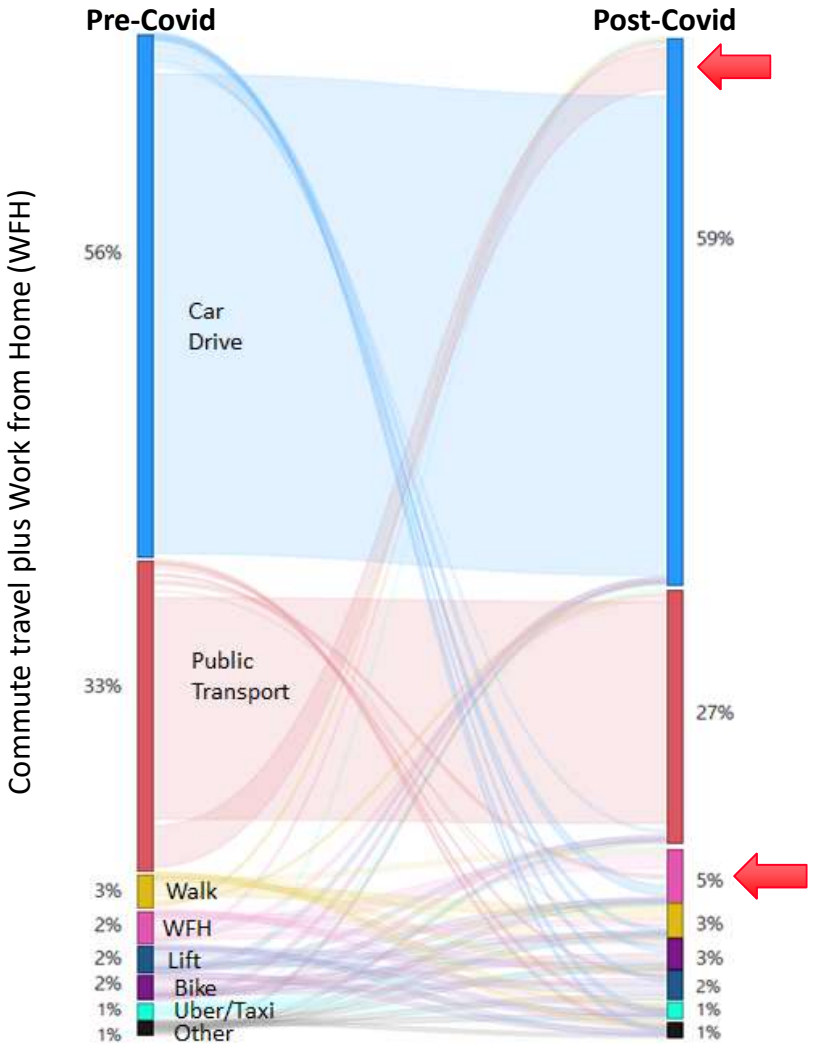
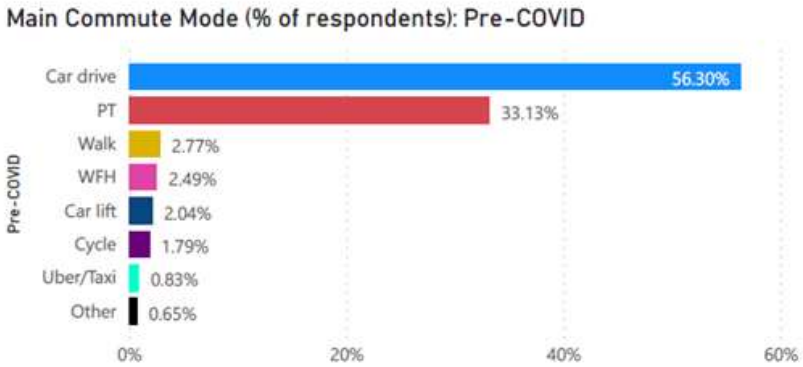
POST COVID Commuting mode shifts from transit to car-drive of around 3%; WFH increases from 2% to 5% from both car drive, transit and other modes

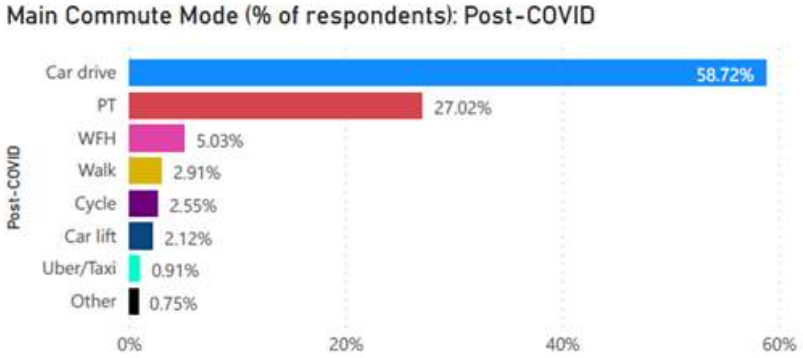
Post-Covid Total Mode Shift



Main Commute Mode- Pre-COVID and Post-COVID
All Melbourne (n = 1318)

- Cross-regional weights applied
- Only selected respondents employed / expected to be employed (FT, PT or casual) at both points in time

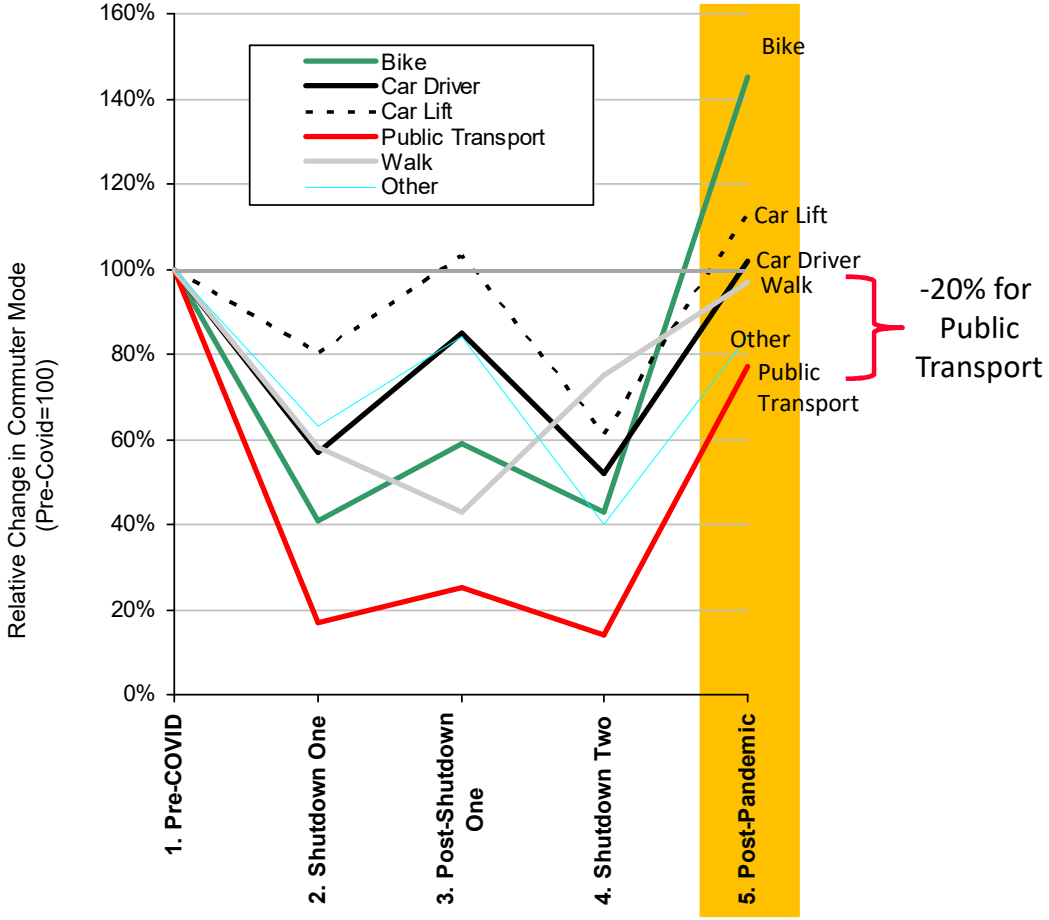


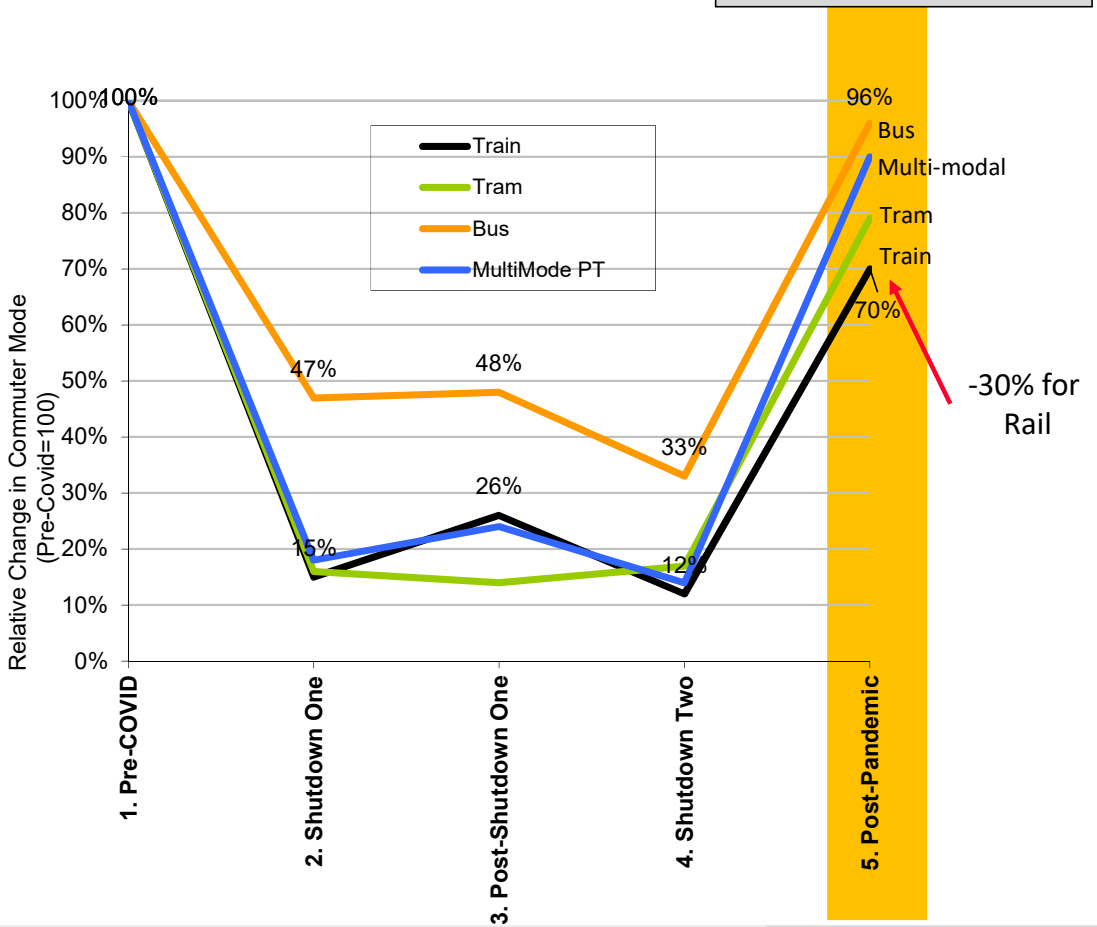


By Mode Post-Covid; JTW grows for Bike (+45%), Car Lift (+13%), Car Driving (+2%). Walking (-3%)
PT ridership returns to 77% of Pre Covid Levels – rail more affected than Bus and Multimodal

Figure D5: Changes in Commute Journey Volume by Mode ; Pre-Covid=100%

Peak-Related Travel





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Note:

(1) Monash - August 2020 Online Panel – final sample - Self reported travel to work volume per week

(2) Weighted sample; representative of total Melbourne travel

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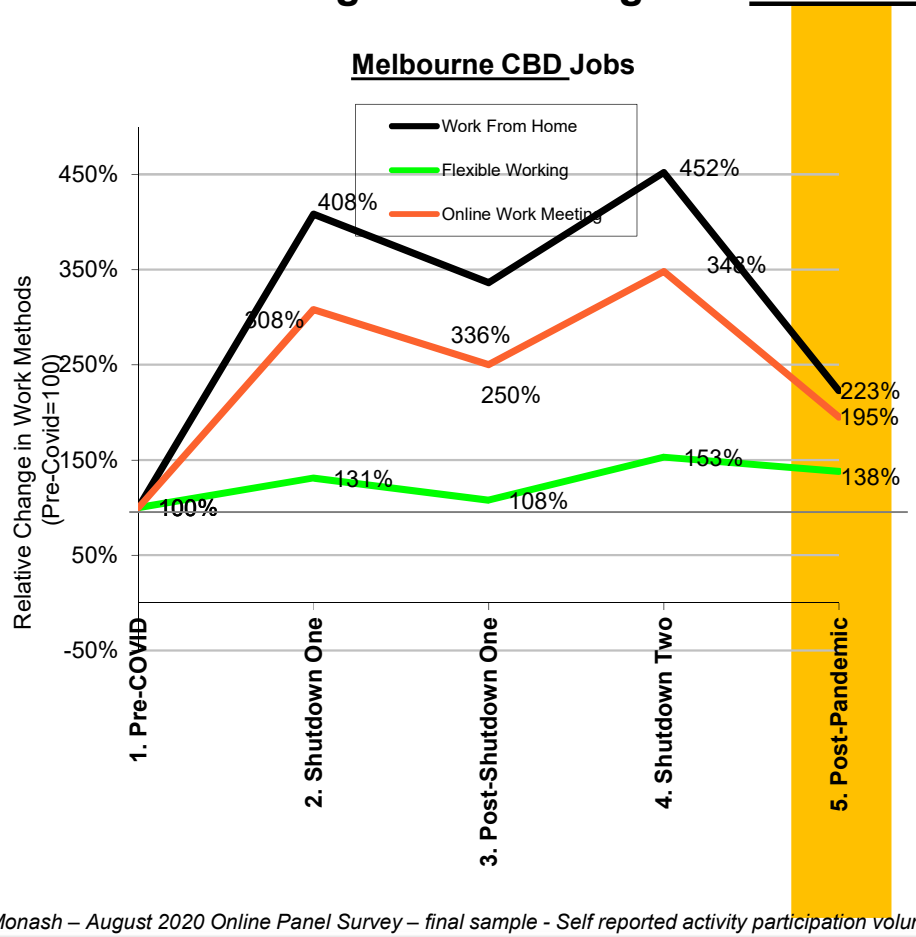
Melbourne CBD

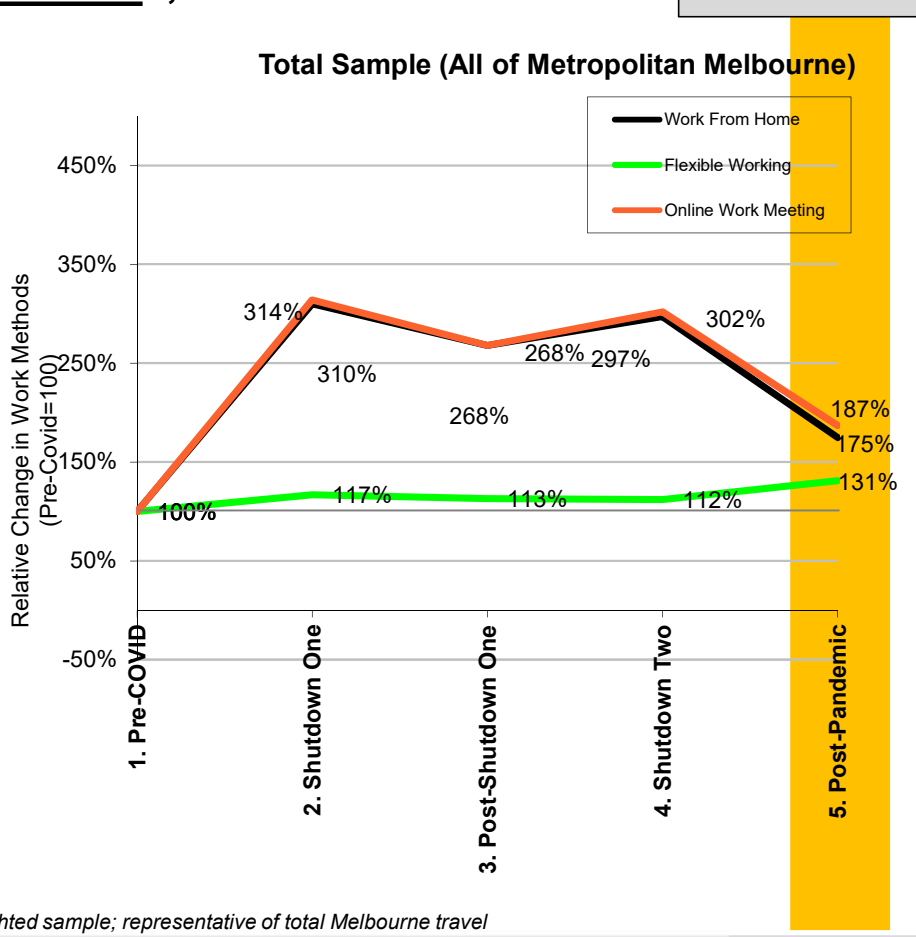
CBD Commuting

Work from Home is MUCH more common for CBD workers; Post Pandemic WFH is expected to more than double (+117%) compared to pre-covid, much higher than for Melb as a whole (+75%)

Figure F2: Changes in Alternative Work Methods ; Pre-Covid=100%

CBD Commuting





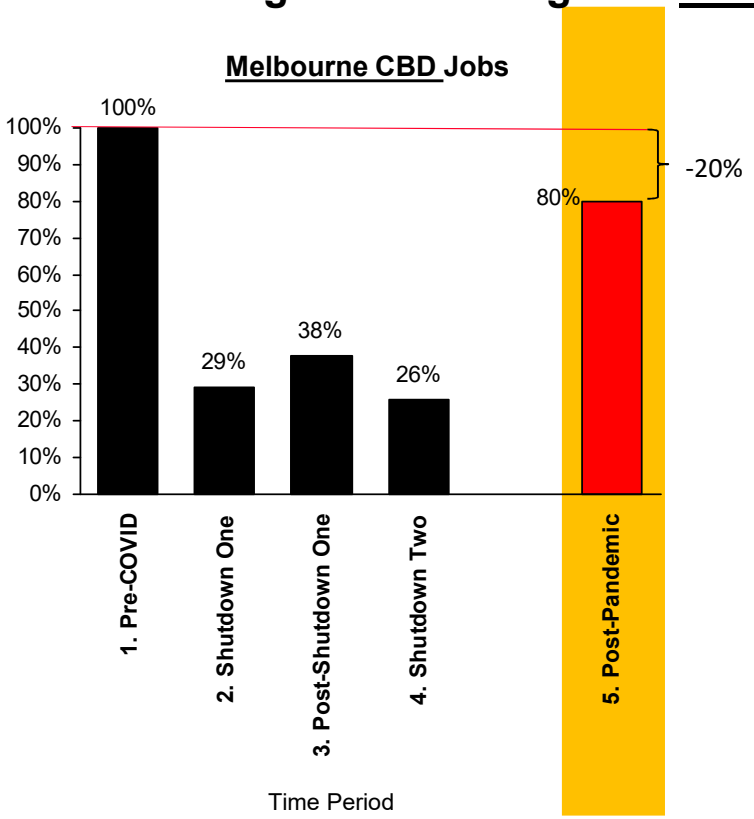
Note:

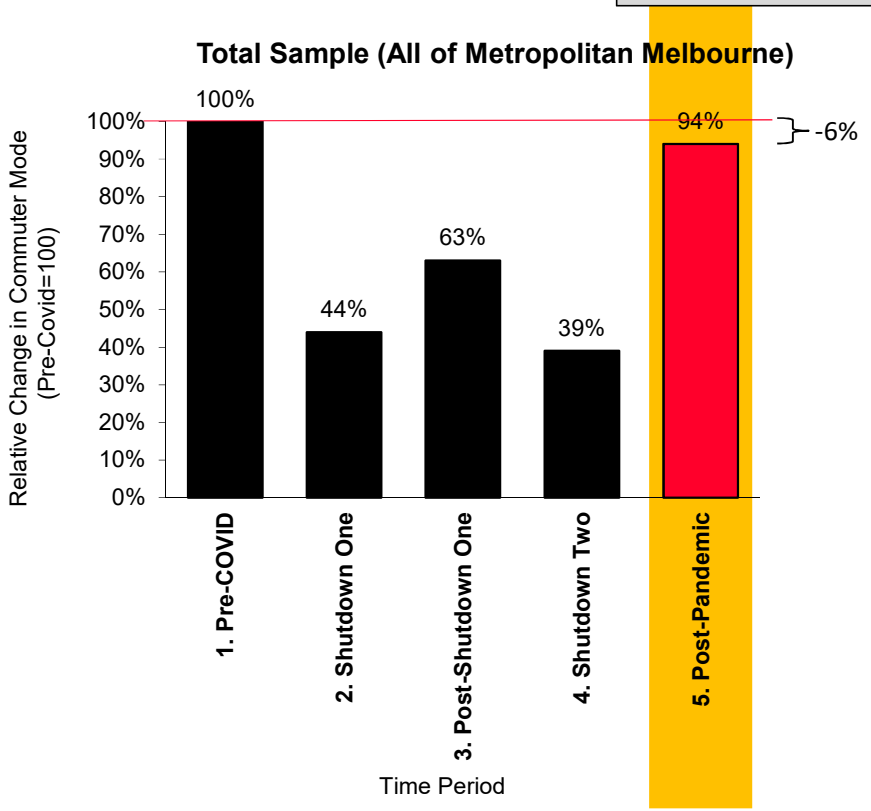
(1) Monash – August 2020 Online Panel Survey – final sample - Self reported activity participation volume per week (2) Weighted sample; representative of total Melbourne travel

Respondents say CBD COMMUTE will reduce more than the rest of Melbourne; Post Pandemic a 20% decline in CBD COMMUTE is self estimated - much larger than for Melbourne as a whole (6%)

Figure F4: Changes in Commute Journey Volume ; Pre-Covid=100%

CBD Commuting





Note:

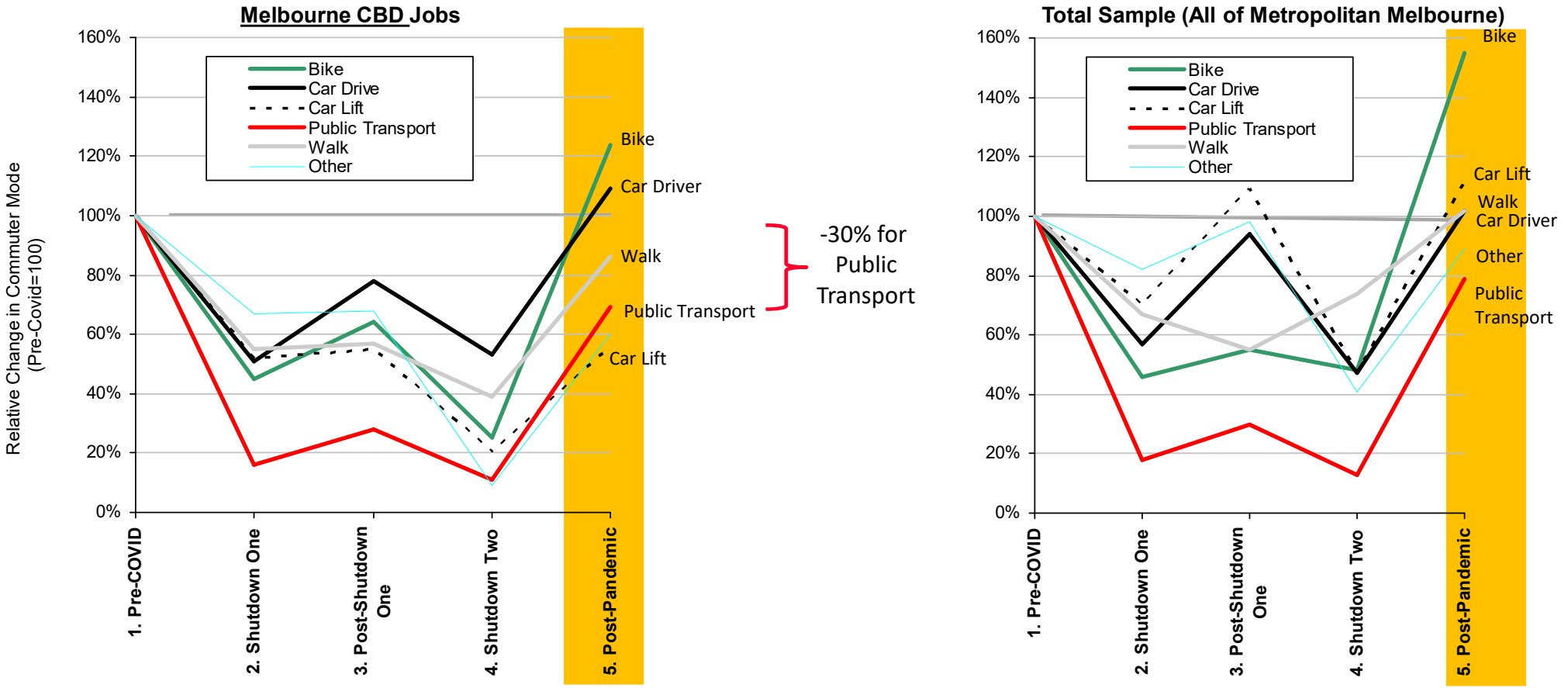
(1) Monash - August 2020 Online Panel – final sample - Self reported CBD travel to work volume per week

(2) Weighted sample; representative of total Melbourne travel

Post-Covid CBD COMMUTE grows for Bike (+24% Pre-Covid) & Car Driver (+9%). Car Lift (-44%) PT (-31%) & Walk (-14%) reduce. CBD modes decline more than Citywide; Car Driving growth is bigger

Figure F6: Changes in Commute Journey Volume by Mode ; Pre-Covid=100%

CBD Commuting



Note:

(1) Monash – July 2020 Online Panel Survey – final sample - Self reported travel to work volume per week (2) Weighted sample; representative of total Melbourne travel

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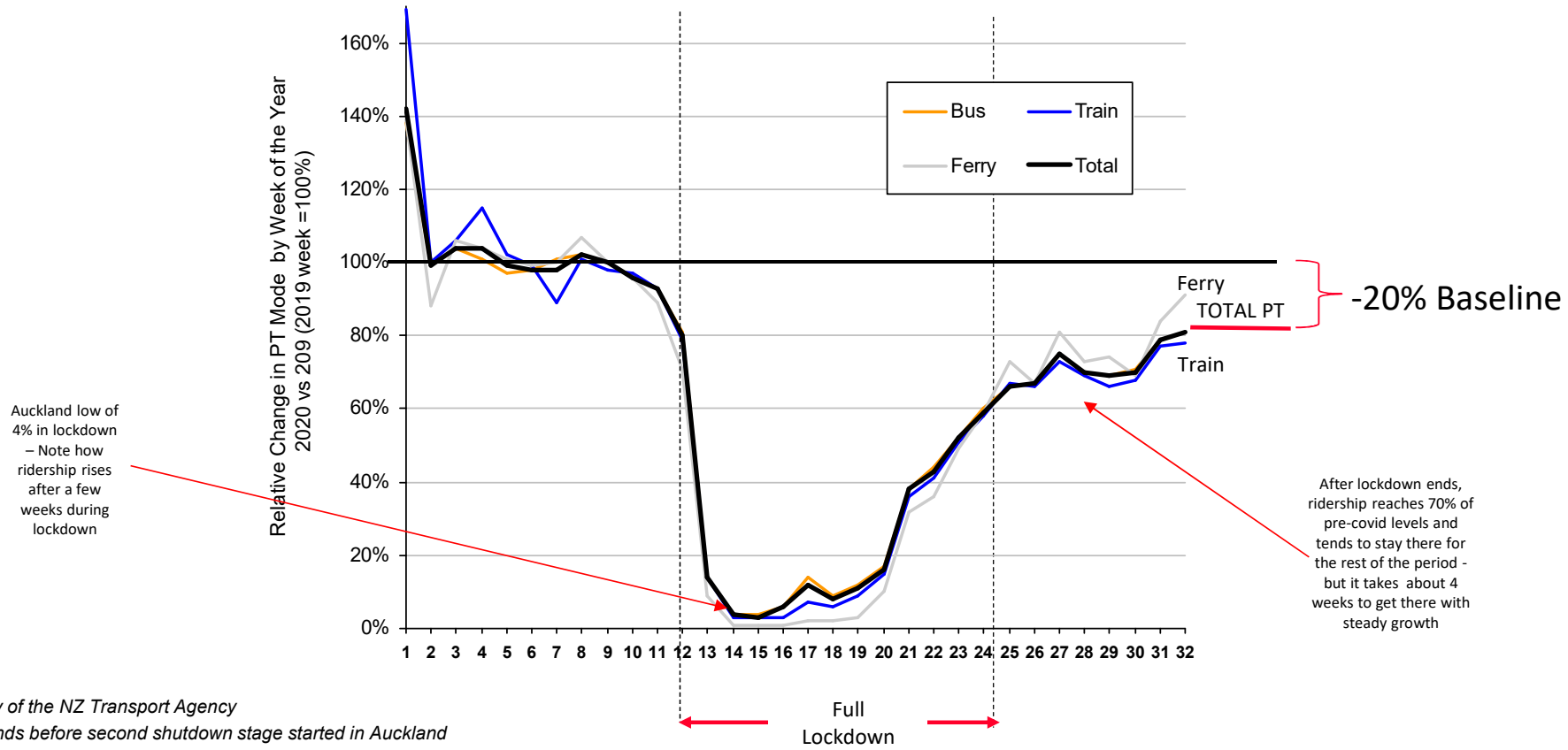
We note that Auckland Transport ; when Covid-19 was no longer an issue, demonstrated a 20% net PT ridership decline; consistent with our low-end est. for Post Covid in Melbourne of -20%

Changes in AUCKLAND TRANSPORT (NZ) Total Public Transport Travel by Mode by week - 2020 vs 2019; 2019 =100%



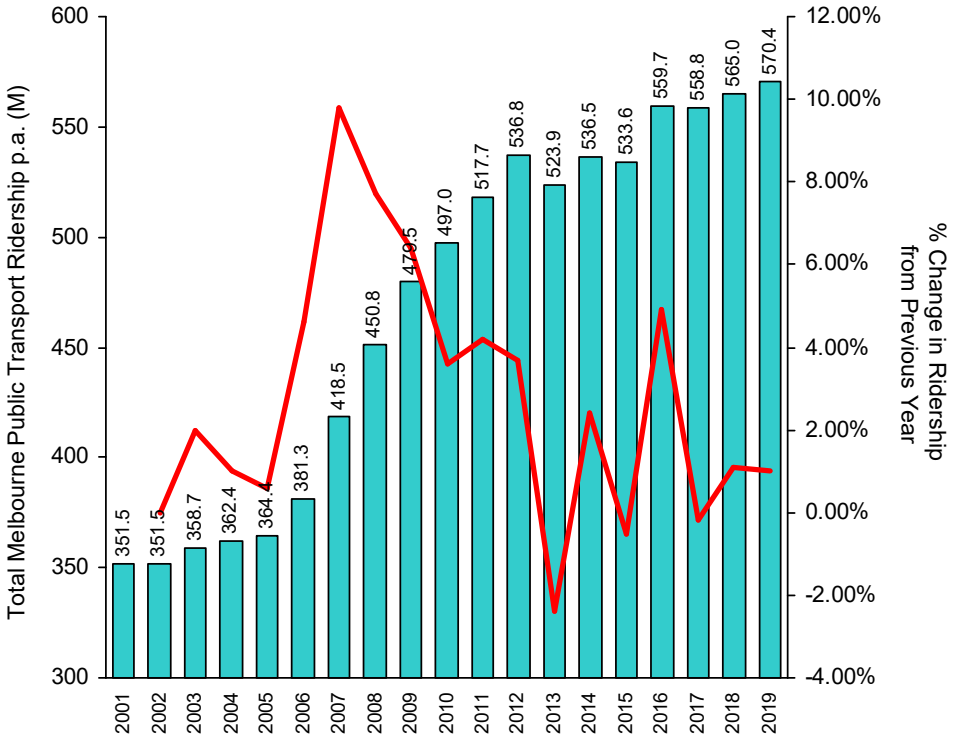
Note:

(1) Data curtesy of the NZ Transport Agency

(2) Note data ends before second shutdown stage started in Auckland

…on the same basis, a one off 20% PT decline would be offset by typical annual ridership growth in a maximum of 7 years ; if growth rates are higher this will take less time

Historical Change in Melbourne Public Transport Ridership



Key Points

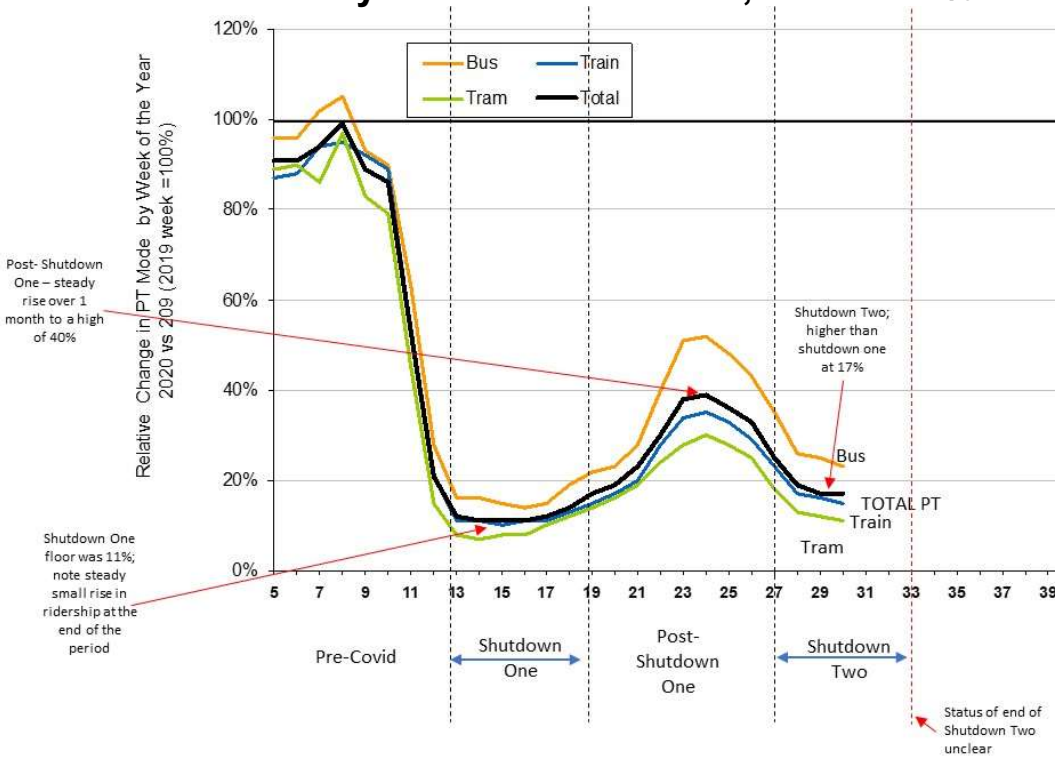
- PT ridership grew a total of 62% between 2001 and 2019
- Annual average growth rates varied between -2% (one year) and 10% (one year); average growth rate annually was 2.8%
- A decline of PT ridership of 20% would require 7 years of annual growth at 2.8% p.a. to return ridership to Pre-Covid levels

Note:

(1) Public Transport Victoria, Victorian Department of Transport and Transport Victoria Annual Reports

Melbourne & Sydney have a way to go and display interesting differences which will be explored in future research

Changes in MELBOURNE Total Public Transport Travel by Mode by week - 2020 vs 2019; 2019 =100%

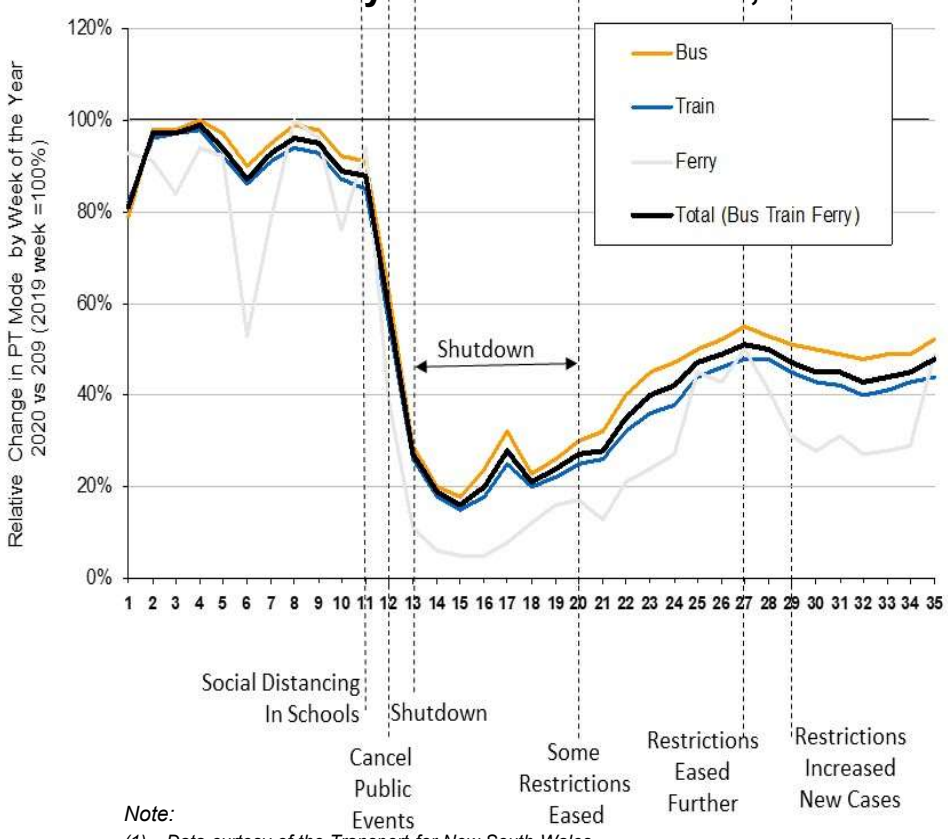


Note:

(1) Source: Department of transport 2020, Daily patronage estimates by mode, compared to baseline data , for February to July 2020

(2) Patronage baselines are based on monthly predictions for weekdays, Saturdays, Sundays and public holidays, derived from 2019 patronage est for the same month and with a year on year growth rate applied. Baselines do not reflect fluctuations in patronage that occur throughout each month or week.

Changes in Sydney Total Public Transport Travel by Mode by week - 2020 vs 2019; 2019 =100%



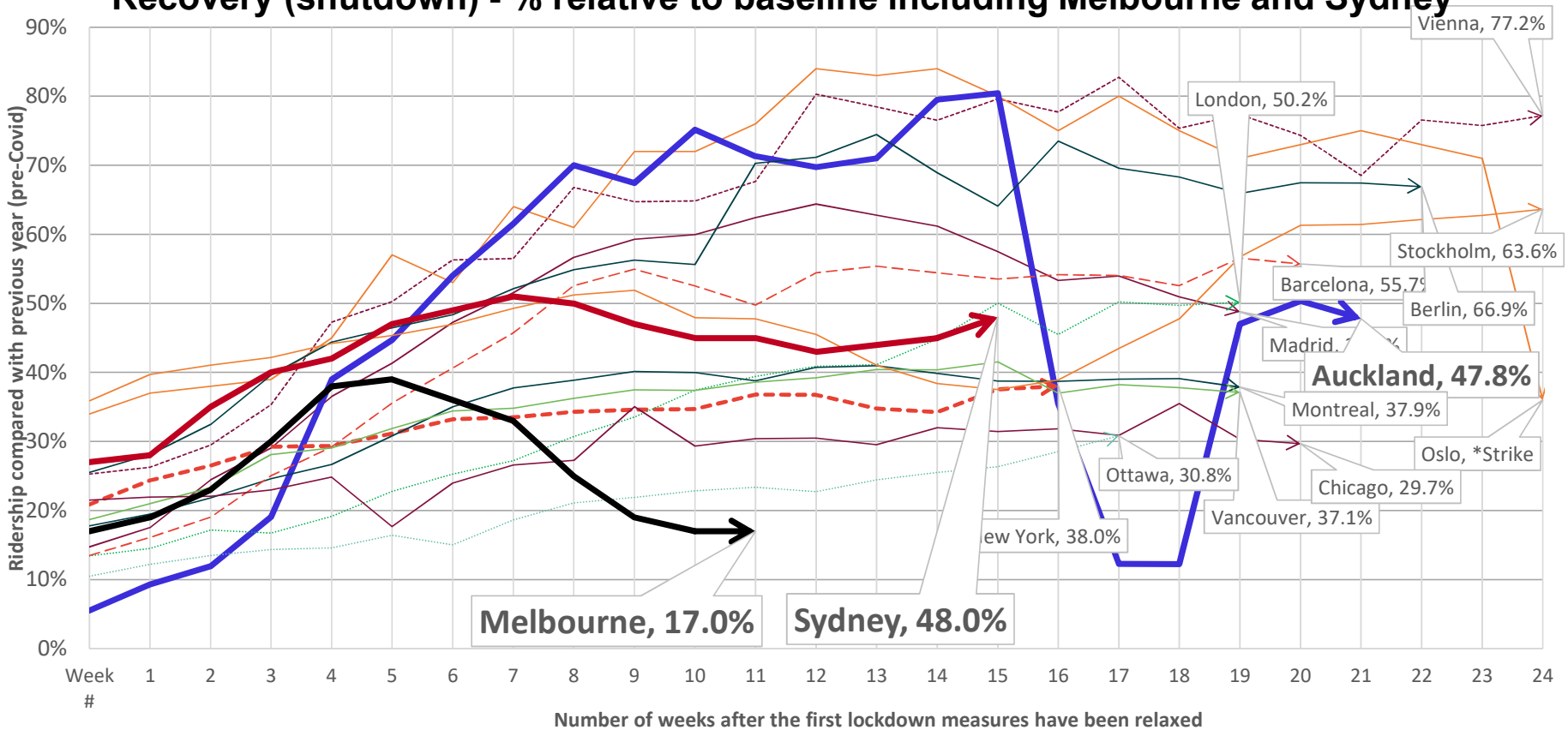
Note:

(1) Data curtesy of the Transport for New South Wales

(2) Note: Light Rail and Metro not included as significant new service introduced in 2019 distorting effects pre-post Covid 19

The general pattern of Melbourne recovery matches those of other cities

Changes in International City (Multi-modal) Public Transport Travel by Mode by week after Recovery (shutdown) - % relative to baseline including Melbourne and Sydney



Number of weeks after the first lockdown measures have been relaxed

Note:

(1) Monash University analysis of raw data collated from Victorian Department of Transport, Transport for NSW, NZ Transport Agency, UITP.

(2) The text tags with percentages after the city name show the change in ridership compared to baseline in 2019

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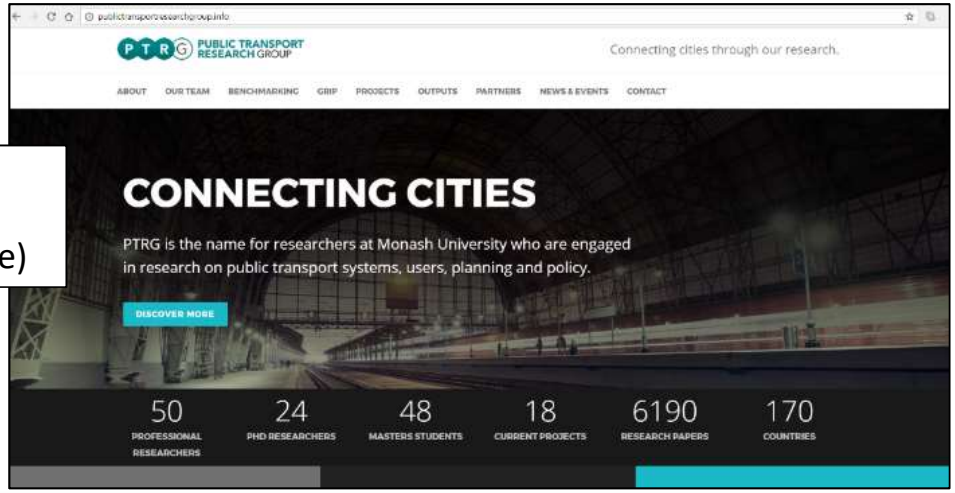

W: ptrg.info
(project has a webpage on this site)

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Researching Transit

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RT5 – Long term impact of COVID-19 on Travel Behaviour

SOUNDCLOUD