Tracking the Global Pandemic Economy
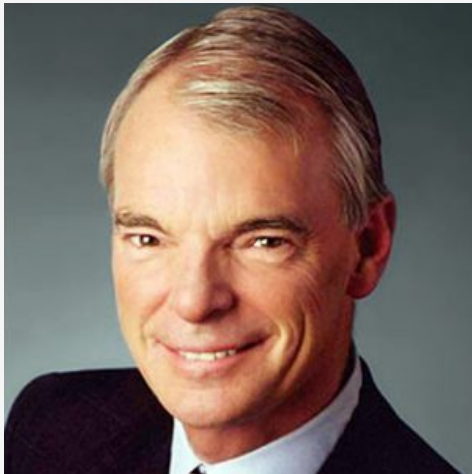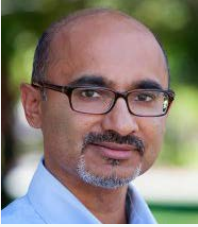
Webinar with Markus

Michael Spence
NYU

Introductory remarks by

Markus Brunnermeier
Princeton

PAST AND FUTURE SPEAKERS

- **Last**

  Arvind Krishnamurthy
  "Corporate Debt Overhang and Credit Policy"

- **Today**

  Mike Spence
  "Tracking the Global Pandemic Economy"

- **Next webinar**

  Bob Shiller
  "Narrative Economics and COVID"

- **Related:**
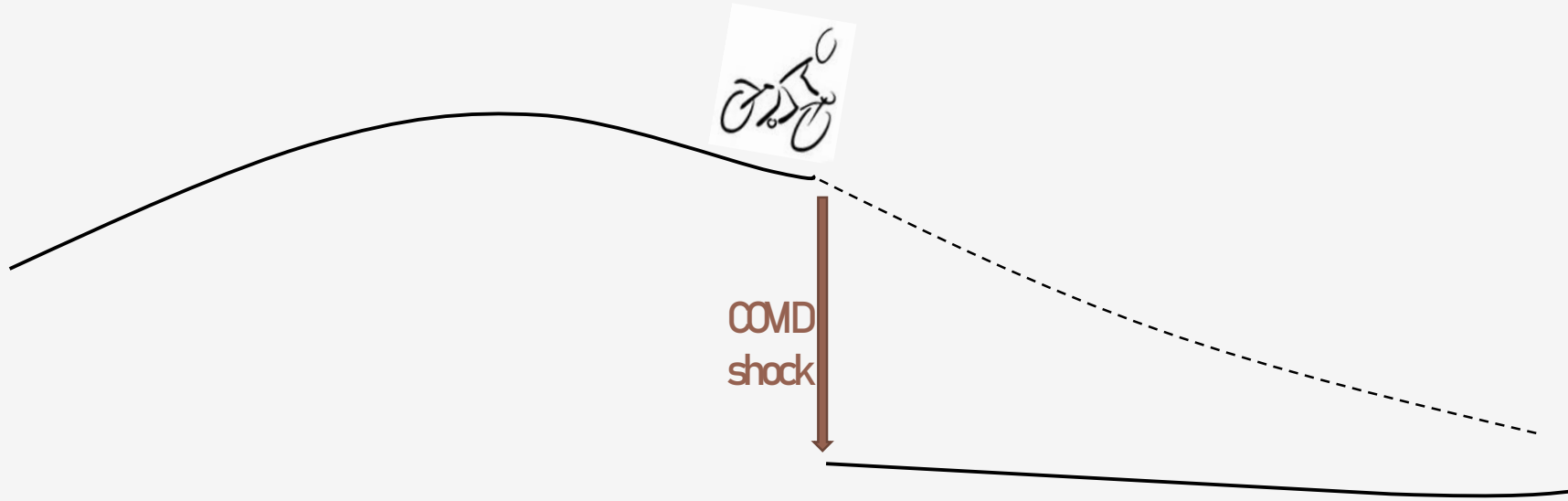
  Gita Gopinath

  Raj Chetty
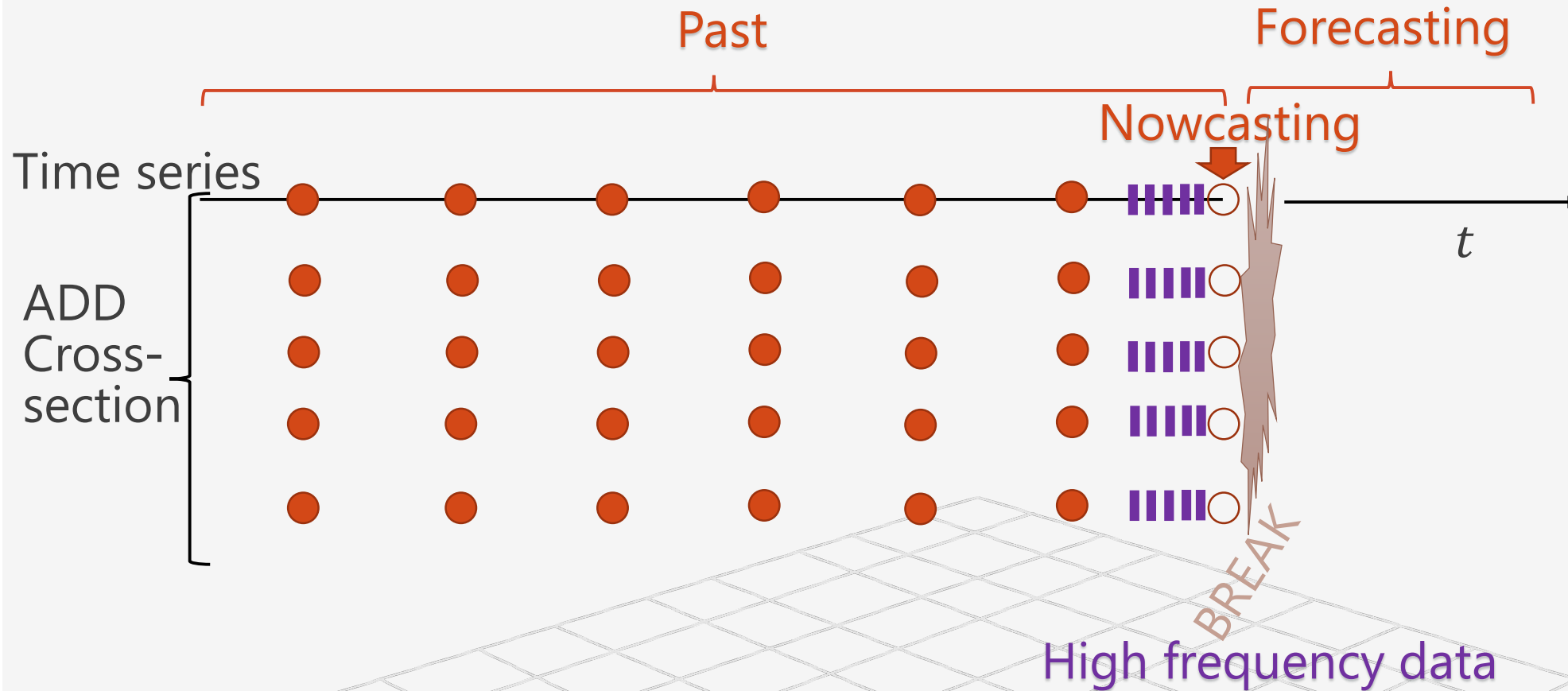
  Erik Hurst

COVID SPEEDING UP EXISTING TRENDS

- Tyler Cowen's webinar

COVID
shock

- Exception: sharing economy

DATA ANALYSIS IN MACROECONOMICS

- The evolution

Do we need models when projecting into future after structural break?

HOW WOULD COVID IN 1995 LOOKED LIKE?

- Less in-time tracking of economic data
- More face masks (privacy) vs tracing apps

- Sharper recession
- Long-lasting effects
  - Negative: More scaring? Long-lasting effects
  - Positive: Speed up new technologies (virtual reality)?
    - Tele-medicine, home office activity, online-learning, online-conferences, …
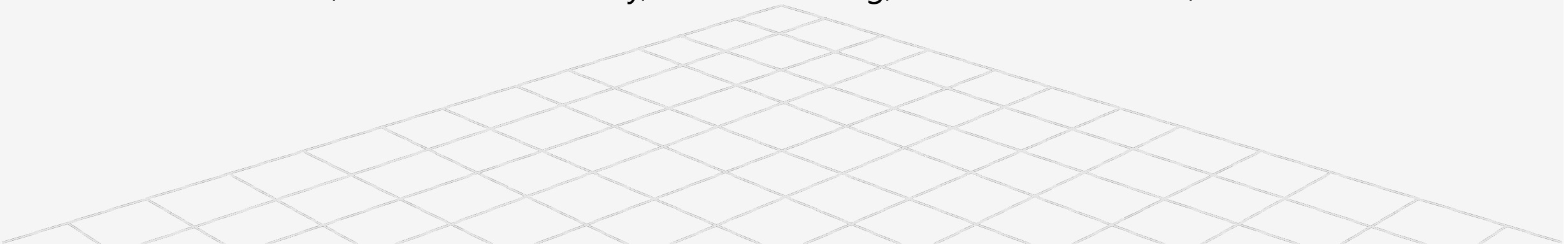
CROSS-COUNTRY COMPARISON

- Economists are critical to explain difference in GDP growth

- Are data comparable?
  - Testing/honest reporting
  - US unemployment vs. European (UI vs. "Kurzarbeit")
  - Die with or die on COVID

- Cultural differences
  - Japan: tradition to follow rules/wear masks

Standardize and share data timely

- Interpret with caution
  - Benjamin Disraeli:
    there are "three kinds of lies: lies, damn lies and statistics"
  - Winston Churchill:
    "the only statistics you can trust are the ones
    you have falsified yourself"

CROSS-SYSTEM COMPARISON
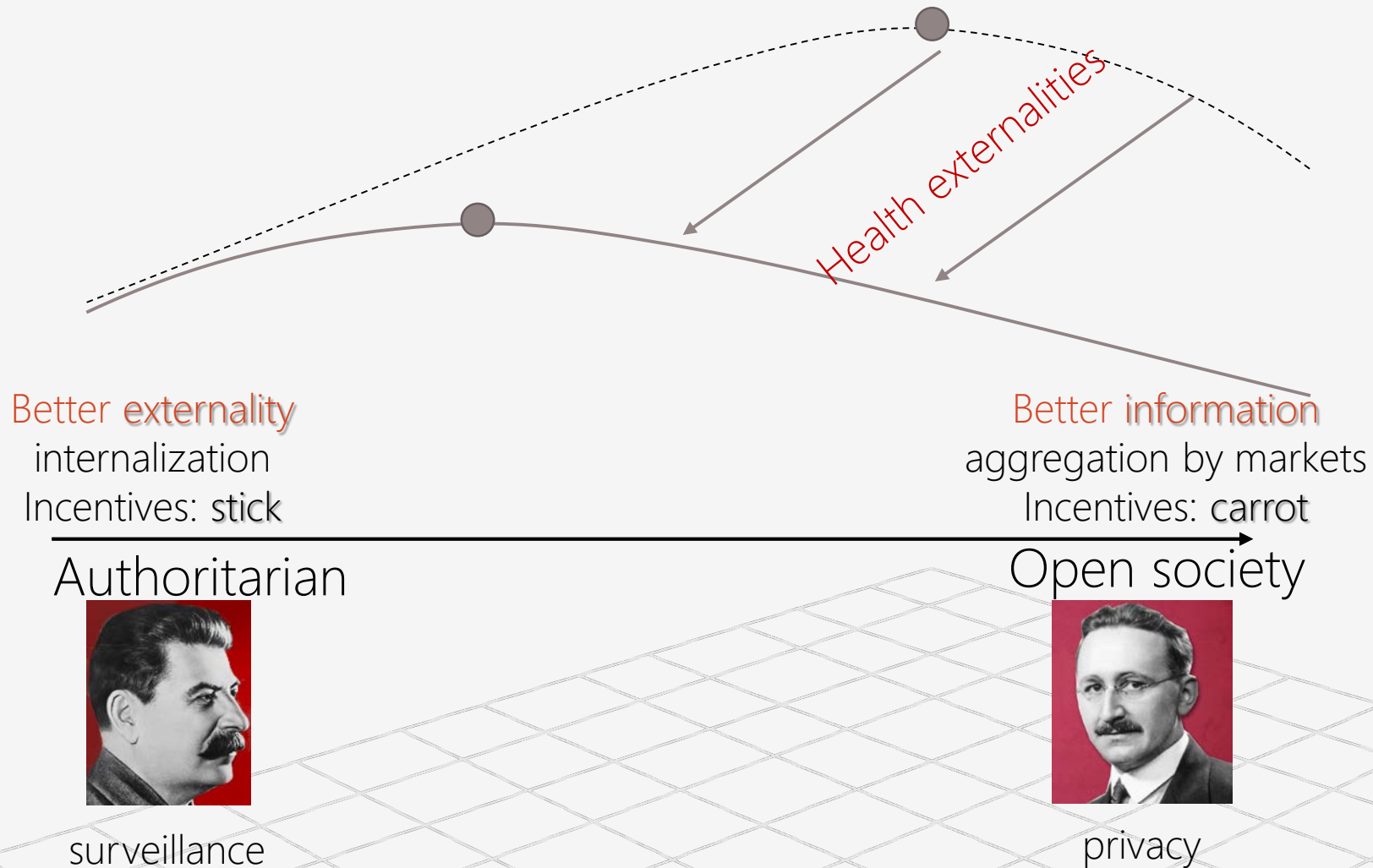
- Temporary?
- Will we return to pre-COVID social order?

Health externalities

Better **externality**
internalization
Incentives: stick

Better **information**
aggregation by markets
Incentives: carrot

Authoritarian

Open society

surveillance

privacy

POLL QUESTION

1. High frequency on-time data significantly
    a. Improves policy response
    b. Reduces the depth of the recession
    c. Improves the recovery (in the long-run)

2. Cross-country comparisons are
    a. Show importance of state capacity (Germany, South Korea, Tawain)
    b. Suggest a temporary larger state involvement
    c. Suggest permanent overhaul of democracy and individual freedoms

TRACKING THE GLOBAL PANDEMIC ECONOMY AND A BRIEF LOOK AT ITS UNCERTAIN AFTERMATH

Princeton

Michael Spence
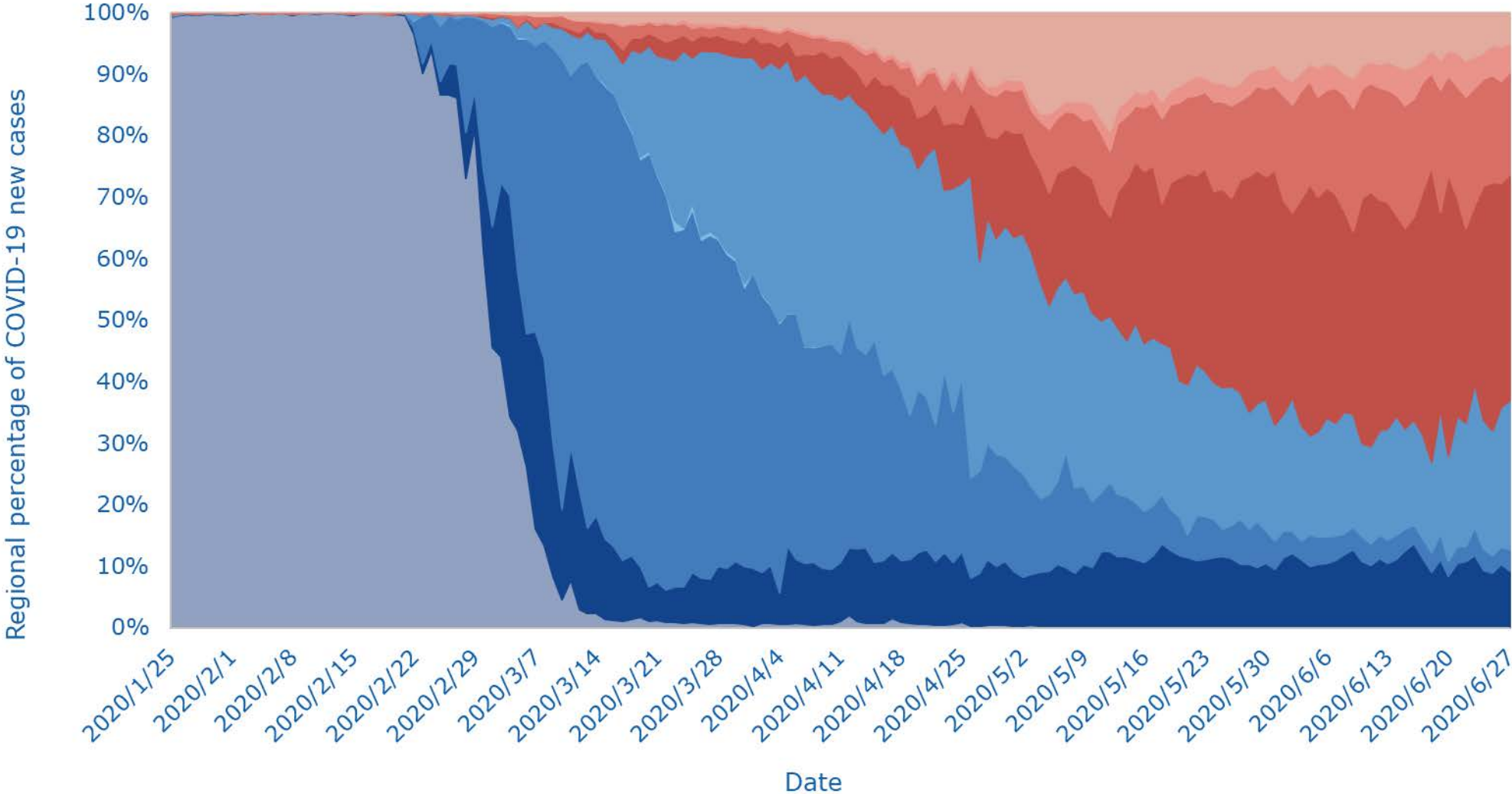
July 6, 2020

TOPICS

- Tracking the pandemic Economy in Real Time
  - The Co-evolution of the Economy and the Epidemic
  - Luohan Academy
  - https://www.luohanacademy.com/indices/covid19/overview
- Digital Trends and Acceleration

Trends of regional percentages of COVID-19 new cases

Pandemic Economy

Pandemic Economy Evolution

The five phases of pandemic economy

Pandemic Economy Fundamentals

- Mobility, business closures and sector shutdowns reduce demand and supply very quickly

- Risk and risk aversion separately reduces demand, especially in sectors that entail contact

- The longer it lasts the greater the economic damage

- Reducing risk

  - 1. Reduce infection per contact – physical/social distancing

  - 2. Reduce number of contacts for a given level of economic activity – large gatherings out

  - 3. Reduce prevalence among people in circulation – test, track, isolate, digital

- Hard part is demand – and risk

- Reducing risk (especially part 3) is positive for health and economic recovery

Contraction, distribution, policy responses

- Monetary policy and fiscal "stimulus"
- Main targets: medical capacity, buffering shock, redistribute the balance sheet damage
- Programs are large: implementation varies
- Move a fair amount of the damage to the public sector balance sheet – Italian example
- Risk aversion as a lingering drag on demand – Dave Brady and I are trying to get a handle on this via surveys
- Distributional impacts adverse
- Unemployment probably 25%
- 39% for households with income below $40K

REMOTE WORKING AND DISTRIBUTIONAL IMPACTS

Table 1: Share of jobs that can be done at home, by metropolitan area

	Unweighted	Weighted by wage
Top five		
San Jose-Sunnyvale-Santa Clara, CA	0.51	0.66
Washington-Arlington-Alexandria, DC-VA-MD-WV	0.50	0.64
Durham-Chapel Hill, NC	0.46	0.57
Austin-Round Rock, TX	0.46	0.58
San Francisco-Oakland-Hayward, CA	0.45	0.58
Bottom five		
Grand Rapids-Wyoming, MI	0.29	0.37
Lancaster, PA	0.29	0.36
Bakersfield, CA	0.29	0.36
Stockton-Lodi, CA	0.29	0.33
Cape Coral-Fort Myers, FL	0.28	0.34

WHITE PAPER

How Many Jobs Can be Done at Home?

Jonathan I. Dingel and Brent Neiman
APRIL 2020

Table 2: Share of jobs that can be done at home, by industry

	Unweighted	Weighted by wage
Top five		
Educational Services	0.83	0.71
Professional, Scientific, and Technical Services	0.80	0.86
Management of Companies and Enterprises	0.79	0.86
Finance and Insurance	0.76	0.85
Information	0.72	0.80
Bottom five		
Transportation and Warehousing	0.19	0.25
Construction	0.19	0.22
Retail Trade	0.14	0.22
Agriculture, Forestry, Fishing and Hunting	0.08	0.13
Accommodation and Food Services	0.04	0.07

Hospitality workforce about 16.7 million

Table 3: Share of jobs that can be done at home, by occupation's major group

	Occupation	O*NET-derived baseline	Manual alternative
15	Computer and Mathematical Occupations	1.00	1.00
25	Education, Training, and Library Occupations	0.98	0.85
23	Legal Occupations	0.97	0.84
13	Business and Financial Operations Occupations	0.88	0.92
11	Management Occupations	0.87	0.84
27	Arts, Design, Entertainment, Sports, and Media Occupations	0.76	0.57
43	Office and Administrative Support Occupations	0.65	0.51
17	Architecture and Engineering Occupations	0.61	0.88
19	Life, Physical, and Social Science Occupations	0.54	0.36
21	Community and Social Service Occupations	0.37	0.50
41	Sales and Related Occupations	0.28	0.21
39	Personal Care and Service Occupations	0.26	0.00
33	Protective Service Occupations	0.06	0.00
29	Healthcare Practitioners and Technical Occupations	0.05	0.05
53	Transportation and Material Moving Occupations	0.03	0.00
31	Healthcare Support Occupations	0.02	0.00
45	Farming, Fishing, and Forestry Occupations	0.01	0.00
51	Production Occupations	0.01	0.00
49	Installation, Maintenance, and Repair Occupations	0.01	0.00
47	Construction and Extraction Occupations	0.00	0.00
35	Food Preparation and Serving Related Occupations	0.00	0.00
37	Building and Grounds Cleaning and Maintenance Occupations	0.00	0.00

LUOHAN ACADEMY PANDEMIC ECONOMY TRACKING PROJECT

- Real time tracking data is live on their website

- The graphs that follow come from that project as it gets up and running

- https://www.luohanacademy.com/

- It is based in Hangzhou, and has access to ecommerce and mobile payments data, globally

- Much of the mobility data comes from Google

- https://www.google.com/covid19/mobility/

- For USA, by state and county, start date 2/15/2020

- Article by Chen Long and me in Project Syndicate

- https://www.project-syndicate.org/onpoint/pandemic-economy-data-visualizations-by-michael-spence-and-chen-long-2020-06

PANDEMIC ECONOMY TRACKING GRAPHS

- Real time data - daily

- Vertical axis: contraction estimated from daily mobility data
  - Proxy for economic contraction
  - Actual contractions are larger based on a few cases
  - May vary over the whole cycle

- Horizontal axis: days to double for confirmed cases
  - Proxy for the rate of spread

- VERTICAL LINE: first occurrence of three consecutive days in which recoveries exceeding new confirmed cases
  - Average over all cases in which this has occurred. That average is 19 days

- Time: days from the start to the bottom, to the start of upturn in economic activity, to the present on whatever day you are looking at it.
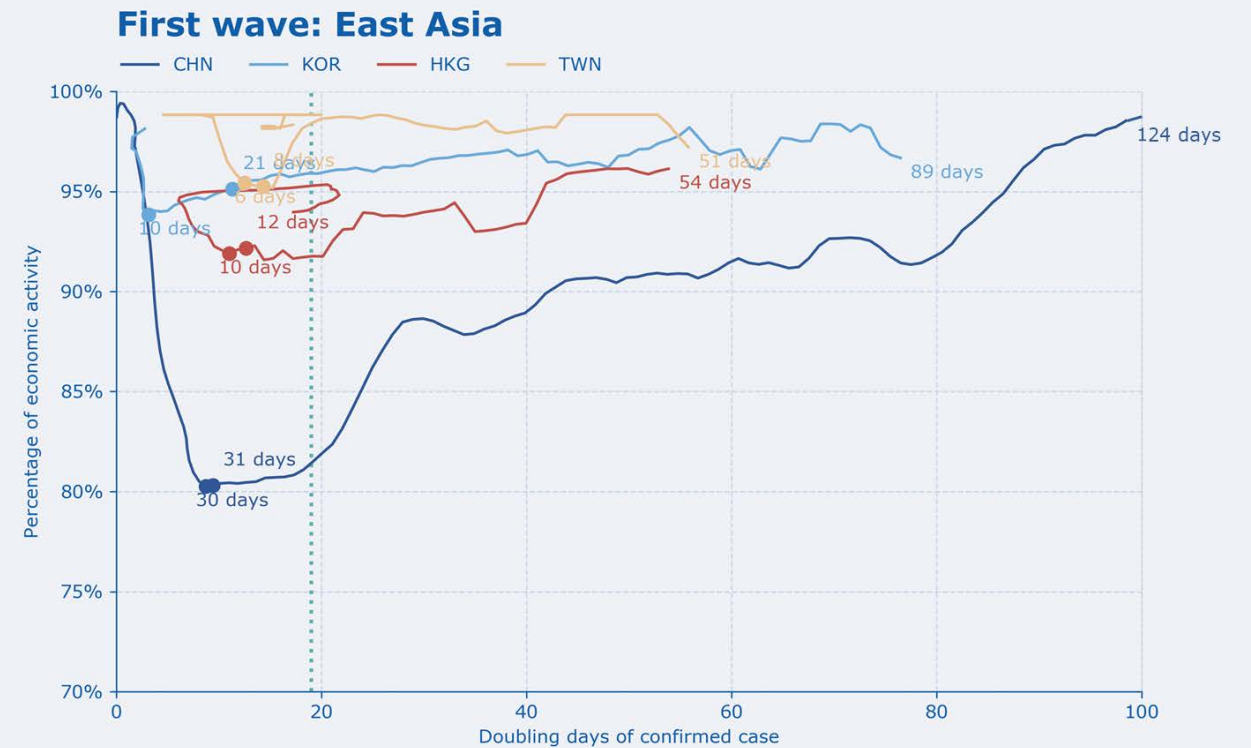

First wave: East Asia

Figure 3: Current Pandemic-Economy Phases of 131 Countries and Regions
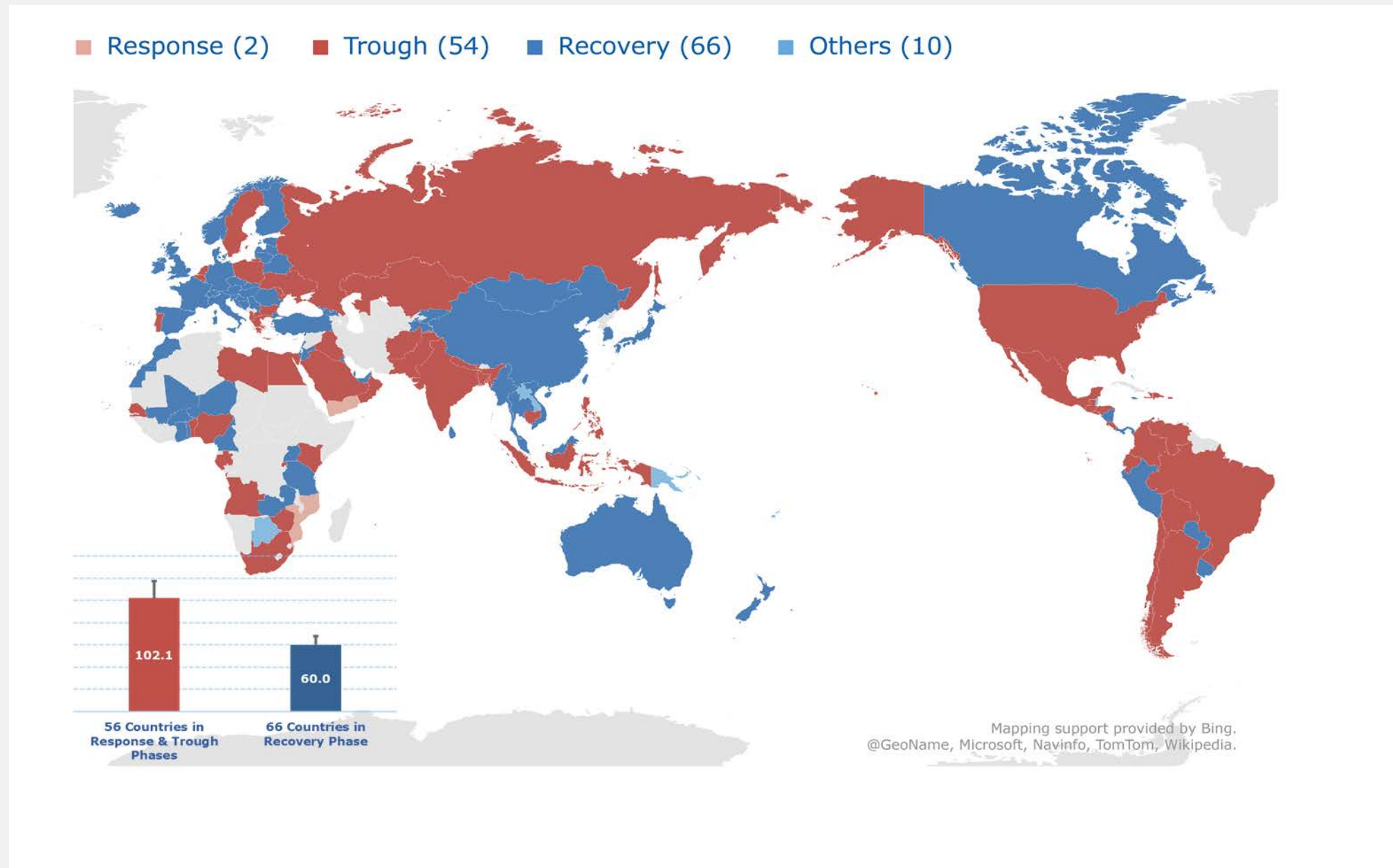
Figure 4: PET Graphs of Selected East Asian Countries and Regions
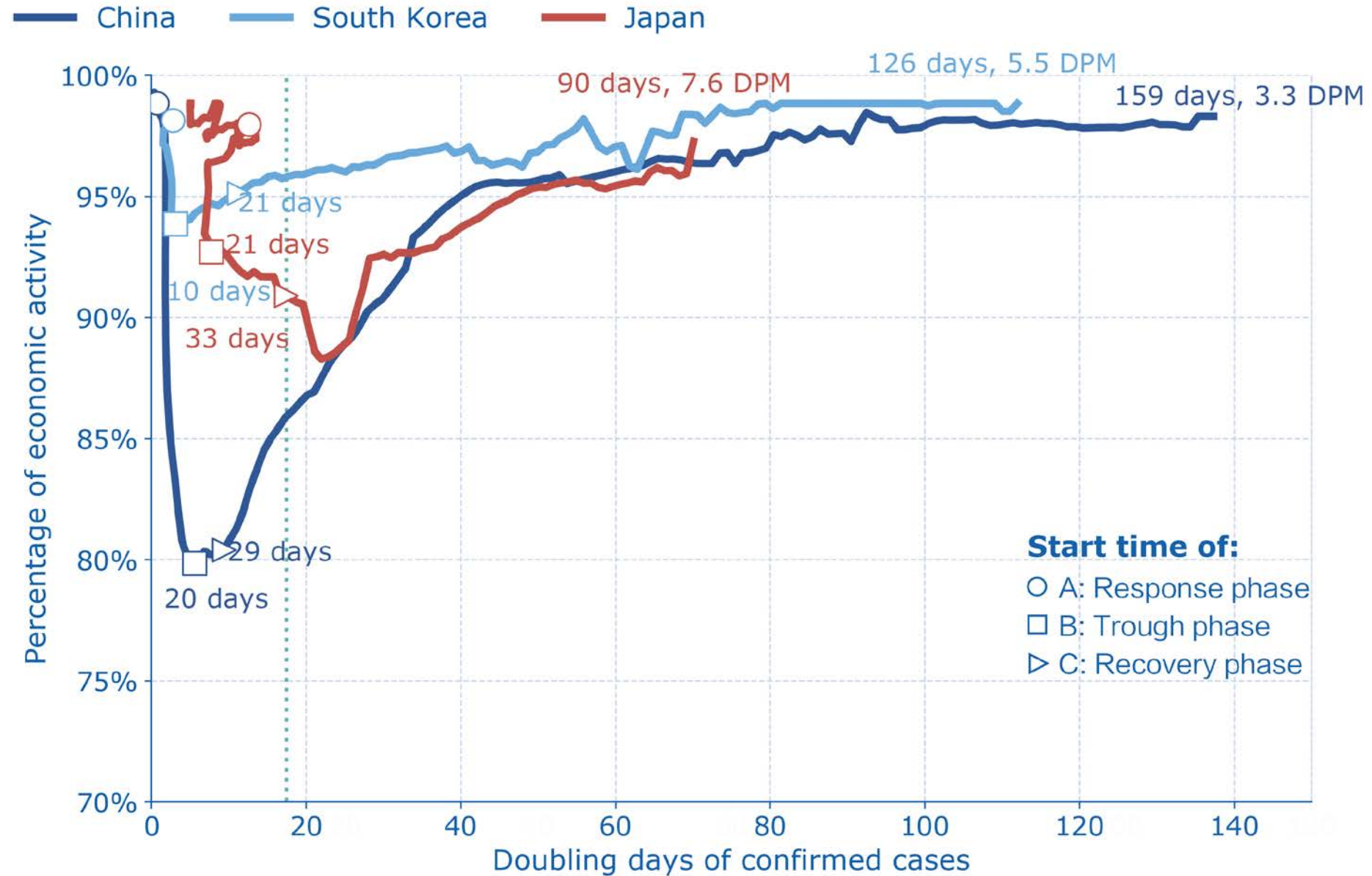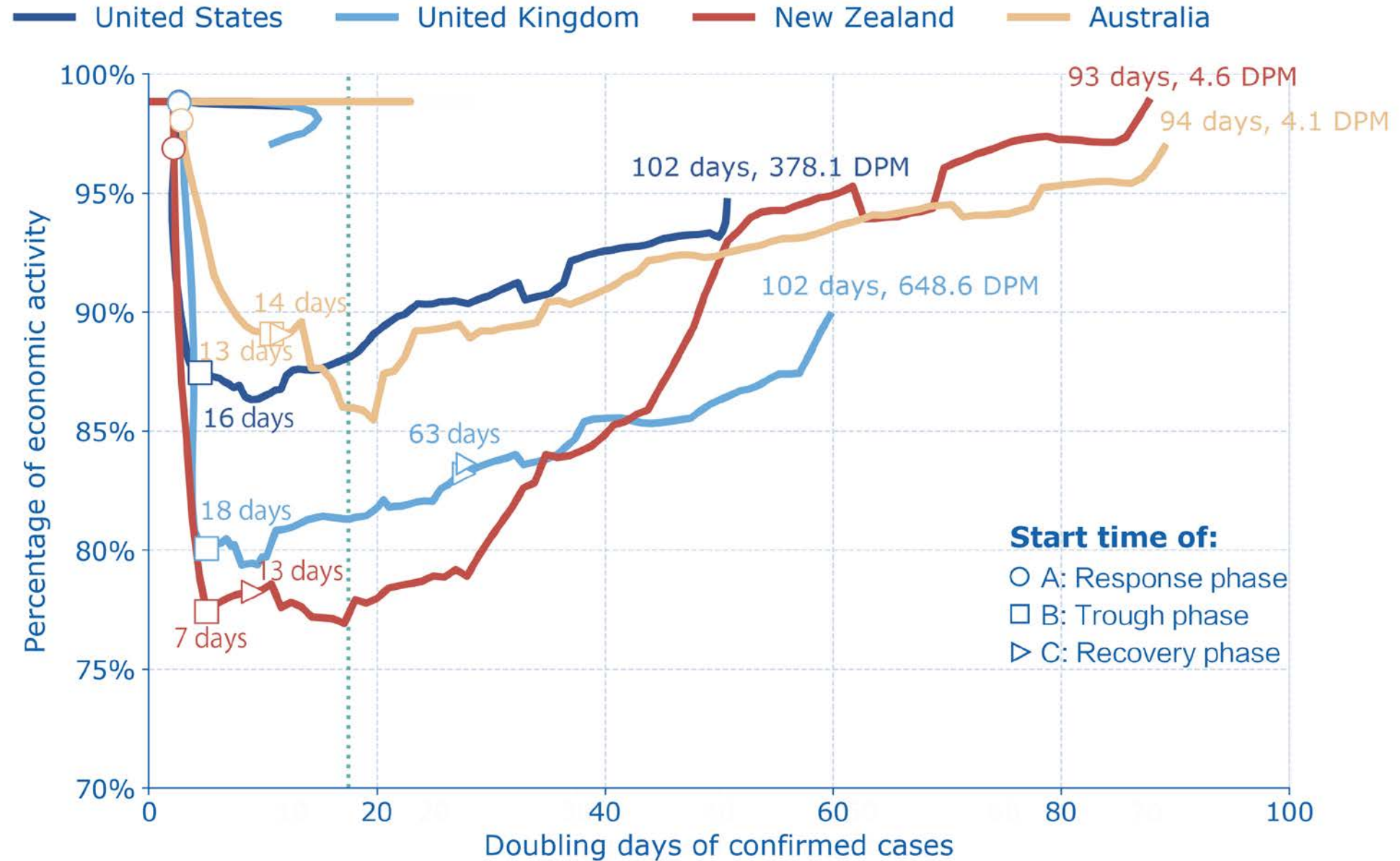

East Asia
— China — South Korea — Japan

126 days, 5.5 DPM
90 days, 7.6 DPM
159 days, 3.3 DPM

21 days
21 days
10 days
33 days

29 days
20 days

Percentage of economic activity

Start time of:
O A: Response phase
□ B: Trough phase
▷ C: Recovery phase

Doubling days of confirmed cases

Figure 5: PET Graphs of Selected Advanced Economies

US, UK and Oceania

— United States — United Kingdom — New Zealand — Australia

Year-over-year percent change in spending by essential category

JP MORGAN CHASE
INSTITUTE
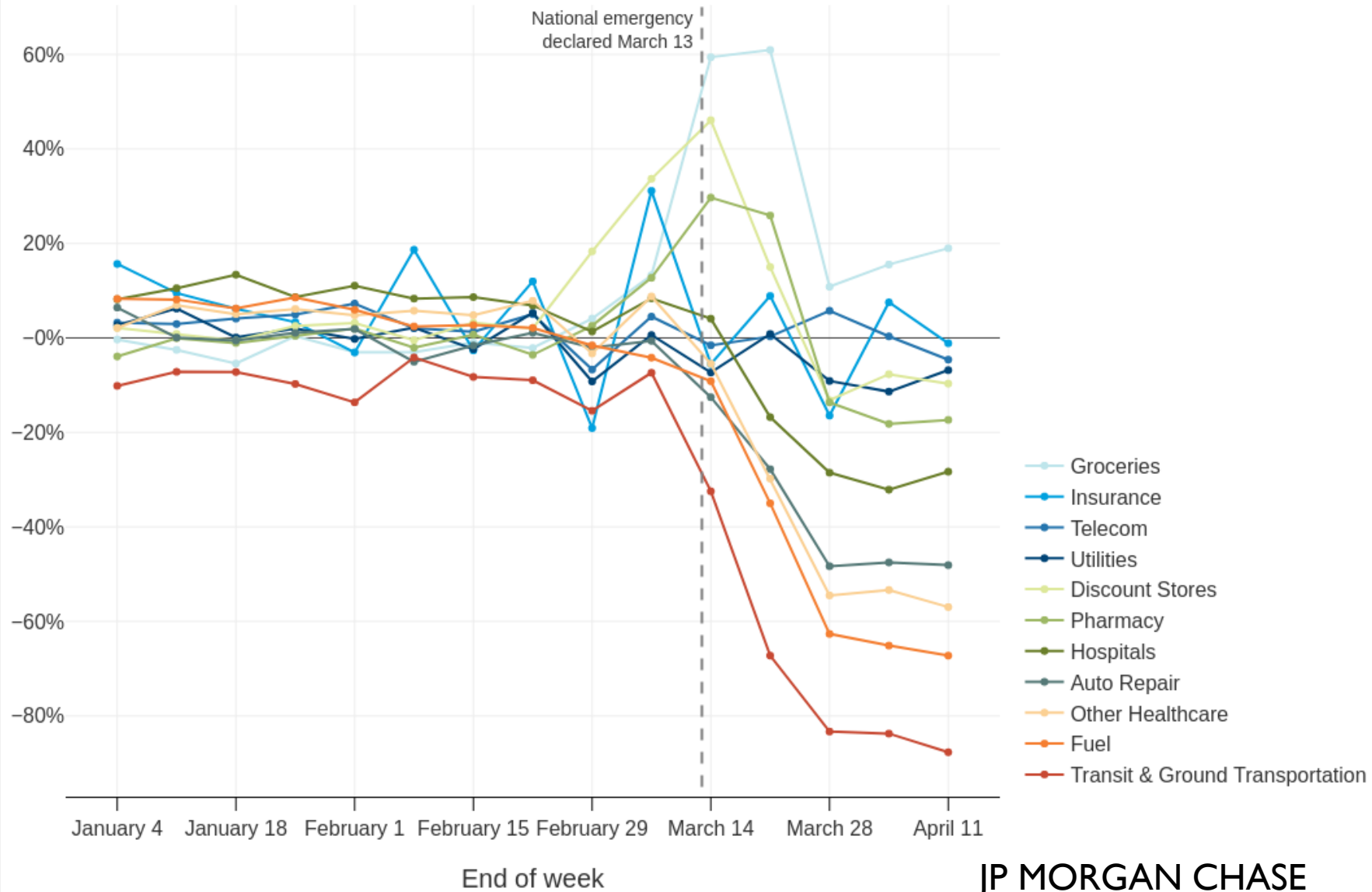
Figure 6: PET Graphs of Selected Advanced Economies

PET

Germany — France

Daily economic activity

100%

90%

80%

70%

110days
106days

0   20   40   60

Doubling days of confirmed cases
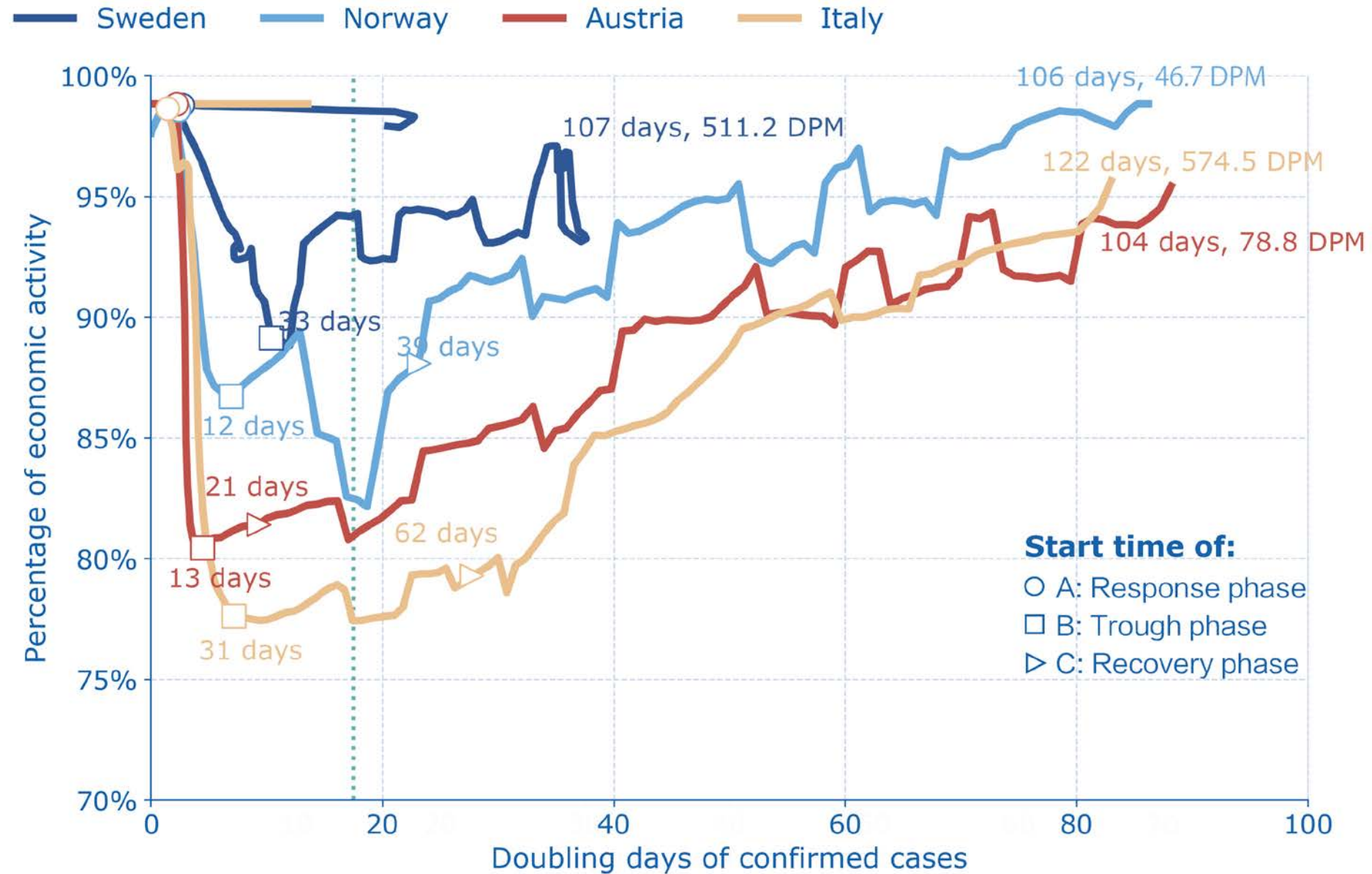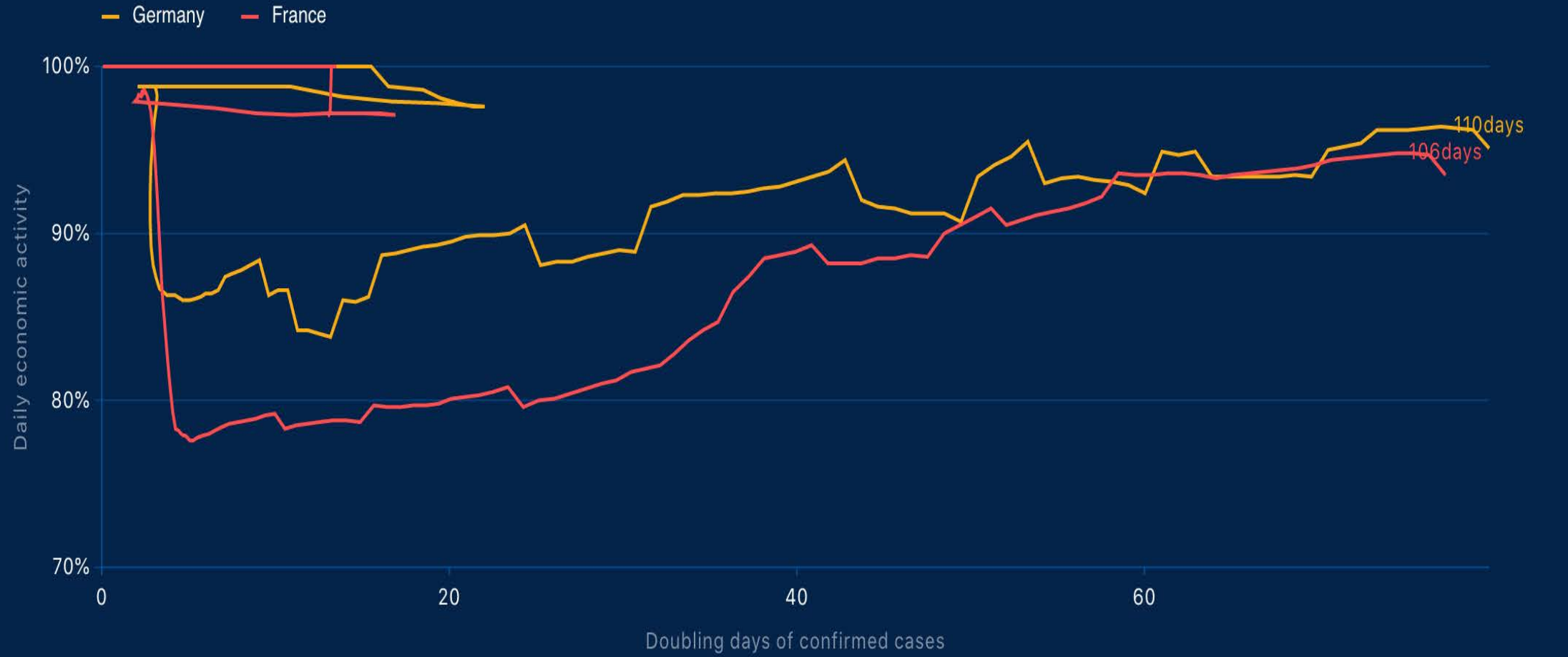
2020/1/16   2020/6/29

Figure 8: COVID-19 Testing Rates

Testing rates in economies at different income levels

— High income — Upper-middle income — Lower-middle income — Low income
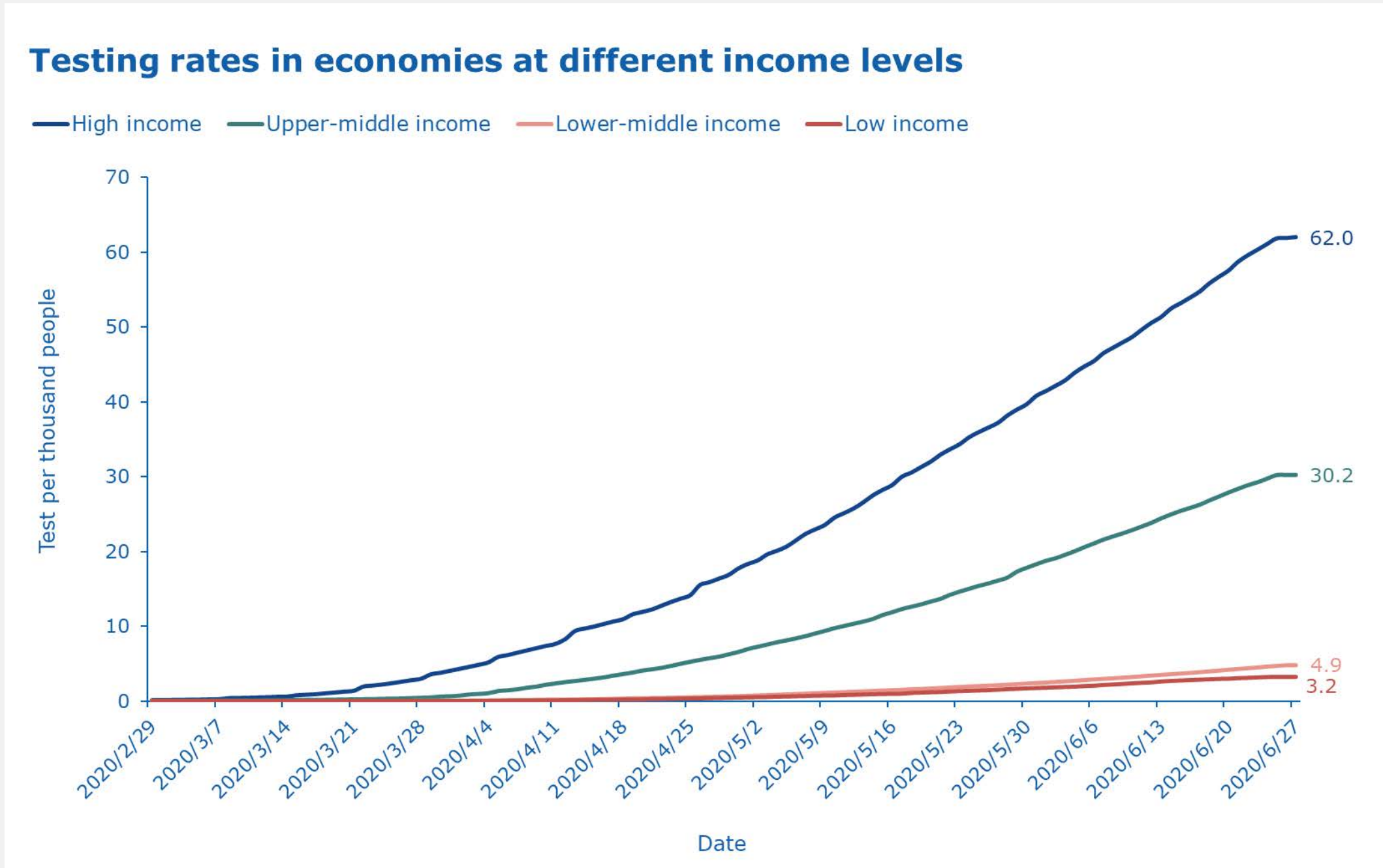
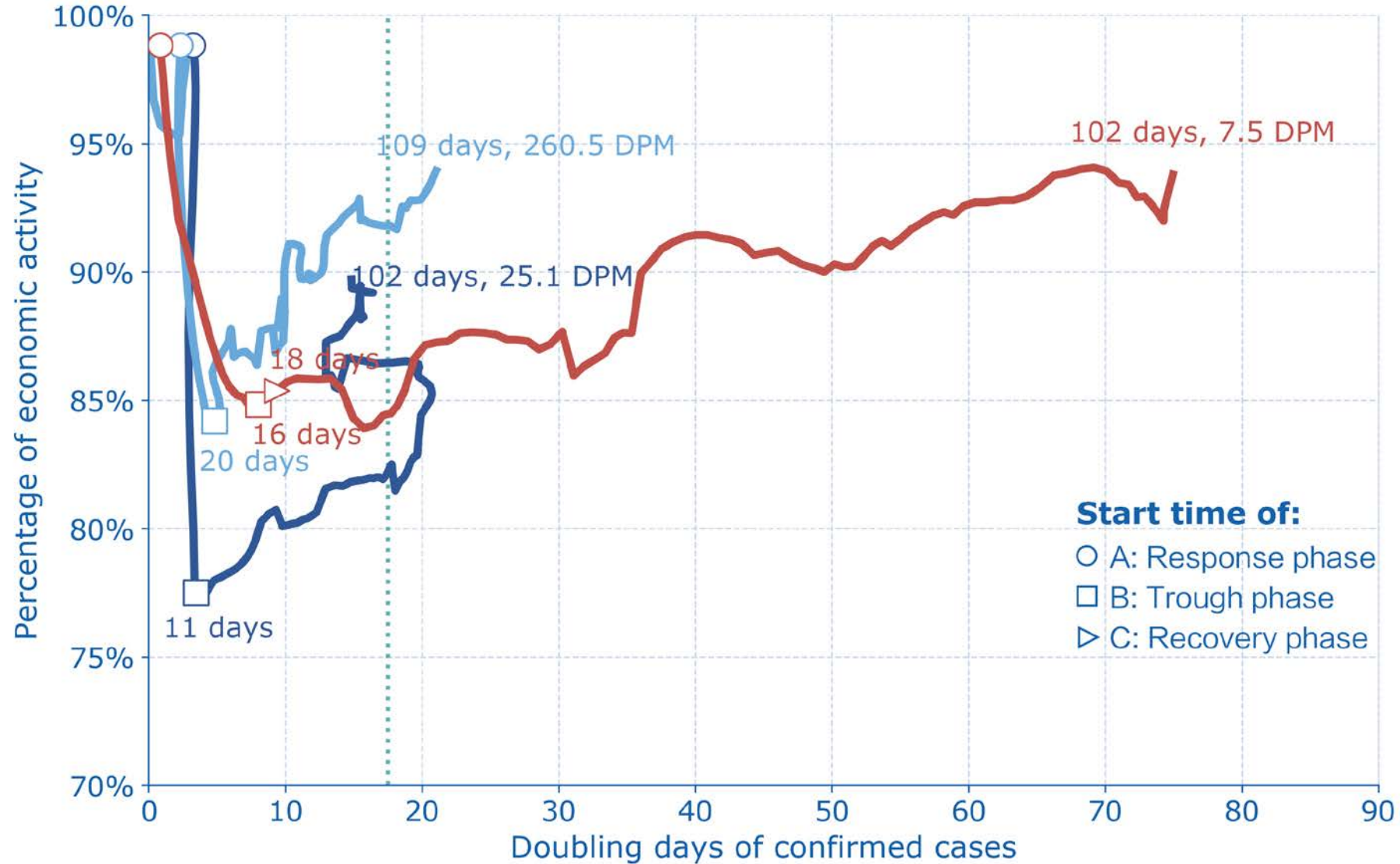**Figure 9: PET Graphs of Selected Emerging and Developing Economies in Latin America**

Figure 10: PET Graphs of Selected Emerging and Developing Economies in Africa

Africa
— Rwanda   — South Africa   — Nigeria

104 days, 39.1 DPM
92 days, 2.6 DPM
99 days, 0.2 DPM
20 days
13 days
19 days

Percentage of economic activity (y-axis: 70% to 100%)
Doubling days of confirmed cases (x-axis: 0 to 60)

Start time of:
O A: Response phase
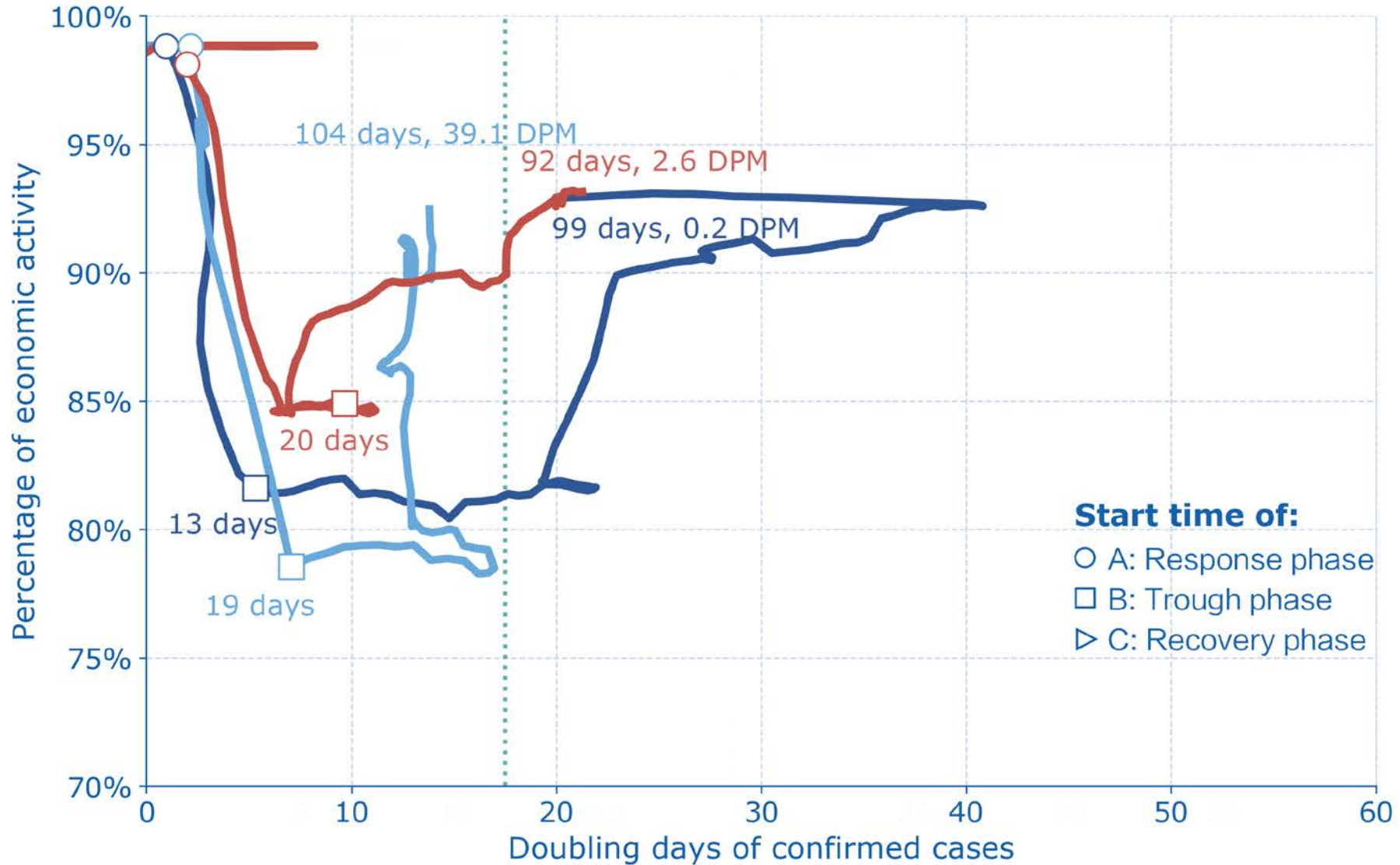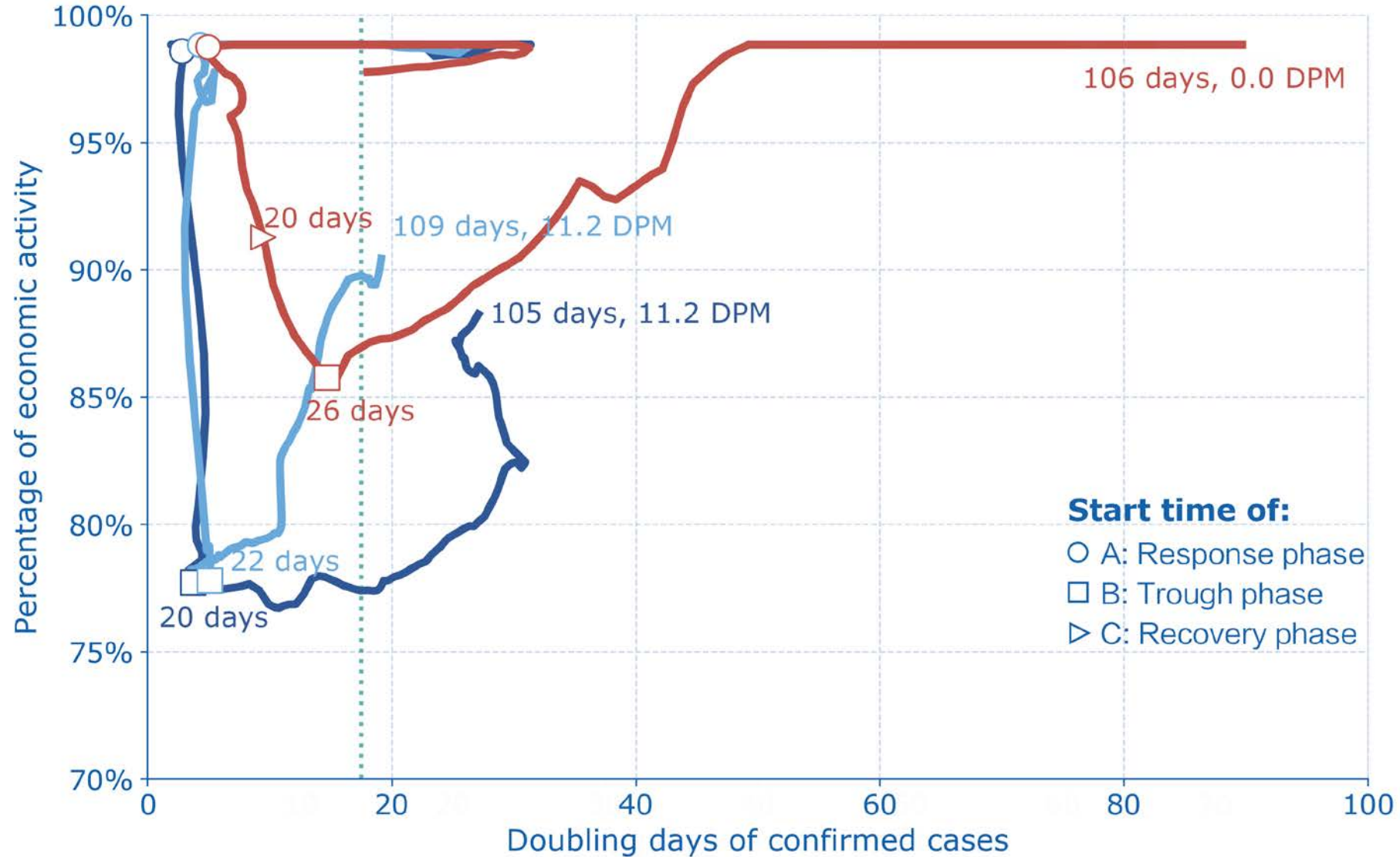□ B: Trough phase
▷ C: Recovery phase

Figure 11. PET Graphs of Selected Emerging and Developing Economies in Asia

South and Southeast Asia

Philippines — India — Vietnam

- Percentage of economic activity (y-axis): 70% to 100%
- Doubling days of confirmed cases (x-axis): 0 to 100

106 days, 0.0 DPM
20 days
109 days, 11.2 DPM
105 days, 11.2 DPM
26 days
22 days
20 days

Start time of:
O A: Response phase
□ B: Trough phase
▷ C: Recovery phase

AMERICA: LOOKS LIKE PREMATURE AND EXCESSIVELY QUICK OPENING

Reopen before May 15th

California — Florida — Oklahoma — Texas

102 days, 97.9 DPM
105 days, 86.4 DPM
103 days, 164.6 DPM
104 days, 150.4 DPM
19 days
29 days
16 days
27 days

Percentage of economic activity
Doubling days of confirmed cases

Start time of:
O A: Response phase
□ B: Trough phase
▷ C: Recovery phase
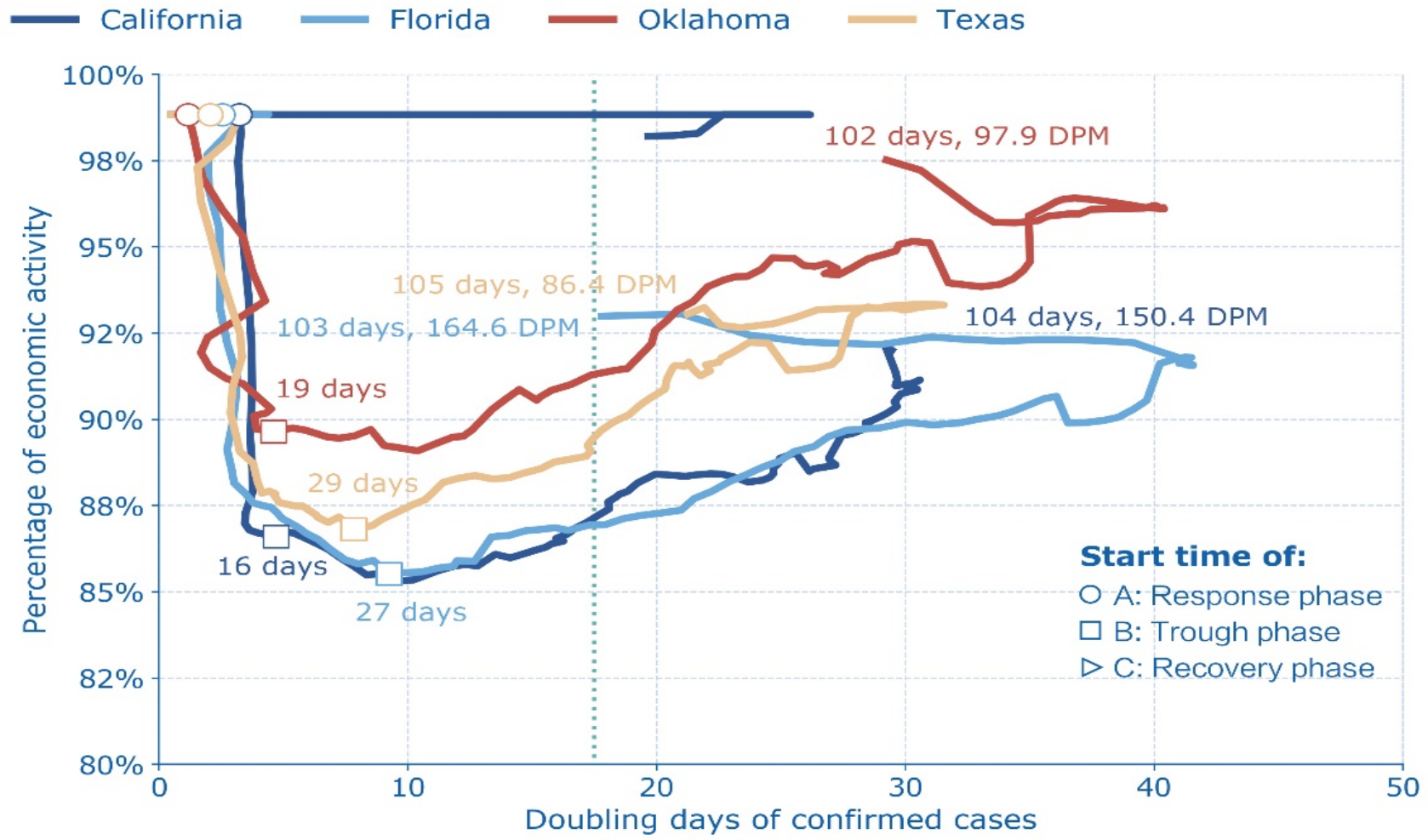
Reopen since May 15th

Arizona ——— Minnesota ——— New York ——— Washington

Percentage of economic activity (y-axis): 80% to 100%

Doubling days of confirmed cases (x-axis): 0 to 80

103 days, 263.0 DPM

105 days, 227.8 DPM

111 days, 179.7 DPM

104 days, 1592.9 DPM

30 days

75 days

18 days

24 days

14 days

Start time of:
○ A: Response phase
□ B: Trough phase
▷ C: Recovery phase
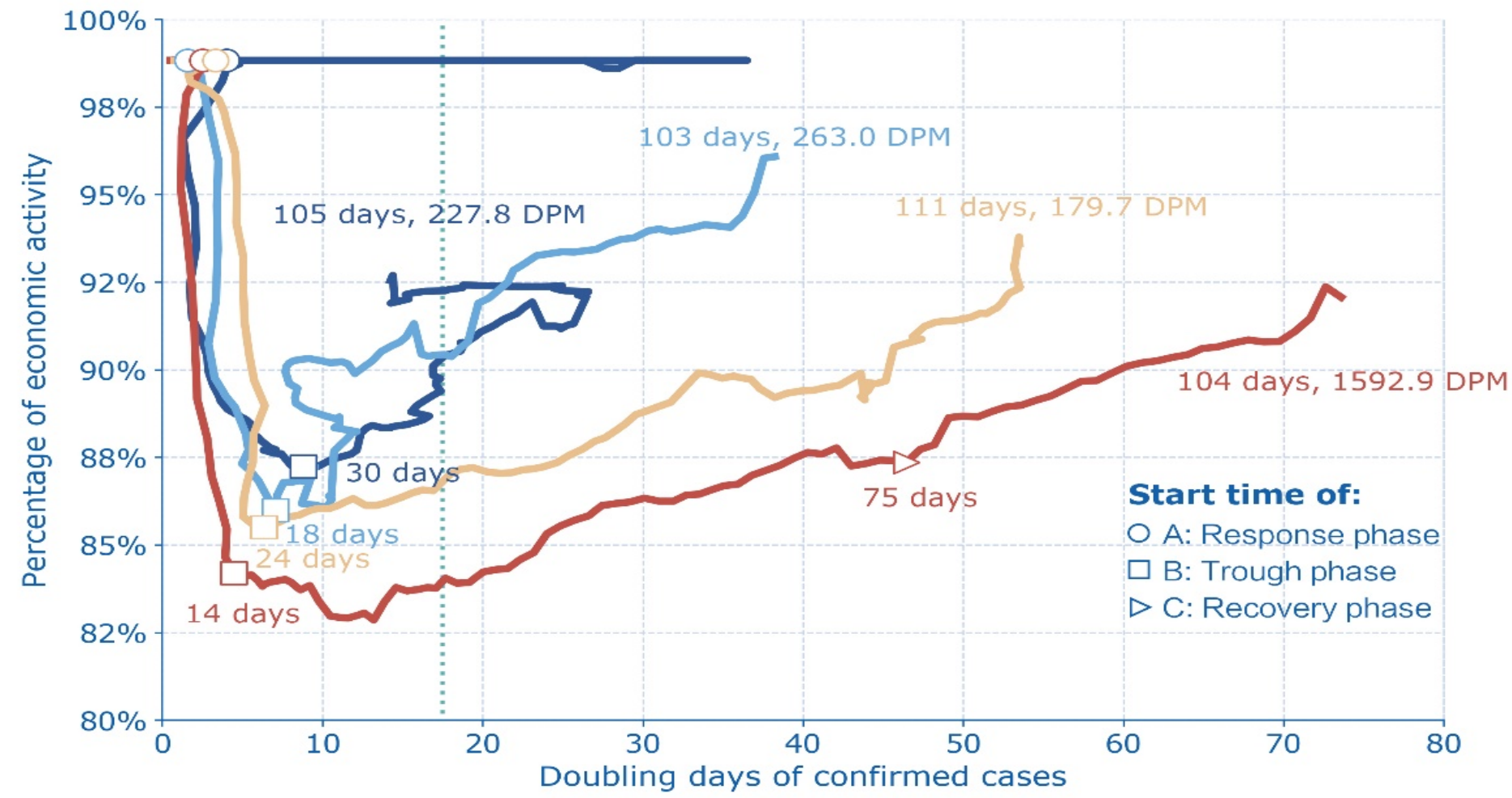
GOVERNMENT HANDLING THE PANDEMIC

YouGov COVID-19 tracker: government handling ☰

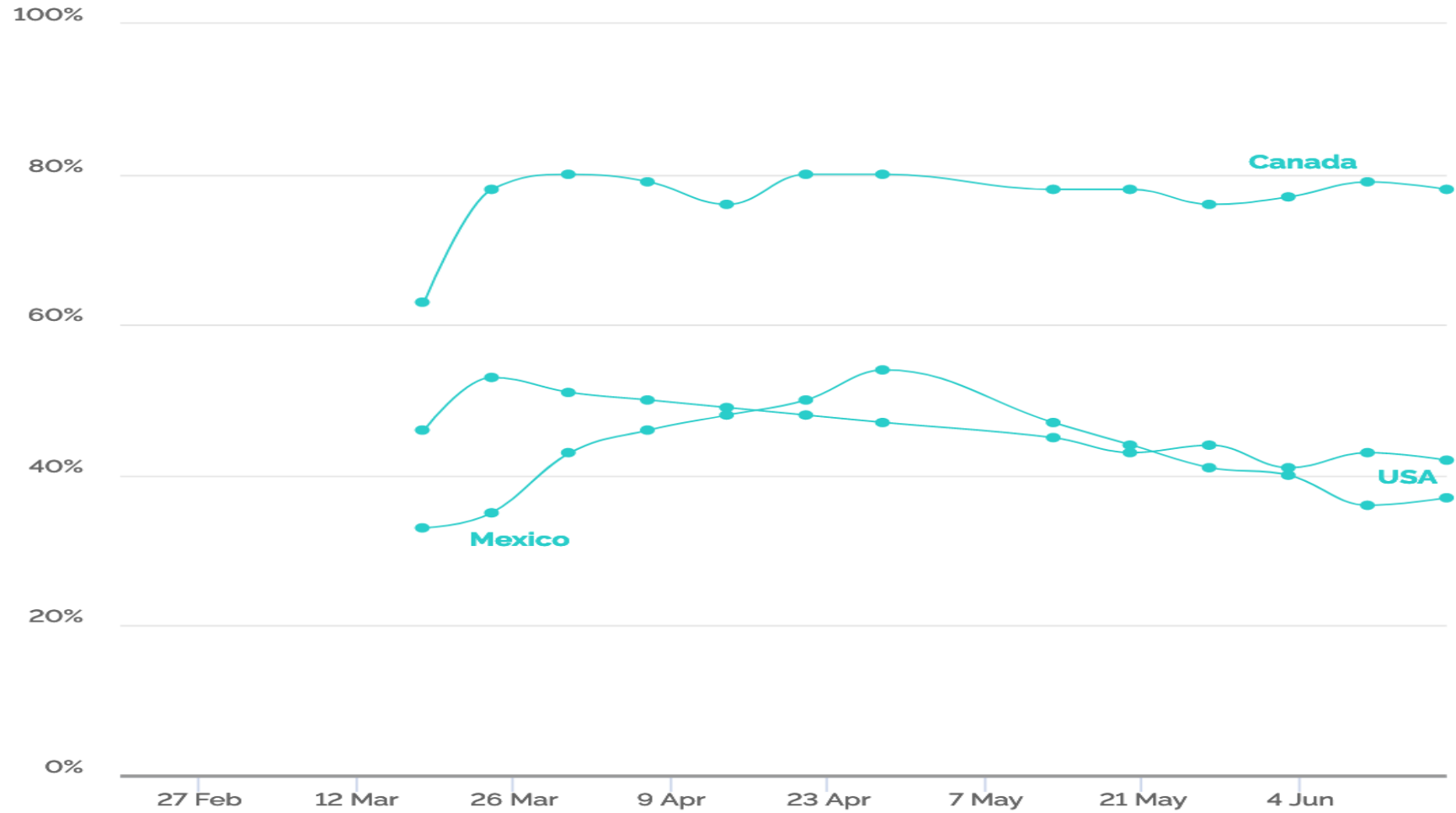% of people in each country who think the government is handling the issue of

YouGov COVID-19 tracker: government handling ☰

% of people in each country who think the government is handling the issue of

- 100%
- 80%
- 60%
- 40%
- 20%
- 0%

Canada

USA

Mexico

27 Feb   12 Mar   26 Mar   9 Apr   23 Apr   7 May   21 May   4 Jun

YouGov COVID-19 tracker: government handling ≡

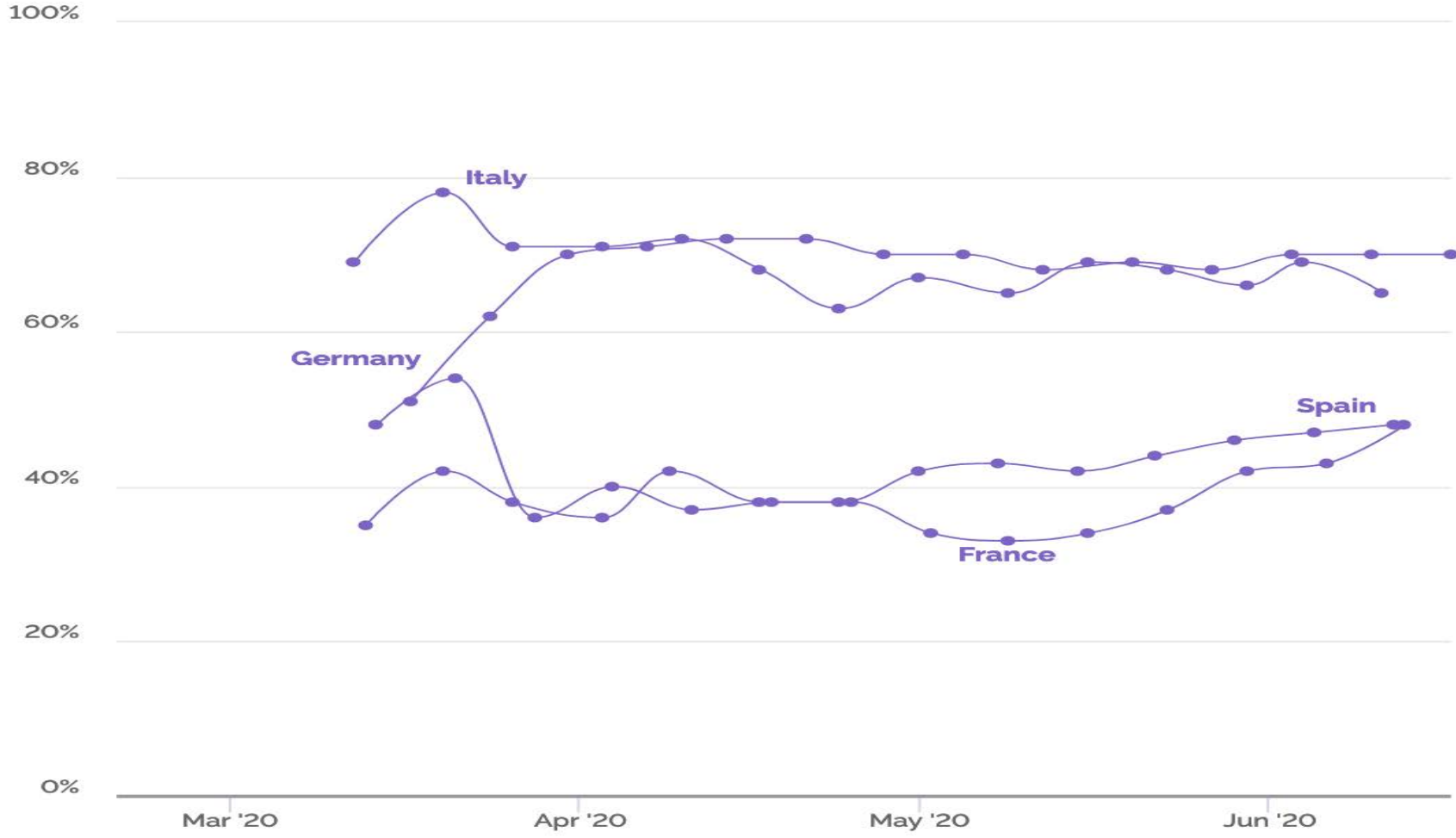% of people in each country who think the government is handling the issue of

From
Feb 19, 2020

To
Jun 16, 2020

Zoom   1m   3m   YTD   **ALL**

100%

80%   Italy

60%   Germany

40%

                              France   Spain

20%

0%

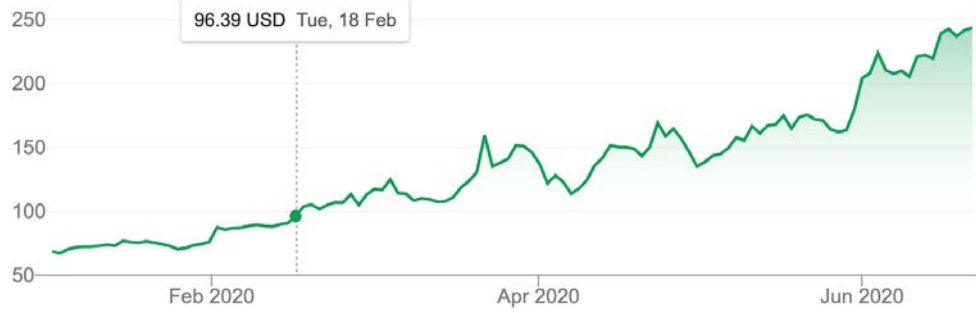   Mar '20   Apr '20   May '20   Jun '20
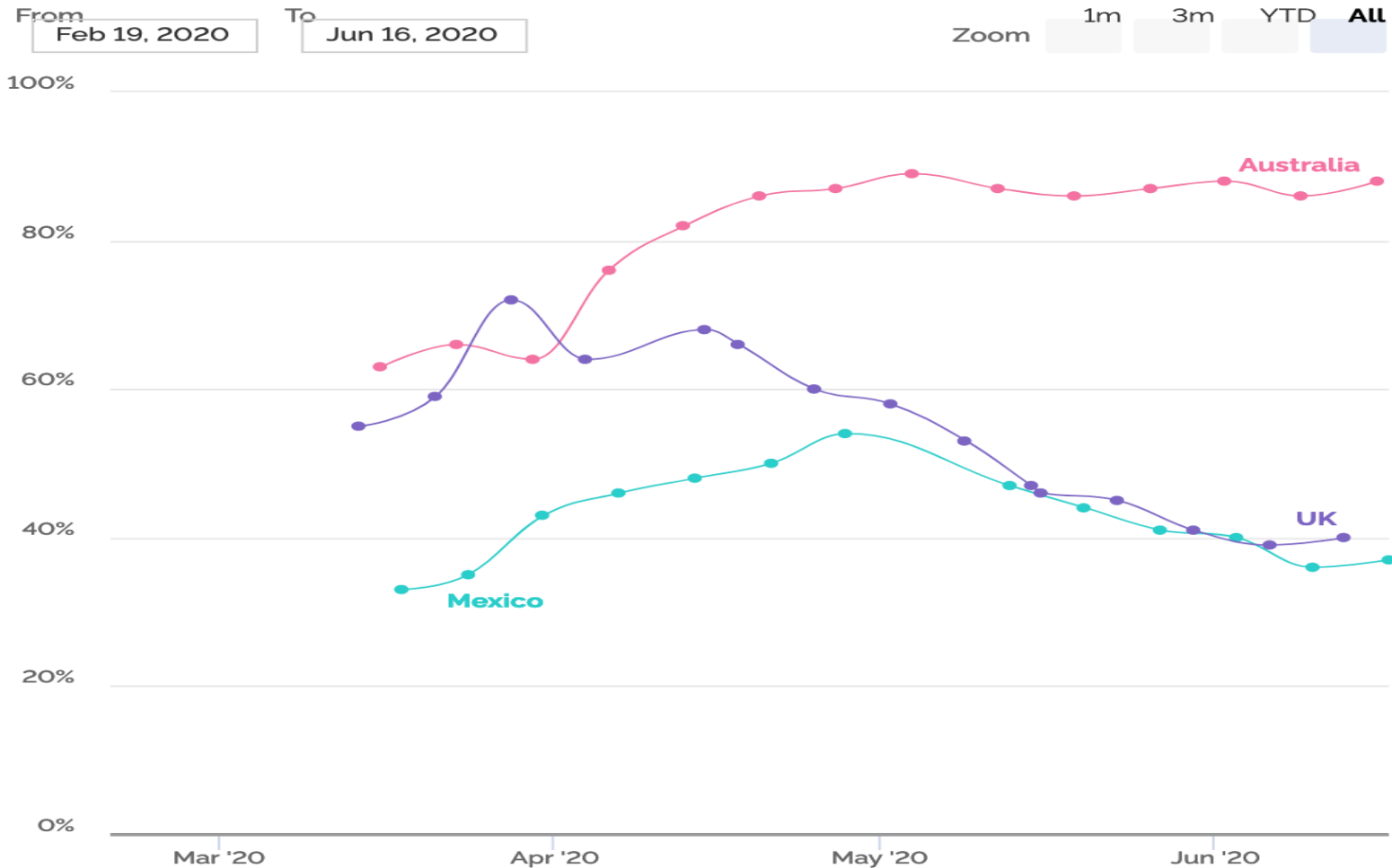
Zoom Video Communications Inc
NASDAQ: ZM

243.48 USD +1.91 (0.79%) ↑
Closed: Jun 22, 04:00 EDT · Disclaimer
Pre-market 245.00 +1.52 (0.62%)

| 1 day | 5 days | 1 month | 6 months | **YTD** | 1 year | 5 years | Max |

96.39 USD   Tue, 18 Feb

250
200
150
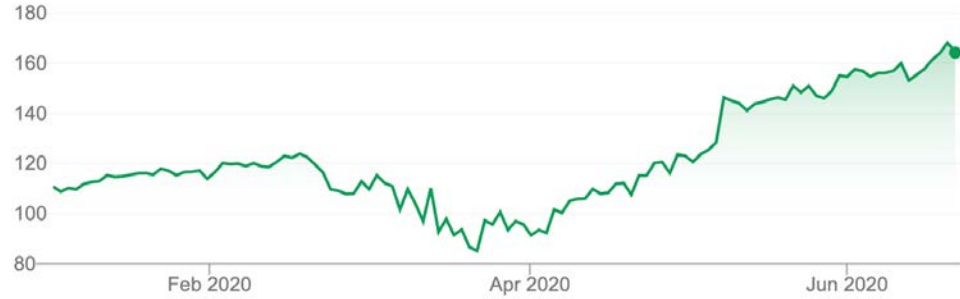100
50

Feb 2020   Apr 2020   Jun 2020

Paypal Holdings Inc
NASDAQ: PYPL

164.36 USD −3.69 (2.20%) ↓
Closed: Jun 22, 04:34 EDT · Disclaimer
Pre-market 165.67 +1.31 (0.80%)

| 1 day | 5 days | 1 month | 6 months | **YTD** | 1 year | 5 years | Max |

180
160
140
120
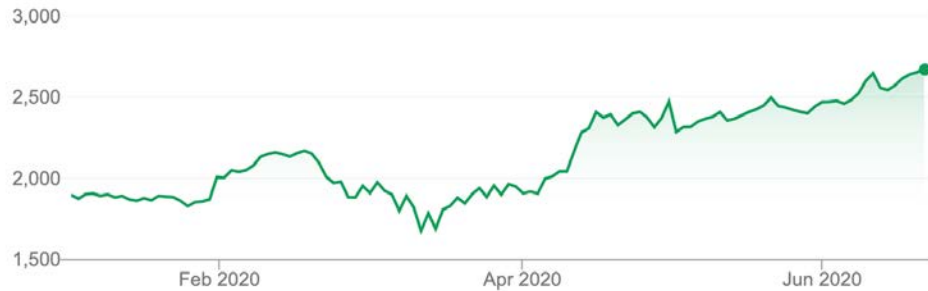100
80

Feb 2020   Apr 2020   Jun 2020

Amazon.com, Inc.
NASDAQ: AMZN

2,675.01 USD +21.03 (0.79%) ↑
Closed: Jun 22, 04:09 EDT · Disclaimer
Pre-market 2,688.00 +12.99 (0.49%)

| 1 day | 5 days | 1 month | 6 months | **YTD** | 1 year | 5 years | Max |

3,000
2,500
2,000
1,500

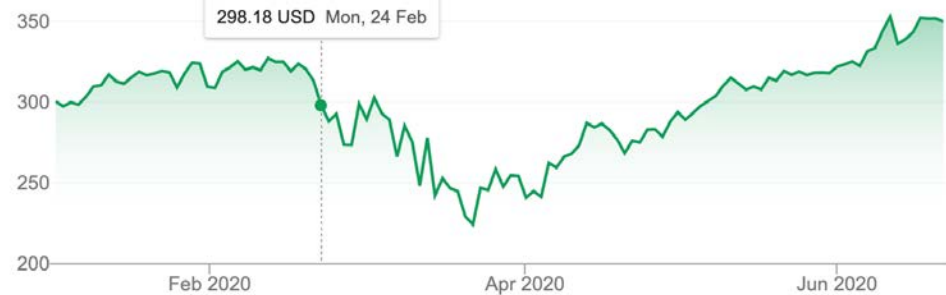Feb 2020   Apr 2020   Jun 2020

Apple Inc.
NASDAQ: AAPL

349.72 USD −2.01 (0.57%) ↓
Closed: Jun 22, 04:43 EDT · Disclaimer
Pre-market 351.00 +1.28 (0.37%)

| 1 day | 5 days | 1 month | 6 months | **YTD** | 1 year | 5 years | Max |

298.18 USD   Mon, 24 Feb

350
300
250
200

Feb 2020   Apr 2020   Jun 2020

Jio Goldrush in India

- Jio is the digital network and platform of Reliance Industries in India

- Created in 2016 – 387 million subscribers as of end of February 2020

- Facebook, Silver Lake, Vista Equity Partners, General Atlantic, KKR, Abu Dhabi-based sovereign **investor** Mubadala, and Abu Dhabi **Investment** Authority

- Roughly 13 B US dollars

- In two months or less

- Intel just invested another $253M in Jio

Key Digital Issues

- Amplifying, reinforcing and accelerating existing trends

- Distance, time and remoteness

- In pandemic economy, remoteness suddenly became much more local

- Inertia and accelerated adoption

- Substitutes and Complements

- Post pandemic mix of mean reversion and permanent change

- Hybrid models

Many Areas of Rapid Change

- Ecommerce
- Retail and consumer
- Mobile Payments and Fintech
- Education
- Work
- Health care and Medicine
- Resilience
- Digital footprint will deepen in pretty much every sector

The Global System and the Pandemic

- Most likely outcome: reinforcement of existing negative trends

- Fragmentation already underway and unlikely to change

- Geopolitical tensions and technology still there

- Old rules will probably not survive without modification

- Resilience, diversification, and some self-sufficiency/localization likely

- US-China relationship going very badly

CRUDE SUMMARY: THE POST-PANDEMIC GLOBAL ECONOMY

- Trends already underway will be reinforced, amplified and accelerated

- Pandemic overcomes "inertia": some innovation, mostly adoption

- Digital in a vast array of sectors: education, medicine, eCommerce, mobile payments and Fintech

- Resilience as a priority

- Deglobalization

- Reconfiguration of global supply chains