

TRACKING THE SPREAD OF COVID-19

BANK OF MELBOURNE ECONOMICS

31 March, 2020

OVERVIEW

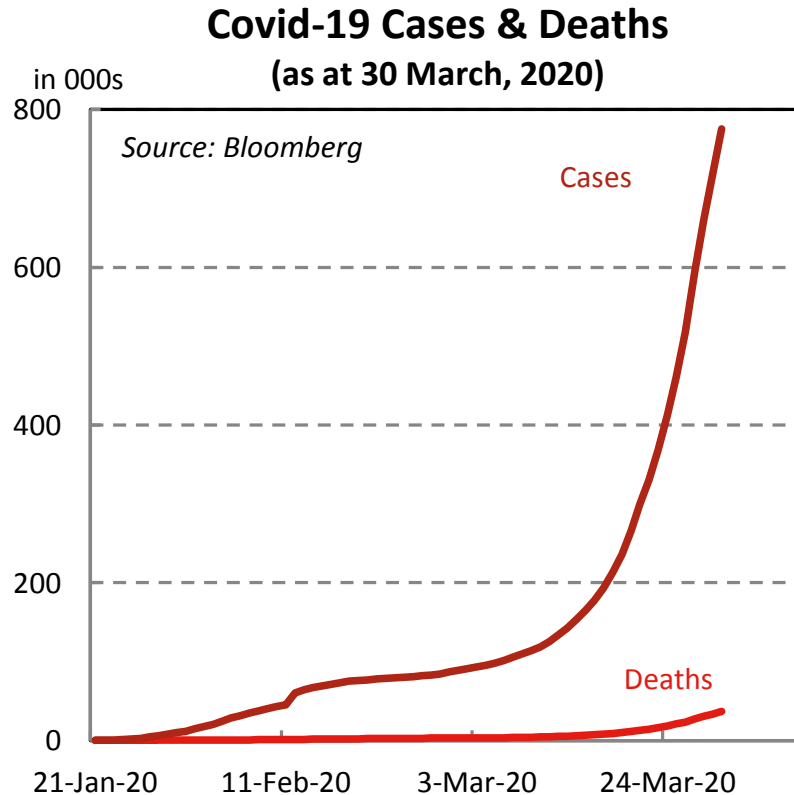
- The disease caused by the novel coronavirus (COVID-19) has spread at an exponential rate.
- Different countries have experienced different rates of mortality and different rates in which the disease spreads.
- These are due to differences in the severity of cases, the quality and preparedness of the healthcare system and the availability of testing.
- Containment measures appear to be effective and are most effective when implemented earlier.
- Australia has so far experienced a much lower mortality rate than some other countries.

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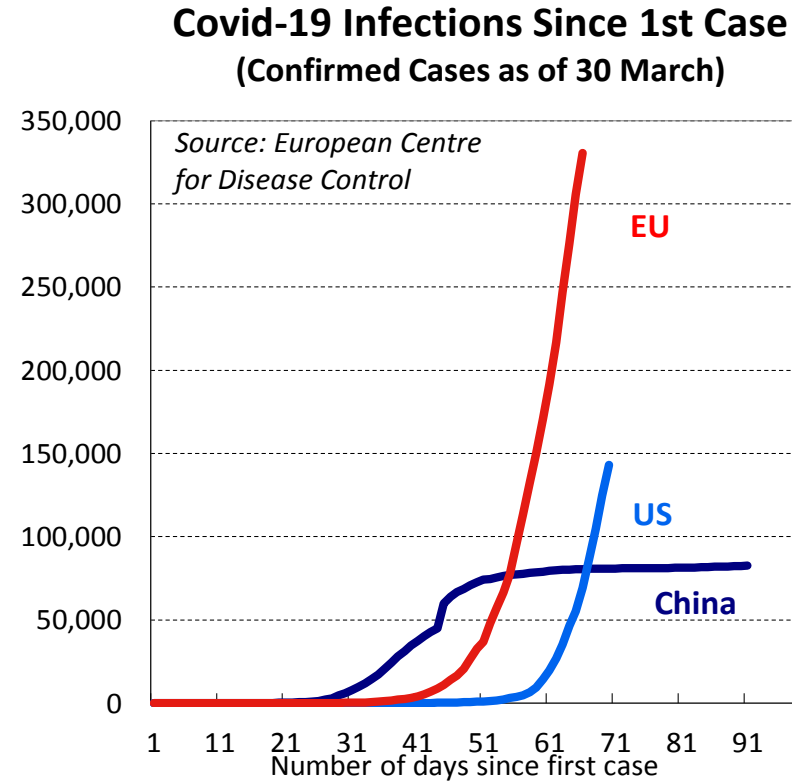
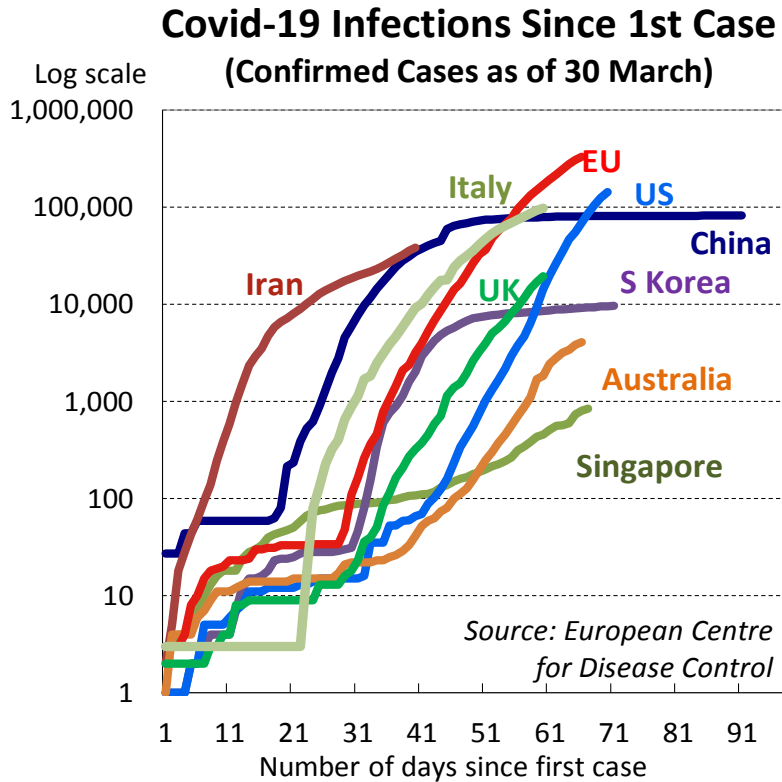
GLOBAL CONFIRMED COVID-19 CASES AND DEATHS



- The disease caused by the novel coronavirus (COVID-19) has spread at an exponential rate.
- The World Health Organisation (WHO) has published reported cases in over 203 countries as of 31 March.
- There have been 775,573 confirmed cases globally and 37,117 deaths globally as at 30 March, according to Bloomberg data that incorporates data from WHO as well as other timely sources.
- Both confirmed cases and deaths are showing an exponential rate of increase.
- For Australia, data from the Department of Health shows there are 4,359 confirmed infections and 18 deaths from COVID-19 as of 6:30am AEDT on 31 March.



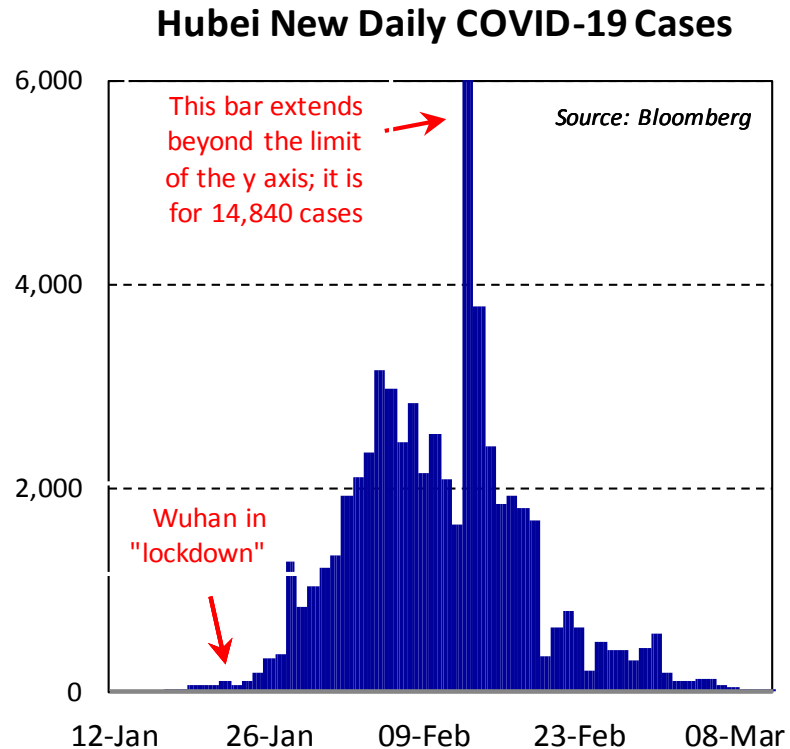
INFECTION RATE – “GO HARD, GO EARLY”



- Countries with stricter containment measures and those that acted sooner have had more success in flattening the curve of the virus.



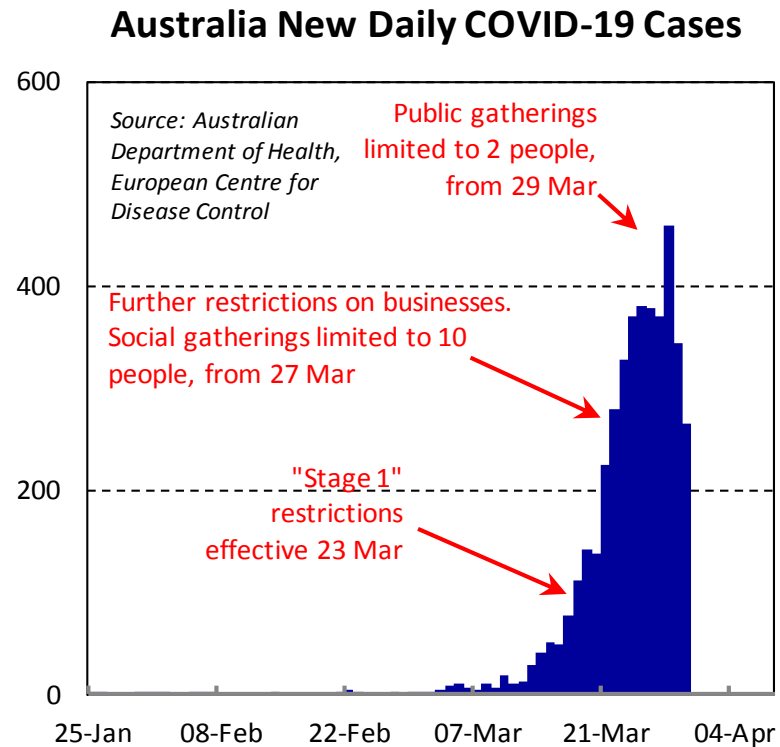
CONTAINMENT MEASURES WORK



- According to the Wall Street Journal, the first reported COVID-19 case was a 57-year old seafood merchant working at the Huanan Seafood Market in Wuhan on 10 December 2019.
- The WHO received confirmation from China on 30 December that there were cases of pneumonia of an unknown cause detected in Wuhan.
- Wuhan went into “lockdown” on 23 January, including the suspension of all public transport and flights in and out of the city. The rest of the Hubei went into lockdown in a phased, city-by-city approach from 24 January.
- Aside from an administrative change causing the number of cases to surge in mid-February, Hubei’s daily new infections peaked on 5 February, 2 weeks after lockdown.
- Travel restrictions were lifted in Hubei (excluding Wuhan) on 24 March, 60 days after containment measures began.



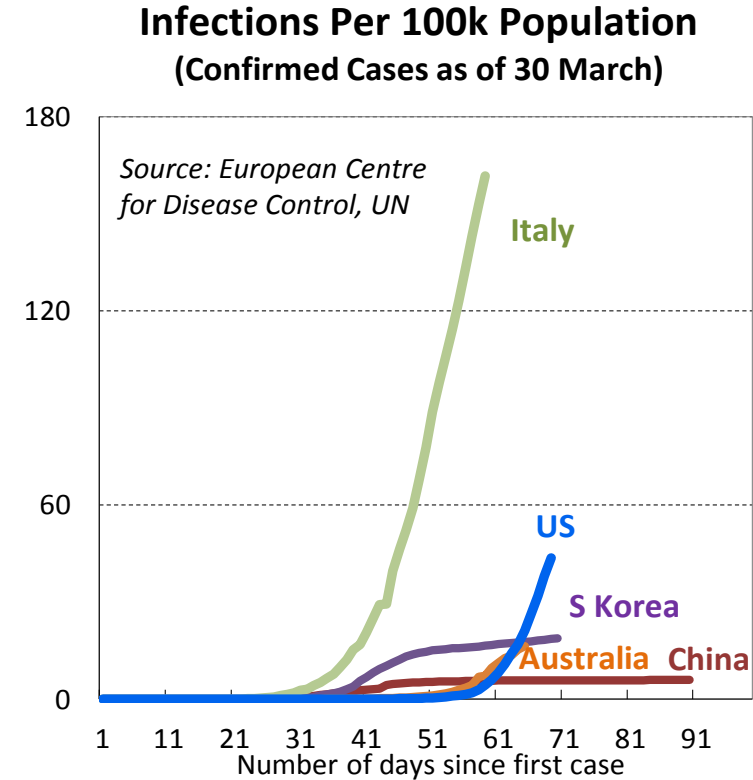
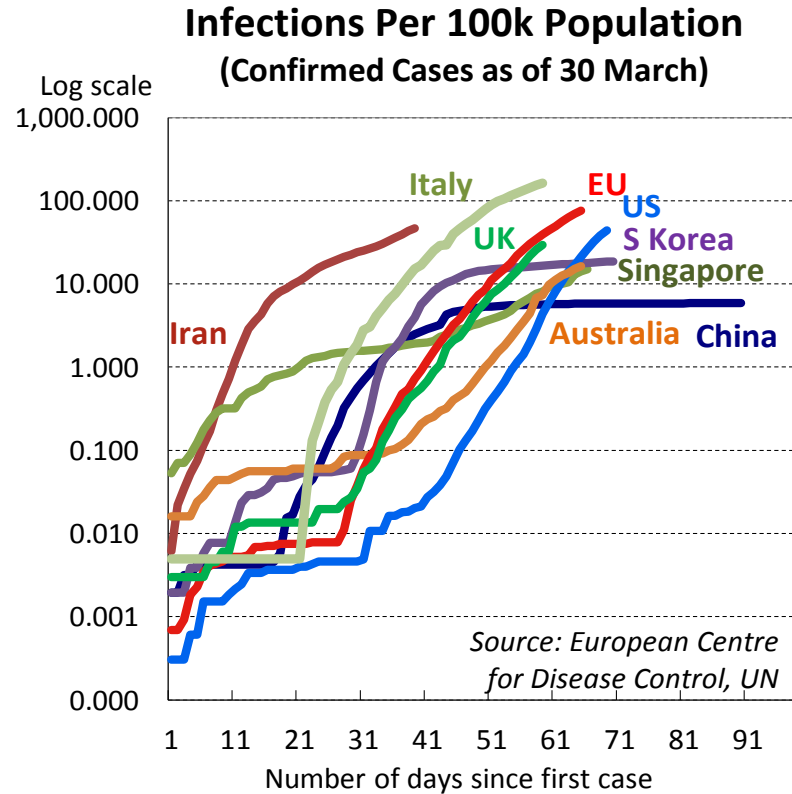
THE AUSTRALIAN STORY



- Australia's first reported case was on 25 January.
- Total confirmed infections passed 1,000 on 21 March.
- In response to the outbreak there has been a steadily tightening range of containment measures mandated at a State and federal level.
- The border was closed to non-resident travellers from mainland China on 1 February.
- The National Crisis Cabinet was formed on 13 March, coinciding with limits of gatherings of more than 500 people except in some circumstances.
- The border was completely closed to non-resident travellers as of 9pm 20 March.
- "Stage 1" restrictions were introduced by the Federal government on 23 March, including restrictions on pubs, gyms, restaurants and other facilities. These restrictions were intensified subsequently on 27 & 29 March.
- Most States have closed their borders and introduced their own mandatory closures of non-essential services and some schools since mid March.



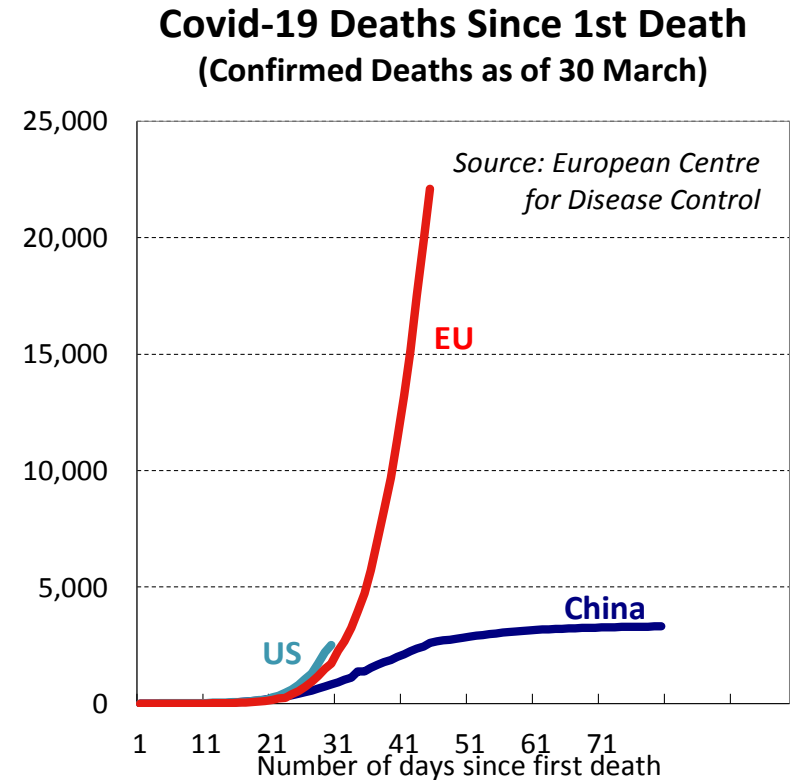
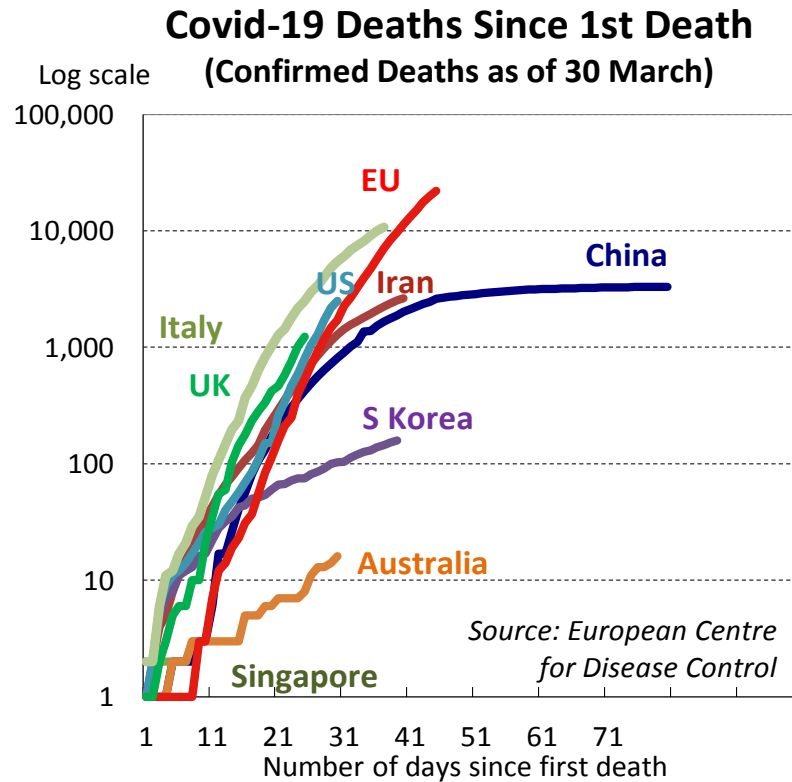
INCIDENCE RATES



- The incidence rate is the number of confirmed infections adjusted for the population.
- Once adjusting for population, Australia's incidence rate puts it among countries with relatively advanced outbreaks.



MORTALITY RATES



- The number of deaths is increasing at a far faster pace in Europe and the US than it did in China.
- Treatment requires capacity in the healthcare system, so slowing the spread of the virus is critical to ensure there are enough hospital beds available.



MORTALITY RATE BY COUNTRY

COVID-19 death rate - selected countries (Reported cases & deaths as of 30 March 2020)			
Country	Confirmed deaths	Confirmed cases	Death rate (%)
Australia	18	4,359	0.4
Italy	10,781	97,689	11.0
US	2,509	143,025	1.8
China	3,311	82,463	4.0
South Korea	158	9,661	1.6
UK	1,228	19,522	6.3
New Zealand	1	552	0.2

Source: European Centre for Disease Control, WHO, Australian Department of Health

- Using reported cases and deaths, Australia's mortality rate is currently much lower than in some other countries.
- This could be due to milder cases being picked up in Australia so far. It might be due to the relatively early stage of the virus's spread or because Australia has a smaller share of its population aged over 65 compared with countries like Italy.



NOTES ON THE USE OF LOGARITHMIC SCALE

- Please note that some charts in this pack use a log scale.
- A log scale is useful for showing rates of growth.
- In these charts, the distance between each tick on the vertical axis is the same, but number increases by a percentage each time (for example, increasing by 10 times per tick mark).
- This better illuminates data that is growing by an exponential rate, but it makes smaller numbers appear closer to larger ones on the scale. Likewise, what may appear to be a small increase in distance above a large number can actually be significant in absolute terms.



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