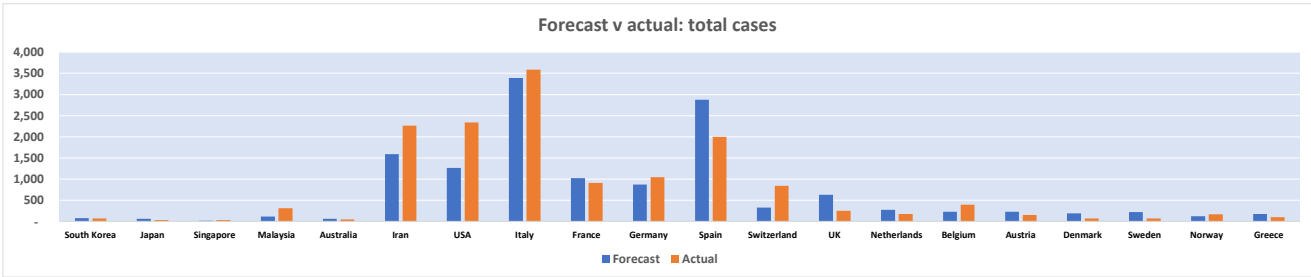


1. Daily update on case numbers

Our short run forecast model assumes that the reduction in transmission rates achieved in Western nations matches what has been achieved in Korea or Italy (the latter for European countries). Orange bars are actual figures for the day and blue bars are our forecast using prior data.

Key points

- 1 The transmission rate in Italy is edging downwards - we anticipate stronger reductions over the next few days
- 2 Significant outbreaks are unfolding, with Spain particularly concerning - many lockdowns now in place
- 3 Remain cautious about countries reporting relatively low new case numbers - eg UK and Greece

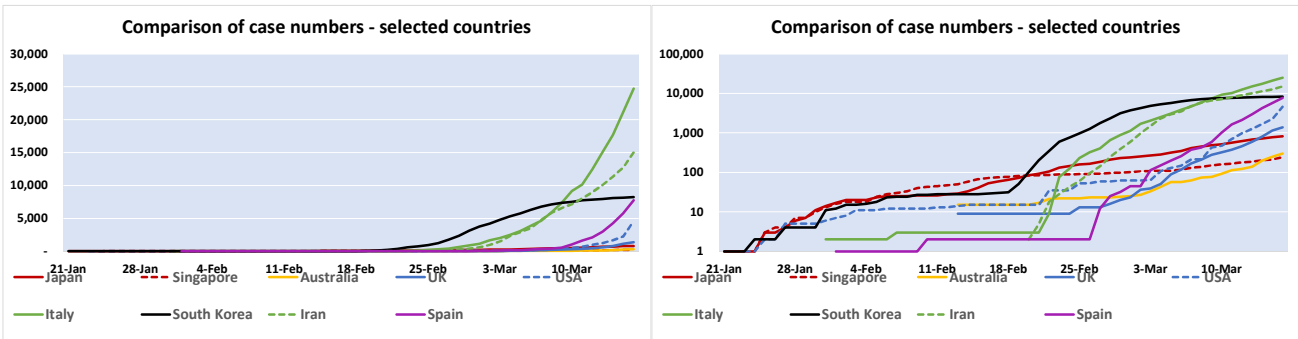


2. Global comparison of growth in case numbers

The figures below are historic data from WHO situation reports, other than for US where we are using John Hopkins figures as WHO/CDC data is out of date. The left hand chart uses a normal axis and the right hand chart shows identical figures on a log axis.

Key points

- 1 Italy and Iran now way ahead of Korea in case numbers (left chart) - Spain growing rapidly too
- 2 Growth in Japan remains slow but still exponential (straight line on right chart)
- 3 Countries such as Spain following a similar/worse path than Italy. UK and USA concerning

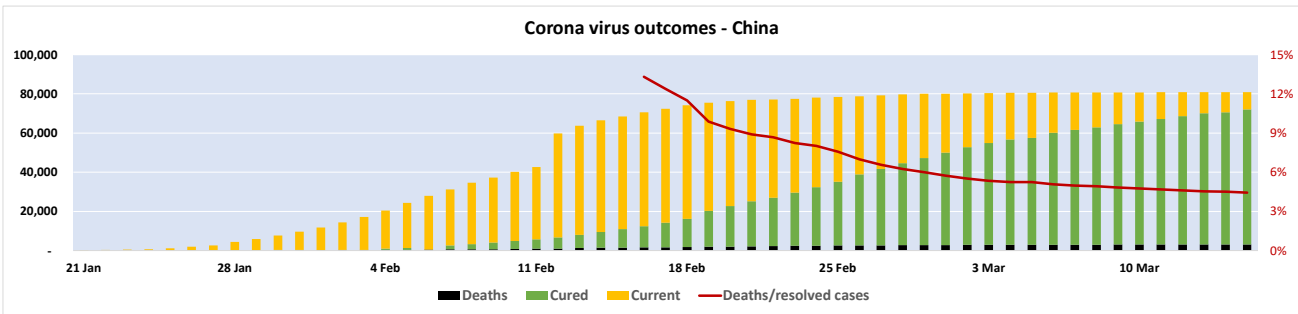


3. China

The figures below are historic figures from WHO (total cases and deaths) and China's CDC (for number of cured cases).

Key points

- 1 New case numbers remain very low - just 16 reported yesterday
- 2 89% of all cases now cured
- 3 Mortality rate on resolved cases now around 4.0% and may fall slightly further



4. Comparison of early stages of outbreaks

The bars below show absolute case numbers, starting from the first day that the country reported approximately 200 cases. This allows comparison of the early stages of the outbreak against China (black line), South Korea (black dotted line) and Japan (grey line).

Key points

- 1 Italy, France and Germany are following a "Korea" track - not a bad thing in the circumstances
- 2 Spain looks materially worse - and the USA is emerging as a massive concern
- 3 Growth in many other European countries remains concerning - suspect underdetection too

