Covid-19: a look at some of the numbers

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My analysis of some of the Covid-19 numbers on a country by country basis. I think the number of cases in the US is likely much higher than the official number.
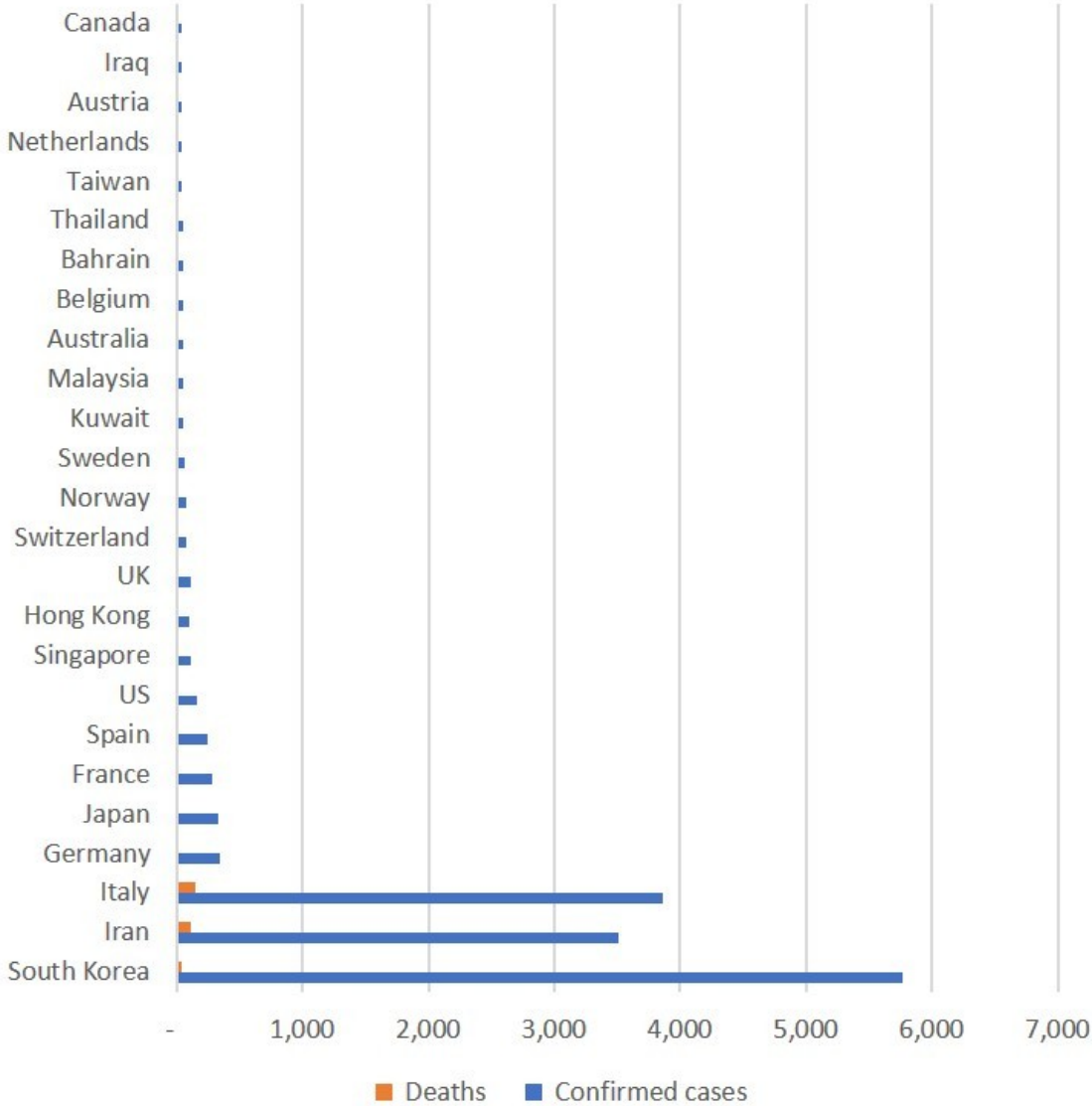
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I am a numbers person, a former biotech analyst, and some of the Covid-19 numbers felt odd to me.

I used a website that tracks cases and deaths by country, and took a look at some key metrics for the 25 countries with the most confirmed Covid-19 cases (excluding China and the cruise ship.[1]) I also entered the current populations of each country. I then calculated the death rate/confirmed case, the confirmed cases per million of population, and the deaths per million of population.

The data in the charts below is from 18:00 GMT, Thursday 5 March.

Cases and deaths

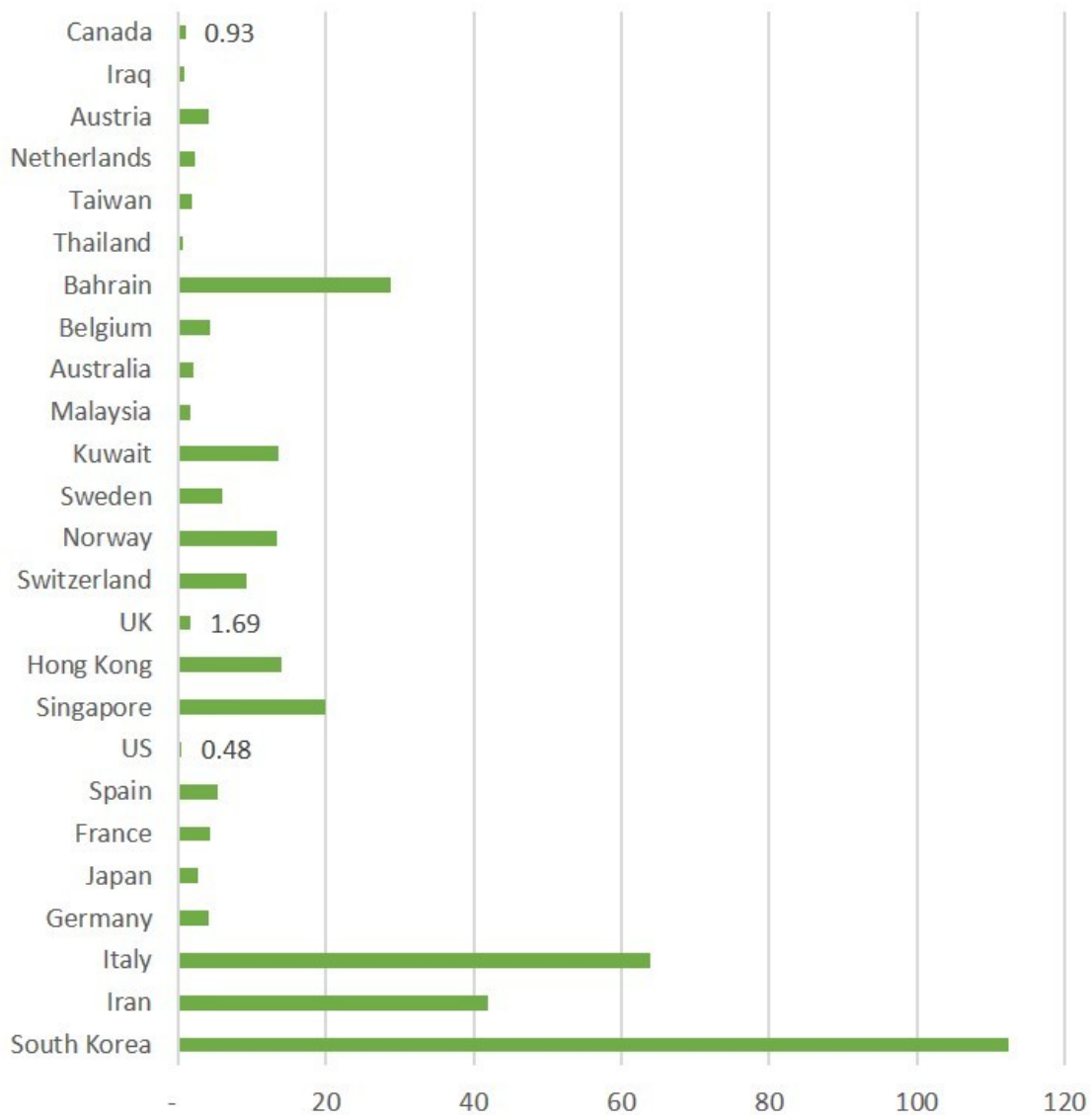|	Confirmed cases	Deaths
Canada		
Iraq		
Austria		
Netherlands		
Taiwan		
Thailand		
Bahrain		
Belgium		
Australia		
Malaysia		
Kuwait		
Sweden		
Norway		
Switzerland		
UK		
Hong Kong		
Singapore		
US		
Spain		
France		
Japan		
Germany		
Italy	~3,900	
Iran	~3,500	
South Korea	~5,800	

Deaths   Confirmed cases

The chart above is just the data on confirmed cases and deaths: simple picture of bad numbers in South Korea, Iran and Italy. Everywhere else is not so bad.
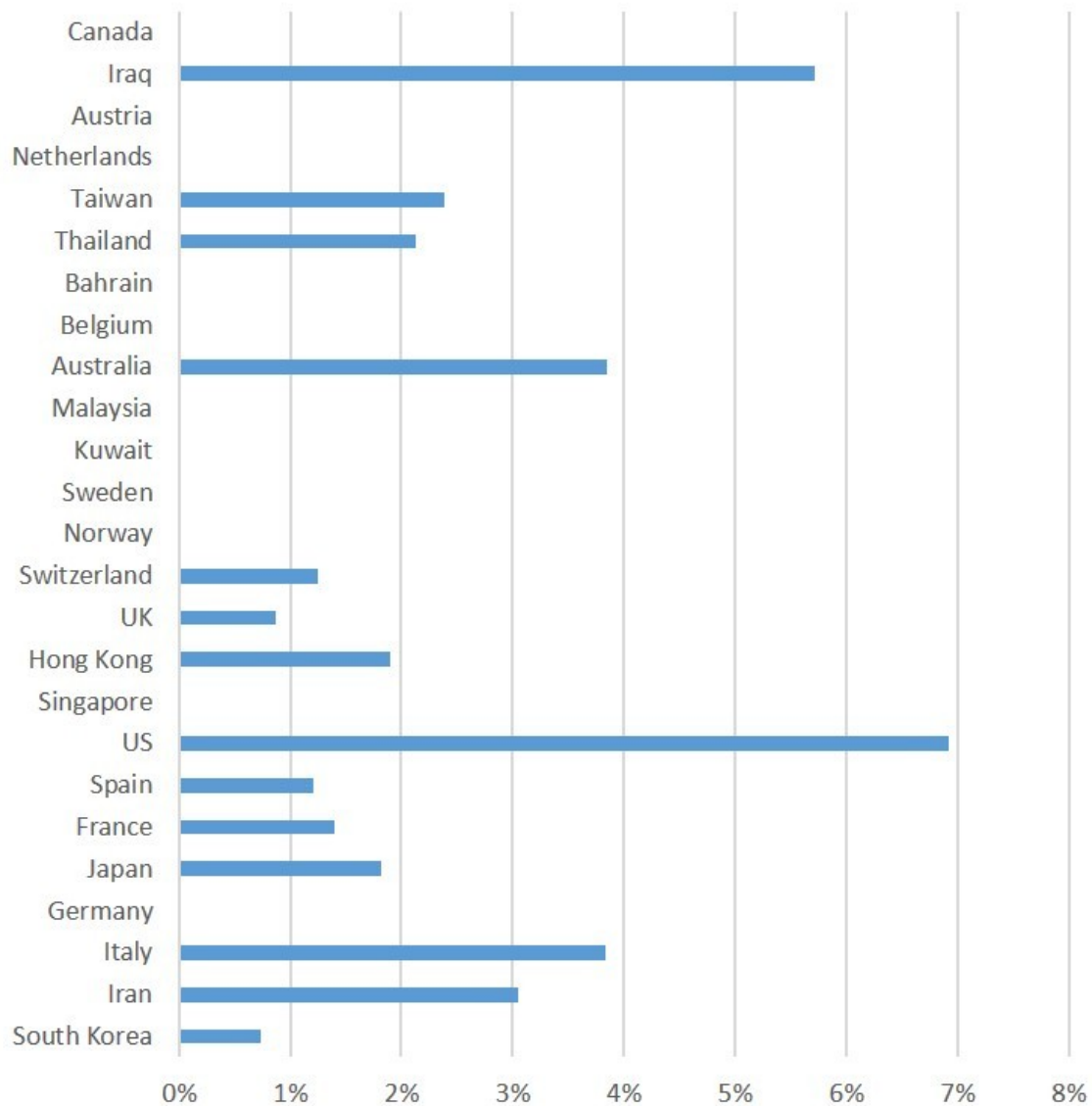
Deaths/million
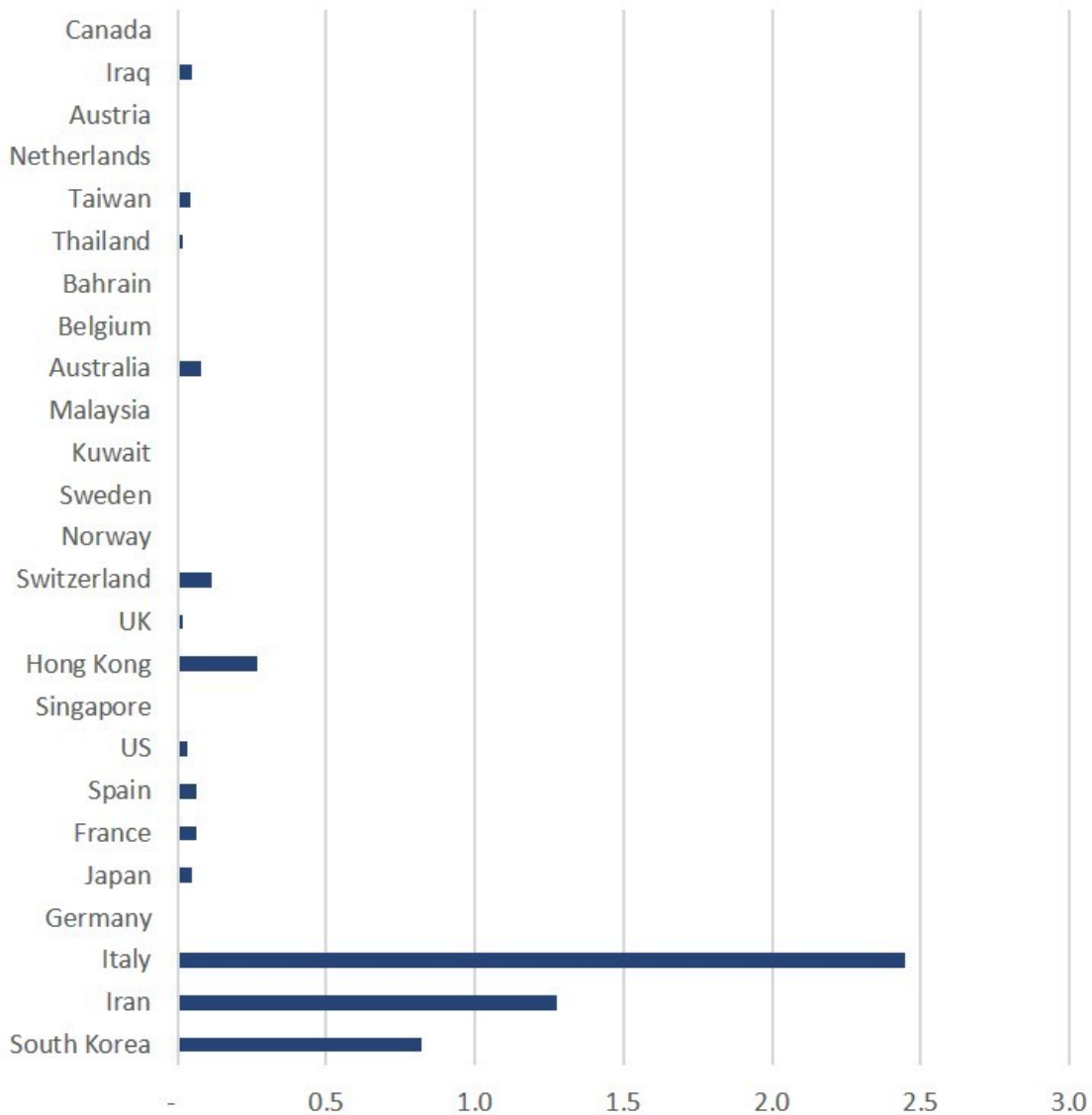
The next chart shows deaths per million of population. The three countries with highest absolute totals also have the highest per capita rates. That makes sense: the virus spreads more, and the medical facilities get overwhelmed. Containing the spread therefore matters. On the other hand, even in the worst-affected countries, the risk of death so far is in that "one (or 2.5) in a million" range. So panic is not appropriate either.

Confirmed cases/million

Country	Value
Canada	0.93
Iraq	
Austria	
Netherlands	
Taiwan	
Thailand	
Bahrain	
Belgium	
Australia	
Malaysia	
Kuwait	
Sweden	
Norway	
Switzerland	
UK	1.69
Hong Kong	
Singapore	
US	0.48
Spain	
France	
Japan	
Germany	
Italy	
Iran	
South Korea	

The third chart is confirmed cases per million, and once again the three hardest hit countries are much higher than everyone else. But there is a slightly odd thing going on: the US confirmed cases per capita is 0.48 per million, which is the lowest of all 25 countries on the list. Roughly half that of the Canadian number, and a quarter of the UK, although both would likely have similar movements of visitors and returnees from China, South Korea and northern Italy. There are other large countries with even lower rates – but their data is highly suspect. It seems unlikely, for example, that Russia has only four confirmed cases. The US number (to me) appears improbably low.

Death rate/Confirmed case

Country	Death rate
Canada	
Iraq	▇▇▇▇▇▇▇▇ 5.7%
Austria	
Netherlands	
Taiwan	▇▇▇ 2.4%
Thailand	▇▇▇ 2.1%
Bahrain	
Belgium	
Australia	▇▇▇▇▇ 3.8%
Malaysia	
Kuwait	
Sweden	
Norway	
Switzerland	▇ 1.2%
UK	▇ 0.9%
Hong Kong	▇▇ 1.9%
Singapore	
US	▇▇▇▇▇▇▇▇▇▇ 6.9%
Spain	▇ 1.2%
France	▇▇ 1.4%
Japan	▇▇ 1.8%
Germany	
Italy	▇▇▇▇▇ 3.8%
Iran	▇▇▇▇ 3.1%
South Korea	▇ 0.8%

The final chart shows the number of deaths per confirmed case, or the mortality rate. The figure that really jumps out is the US, with just under 7% of those diagnosed with the virus dying of it, higher than any other country. Possible explanations are that Americans are uniquely susceptible to the virus (not likely – the Canadian mortality rate is zero percent, and the two populations are very similar); that the American medical care is doing a bad job of keeping victims alive (also not likely – the US system has its flaws but it's not worse than Iran, Malaysia or Thailand, etc.); or that the Americans are badly under-counting the number of cases.

I think that is likely. The actual number of Americans infected by Covid-19 is likely much higher than the current stats show. There are a number of theories as to why that might be the case, but I leave those to others.

I expect over the next few days to see a big increase in the number of diagnosed cases in the US, while the number of deaths will grow much more slowly. The good news is that will cause the mortality rate to drop, the bad news is the risk of spread will be higher by some amount.

The average number of cases per million in these 25 countries is 14, but if I exclude South Korea, Italy, Iran and Bahrain, that drops to around five.

If the US were to have about the same number of cases per capita as other similar countries, then there are likely over 1,500 infected Americans right now. I would not be surprised to see the confirmed case count move towards that number rapidly over the next week. Not because more Americans are actually getting sick, but because the case count will become more accurate.

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[1] The China numbers are unrepresentative since they had the disease first, when little was known about diagnosis or treatment. And the cruise ship is also not a good data sample: confined space, etc.