Tim Leunig

Covid: a late summer stocktake

Most countries came out of lockdown before us, and we can therefore learn from their experiences. This note looks at the June and July experience of 33 countries.

In addition to the UK, I look at:

- Western Europe (Austria, Belgium, France, Germany, Greece, Iceland, Ireland, Netherlands, Italy, Portugal, Spain, Switzerland)
- Scandinavia (Denmark, Finland, Norway, Sweden)
- Eastern Europe (Czech Republic, Poland, Slovakia)
- Baltics (Estonia, Latvia, Lithuania)
- Americas (Canada, US)
- Asia (China, Israel, Japan, Singapore, South Korea, Taiwan)
- Australasia (Australia, NZ)

I look at 7 day rolling averages of "confirmed rates of infection per million population" up to Sunday 2 August, from Our World in Data.[1] All data are taken at face value.

Remember that this is summer in almost all of these countries. Viruses usually do less well in summer. We should expect things to worsen in the autumn and winter.

None of these countries had opened their schools either.

First finding: Coronavirus rates are generally rising.

24 countries end the period with a higher rate than when they began, 9 with a lower rate.

Coronavirus rates have doubled, on average, over this two-month period, rising from 12 to 24.

Coronavirus rates have doubled or more in 16 countries.

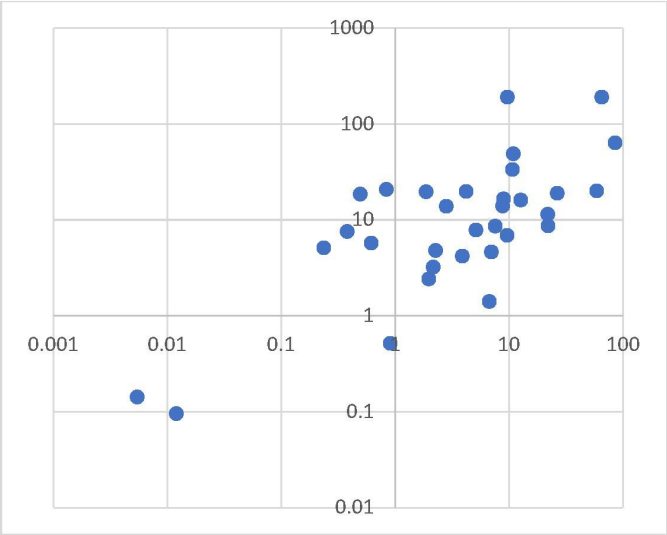
Coronavirus rates have risen ten-fold or more in 8 countries.[2]

This has not, however, been a period of continuous rises: far from it. Compared with their lowest points, coronavirus rates have doubled in 24 of the 29 countries[3] that started with non-trivial rates.[4]

Second finding: Your coronavirus rate is unpredictable

The value two months ago is only a weak predictor of your coronavirus rate today. This chart shows the June 3 value (X axis, log), vs the Aug 3 value (Y axis, log).

[1] Spain up to 1 August.
[2] Australia, Greece, Israel, Japan, Latvia, Slovakia, Spain, Switzerland
[3] Canada, Italy, Portugal, Sweden, UK,
[4] Trivial rates in China, New Zealand, South Korea and Taiwan. China and Taiwan have doubled, but from such a low base as to be meaningless.



There is a correlation, but it is a weak one. The Adj R2 is 0.21.[5] This is driven by the outliers: if we delete the three highest and lowest values, the Adj R2 falls to 0.

This means that if you started with next to no cases, you have a strong change of remaining there. If you had an exceptionally high number of cases, you will still be high. But for those countries in the middle, today's data has no predictive value in assessing the likely value in two months' time.

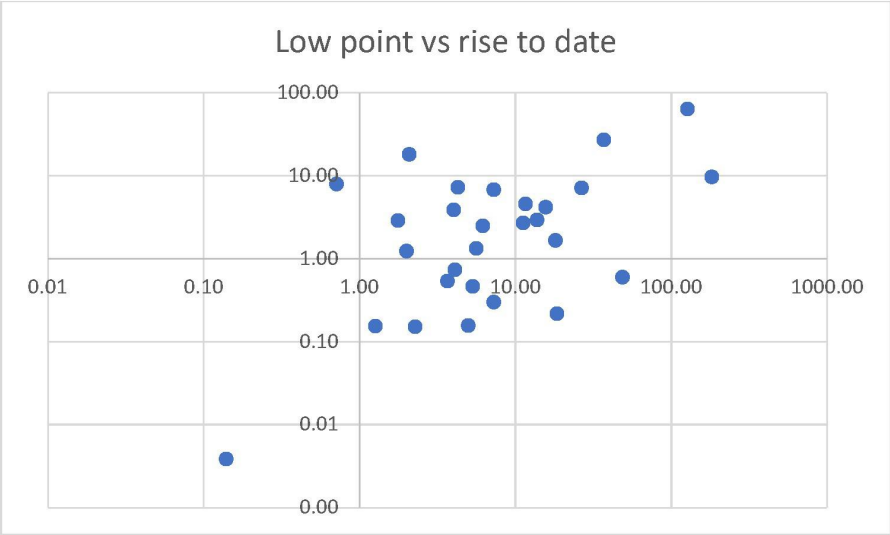
That is a startling finding. We have no knowledge of where we will be in two months (except to rule out extreme values such as 0 or 500). Our current value (9) is not dissimilar to Finland two months ago. Their value is now just 1.4. It is also similar to Italy and Ireland, whose values have also fallen. It is also similar to the Netherlands, whose values have doubled in two months. It isn't much below where Belgium, Spain or Israel were 2 months ago – they now have values of 30, 50 and 200.

This is perhaps the most useful finding of all. Today's UK value for Coronavirus cases has no predictive value for where we will be in two months' time. We have almost no idea where we will be at the start of October. It seems highly unlikely that our value will be below 1.4 or above 200. It probably won't be below 5 or above 50. But those are tremendously wide ranges.

Third finding: How low you got coronavirus is only a weak predictor of the rebound

Here is a (log-log) plot of your lowest infection rate in June/July (x), versus the rise since (y)

[5] OLS here and throughout.



There is a correlation but it not strong (Adj R2 0.27). The correlation is again driven by outliers. This result is important. It tells us that even when you get Covid down to really low levels, that does not imply that you will be able to keep it there.

Fourth finding: There is a second wave

Since countries' histories do not explain current rates at all well, this is a second wave. There was a lull, and then it took off again.

Some previous successes have done really badly – Israel spectacularly so, but also countries like Switzerland, where recorded cases have risen ten-fold.

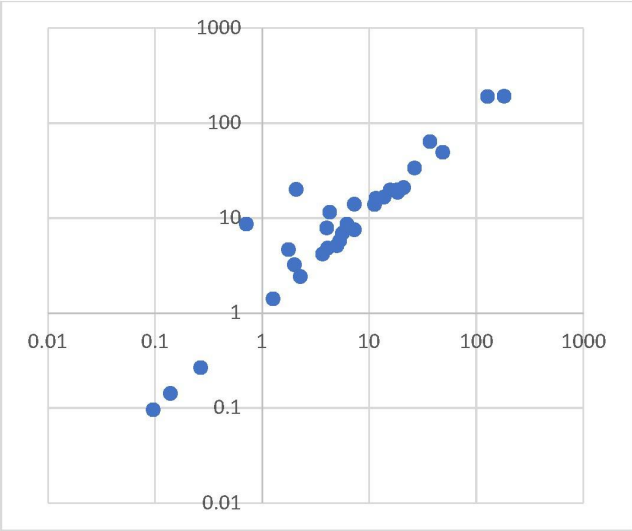
This is bad news: it tells us that there are not countries we can look to as a plan. At the end of May we might have looked to New Zealand, Australia, South Korea, Switzerland, Austria, Israel and Germany. All had low values throughout May. Today New Zealand and South Korea remain outstanding, Germany is a fraction below us, while Austria, Switzerland and Australia are significantly above us, and Israel is now level with the US.

A handful of countries who did badly earlier, like Italy and the UK, are now in a relatively good position. Spain did badly, then pretty well, and is now doing badly again (at least in Catalonia).

I think that this tells us that luck is more important that we might want to imagine. Switzerland and Austria have reopened in the way you expect countries with incidence rates below 2 (Switzerland) or 3 (Austria). But their rates rose fast.

Fifth finding: Today's value is all about the most recent month or so.

Again this follows. If the earlier values have no predictive power, today's value is a function of very recent changes. If we plot the rise from the recent low (X), against today's value (Y), we find a strong correlation.



The point lie overwhelmingly on the 45 degree line. There are a handful of countries to the above and to the left – these are countries with higher initial rates of infection (such as Portugal, the UK), who have managed to prevent a second wave.

Conclusions

Given that most countries have seen a post-relaxation rise in coronavirus rates, it is overwhelmingly likely that we will to. The current ONS finding that cases are rising is almost certainly correct.

Furthermore, rates have risen significantly in most countries, and that is therefore the "best guess" for the UK. We can hope to be like Italy or Germany, rather than Austria, Switzerland, the Netherlands or Spain. But I am not sure we really know what the former two did differently, and that means we should not rely on it.

What to do?

Offices

We need to avoid anything that will raise R and I, and which does not have a significant effect on GDP. It is a very bad idea, for example, for office workers to be encouraged to return to the office if they can work from home. Getting me into the office increases GDP only trivially (train fare, lunch), but materially increases R. For lower paid office workers, the equation is worse, as they are more likely to spend the money they save on commuting bills. The later lockdown cost – whether local or national – is likely to outweigh the cost of my lunch. The mantra "Work from home if you can" seems very well-supported by the evidence.

Inside out

The evidence does seem to be that outdoors is fine. UV light kills viruses. It always has done. A crowded beach doesn't seem to be the end of the world. More importantly, what can we get that is conventionally inside, outside?

Ventilation

We seem to talk very little about ventilation. It may be that UV is all that makes the outdoors different, but it is also possible that bad stuff blows away. More work on indoor ventilation seems

appropriate. We might need to go back to opening windows on trains and buses as well. Think of the winter fug in both.

Public Transport

It seems likely that public transport remains bad news. Far from encouraging people to use it, we should probably be discouraging people from using it. In that context, and given that the current subsidy costs of running the railways are perhaps £1bn a month, we might do better to shut down many lines altogether for a year and run others at a much-reduced service. Halving the number of trains on commuter routes, as well as starting later and finishing earlier, seems plausible. Use the time for maintenance and upgrades.

Schools

We need the schools to go back. At the moment classrooms typically open onto a corridor. For all ground floor rooms, we should convert one window into a door. There is no point in the kids going into the corridor. That will raise R without raising GDP. Send the army in to do it if necessary. And no, I don't care if the building is listed: do it anyway, and leave English Heritage and Local Authority Planning Departments to howl afterwards.

We should also consider external doors into first floor windows, with a self-supporting adjacent staircase, as per this picture. Heck, you could even use a set of aircraft boarding steps – the first floor is about the height of a 737.

We should also put portacabins into playgrounds, to reduce contact within schools. Alison Wolf thinks we should teach in marquees if we have to. I am with her on this one.

We should also consider teaching not on site. There are, for example, many churches and church halls that could be used as classrooms. My own church could take two classrooms easily – one in the nave, one in the hall area. It has toilets and a small kitchen area. There is a small area for kids to run around at break time.

Track and Trace

This appears to be a complete farce. I was in Manchester and Durham last week. 1 restaurant took it seriously. Wetherspoons asks you to use their app, which probably covers it. Others seem disinterested. One suggested I jotted it down on the back of a menu. Motorway service stations say

that if you are there for more than 15 mins you should go to customer services and register. No-one does.

We need to be much clearer. Restaurants, pubs etc should require proof of ID and address for everyone over 16. We need inspectors to go in. If anyone has ordered food or drink, and the place has no record for them, then the place is shut down, effective one hour, for two weeks. Second offence: shut down immediately. Third offence: lose your licence. Can we use Eat Out to Help Out records to test whether my anecdotes are reliable? (We know the number of covers – can they produce the addresses?)

Motorway service stations should use ANPR to record who is there. Is this legal? If not, let's make it legal.

We need tracers to be using phone, text, WhatsApp, and knocking on your door. If you don't respond, knock on the neighbour's doors. If you don't answer the phone, I don't think that is a violation of your privacy to ask your neighbours if they have seen you recently. Better still, take the test kit round and get the person to do it then. Stick a combination lock over their normal door lock, so they have to ring a number to get the combination to get into their house. Disable their phone so that whatever number they ring, they get through to track and trace. Find their number plate and get them via ANPR on the main roads, or in car parks. Literally, you drive into ASDA, it spots your number plate, and someone comes to find you. "Could Mr Leunig please report to customer services. The Track and Trace service needs to speak to you". Believe me, people will start answering their phones when we start doing this sort of thing.

Shielding

The evidence from my sample of countries suggests that we will need to consider mass shielding again. Put simply, almost all of those who are likely to die are above retirement age, and almost all of those who are likely to suffer are over 50. Now it isn't possible to perfectly divide the population, but if we are serious about avoiding pressure on the NHS and rising death rates, we need to look again at this.

It would not be hard to give everyone over 60 a weekly supermarket home delivery slot. Even if there are no official slots, it isn't that hard to load a shop into a taxi and drive it to someone's house. There are lots of underemployed uber drivers at present. For really old people, we should ring them and ask them what they want. Give them a phone number so that whatever they want, whenever they want it, they can get it. Get the same person to answer every time. We had thousands of people volunteering to help out – let's use them like this. That person can get the shopping delivered, or go pick it up themselves. Much better than boxes of random stuff.

Everyone 50-60 should get a click and collect slot every week.

For care homes I think we need residential carers, who do not leave for two weeks. They should be tested on arrival every time and quarantined on site until the result comes through a day later. (At least until the quick return testing gives a reliable negative result).

We should, in short, care about the direction of R, as well as the level. As long as only young people get it, we don't really care.

Being ready to shut down

Given that 50% of countries have seen covid rates double, we need to be ready for that. That might take the form of more intense local outbreaks, or more local outbreaks, or outbreaks that are less than local. Do we have good plans in place?

There is loose talk reported in the papers that we will isolate London at the M25. What does that mean? Does that mean no trains cross the boundary? No cars at all? Will the boundary literally follow the M25, or will some areas be assigned to outside even if they are inside, and vice versa? (For example, Chertsey is inside, but Chertsey Hospital is outside. Perhaps best not to follow the actual M25 at Chertsey). Have we decided how to do roadblocks? What happens to the M25 itself? (Clockwise for outsiders, and anti-clock for insiders?)

Have we decided what to do for people who cannot work in those circumstances? There will be teachers who live outside and work inside. Do they come in anyhow? (A pretty porous border if so). Or do they get put on sick pay? (which is $1/7^{th}$ of their regular pay). What happens when they can't pay their rent or mortgage? Or do they get furloughed?

How long do people have to get home? Can people who work in London move in with a friend? If the alternative is SSP and losing your house, people will do this whether we like it or not.

Giving old people choice

It isn't clear to me that old people all want to be protected. It seems likely that this will bounce back this winter. Unless we are really confident that a vaccine will be here by November, it might be time to say to older people "It is your choice". Some of them are very lonely. They have not seen their family, the people at church, etc etc. Some don't have the internet, but even those who do find it a very poor substitute. They are getting less and less exercise, and becoming more and more frail. They may well prefer to live a normal life, and take a risk. Since we are not short of hospital capacity, why should we not let them? We let people smoke, after all. Initially we didn't want them clogging up the hospitals, so we had to turn others away. That is no longer a risk, so why shouldn't we let people decide? Time to treat adults like adults.

Herd immunity

I know the term is banned, but here goes. We know that it is really hard to maintain an unstable equilibrium. Switzerland (and many other countries) shows us that. Unless a vaccine comes very soon, we could easily have another major outbreak, as Switzerland (and Netherlands, Spain, Belgium etc have done).

If R=2.4 naturally, we need 58% to reach herd immunity. Let's assume – without evidence – that if office workers work from home, everyone wears masks and washes their hands, and we have a more comprehensive track and trace – we get R down to 1.8. I made that up, but is sounds plausible to me. You now need 45% of people to reach herd immunity. About 5% have had it, pushing R down to 1.7. Let's say we let rip among younger people, and a quarter of people get it. R would now be 1.28. If a third get it, R is down to 1.14.

Sure, it is still above 1. But outbreaks don't take off at all fast if R is 1.14 or 1.28. You don't have to make nearly as many tough decisions if R is only just above 1, and outbreaks are likely to be local.

For that reason I still think we should consider allowing Glastonbury to go ahead, but with a twist. We would welcome people with covid. Everyone stays 3 weeks, and are tested regularly. You can't leave until you have had it and recovered. (Or spent 2 weeks in isolation if you don't get it). My 17 year old daughter is up for it. She wants to be out the other side and to be able to get on with her

life. That seems a logical position on her part, given that the evidence is that very few 17 year olds suffer badly.

Of course, if there is no immunity, this does not work. But if only young people get it, and don't suffer much, what have we lost? I am not sure there are many downsides of large numbers of young people getting it in controlled conditions.

If there is no immunity, and a vaccine is not close, then we have a much tougher set of questions to answer. Medics I talk to think it will provide at least partial protection, and that subsequent bouts will be less severe. I think that the downside of lots of young people getting it, in controlled conditions, are very low.

Of course, if this is right, we want to reverse some of the things I outlined earlier. We want kids to meet in school corridors. We want nightclubs open. We want young people to go to Ibiza. We want to require those under 40 to go to the office (provided they live with no-one over 40). We want bad ventilation. It would be better to do it in summer, when we are all healthier, and there are fewer pressures on the NHS.

In this setting, however, we would also want to allow the 60 year old working in Tesco to step back from their role. It is one thing working in Tesco regularly, but another working there with a much higher rate of coronavirus.

Offer delayed retirement to people who want to shield.

Some people are nervous, and understandably so. They might be 63, fat, Asian, asthmatic, live with someone with similar issues. Or they might have a normal risk, but be a single parent. Or have a child with special needs and no extended family. I think we should consider allowing these people a year of retirement now. In exchange for a one year increase in their pension age, they can have a year off, now, and they will be given their pension (state and private – GAD can do some calculations).

Sure, there is an upfront cost, but given the likely surge in unemployment, some people stepping out of the labour market for a year might not be such a bad thing. (I know that this is the lump of labour fallacy, but in a recession it has some validity).

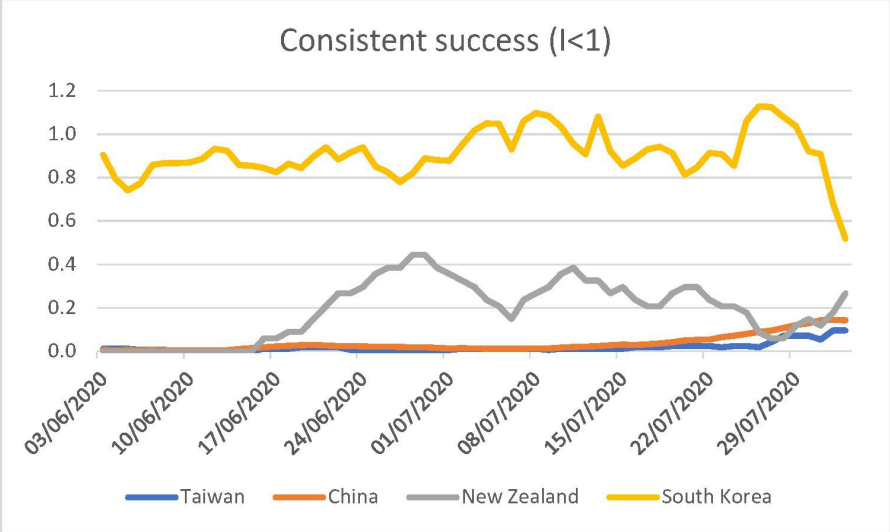
Equally, if someone is over 60 wants to take early retirement, maybe they should be offered a lower pension and be allowed to. Some might find that appealing.

Annex

We can divide the countries into groups

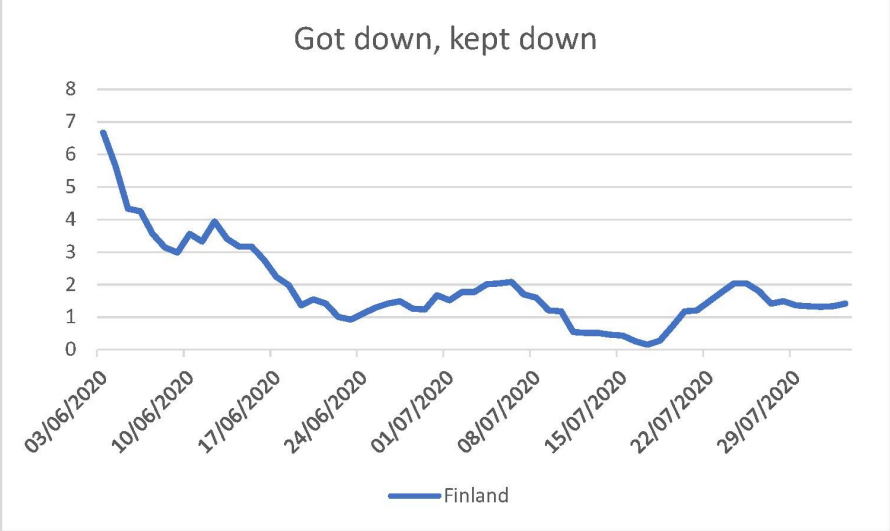
Group 1: Consistent success

China, New Zealand, South Korea and Taiwan have had very low rates throughout the summer, with incidences never exceeding 1 per 2 million inhabitants.



Group 2: Got down, kept down.

Finland is the only country in this group.



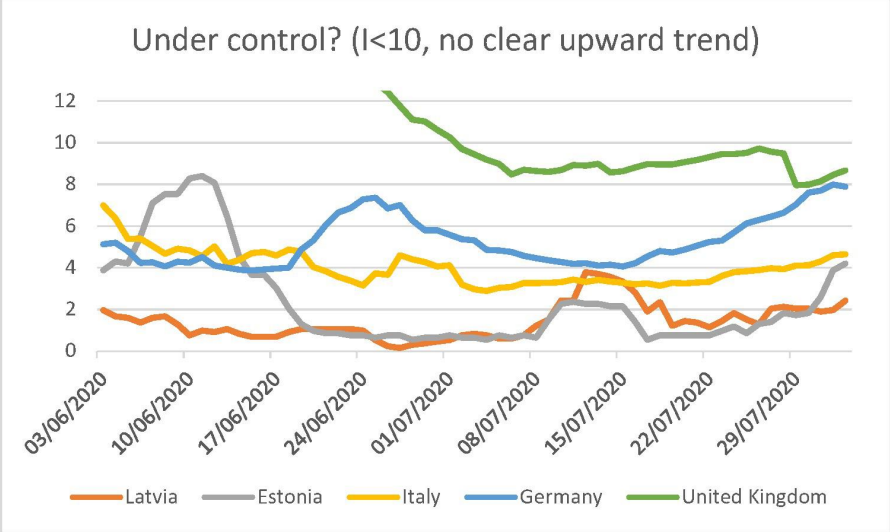
Since Finland is the only country in this group, we can give a potted history. Rates hit 30 and were over 20 for three weeks in April. They then got it right down to 0.15 by July 17 (i.e. 1 confirmed case). There lock down included restrictions on movements into and out of the Helsinki region, and they recommended people aged over 70 should avoid contact altogether. All schools were shut

(early years was not), although primary schools were reopened in May. International travel has been gradually re-opened.

Although the rate has risen almost tenfold to 1.42, it is still very low, and has been stable for a week now. Given the size of Finland, the variations since mid-June are probably noise.

Group 2: Probably under control, but no room to further open

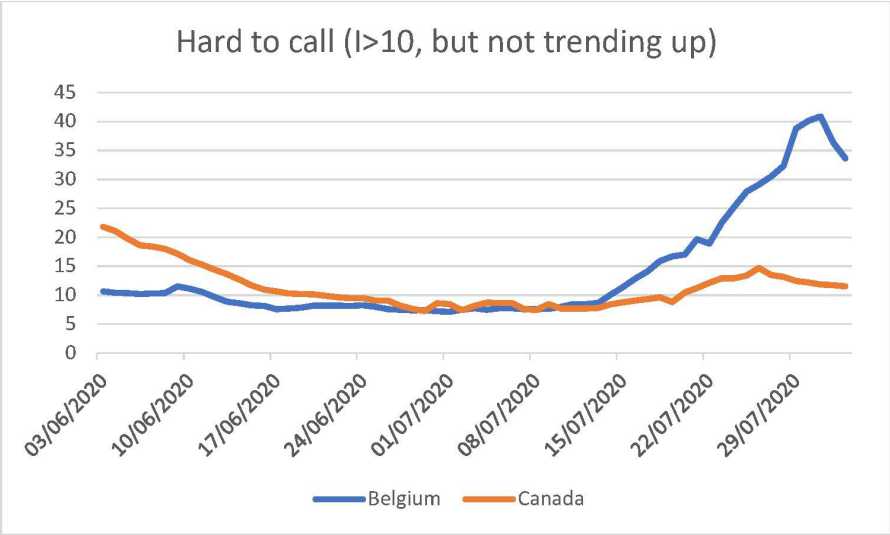
Estonia, Germany, Finland, Italy, Latvia and the UK all have rates that are under 10 per million.



Nevertheless, figures are rising in most countries. The rate in Germany has doubled in the last two weeks (although they have brought it down from these levels before). Italy has risen by about a half over the last month. Estonia has seen a sharp rise in the last week or so, although they are inevitably small numbers. The ONS believes that the rate in the UK is rising.

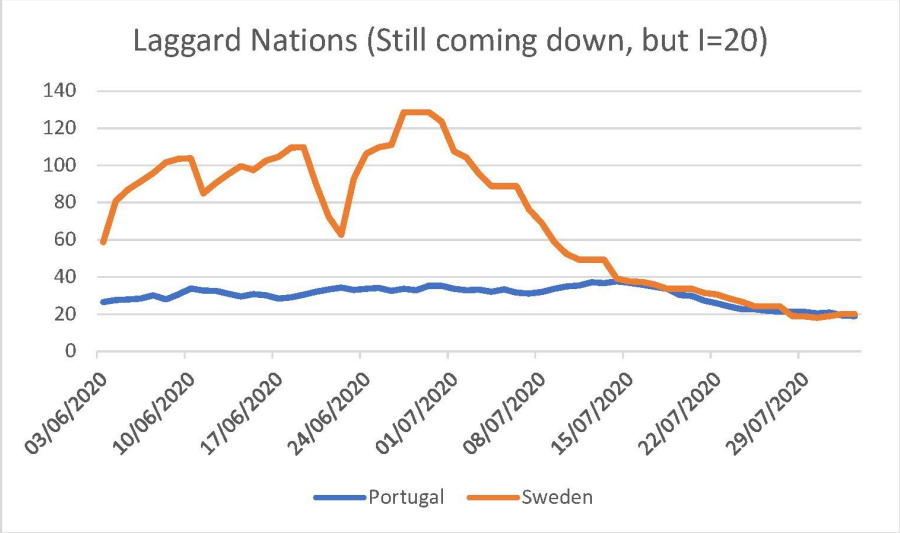
Group 3: Hard to call – high but not trending up

Belgium has seen a second spike, not doubt about it. It might be coming under control, but with a rate still about 30 it is too soon to say. Canada's rate has fluctuated between 10 and 15 – one of the few countries to be both relatively high and stable.



Group 4: Laggard nations

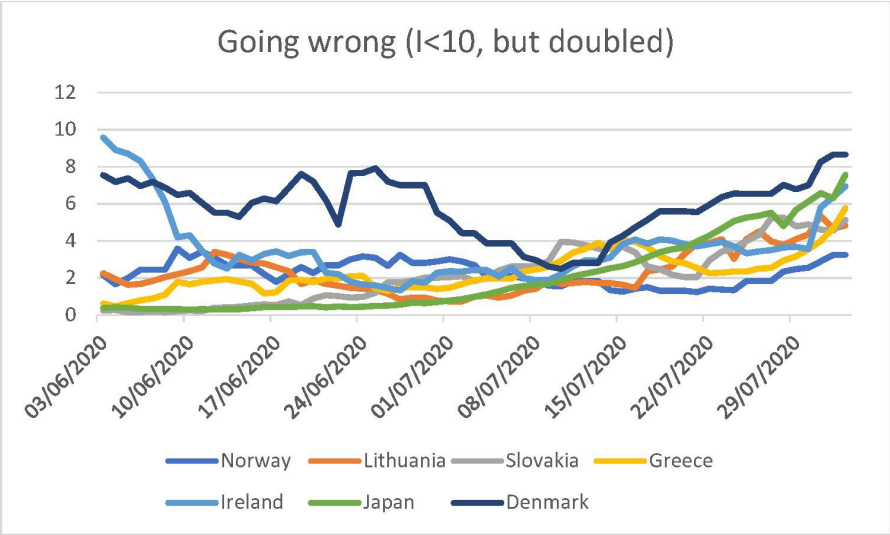
Portugal and Sweden are still coming out of their first phase. They have not reached their nadir (they hope). Rates are still high: around 20 in each case.



Groups 5-8 are the countries where things are going wrong. They differ only in the extent to which they are going wrong.

Group 5: Going wrong

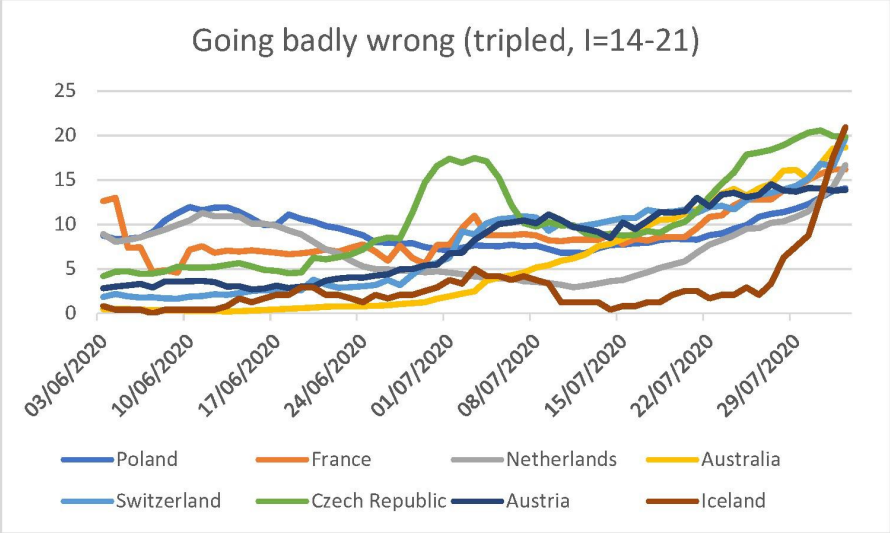
Denmark, Greece Ireland, Japan, Lithuania, Norway and Slovakia have all seen rates double, but the absolute values remain under 10. With the possible exceptions of Norway and Slovakia, these are all clearly trending upwards. It seems likely that these places will need further lockdown measures if the rates are not going to continue to rise.



Group 6: Going badly wrong

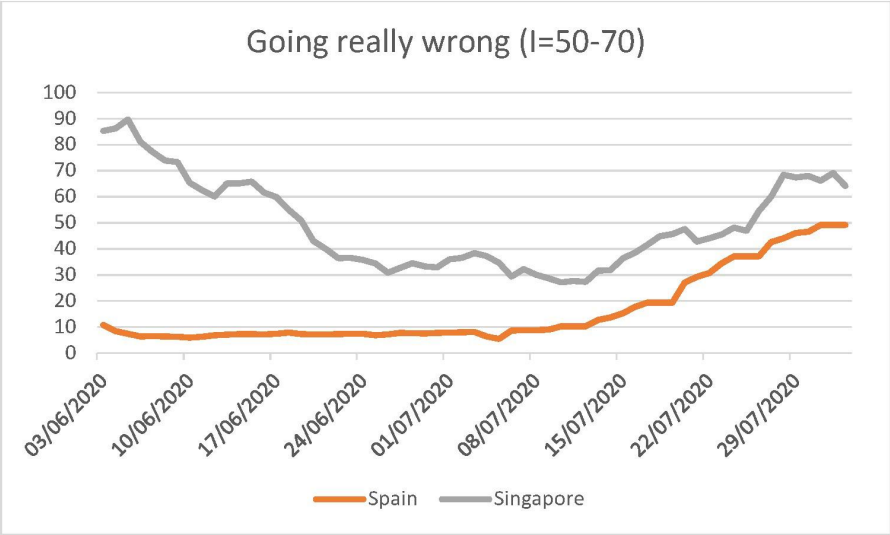
With 8 nations, this is the biggest single group.

In Austria, Australia, the Czech Republic, France, Iceland, Netherlands, Poland, and Switzerland rates have tripled and are now well above 10 in all cases. With the exception of Austria (which appears to have stabilised at 14) and perhaps the Czech Republic, these countries all have rising rates. The Netherlands, for example, has risen from 3 to 17 in three weeks. France's rise has been slower, but it has risen from 4.6 to 16.



Group 7: Going really wrong

Singapore was supposedly a success story initially, but it had a terrible summer and it is getting worse. Spain had the harshest lockdown, and appears to have thrown it away. It is, however, a warning that a country can go from a rate of 5 to a rate of 50 within a month.



Group 8: Going unbelievably wrong

That the US is going unbelievably wrong is well known, but Israel was at current UK rates 2 months ago. It has now moved to rates equal to those of the US.