

Easily overlooked issues regarding COVID-19

Posted on [February 18, 2020](#) by [Gail Tverberg](#)

We read a lot in the news about the new Wuhan coronavirus and the illness it causes (COVID-19), but some important points often get left out.

[1] COVID-19 is incredibly contagious.

COVID-19 transmits extremely easily from person to person. Interpersonal contact doesn't need to be very long; a taxi driver can get the virus from a passenger, for example. The virus may be transmissible even before an infected person develops symptoms. It may also be transmissible for a few days after a person seems to be over the virus; it is possible to get positive virus tests, even after symptoms disappear. Some people may have the disease, but [never show symptoms](#).

[2] The virus likely remains active on inanimate surfaces such as paper, plastic, or metal for many days.

There haven't been tests on the COVID-19 virus per se, but [studies on similar viruses](#) suggest that human pathogens may remain infectious for up to eight days. Some viruses that only infect animals can survive for more than 28 days. China is reported to be [destroying paper currency](#) from the hardest hit area, because people do not want to accept money which may have viruses on it. Clearly, surfaces in airplanes, trains and buses may also harbor viruses, long after a passenger with the virus has left, unless they have been thoroughly wiped down with disinfectant.

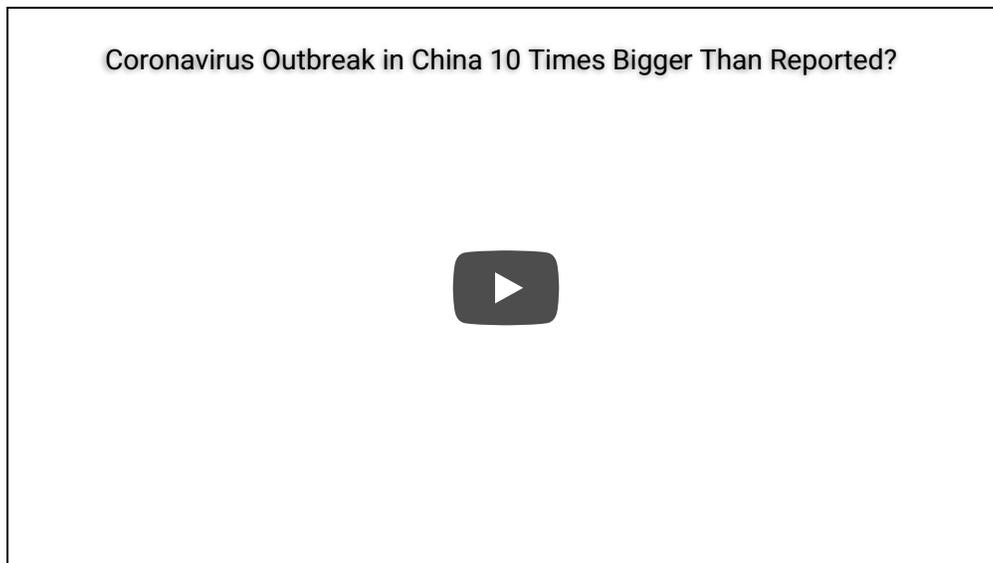
[3] Given Issues [1] and [2], about the only way to avoid spreading COVID-19 seems to be geographic isolation.

With all of today's travel, geographic isolation doesn't work very well in practice. People need food and medical supplies. They need to keep basic services such as electricity and garbage collection operating. Suppliers of food and other services need to come and leave the area and that tends to spread COVID-19. Also, the longer a geographic area is isolated, the larger the percentage of the people within the area that is likely to get COVID-19. The problem is that the people need to have contact with others in the area for purposes such as buying food, and that tends to spread the disease.

[4] The real story regarding the number of deaths and illnesses seems to be far worse than the story China is telling its own people and the world.

The real story seems to be that the number of deaths is far greater than the number reported—perhaps 10 times as high as being reported. The number of illnesses is also much higher. At one point, facilities doing cremations

in the Wuhan area were reported to be doing four to five times the normal number of cremations. Some of the bodies in the Wuhan area now need to be sent to other areas of China because there is not enough local cremation capacity.



China doesn't dare tell its people how bad the situation really is, for fear of panic. They want to tell a story of being in control and handling the situation well. The news media in the West repeat the stories that the government-controlled publications of China provide, even though they seem to present a much more favorable situation than really seems to be the case.

[5] Our ability to identify who has the new coronavirus is poor.

While there is a test for the coronavirus, it costs hundreds of dollars to administer. Even with this high cost, the results of the tests aren't very reliable. The test tends to produce many false negatives. The virus may be present somewhere inside the person being tested, but not in the areas touched by swabs of the throat and nose.

[6] Some people get much more severe symptoms from COVID-19 than others.

Most people, perhaps 80% of people, seem to get a fairly light form of the COVID-19 illness. Groups that seem particularly prone to adverse outcomes include the elderly, smokers, those who are obese, and those with high blood pressure, diabetes, or poor immune systems. Males seem to have worse outcomes than females.

Strangely enough, there is speculation that people with East Asian ancestry (Chinese, Japanese, or Vietnamese) may have a [higher risk of adverse outcomes](#) than those of European or African ancestry. One of the things that is targeted by the disease is the ACE2 receptor. The 1000 Genome Project studied expected differences in ACE2 receptors among various groups. Based on this analysis, some researchers (in non-peer-reviewed studies, [here](#) and [here](#)) predict that those of European or African ancestry will tend to get lighter forms of the disease. These findings [are contested](#) in another, non-peer-reviewed study.

Populations at risk

Average of six genetic variants associated with higher ratios of ACE2 cells:
rs233575 (A), rs714205 (G), rs1978124 (C), rs879922 (G), rs2048683 (G),
rs1877752 (C)

Code	Population	%
JPT	Japanese in Tokyo, Japan	92%
CHS	Southern Han Chinese	92%
EAS	<i>East Asian</i>	91%
KHV	Kinh in Ho Chi Minh City, Vietnam	91%
CHB	Han Chinese in Beijing, China	90%
CDX	Chinese Dai in Xishuangbanna, China	90%
PEL	Peruvians from Lima, Peru	78%
BEB	Bengali from Bangladesh	77%
STU	Sri Lankan Tamil from the UK	75%
ITU	Indian Telugu from the UK	74%
MXL	Mexican Ancestry from Los Angeles USA	72%
SAS	<i>South Asian</i>	72%
GIH	Gujarati Indian from Houston, Texas	68%
AMR	<i>Admixed American</i>	66%
ASW	Americans of African Ancestry in SW USA	66%
PJL	Punjabi from Lahore, Pakistan	65%
ACB	African Caribbeans in Barbados	64%
LWK	Luhya in Webuye, Kenya	63%
MSL	Mende in Sierra Leone	62%
AFR	<i>African</i>	62%
ESN	Esan in Nigeria	62%
GBR	British in England and Scotland	61%
GWD	Gambian in Western Divisions in the Gambia	61%
PUR	Puerto Ricans from Puerto Rico	60%
CLM	Colombians from Medellin, Colombia	59%
YRI	Yoruba in Ibadan, Nigeria	57%
FIN	Finnish in Finland	57%
IBS	Iberian Population in Spain	56%
EUR	<i>European</i>	56%
CEU	Utah Residents with Northern and Western European Ancestry	53%
TSI	Toscans in Italia	51%

1000 Genomes Project

Figure 1. Chart from [Coronavirus risk for Asians, Africans, Caucasians revealed](#)

Bolstering the view that East Asians are more susceptible to viruses that target the ACE2 receptor is the fact that SARS, which also tends to target the ACE2 receptor, [tended to stay primarily](#) in China, Hong Kong, Taiwan, and Singapore. While there were cases elsewhere, they tended to have few deaths.

Observational data with respect to COVID-19 is needed to determine whether there truly is a difference in the severity of the illness among different populations.

[7] China has been using geographical quarantine to try to hold down the number of COVID-19 cases. The danger with such a quarantine is that once the economy is down, it is very difficult to come back to the pre-quarantine state.

Data shows that China's economy is not reopening quickly after the extended New Year holiday finished.

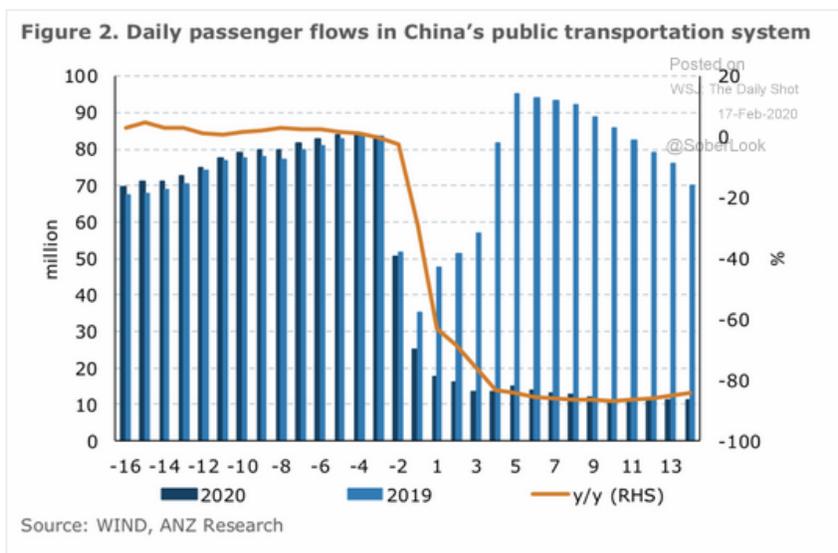


Figure 2. China daily passenger flows, relative to Chinese New Year. Amounts are now down more than 80% and have not increased, even as some businesses are theoretically reopening. Chart by ANZ, copied by [WSJ Daily Shot Feb. 17, 2020](#).

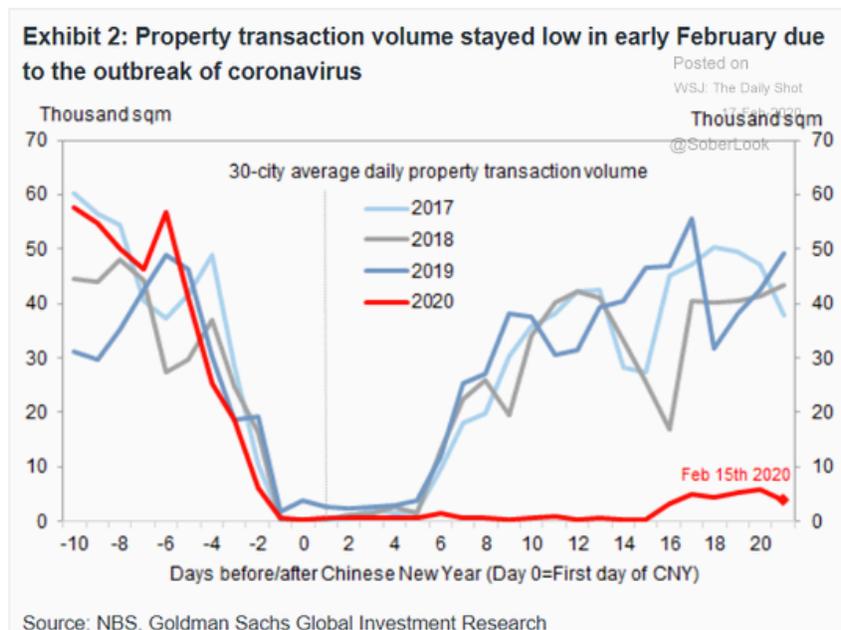


Figure 3. China property transactions, before and after Chinese New Year. Chart by Goldman Sachs. Reprinted by [WSJ Daily Shot, Feb. 17, 2020](#).

All businesses will be adversely affected by a lack of sales if they need to continue to pay overhead expenses. Small and medium-sized businesses will be especially adversely affected. Bloomberg reports that if a shutdown lasts for three months, there is a substantial chance that these businesses will [run through their savings and fail](#). Thus, these businesses may be permanently lost if the economy is down for several months.

Also, restarting after a shut-down is more difficult than it might appear. Take, for example, a mother who wants to go back to work. She will likely need:

- Public transportation to be operating, so she has a way to get to work;

- School to be open, so she doesn't need to worry about her child while she is at work;
- Masks to be available, so that she and her child can comply with requirements to wear them;
- Stores providing necessities such as food to be open, or she may be too hungry to work

If anything is missing, the mother is likely not to go back to work. Required masks seem to be a problem right now, but other pieces could be missing as well.

Businesses, too, need a full range of workers to restart their operations. If the inspector doing the final inspection is not available, the business may not really be able to ship finished products, even if most of the workers are back.

[8] A shutdown of as little as three months is likely to be damaging to the world economy.

Multiple things are likely to go wrong:

(a) Commodity prices are likely to fall steeply, because of low demand from China. Oil prices, in particular, are likely to fall steeply, perhaps to \$30 to \$35 per barrel. Besides cutbacks in oil demand from China, there is the issue of a general reduction in long distance travel, because of fear of traveling with other passengers with COVID-19.

(b) US businesses, such as Apple, will find their [supply chains broken](#). They won't know when, and if, they can ship products.

(c) Debt defaults are likely to become more common, especially in China. The longer the slowdown/shutdown lasts, the greater the extent to which debt defaults are likely to spread around the world.

(d) The world economy is likely to be pushed into recession, without an easy way to get out again.

[9] The longer the shutdown lasts, the more likely there is to be a major collapse of the Chinese economy.

In the event of a long-term shutdown, it would seem likely that, at a minimum, a new leader would take over. In fact, there would seem to be a significant chance of major changes within the economy. For example, the provinces of China that are able to restart might attempt to restart, leaving the more damaged areas behind. In such a case, instead of having a single Chinese government to deal with, there might be multiple governmental units to deal with.

Each governmental unit might consist of a few provinces trying to provide services such as they are able, without the benefit of the parts of the economy that are still shut down. Each governmental unit might have its own currency. If this should happen, China will be able to provide far fewer goods and services than it has in the recent past.

[10] Planners everywhere have been guilty of “putting too many eggs in one basket.”

Planners today look for *efficiency*. For example, placing a large share of the world's industry in China looks like

it is an efficient approach. Unfortunately, we are asking for trouble if the Chinese economy hits a bump in the road. Using just-in-time supply lines looks like a good idea as well, but if a major supplier cannot provide parts for a while, then having inventory on hand would have been a better approach.

If we want systems to be sustainable, they really need a lot of *redundancy*. Redundant systems are not as efficient, but they are much more likely to be sustainable through difficult times. There is a [recent article](#) in *Nature* that talks about this issue. One of the things it says is,

A system with a single cycle is the most unstable because the deletion of any cycle-node or link breaks the sustaining feedback mechanism.

“A system with a single cycle” is basically similar to “putting all of our eggs in one basket.” “Deletion of any cycle-node or link” is something like China running into coronavirus problems. We probably need a world economy that consists of many nearly separate local economies to be certain of long-term world economy stability. Alternatively, we need a great deal of redundancy built into our systems. For example, we need large inventories to work around the possibility of missing contributions from one country, in the case of a problem such as a major epidemic.

Conclusion

The world economy may become very different, simply because of COVID-19. The new virus doesn't even need to directly affect the rest of the world very much to create a problem. The United States, Europe, and the rest of the world are very much dependent on the continued operation of China. The world economy has effectively put way too many eggs in one basket, and this basket is now not functioning as expected.

If China is barely producing anything for world markets, the rest of the world will suddenly discover that long supply chains weren't such a good idea. There will be a big scramble to try to fill in the missing pieces of supply chains, but many goods are likely to be less available. We may discover quickly how much we depend upon China for everything from shoes to automobiles to furniture to electronics. World carbon dioxide emissions are likely to fall dramatically because of China's problems, but will the accompanying issues be ones that the world economy can tolerate?

The thing that is ironic is that it is possible that the West's fear of the new coronavirus may be overblown—we really won't know what the impact will be with respect to people of European or of African descent until we have had a better chance to examine how the virus affects different populations. The next few weeks and months are likely to be quite instructive. For example, how will the Americans and Australians who caught COVID-19 on the cruise ships fare? What will the health outcomes be of non-Asians being brought back from Wuhan to their native countries on special planes?

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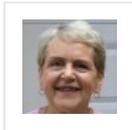
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About Gail Tverberg

My name is Gail Tverberg. I am an actuary interested in finite world issues - oil depletion, natural gas depletion, water shortages, and climate change. Oil limits look very different from what most expect, with high prices leading to recession, and low prices leading to financial problems for oil producers and for oil exporting countries. We are really dealing with a physics problem that affects many parts of the economy at once, including wages and the financial system. I try to look at the overall problem.

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Xabier says:

March 9, 2020 at 2:07 pm

What this highlights, of course, is that the major cause of deaths from the virus in the advanced countries will be the inability of health services to treat people due to sheer numbers of the seriously ill, lack of equipment and staff – just overwhelmed, but there are degrees even within that.

Fastrover says:

March 9, 2020 at 2:18 pm

Italy less than 8000 cases in the north and already there health service saying there near breaking point.



Gail Tverberg says:

March 9, 2020 at 3:32 pm

It doesn't take may cases to "go over the edge."

Daniel says:

March 9, 2020 at 2:28 pm

Countries have figured out that if they don't have test kits; the don't have the virus....That is the trump plan for the U.S and soon will be every where else

Dennis L. says:

March 9, 2020 at 2:45 pm