



## CORONAVIRUS: THE MORTALITY RATE IS OVERSTATED AND 3 OTHER REASONS TO KEEP CALM

by Kathy Graham

This current coronavirus outbreak:

- in the short term in the U.S. will likely not be as frightening as many think now.
  - in the long term will likely improve globalization and make economies more resilient.
- Both results are due to fractions, as well as medical science, human reactions, and economics.

### REASON #1 FOR CALM: ARITHMETIC OF FRACTIONS

On March 7, 2020, Johns Hopkins Coronavirus Map showed the following global stats:

- 3,491 dead—this number is the numerator in the mortality rate fraction.
- 102,472 total confirmed cases—this number is the denominator in the mortality rate fraction.

Let's look at the accuracy level of these two numbers:

- 3,491 dead has a high probability of being accurate because it involves counting dead bodies.
- 102,472 total confirmed cases has a high probability of being inaccurate due to under-reporting and lack of testing.

Therefore, when we look at the mortality rate of 3.4% ( $=3,491/102,472$ ), **the denominator is highly likely to increase, which will make the mortality rate less than 3.4%**. Example: if total actual cases on 3/7/20 were double the current confirmed number, the actual mortality rate would be  $3,491/204,944 = 1.7\%$  mortality rate, not 3.4%.

**SUMMARY:** Larger denominators (from more accurate reporting of cases and more testing) will make the overall coronavirus mortality rate smaller, which means more people are actually surviving the virus than what we think now due to a highly likely too low a number of confirmed cases.

### REASON #2 FOR CALM: MEDICAL SCIENCE

It's a low probability that the mortality rate will increase greatly above 3% because a virus usually become less virulent—i.e., kills fewer of the confirmed cases—as the virus becomes more prevalent—i.e., more cases of people with the disease.<sup>1</sup>

**SUMMARY:** The longer the coronavirus is around and the numbers catching the coronavirus increases, the virus is not usually as deadly as it ages compared with its early stages.

### REASON #3 FOR CALM: HUMAN REACTIONS

Self-preservation is the most basic human instinct with fear being one of the main drivers for humans to take action.

- By last week—several days after hearing the CDC announcement—people here were stocked up.
- Last week people began staying home with an increasing number of events cancelled, travel plans altered, and companies commencing work from home programs utilizing employee laptops with Internet communications.
- The U.S. population knows how the virus is transmitted, how to avoid catching it, and are altering their behavior.

**SUMMARY:** By March 7, 2020—when only 3/10<sup>th</sup> of 1% (340 U.S. confirmed cases) of the U.S. population was represented in Johns Hopkins' global total number of 102,472 confirmed cases—people in the U.S. were already in self-imposed quasi-quarantine. People in the U.S. are stocked up and starting to limit contact with others.

### REASON #4 FOR CALM: ECONOMICS

The markets are reacting, rewarding some, punishing others via capital flows, investment decisions, power reallocations because the:

- Extent of corporate decisions to place significant amounts—many times even 100%—of their supply chain deliverables in one country to gain short-term cost advantages has been exposed.
- Contagion transmission role of mass human transportation vehicles due to air filtration processes lacking effective germ elimination is now obvious.
- Levels of corporate, institutions, and government emergency readiness and communications plans are known.

**SUMMARY:** The fact that the markets are reacting is an appropriate development as they are the vehicle to globalization improvement and further economic resiliency. THE SMART MONEY IS BUYING NOW.

My utmost condolences to those impacted by personal loss from this coronavirus. We need to continue to focus on ways to decrease the deaths from this new virus, the 50,000 annual deaths globally from pneumonia, the 56,000 annual deaths globally from the flu virus, the 100,000 annual deaths globally from weather hazards, and the 14+ million annual deaths globally from cancer—all horrible losses of human capital/people that are affected at random.

Meanwhile, let's keep calm and carry on prudently with our responsibilities.

---

<sup>1</sup> Evolution of Virulence in Emerging Epidemics by Thomas W. Berngruber, Rémy Froissart, Marc Choisy, Sylvain Gandon.  
<https://journals.plos.org/plospathogens/article?id=10.1371/journal.ppat.1003209>.