The Viral Economy

OVERVIEW: HOPE

By Evan Anderson

While the pandemic's course to-date has been both horrifying and devastating, the past two weeks have also revealed extremely useful information previously unavailable earlier in the world's track along the viral curve.

First, one of the biggest ongoing issues during the pandemic has been a lack of testing. Without strong test numbers, we are forced to guess blindly at the true statistics needed to understand the severity of COVID-19. From Day 1 of US infections, testing has been inadequate to the point where only the severely ill or the deep-pocketed have access to a true diagnosis. Much has been posited about what this means, how many undetected cases exist, and how it lines up with the number of unrecorded deaths caused by COVID-19 in patients who never received a test, even post mortem.

Iceland, by comparison, prepared well for the pandemic, and for the past few weeks has been emerging as a strong test case for the true burden of disease. With new studies from a team at [Los Alamos on the R_0 of the virus](#) (the team estimates it at an astounding 6, meaning each infected person spreads the virus

to 6 new people), we can begin to see that before quarantines were even first considered, a large number of people were infected. The case counts in highly exposed areas (think New York, and cities in Europe) were therefore potentially predestined.

How big are the numbers really?

"Roughly 60 percent of the over 600 sailors who tested positive so far have not shown symptoms of COVID-19, the potentially lethal respiratory disease caused by the coronavirus, the Navy says. The service did not speculate about how many might later develop symptoms or remain asymptomatic."
- Reuters, 4/16/20

Here is where Iceland becomes relevant. With enough testing capability, and strong contact tracing and quarantine, the island nation is now producing some of the clearest data in the world. [Iceland reports that having tested 5% of its population, 50% of cases are asymptomatic](#).

This implies that case numbers are drastically higher than known cases, a fact that seems to be reinforced by the [emerging situation (with very high testing levels) on the *USS Theodore Roosevelt* in Guam](#), where 60% of infected sailors are asymptomatic. Such counts, in some of the first truly developed testing scenarios visible to-date, finally imply that the number of people infected is indeed dramatically higher than estimated.

The numbers are therefore both positive and hopeful, and more so as time passes without those asymptomatic carriers developing more extreme symptoms.

The question of immunity

With the added proof that the R_0 is much higher than earlier estimates, and that asymptomatic carriers are in fact the majority of cases, we can determine that it is likely that we're already seeing some of the worst numbers of the current phase of the pandemic. This implies that many, many people have already been infected and recovered, undetected.

[This also leads toward conclusions that the current lockdown in many countries will not need to be prolonged](#). Indeed, depending on the exact numbers of undetected cases early on, the necessity of intensive lockdowns in the first place is being drawn into question. While this is reassuring, and the idea of relaxing lockdowns is certainly attractive, key questions remain.

First, added testing capability in more countries would add to the case that Iceland is beginning to make with its data. More important, the question of immunity post-recovery is critical.

From [Bloomberg](#):

> "'There is no proof at this point that the development of an antibody response will be protective,' said David Walt, a professor of pathology at Harvard Medical School and Brigham and Women's Hospital in Boston. 'There is no evidence yet that people can't get reinfected with this virus.'"

The question of immunity – the body's ability to consistently produce antibodies to COVID-19 based on previous exposure – will be tantamount to the ability of countries currently undergoing stringent lockdown to return to a new normal. If the virus continues to circulate in an "opened-up" society where no immunity is afforded the previously infected, a new cycle of infections will begin.

For now, stay-at-home orders still make sense. If we're lucky, we will learn in the coming weeks that they no longer do.

The only way to truly know is to dramatically increase testing, along with contact tracing and quarantine.

Severity

Severity will be measured using four key indicators. Since there is drastically insufficient testing, particularly in the United States, we will not be estimating cases until mass testing is ramped up and a realistic sense of spread can be regained.

1. **Apparent R_0, or "R-Naught"**

   The number of new individuals each case will infect, based on Los Alamos's most recent study. An R_0 below 1 means the disease is being contained.

2. **Case Fatality Rate, or CFR**

   The number of deaths as a percentage of total resolved cases (percentage of deaths vs. individuals cured).

3. **Total Confirmed Cases**

   The official number of reported confirmed cases, as of press time (per Johns Hopkins).

4. **Total Estimated Cases**

   Based on the latest guidance from Imperial College London's COVID-19 Response Team.

April 1, 2020

Apparent R_0 = **6**

CFR = **?**

Total Confirmed Cases: 2,113,226

Total Estimated Cases:
Estimates of CFR and Cases are not useful without sufficient testing.

Official Death Count:
140,371

Most-Affected Regions

Countries experiencing the highest deaths per million

San Marino (1,120)	Netherlands (193)	Portugal (62)
Andorra (427)	Switzerland (148)	Iran (58)
Belgium (419)	Luxembourg (110)	Denmark (55)
Spain (409)	USA (103)	Saint Martin (52)
Italy (367)	Ireland (98)	Isle of Man (47)
France (275)	Channel Islands (86)	Germany (47)
Sint Maarten (210)	Bermuda (80)	Austria (46)
UK (202)	Monaco (76)	Canada (32)

Market Effects

Percentage Change Since Outbreak, Select Viral Economy Metrics

Financial Markets

Shanghai Composite -9.17

Shenzhen Composite -2.72

Hang Seng -15.24

Nikkei -18.18

DJI -18.00

S&P 500 -13.76

FTSE 100 -25.70

Bovespa -33.42

Nasdaq -5.94

Commodities with High China Demand

WTI Crude -59.06

Brent Crude -59.62

Copper -17.87

Steel Rebar -8.8

Nickel -16.13

Iron Ore -9.04

Aluminum -16.39

Cotton -19.42

US Case Map as of April 1, 2020
(Courtesy Johns Hopkins)

Economies and Companies with Significant Exposure Selected by The Viral Economy in February

National ETFs

iShares MSCI China -7.98

iShares MSCI India -27.49

iShares MSCI Australia -27.26

iShares MSCI Japan -15.47

iShares MSCI South Korea -19.25

iShares MSCI Russia -31.13

iShares MSCI Philippines -29.32

iShares MSCI New Zealand -16.49

IShares MSCI Malaysia -18.86

iShares MSCI Singapore -24.89

iShares MSCI Thailand -30.11

VanEck Vectors Vietnam -24.23

US Equities

Skyworks Solutions -18.87

Wynn Resorts Ltd. -48.49

Qorvo -23.04

Qualcomm -10.94

Micron -15.67

Broadcom -17.50

NVIDIA +24.76

Texas Instruments -12.04

IPG Photonics -17.71

KLA-Tencor -11.18

In summary, the current market bounce has far from repaired the ongoing market damage from the COVID-19 outbreak. What's more, the influx of liquidity that the Fed has introduced into markets will now be facing an extremely uncertain earnings season, as companies begin to account for the deep costs of ongoing shutdowns and many report intense losses. With no return to normal yet in sight, the extreme optimism in current P/E ratios is not to be trusted.

Most important, whether in the best- or worst-case scenarios, stocks are clearly overvalued. Best-case implications for a return from lockdown in early summer would still result in massive losses for markets and economies, and the difficulty of returning to full productivity from there will remain an issue even if the virus proves far less deadly than expected. Note that markets are not pricing this in, and that further drops remain likely.

The likelihood of a bottom in the next week is low.

RECOMMENDATIONS:

1. Do not visit hospitals unless absolutely necessary.
2. Expect the current market bump to lose momentum as earnings are reported.
3. Wash your hands frequently.
4. Practice social distancing, avoid crowds, and stay 10 feet away from others.
5. The virus appears to be more airborne than previously known. Wear a mask if possible when in shared spaces.
6. Watch for signs that immunity is not occurring in recovered patients.

EVAN ANDERSON is the CEO of INVNT/IP and a senior staff writer at SNS. Infectious-disease epidemiology has been a strong interest since his work with tuberculosis in Haiti.

Appendix: Severity Tracker for Major Economies

The Severity Tracker for Major Economies measures the trajectory of SARS-CoV-2 and its effect on the economy of each of the largest countries (by nominal GDP) whose data can be trusted. Notable exceptions in the top global economies are China, India, and Brazil, whose virus data cannot be trusted for varied reasons, running from lack of press freedom (China, Brazil) to evidence of tampering (China) to a simple lack of testing capabilities and robust medical infrastructure (India).

This tracker uses proprietary Viral and Economic indexes to serve as a guide for the global viral and economic outlook of these countries individually and in combination. The countries tracked represent over 890 million people generating over $44 trillion in annual GDP. Individual country profiles will be added each week as more data becomes available.

Overall Severity Index Scores

(0=Unaffected, 1=Extremely Severe)

South Korea (0.04)
Australia (0.08)
Germany (0.12)
Japan (0.18)
Canada (0.23)
France (0.27)
Italy (0.28)
United States (0.28)
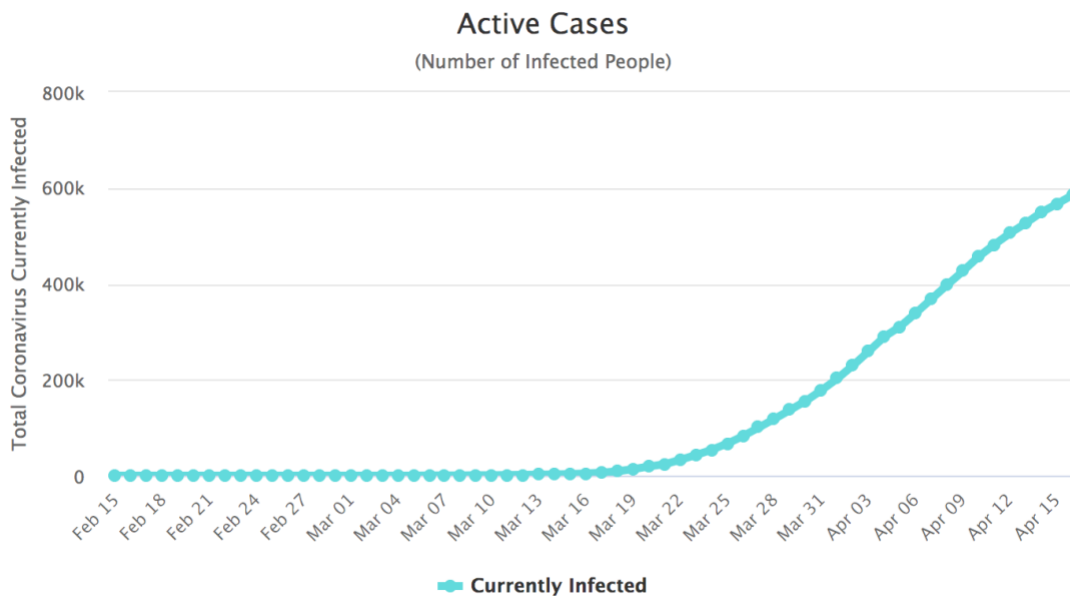**United Kingdom (0.34)**
Spain (0.35)

Severity Tracker: The United States

National outlook based on virus severity and economic indicators

Total Score: 0.28
Viral Severity Index Score: 0.37
Economic Severity Index Score: 0.19
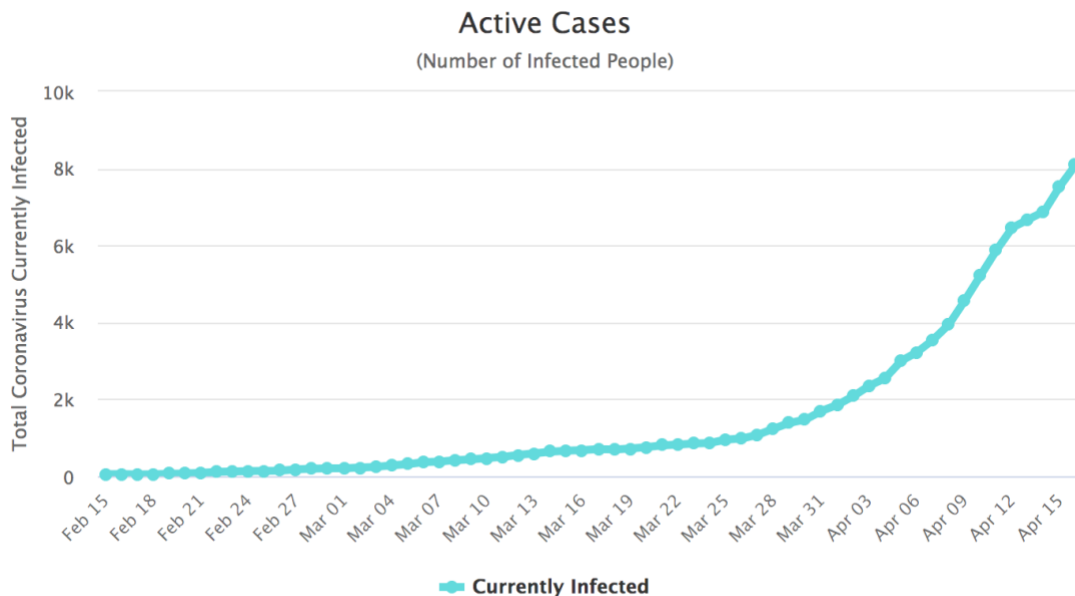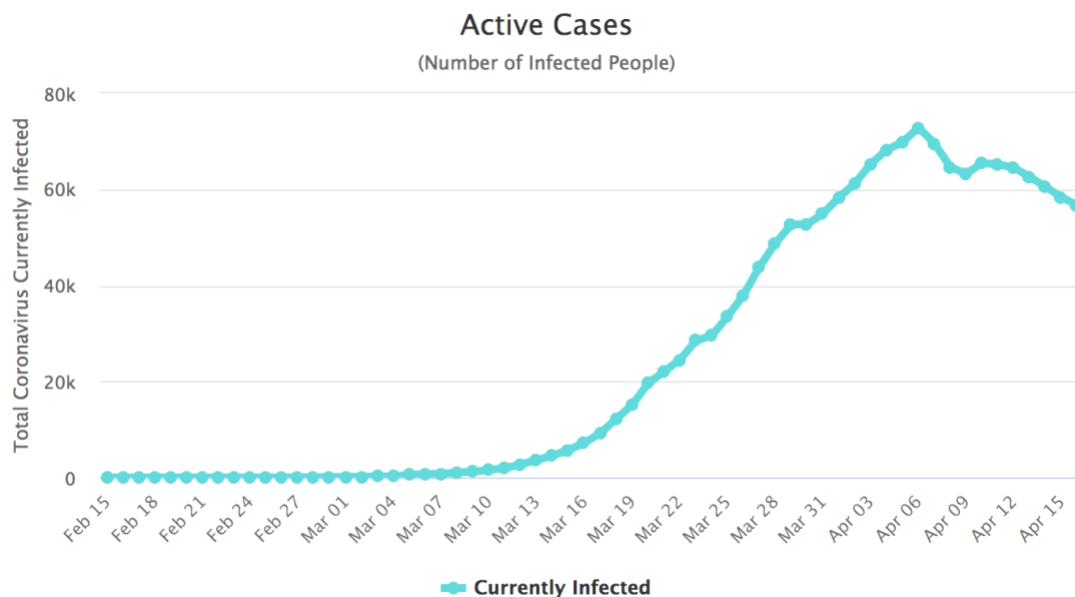

Active Cases
(Number of Infected People)

Severity Tracker: Japan

National outlook based on virus severity and economic indicators

Total Score: 0.18
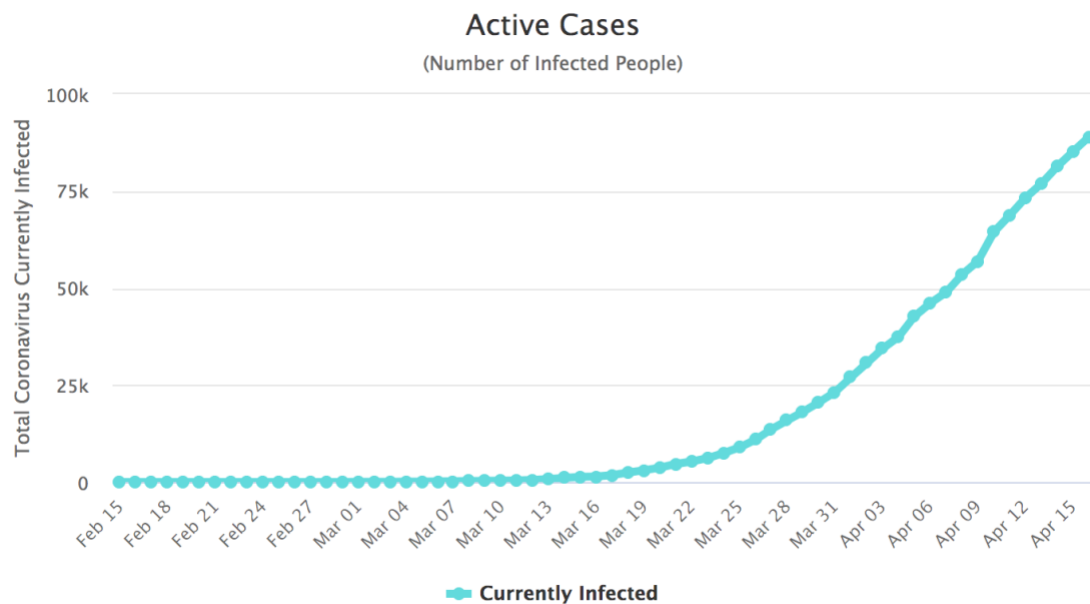**Viral Severity Index Score:** 0.34
Economic Severity Index Score: 0.16

Active Cases
(Number of Infected People)

Severity Tracker: Germany

National outlook based on virus severity and economic indicators

Total Score: 0.12

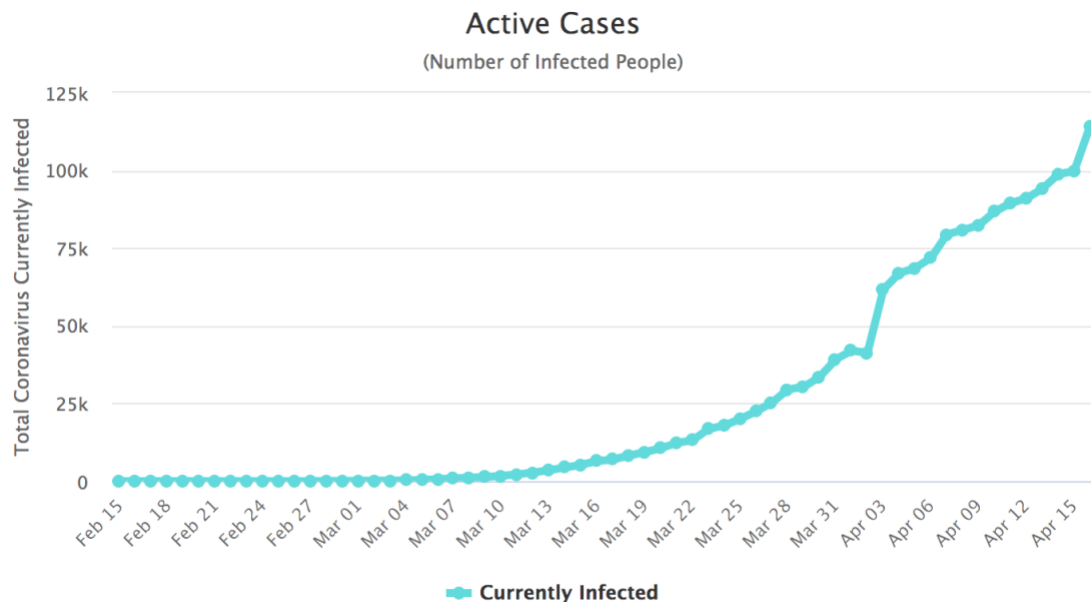**Viral Severity Index Score: 0.12**

Economic Severity Index Score: 0.12

Active Cases
(Number of Infected People)

Severity Tracker: United Kingdom

National outlook based on virus severity and economic indicators

Total Score: 0.34
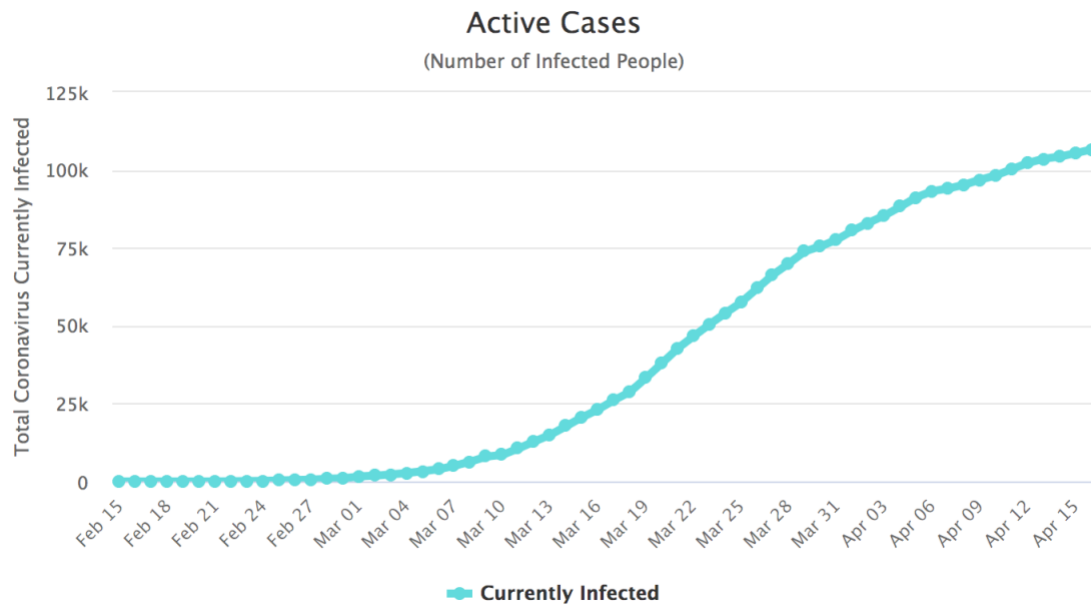**Viral Severity Index Score: 0.61**
Economic Severity Index Score: 0.076

Active Cases
(Number of Infected People)

Severity Tracker: France

National outlook based on virus severity and economic indicators

Total Score: 0.27

Viral Severity Index Score: 0.31

Economic Severity Index Score: 0.24

Active Cases
(Number of Infected People)

Severity Tracker: Italy

National outlook based on virus severity and economic indicators

Total Score: 0.27

Viral Severity Index Score: 0.25

Economic Severity Index Score: 0.31
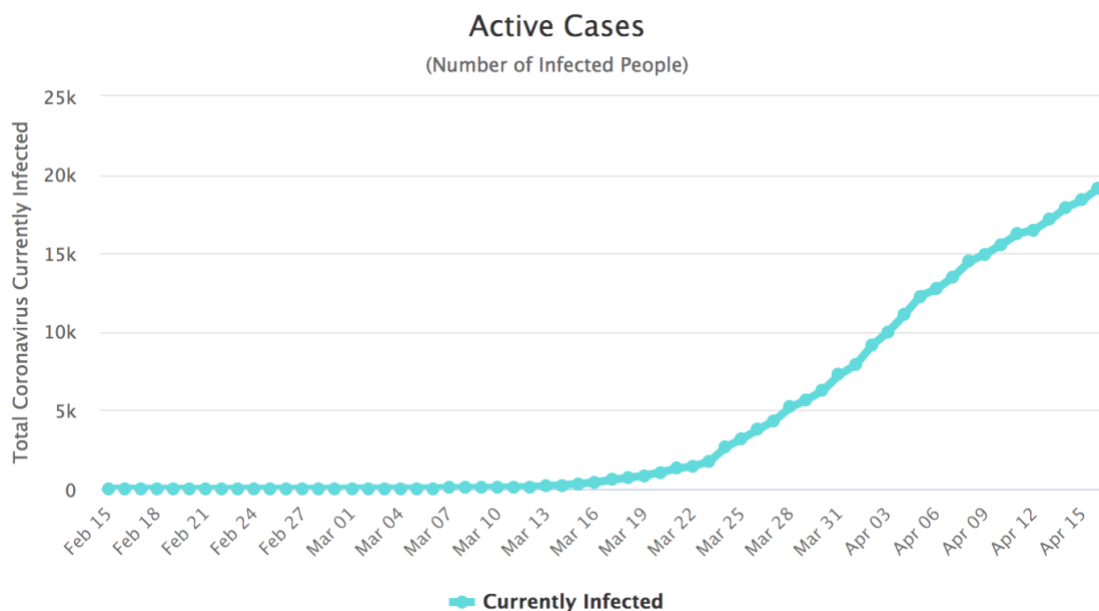
Active Cases
(Number of Infected People)

Severity Tracker: Canada

National outlook based on virus severity and economic indicators

Total Score: 0.23

Viral Severity Index Score: 0.23

Economic Severity Index Score: 0.23

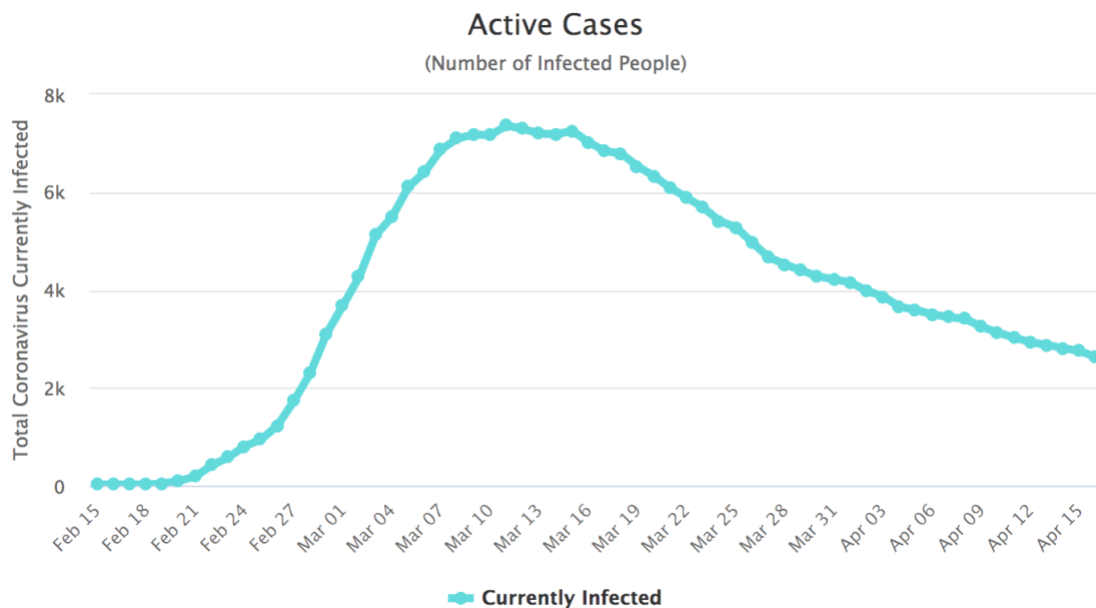### Active Cases
(Number of Infected People)
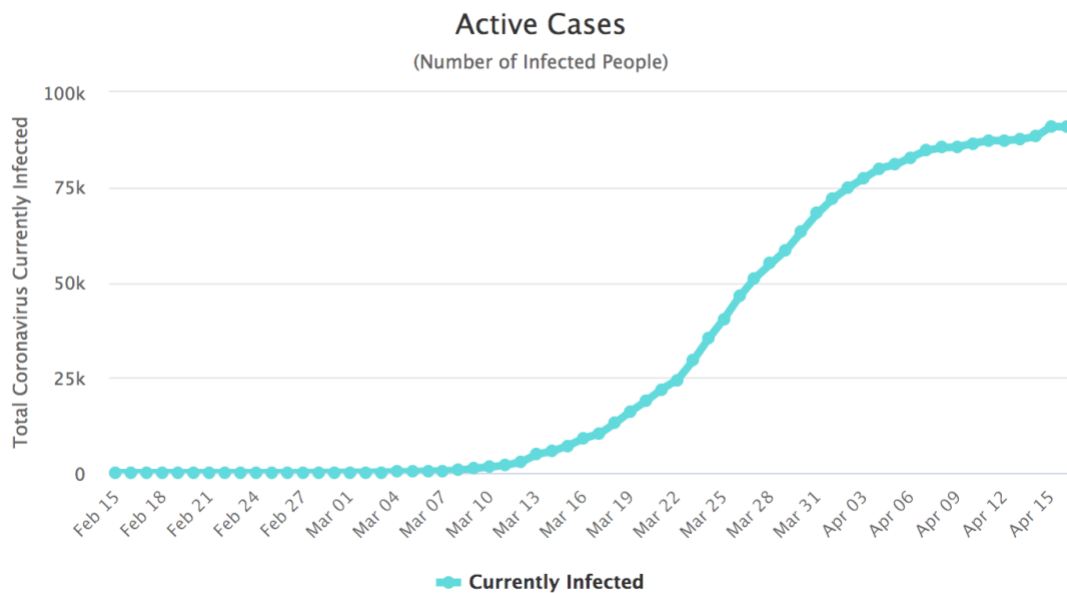
Severity Tracker: South Korea

National outlook based on virus severity and economic indicators

Total Score: 0.04
Viral Severity Index Score: 0.02
Economic Severity Index Score: 0.05

Active Cases
(Number of Infected People)

Severity Tracker: Spain

National outlook based on virus severity and economic indicators

Total Score: 0.35
Viral Severity Index Score: 0.22
Economic Severity Index Score: 0.47

Active Cases in Spain
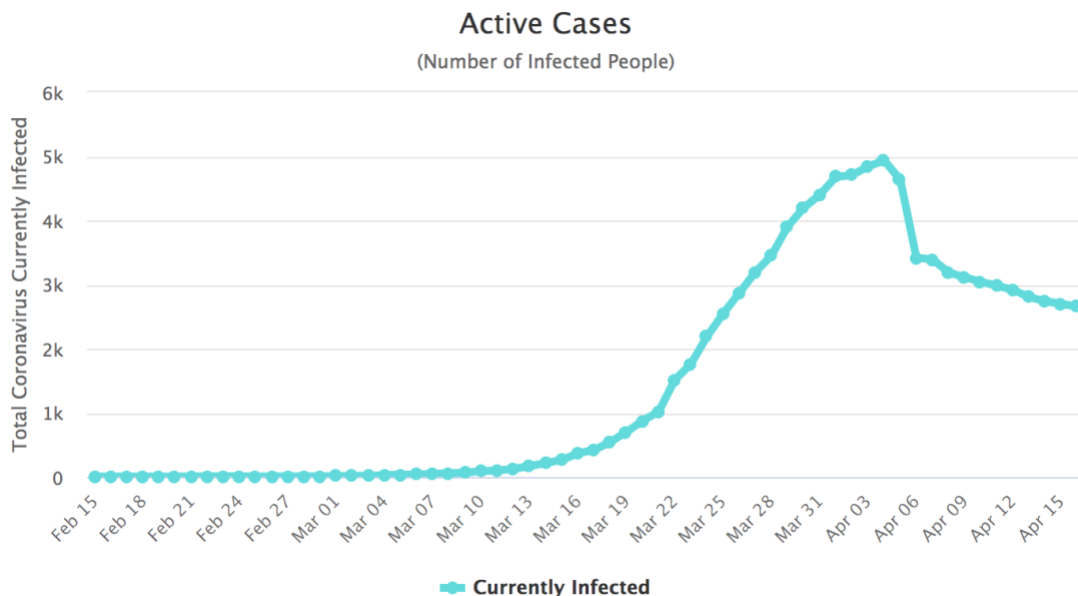

Active Cases
(Number of Infected People)

Severity Tracker: Australia

National outlook based on virus severity and economic indicators

Total Score: 0.08
Viral Severity Index Score: 0.04
Economic Severity Index Score: 0.12

Active Cases
(Number of Infected People)

Currently Infected