RBC Global Asset Management

# COVID-19 Economic Update

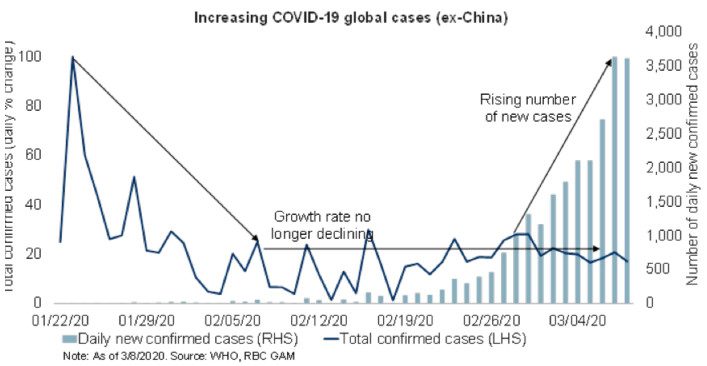
## from Eric Lascelles' #MacroMemo, March 9, 2020

As usual, there is plenty to report about the COVID-19 virus. We start with the bad news, pivot to the good news and then provide an objective economic update.

### The bad news:

Financial markets remain extremely concerned about COVID-19, retreating sharply to start the week. The S&P 500 is now down by 19% from its February peak, and the U.S. 10-year yield has dived from 1.90% at the start of the year to a record-low 0.49% now.

The virus itself has now infected 105,586 people globally, with 3,613 new cases confirmed outside of China on March 8 (see chart). This rate of spread is nearly as high as China's peak of 3,892 new cases on February 5.




Outside of China, the disease remains most prominent in Italy, Iran and South Korea, with more than 1,000 new infections in each of Italy and Iran over the past day alone. Other hot spots as measured by the number of outstanding cases include Germany, France, Japan and Spain. Countries with lower overall caseloads but rapid growth rates include Belgium, the Netherlands, Switzerland, the U.K. and Egypt.

While the U.S. claims no new cases on March 8, some experts believe the country has experienced local transmission for many weeks but has failed to identify many cases due to testing problems. The fact that the U.S. presently registers as having among the highest fatality rates in the world could well be a function of unequal access to health care within the country, but is more likely because the fatalities are being picked up (the numerator) but not the full extent of the underlying infections (the denominator).

Similarly, while many emerging-market nations report a vanishingly small number of cases, the obvious risk is that they have significantly more but lack the infrastructure for proper diagnosis. One of the most challenging aspects of COVID-19 is that its symptoms do not immediately mark it as distinct from more ordinary diseases such as the flu.

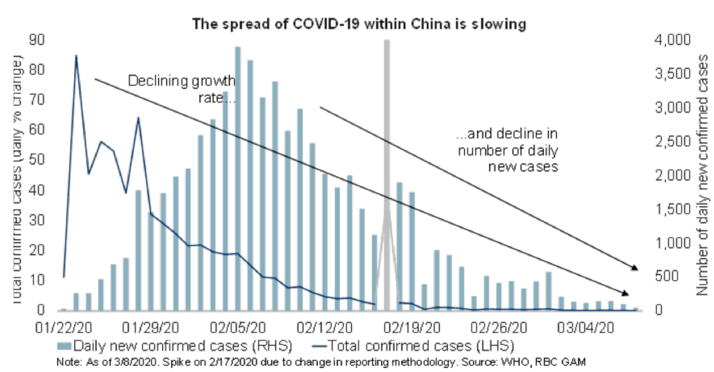
A further challenge is that epidemiologists say that a vaccine for COVID-19 is unlikely to be a near-term proposition. Whereas we had previously hoped for a cure in the coming months, experts suggest this could well take a year or longer. This isn't to say that medicine has no role to play in the meantime, however. Drugs and medical protocols may well be developed that reduce the severity of the symptoms or the probability of death,  and solutions as simple as hand washing and not touching one's face can go a long way toward limiting the extent of the disease.

### The good news:

Fortunately, and contrary to the general impression, there also is quite a lot of good news to report about COVID-19.

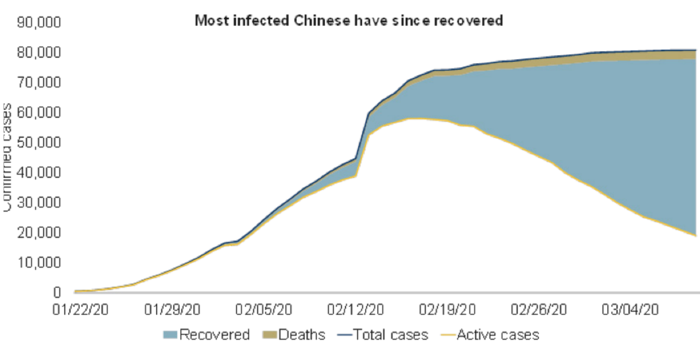
So far, COVID-19 has killed far fewer people than the ordinary flu, felling 3,584 worldwide versus an estimated 20,000 to 52,000 deaths this year in the U.S. alone from the flu. Granted, a higher fatality rate means that were COVID-19 to spread as widely as the flu, it would be by far the more deadly of the two. But that presupposes significant further spread and that the fatality rate is as high as imagined (more on that shortly).

Within China, the improvement is truly remarkable (see chart). The country has recorded just 46 new cases in the latest day – nearly 100 times less than its peak infection rate in early February. Of the country's 34 regions, 30 had no new confirmed cases in the latest day. To be clear, it is not that the virus never escaped Hubei province – every province was hit by the virus. In fact, more than 100 cases were detected in 26 of the 34 regions, but the virus was subsequently vanquished in nearly all of them. China – responsible for 77% of the world's cases – has managed to control the disease and is now in the process of restarting its economy. This must surely bode well for the rest of the world.



For those who are skeptical, suspecting that China is simply underreporting the number of cases, we provide two retorts. First, the scale of its testing program is truly remarkable. The country's most populated province of Guangdong claims to have administered 320,000 tests, of which merely 0.4% tested positive. At face value, this is not a situation in which a large fraction of the country unknowingly harbours the virus. Second, it would be impossible to conceal the extent of the virus for long, and so any effort to lowball the rate of spread would not go so far as to claim virtually no new cases.

While China has suffered a total of 80,905 infections, it is important to understand that this does not represent the total number of actively infected. This is a historical count capturing the number of people who ever had the disease. The majority have now been declared virus free. In China, the number of infected has actually shrunk to just 18,979 (see next chart).



Note: As of 3/9/2020. Source: DXY, Macrobond, RBC GAM.

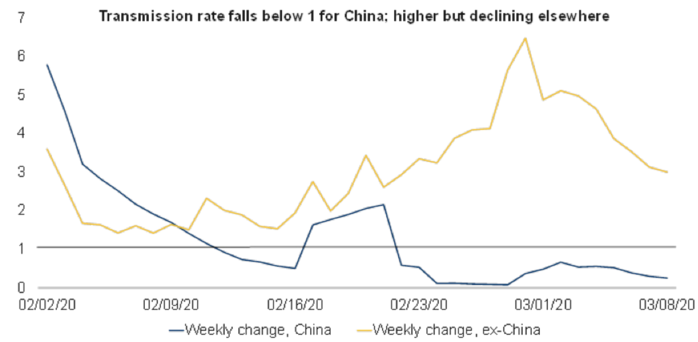
COVID-19, while highly dangerous and seemingly easily transmitted, may not be quite as insidious as some imagine. This hypothesis relates to the fatality rate, the transmission rate, and the scope for asymptomatic transmission.

**Fatality rate:**

- While the fatality rate in the Chinese epicenter of Hubei is a sizeable 4.4% and we have generally assumed a 3% fatality rate, it has so far proven substantially lower elsewhere.
- In China, outside of Hubei province, the fatality rate is just 0.9%.
- In South Korea, the fatality rate is just 0.7%, though the arrival of the virus is sufficiently recent that this could yet rise.
- The ill-fated Diamond Princess cruise ship saw 696 infections, but only 7 deaths – a fatality rate of just 1.0% despite a population that skewed old.
- It is premature to conclude that the fatality rate is definitely 1% or below given that the outbreak is not yet concluded and some who are currently infected may yet die. But it is undeniable that Hubei was at a distinct disadvantage in that it faced a completely unknown virus and its hospitals were quickly overwhelmed.
- A final fatality rate of perhaps 0.5% to 1.0% would still be five to ten times worse than the ordinary flu, but much more manageable than initial estimates, and possibly not requiring the same severity of quarantining.

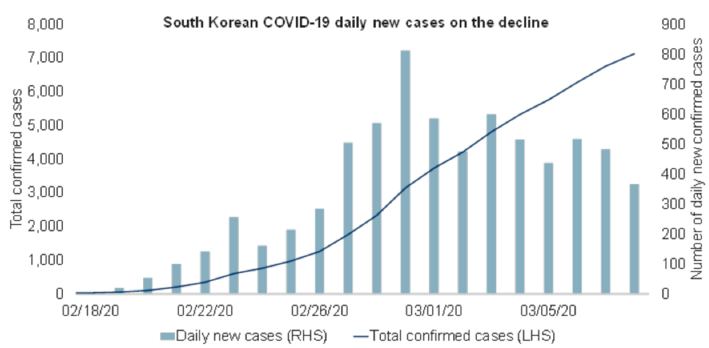
**Transmission rate:**

- China has already demonstrated that the transmission rate can be reduced with extreme quarantining and other measures. Indeed, our (extremely) rough transmission rate calculation shows that China's transmission rate fell from above 6 (meaning each person infected more than six others) to below the crucial 1 threshold (each person infects less than one new person, allowing the outbreak to diminish) by mid-February. Refer to the next chart.



Note: As of 3/9/2020. Transmission rate calculated as 7 day % change of underlying 5 day moving averages of new infections. Source: WHO, RBC GAM

- The story is not quite so cheery elsewhere, as the ex-China transmission rate is still in the vicinity of 3, but it is falling and also down from a high of above 6. In other words, hand-washing, quarantining and reduced human interactions are beginning to work. But more will need to be done to fully tame the disease outside of China.
- It is extremely heartening that South Korea also appears to have brought its outbreak under tentative control. The number of new cases in Korea peaked at over 800 new cases per day, but is now down to less than 400 daily and steadily falling (see chart).



Note: As of 3/8/2020. Source: WHO, RBC GAM

**Asymptomatic transmission:**

- While transmitting the virus from one person to another does appear to be technically possible without symptoms, it is not common. A Chinese study has found that just 1.2% of cases are asymptomatic, and furthermore it stands to reason that those with no or mild symptoms would have a smaller virus count and would also be engaging in less behavior that lends itself to easy transmission such as coughing.

- For the most part, then, transmission likely comes from people who are already beginning to feel unwell. Quarantining such people is arguably not "too late."

Italy is now the worst-hit developed nation and is attempting an aggressive quarantine of 16 million people across a large swath of the country. Schools have already been closed. Time will tell whether this works in the developed world, but at least we have answered the question as to whether this can even be attempted in a democracy with more substantial human rights than China.

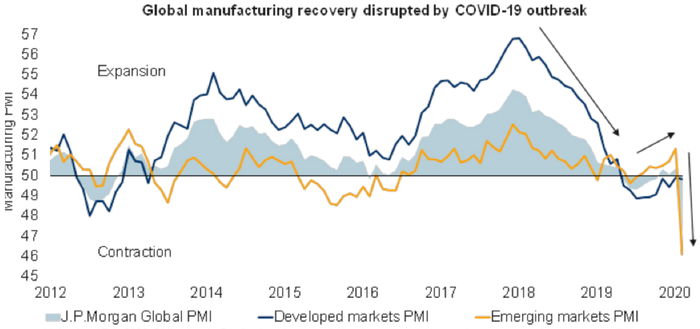
We stand by our observation from last week that developed-world nations should in theory be less vulnerable to the virus and also to economic damage, given the extent to which their health system is on average stronger and a larger fraction of people may be able to work from home.

We conclude the "optimistic" side of this analysis with the observation that, historically, viral outbreaks have proven short-lived and have done only temporary damage to economies and financial markets. Granted, this iteration is more extreme and could take longer to resolve, but the general contours of the analysis are likely still correct.

## Latest economic data:

The hit to the Chinese economy from its viral outbreak and subsequent quarantining has been significant. Chinese PMIs have fallen to all-time lows and other activity metrics remain quite depressed. The global PMI has also been significantly affected, though mainly because China represents such a large weight in the index (see next chart).

Global manufacturing recovery disrupted by COVID-19 outbreak




Note: As of Feb 2020. PMI refers to Purchasing Managers Index for manufacturing sector, a measure for economic activity.
Source: Haver Analytics, RBC GAM

That said, Chinese firms continue to report that they are gradually restarting production and many target a return to full output by the end of March. The economic impact appears to be mainly via a temporary supply-side shock from quarantined workers as opposed to bleeding too badly into the demand side of the economy.

Outside of China, there isn't much evidence of economic damage yet, though it is still early going. Economic data was unusually robust going into this episode, suggesting a degree of resilience. U.S. hiring in February was unusually good, making the point that even as COVID-19 was rampaging through China, capturing headlines and disrupting supply chains, U.S. businesses still felt cheery enough to hire.

The latest U.S. Beige Book recorded numerous mentions of COVID-19 by surveyed businesses, but still concluded with a familiar prediction of modest to moderate growth. Admittedly, the survey was conducted between late January and mid-February.

More recently, weekly U.S. jobless claims held up surprisingly well through February 29, suggesting again that non-Chinese companies have not suddenly pivoted to layoffs even as the situation began to take on a global significance. The truth won't be fully known until the March data becomes available.

## Economic outlook:

The economic outlook has undeniably soured. The table below reflects our latest thinking on the subject. Among the many potential channels through which the virus could hurt economic growth, it is the financial market response and the prospect of quarantining that may prove the most relevant, at least initially. The first of these has already soured, whereas the second is entirely speculative at this point.

COVID-19 economic channels and likely effect

| Economic channel | Description | Situation so far | Optimistic scenario | Medium scenario | Pessimistic scenario |
|---|---|---|---|---|---|
| Financial markets | Tighter financial conditions, negative wealth effect | Medium | Small | Medium | Large |
| Business confidence | Reluctance to hire, invest, buy inputs | Minimal | Small | Small | Medium |
| Household confidence | Reluctance to spend | None | None | Small | Medium |
| Death | Reduction in labour supply, product demand | None | None | Minimal | Small |
| Illness | Temporary reduction in labour supply | None | None | Small | Medium |
| Quarantine | Temporary reduction in labour supply & product demand | None | Small | Medium | Large |
| Supply chain | Magnifies other effects; slows recovery | Small | Small | Small | Medium |
| Liquidity/solvency | Temporary losses can tip businesses/households into illiquidity or insolvency | None | Minimal | Small | Large |
| Effect on 2020 developed-world GDP growth rate: | | -0.25 to -0.5 | -0.25 to -0.5 | -0.5 to -1.0 | -1.0 to -3.0 |

As at Mar 9, 2020. Source: RBC GAM
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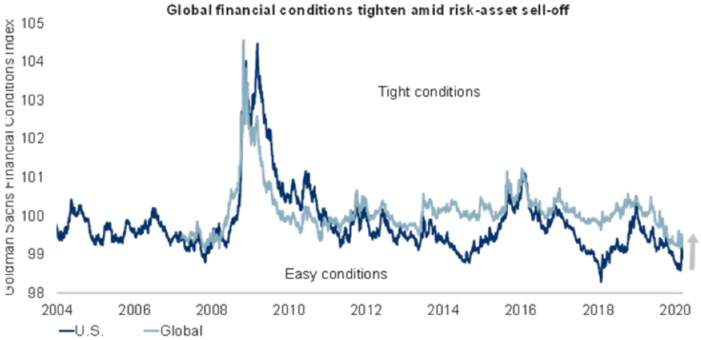
The financial market channel's effect is already quite visible via tighter financial conditions (next chart).

Global financial conditions tighten amid risk-asset sell-off




Note: As of 3/6/2020 for U.S., 3/5/2020 for global. Source: Goldman Sachs, Bloomberg, RBC GAM

Considerations such as the number of deaths and the number of infirm do not so much have a direct effect on the economic trajectory as inform the extent of any quarantining to come.

The demand side of the equation is also relevant, via "confidence" considerations. To the extent businesses and households get spooked, they could pull back on their hiring, investment and spending. There isn't much evidence of this so far, but it could well mount. While this channel is less certain to activate, it would be a more damaging development than constraining the labour supply via quarantines, as the quarantines can be ended fairly quickly whereas demand would take some time to recover.

Finally, there are more complicated second-order considerations such as the supply chain and the liquidity and solvency of businesses and households. The longer any disruption lasts, the more these additional constraints become relevant. In a worst-case scenario, the liquidity and solvency concerns can become quite serious as businesses fail and households go bankrupt, creating further knock-on effects.

Such areas as private debt, private equity, leveraged loans and high-yield oil debt seem particularly vulnerable. Fortunately, none are even close to the size of the troubled U.S. mortgage market during the global financial crisis of 2008—2009, and the banking sector has since increased its capital buffers considerably.

As to the amount of economic damage that might be inflicted, refer again to the prior table. While the conclusions are highly stylized and subject to change, we imagine that an optimistic COVID-19 scenario would subtract 0.25ppt to 0.5ppt from the rate of developed-world economic growth in 2020; a medium scenario would subtract 0.5ppt to 1.0ppt; and a negative scenario would subtract 1.0ppt to 3.0ppt. To be clear, the economy still grows in all but the most negative of these scenarios, but just by less than normal.

Our current thinking has now tilted toward the medium scenario and away from the positive scenario, though any of the three remain possible. Should wide-spread quarantining be avoided and the viral outbreak be limited, the positive scenario could well become the most likely scenario again.

The economic damage in China should be at least 1ppt subtracted from 2020 GDP growth (our prior forecast), if not twice that. Our vagueness relates more to China's possible reluctance to admit to the severity of the slowdown than to genuine uncertainty about the extent of the economic damage. China, it should be noted, plays a much larger role in the global economy relative to when SARS struck, commanding 16% of global output today versus just 4% during SARS. China also has an outsized effect on the rest of the world via its rapid growth rate (it is responsible for one-third of global growth), plus its many tourists and its centrality to many supply chains.

## Recession risk:

The economic damage is unlikely to be spread evenly across the year. In China, it should be heavily front-weighted to the first quarter. In the rest of the world, the first quarter should be notably weaker than normal, but it is the second quarter that could suffer the greatest hit. In all cases, outright economic decline seems conceivable for the most adversely affected quarter(s), even as the overall calendar year still manages more total output than 2019.

While this is not the technical definition, many view two quarters of economic decline as a "recession." Europe seems particularly vulnerable to this given its low economic speed limit. The U.S., in contrast, might suffer one quarter of decline but be able to squeeze out a modicum of economic growth in the adjacent quarters thanks to its higher natural rate of growth.

We are tempted to take solace in the fact that our yield-curve based recession model argues that the one year ahead recession risk in the U.S. has actually declined slightly over the span of the last two weeks, from 33% to 23%. However, this is a dangerous conclusion to reach. The model has a habit of display a declining recession risk when a recession is truly imminent. Logically, this is because the model is calibrated to the risk of a recession one year ahead, and an imminent recession will probably be resolved within a year's time. Technically, the yield curve first flattens as trouble brews (the recession signal), but then frequently steepens into the recession itself as central banks jam downward on the short-end of the curve more aggressively than the long end can rally. In other words, the risk of recession is almost certainly above rather than below 33%.

In all of this, it will be crucial to determine whether any hypothetical recession is primarily mechanical or instead takes on a more organic aspect. If output falls primarily because workers are told to stay home (supply side), this is something that can be recovered from fairly quickly. But if businesses and households get spooked (demand side) – with layoffs consequentially mounting, car-buying collapsing, and the like – that would become a more organic recession that takes more time and effort to recover from.

## Policy response:

Central banks are now delivering significant stimulus in an effort to minimize economic damage. Never forget the policymakers are actively trying to avoid worst-case outcomes.

The last time the U.S. Federal Reserve delivered an inter-meeting rate cut I was on a transatlantic flight, discovering the action as I was waiting for my luggage to come through. This 50bps cut was more widely anticipated, with rumours flowing for several days that the Fed was nearing such an action.

Other central banks have moved similarly, with a 50bps rate reduction from the Bank of Canada, 25bps from the Reserve Bank of Australia, and China continuing its easing efforts. More stimulus is likely, with the ECB set to act later this week.

It is fair to ask whether central banks are pushing on a string when much of the prospective economic damage may come through quarantined workers. No level of interest rates can bring workers back to their offices if the government tells them to stay away. Still, lower rates make solvency problems less likely, boost market confidence and add liquidity to the economy.

We budget for further monetary stimulus, from other international central banks and also from the players that have already acted. Of course, the zero bound limits the enthusiasm of central banks.

Fiscal policy is less capable of moving nimbly, but is also increasingly likely in the present context. The U.S. Congress doesn't agree on many things, but could find its way toward a fiscal package if the economic situation genuinely deteriorates. Already, $8 billion has been unlocked for emergency funding. Other countries are also likely to act.

The best fiscal solutions would have less to do with generalized government largesse, and more to do with specific measures to control the virus, medical funding and measures to prevent otherwise viable businesses and households from becoming temporarily illiquid or insolvent.

## Financial market response:

The financial market response has clearly been substantial. It is impossible to say with any precision where markets will go from here.

But we can make a few comments that may act as a salve on the wounds of investors:

- Although China was the source of the viral outbreak and its economy has been most damaged by COVID-19, the Chinese stock market has been among the strongest in the world so far this year. Chinese stocks recognize that this is probably a temporary proposition, though it is of course easier to reach that conclusion in China were the number of infected is in active retreat.
- Bond yields are now at record lows. Although there are structural reasons for low interest rates, our research argues that yields should be drifting slightly higher over the coming years and decades, not lower. Furthermore, we are skeptical that North American yields need go negative as in the Eurozone and Japan.
- Stock valuations have become more conservative as a result of the market decline, and yet the bulk of any economic and market damage is likely to be temporary rather than permanent.
- Accordingly, we continue to view this market ruction through an opportunistic rather than a defensive lens.

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Eric is Chief Economist for RBC GAM and is responsible for maintaining the firm's global economic forecast, and generating macroeconomic research. He is also a member of the RBC GAM Investment Strategy Committee, the group responsible for the firm's global asset mix recommendations. Eric is a frequent media commentator and makes regular presentations both within and outside of RBC. Prior to joining RBC GAM in 2011, Eric spent a decade at another Canadian financial institution, rising from economist to the chief economics and rates strategist on the firm's trading floor. He previously worked with the Canada's national statistical agency.

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