



More about COVID-19

March 23 – 27, 2020

- Overview
- Virus control efforts
- Update on monetary policy
- Update on fiscal policy
- Nine economic scenarios
- Financial market implications

As COVID-19 began its global spread, did anyone else initially fantasize about the prospect of working from home? I was more than ready to ditch the commute and fully prepared from a leisure perspective with a tally of three unread books, two new board games, a video game and umpteen shows all lined up. The problem has been getting to them. Work is finding a way to bleed into my evenings and weekends, and suddenly I'm a part-time teacher as well. My kids are going to be experts in economics and epidemiology by the time this is over, and earn Ds in everything else!

For all of that grumbling, there's nothing like a crisis to focus the mind. Whereas previously the job of a global economist was to flit between a host of minor themes and risks, there is now just one (giant) item to hammer away at. And despite working remotely for nearly two weeks, I feel better synchronized than ever with my team and colleagues thanks to a variety of remarkable technologies that are allowing us to share information in real time. If only I'd thought to bring my poor office plant home...

Overview

It was another rough week, both in terms of COVID-19 and financial markets. The total number of infections has now reached an eye-watering 292,142, with no end in sight: there

were 26,069 additional cases in the latest day alone. A total of 12,777 deaths have now been reported.

Accordingly, the bellwether S&P 500 is now down roughly 35% from its peak and the U.S. 10-year yield has fallen by half in just over a month. Risk aversion remains high and markets are extraordinarily volatile.

To deploy an imperfect metaphor, governments have opted to put their countries into an induced coma to minimize the death toll, but with the side-effect of considerable economic and financial market damage.

We have been forced to downgrade our growth forecast yet again. We're now forecasting not just recession, but the deepest peak-to-trough decline in recent memory. Fortunately, the trough is not likely to last for especially long.

A further silver lining is that policymakers have now introduced truly extraordinary amounts of monetary and fiscal stimulus. This is key for preventing a temporary and artificial supply-led shock from turning into an enduring demand-side one.

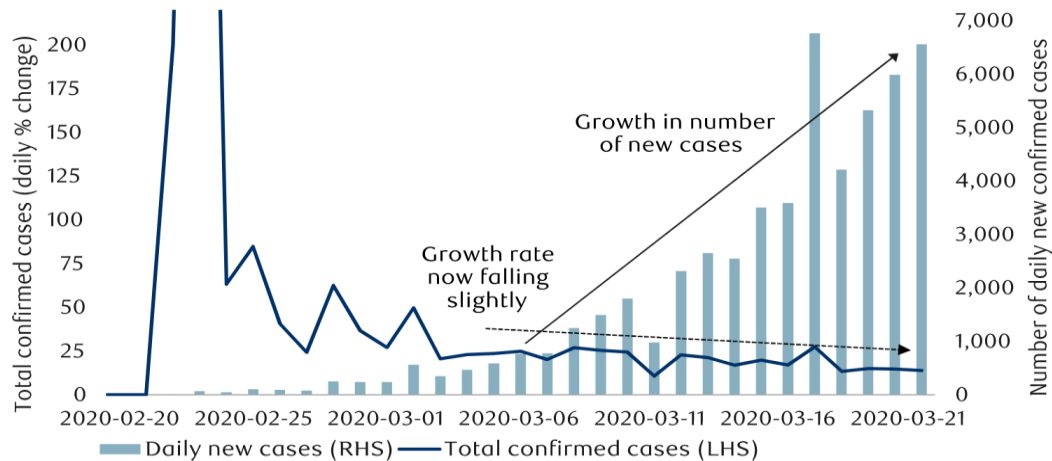
For those investors with the luxury of a longer term investment horizon, risk assets such as equities and credit are now quite cheap by historical standards.

Regional variation

Reflecting the extent to which COVID-19 has gone global, 72% of all recorded cases have now been logged outside of China. Given that China's overall case count of 81,498 now contains just 5,567 actively infected people, it is probably the case that the rest of the world now accounts for more than 95% of total active cases.

Most of the bad news remains centered on Europe, where Italy now records the most new cases of any country per day and has suffered the greatest overall loss of life. It is a small consolation that the daily percent growth rate has diminished slightly over the past few weeks. This suggests the disease is beginning to transmit slightly less readily (see chart).

Spread of COVID-10 in Italy

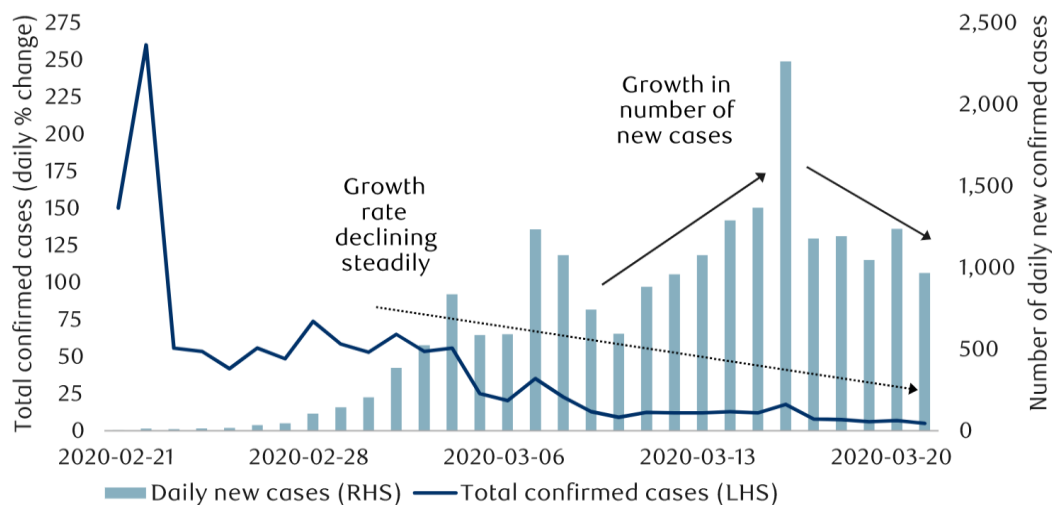


Note: As of 3/21/2020. **Source:** WHO, Macrobond, RBC GAM

Spain has become a very large problem as well, with 4,946 new cases in the latest day and 24,926 overall. Germany and France are not far behind, though Germany's extremely low case fatality rate hints that it is doing a better job of identifying infections than are others.

Outside of Europe, Iran has been improving if one believes the data, with a declining number of new daily cases (see chart). If genuine, it joins a truly exclusive list headed by the great successes of China and Korea. In contrast, prior poster children such as Japan and Singapore now appear to be suffering a (limited) second wave of outbreaks.

Spread of COVID-19 in Iran (daily change)



Note: As of 3/21/2020. **Source:** WHO, Macrobond, RBC GAM

The U.S. data remains maddeningly inconsistent. Different figures are emanating from different data sources. Also, the numbers are not reliably published on the weekends. This latter issue means that the data is both stale and jumpy. In the end, the U.S. is another country of considerable concern. The country has at least 15,219 cases according to the World Health Organization, and some credible sources figure that New York State alone has more than that. Regardless, these figures will soon become stale as the U.S. case count is roughly doubling every three days.

Canada has logged 1,048 cases as of the latest estimate, though the growth rate is a fierce 20% per day. The government of Canada has published data suggesting that when the country's cases are mapped according to the true start of each illness as opposed to when each was officially diagnosed, the number of new cases per day may already be starting to decline. But those savvy with numbers will quickly realize that any cases identified in the coming days and weeks could well be retroactively added to the earlier dates, rendering the tentative decline an illusion. That said, the government analysis seems to argue that the decline began sufficiently long ago that new cases are unlikely to interfere with the conclusion. Consider us hopeful but ultimately skeptical given a very different trend visible nearly everywhere else.

Virus parameters

We have discussed our COVID-19 fatality rate and transmission rate assumptions at some length in [prior #MacroMemos](#), and so will not repeat ourselves here. Suffice it to say, we continue to assume:

- the fatality rate eventually settles at just 0.5% to 1.0%, and
- the transmission rate remains high, but should eventually decline below the critical threshold of one with the significant social distancing efforts now underway.

Contradicting earlier research, several studies now argue that roughly half of all COVID-19 infections are asymptomatic, or present only very mild symptoms. This helps to explain the ease of infection, though it is a consolation that asymptomatic carriers should in theory be less likely to spread the disease to the extent they aren't coughing or sniffing.

Italy is the bellwether country for the developed world given that it was hit first and, thus far, worst. As such, a significant disappointment over the past week is that the number of daily Italian cases has not yet peaked. Relative to when the virus first reached a critical mass in each country, China and South Korea had peaked by now. But all hope is not lost for Italy, for two main reasons:

1. Relative to when Italy first imposed a "hard" quarantine, the country could still be on track to mimic the victories of China and South Korea so long as its case count peaks in the next few days.
2. Regardless of the exact timing, it is hard to fathom the caseload continuing to rise indefinitely when most Italians are now quarantined within their dwellings.

Virus control efforts

We have now constructed a table that closely tracks major countries' efforts to control COVID-19 (see next table – magnifying glass is advised). The main policy efforts extend along containment, border control and testing channels. Each is important. **Border controls** are necessary as otherwise strong domestic policies could be undermined by more lax foreign measures. **Serious containment efforts** are necessary to the extent that a significant number of cases have already presented themselves within most countries. **Testing** is important to the extent that the disease now appears to have a significant asymptomatic component, and to keep the virus in check once quarantining is complete.

Spread of COVID-19 – Major countries' efforts

	Spread of COVID-19			Containment		Border				Testing			
	First date of local transmission*	First date of 1 case/1m people	Date of peak new daily cases	Soft	Hard	Limited arrival from China	Limited arrival from hotspots	Partial closure	Full closure	Total tests	Tests/ million people	Tests/ total cases	As of date
Brazil	2020-03-07	2020-03-17		2020-03-21				2020-03-19		2,927	14	15	2020-03-13
Canada	2020-03-01	2020-03-06		2020-03-16	2020-03-23			2020-03-16	2020-03-18	54,956	1,456	130	2020-03-19
China	2019-11-17	2020-01-26	2020-02-05		2020-01-23		2020-03-13			320,000**	2,820	928	2020-02-24
France	2020-02-28	2020-03-01		2020-03-16				2020-03-16		36,747	563	26	2020-03-15
Germany	2020-02-28	2020-03-02		2020-03-16				2020-03-16		167,000	1,993	44	2020-03-15
India	2020-03-05				2020-03-23	2020-03-13	2020-03-13	2020-03-13	2020-03-25	14,514	11	196	2020-03-20
Iran	2020-02-25	2020-02-26		2020-03-04						80,000	952	7	2020-03-14
Italy	2020-02-23	2020-02-16		2020-02-21	2020-03-08	2020-01-31		2020-03-17		148,657	2,459	5	2020-03-17
Japan	2020-02-16	2020-02-23		2020-03-15		2020-03-15	2020-03-15			14,901	118	18	2020-03-20
Mexico		2020-03-20		2020-03-20						278	2	40	2020-03-10
Russia	2020-03-21	2020-03-18				2020-02-20	2020-02-28	2020-03-14	2020-03-18	116,061	795	1,248	2020-03-17
South Korea	2020-02-19	2020-02-10	2020-02-29	2020-02-20		2020-02-04				286,716	5,592	34	2020-03-17
Spain	2020-02-28	2020-02-28		2020-03-14	2020-03-14		2020-03-10		2020-03-16	30,000	1,401	3	2020-03-18
Switzerland	2020-03-02	2020-03-06		2020-03-16			2020-03-18			4,000	462	19	2020-03-07
U.K.	2020-02-28	2020-03-11		2020-03-22	2020-03-23					50,442	743	33	2020-03-17
U.S.	2020-02-28	2020-03-04		2020-03-16	2020-03-22	2020-02-04	2020-03-11	2020-03-18	2020-03-21	103,945	314	62	2020-03-19
	* Either official designation from WHO (starting Feb. 28) or when local cases >50 (before Feb. 28)			Soft: local/ regional quarantines, recommendations/ orders to limit group sizes, broad school Hard: full lockdown of significant area/ population		Partial: restriction of entry from a significant number of countries (e.g. Schengen Area), partial land border closure, limiting flights, etc. Full: closure of all land borders/ full restriction of non-citizen entry				* Guangdong province only			

As at 03/23/20. **Source:** World Health Organization, RBC GAM

The containment metrics show that developed-world countries are only now getting serious about quarantines, implementing what we deem to be mostly “soft” containment in mid-March, with many yet to implement a “hard” containment. Italy is one to two weeks ahead of the others, hence our focus on the country to see if such efforts work. Borders are now effectively closed nearly everywhere.

The subject of testing is where the greatest variation is found between countries. The data is admittedly spotty, but China and South Korea shine, with more total tests undertaken than anywhere else, and also more tests per million people. Others lag significantly behind, but Germany, Italy the U.S., Iran, Canada and the U.K. have also conducted a large number of tests. On a per capita basis, Italy, Germany, Canada and Spain also do well. Testing is where

there is most obviously room for policy improvement, not just with the laggards but with almost everyone.

The table also tracks the date at which COVID-19 began spreading within each country, and when it peaked for those fortunate enough to have reached that point.

Update on monetary policy

Countries are now deploying truly remarkable amounts of monetary and fiscal stimulus. The situation continues to evolve quickly, with the following table providing rough approximations for the amount of monetary and fiscal stimulus now on offer.

Global COVID-19 stimulus packages

Country/Region	Monetary stimulus		Relief package	Fiscal stimulus
	Policy rate cut (bps)	Asset purchase (% of GDP)	Size (% of GDP)	Size (% of GDP)
Australia	50	0.0	1.0	1.0
Canada	100	0.0	3.6	1.2
ECB	0	7.3	N/A	N/A
France	0	N/A	14.3	0.4
Germany	0	N/A	44.9	3.6
Italy	0	N/A	20.7	1.1
Japan	0	1.0	2.2	2.1
Netherlands	0	N/A	2.0	1.8
Spain	0	N/A	17.2	9.2
Sweden	0	6.0	6.0	3.0
Switzerland	0	0.0	6.0	3.1
U.K.	65	9.0	15.8	0.9
U.S.	150	Unlimited	9.8	9.8
China	10	0.0	1.2	1.2
India	0	0.0	0.0	0.0
South Korea	50	0.1	3.2	3.2
Mexico	25	0.0	0.0	0.0
Brazil	100	0.0	2.1	2.1
Russia	0	0.0	0.3	0.3

Note: As of 3/23/2020. New relief packages that are still in the works included in estimates for Japan and U.S. Fiscal stimulus only includes spending by the government and does not include relief measures such as tax and fee deferral, loans and loan guarantees, and equity investment, etc. **Source:** National central banks, national government websites, ING, UBS, RBC GAM

From a monetary policy perspective, central banks have now cut policy rates to zero, if not beyond. Granted, this action involved less easing than during most recessions since the starting policy rates were also low by historical standards.

Central banks are trying to make up for this limitation via other means, such as quantitative easing. The Fed has just announced the biggest “bazooka” of all in its promise of unlimited

quantitative easing going forward. It will buy a colossal \$625 billion in Treasury securities and mortgage securities over just the coming week, and presumably continue as needed into the future. It has also pledged support for the municipal debt market, corporate debt market, and even small business loans. To the extent these latter markets are suffering from liquidity problems, it is fair to deem the effort “credit easing” and not just quantitative easing.

The European Central Bank never stopped quantitative easing, but has now committed to even more. Other central banks have also leapt in, including the Bank of England and the Reserve Bank of New Zealand. The Bank of Canada has so far remained more cautious than most, with a policy rate that has merely fallen to 0.75% and no quantitative easing. But the economy is set to enjoy a theoretical further boost from the substantial decline in the Canadian dollar versus the U.S. dollar (though this is dampened, in turn, by much weaker oil prices). Canada’s federal government has resumed a mortgage-buying operation it undertook during the global financial crisis.

From a timing perspective, it took central banks more than a year into the global financial crisis before implementing quantitative easing, so they deserve full marks for the nimble response this time. From a size perspective, the Fed printed \$3.7 trillion of money (and bought an equivalent amount of bonds) in response to the global financial crisis. That is still significantly beyond the plan for the coming week, but a sustained effort at the announced pace wouldn’t take long to catch up. We presume central bank balance sheet expansion and monetary stimulus more generally will be at least as large in response to COVID-19 as to the financial crisis. As for the economic boost provided by all of this, we continue to figure the policy rate cuts add something like 0.5ppt to developed-world growth. Quantitative easing, if it reaches the scale of the financial crisis effort, might add a further 2% to the level of output over time.

Less remarked upon but arguably no less important, central banks have also learned another lesson from the financial crisis: introducing and in some cases re-introducing a wide range of liquidity measures designed to keep banks liquid and critical corners of the credit market functioning. These figures already sum into the trillions of dollars, though their temporary nature means that they are less likely to have long-lasting effects on inflation or asset valuations than more enduring measures such as quantitative easing.

[Update on fiscal policy](#)

Fiscal policy continues to ratchet higher as well, as detailed in the aforementioned table. Here, we expect the total sums expended to ultimately exceed the powerful stimulus delivered during the global financial crisis. Developed-world fiscal stimulus delivered in 2008 and 2009 was 3.6% to 5.5% of GDP, whereas we already see countries proposing and even implement packages that are larger yet.

The U.S. appears to be close to a \$1.3T fiscal package and may well find itself on its way to fiscal stimulus worth nearly 10% of GDP. The numbers quickly get blurry as one debates such matters as whether a government loan guarantee should be valued at the full amount of the loan, the probable loss that the government will incur, or at zero until any such loss happens.

Theoretically, to the extent some governments aspire to significantly fill a wage and profit hole that could easily be 5% of GDP across the entirety of 2020 (with a temporary trough of perhaps 15% below normal output) , it arguably makes sense to go even bigger than a decade ago.

Many countries began with a phase one of targeted spending on emergency programs, health spending and drug research. Phase two efforts are now underway, targeted at getting thousands of dollars per month to sidelined workers and shuttered businesses. This helps to prevent foreclosures and bankruptcies from stacking up, which could turn a short-term shock into a lengthy crisis. For that matter, some countries have suspended the need to make certain loan payments. Others are deferring the official declaration of default on a non-performing loan.

Ideally, governments will find ways to encourage businesses to keep workers on staff: this would allow for a much smoother acceleration once the disease has faded rather than grappling with a large pool of unemployed people who will be reluctant to spend until they are matched with employers.

Nine economic scenarios

Our forecasts have now deteriorated significantly over several consecutive weeks.

Two weeks ago, we imagined that COVID-19 would have a ramped up SARS-type effect on the economy. However, that analysis rapidly proved insufficient as COVID-19 has now gone fully global and also blown well past anything SARS ever inflicted upon the world from a GDP standpoint.

Last week, we sought out and found parallels in the 1918 Spanish Flu, the 1958 Asian Flu and the 1968—1969 Hong Kong Flu, basing our economic forecasts off of historical analysis and modern-day models of what a similar epidemic might do today. However, even though COVID-19 itself is arguably less dangerous than these predecessors, the economic implications now appear set to be significantly greater to the extent that the scale of precautionary quarantining now underway is unprecedented.

This week, we once again find ourselves with new forecasts that are significantly worse than previously imagined. Several observations have led us to these diminished forecasts:

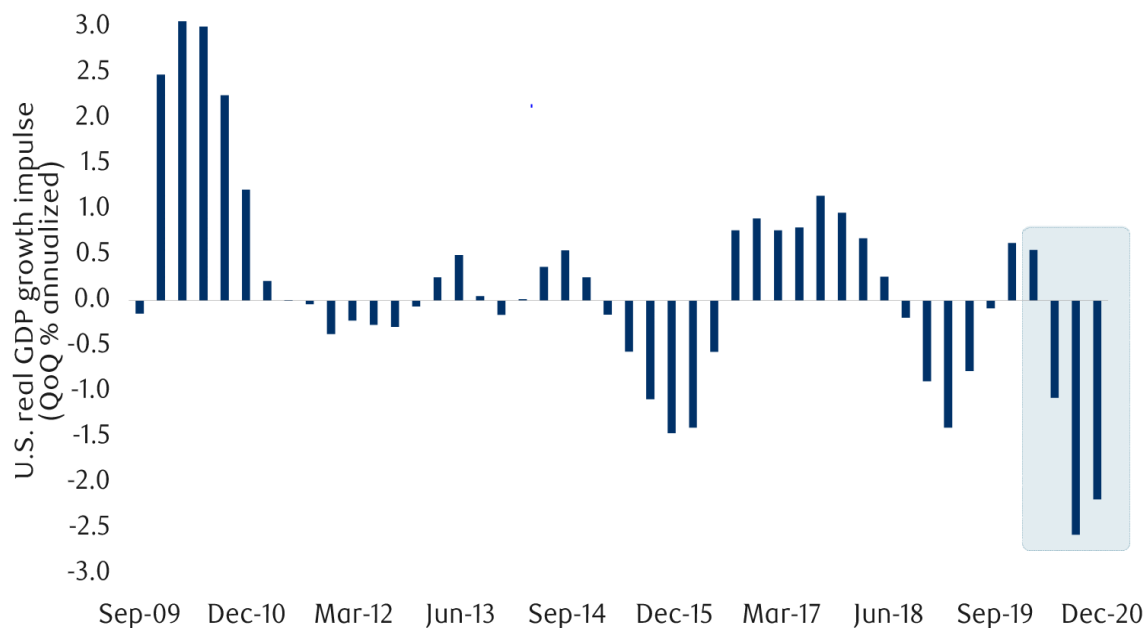
- Chinese output likely fell by 30% from peak to trough, and the rest of the world is now suffering from an outbreak every bit as significant as China did, and increasingly pursuing familiar policies from a containment and border control perspective.
- We've revisited our assumptions about the eight key economic channels across which the virus operates (see next table). This includes the extent to which demand-side household spending might be affected and the degree to which tighter financial conditions might constrain growth (see subsequent chart).

COVID-19 economic channels and likely hit to growth

Economic channel	Description	Shallow depth scenarios	Medium depth scenarios	Deep depth scenarios
Financial markets	Tighter financial conditions, negative wealth effect	Medium	Large	Very large
Business confidence	Reluctance to hire, invest, buy inputs	Medium	Large	Very large
Household confidence	Reluctance to spend	Small	Medium	Large
Death	Reduction in labour supply, product demand	Minimal	Minimal	Small
Illness	Temporary reduction in labour supply	Minimal	Small	Medium
Quarantine	Temporary reduction in labour supply & product demand	Medium	Large	Very large
Supply chain	Magnifies other effects; slows recovery	Small	Medium	Medium
Liquidity/solvency	Temporary losses can tip businesses/households into illiquidity or insolvency	Minimal	Small	Large
Effect on 2020 developed-world GDP growth rate (ppt): (each cell's range reflects different possible crisis durations)		-1 to -3	-3 to -9	-7 to -18

Note: As at 03/21/2020. **Source:** RBC GAM

Tightened financial conditions to be a drag on growth



Note: As of 3/19/2020. Real GDP growth impulse from Goldman Sachs (GS) World Financial Conditions Index based on GS estimates of impact of FCIs on GDP growth, with the assumption that financial conditions remain the same for the rest of the year and the following 4 quarters. **Source:** Goldman Sachs, Bloomberg, RBC GAM.

- We also revisited our sector-based analysis, making assumptions about the extent to which individual sectors such as retailers might be affected, and tallying these up into an economy-wide forecast.
- We have now begun to see high-frequency data points for developed-world economies, and these show quite a significant economic deterioration, not dissimilar to China's experience.

Scenario framework

Our economic scenario analysis framework has also evolved. Rather than simply discussing a positive, medium and negative scenario, we have divided the analysis along two different dimensions: the depth of the economic decline, followed by the duration of this economic trough before a recovery sets in. To illustrate, there is no reason that a sharp economic decline must also last for a lengthy period of time – it could well end quickly if the virus is rapidly tamed. With three possibilities considered along each dimension, the result is $3 \times 3 = 9$ economic scenarios.

Depth

We define the shallow, medium and deep GDP peak-to-trough assumptions as -5% of GDP, -15% of GDP and -30% of GDP, respectively. To be clear, the economy doesn't necessarily spend very much time at these depressed levels (that's the duration part, later). But it briefly declines by this much for a period of a number of weeks. It should be noted that even the shallow assumption is quite severe by normal recession standards – but this is not a normal event.

The most likely scenario is probably the medium depth option (-15%) in that it represents a shock about half as deep as suffered in China. Developed-world economies presumably get off somewhat more lightly than China due to less severe quarantining measures and a greater ability to work from home. That said, evidence from high-frequency indicators like jobless claims, restaurant bookings and traffic congestion confirm an extremely serious hit to developed-world economic output.

It is of course not impossible that the rest of the world suffers a GDP hit every bit as deep as China (-30%). The developed world is richer than China, meaning a larger fraction of consumer spending is on discretionary items. As an example, we estimate that only 54% of Canadian household spending is "fixed", whereas the other 46% could be significantly reduced in an adverse event.

Conversely, the shallow option is also conceivable (-5%). A good rule of thumb is that the actual economic hit from exogenous shocks tends to be smaller than what simplistic economic analysis would normally argue. Yes, tourism and retailers are down, but there is much more to an economy than that and things like e-commerce may surge. Furthermore, policymakers are gearing up a truly remarkable response that could significantly limit the damage, filling the hole created by lost wages and lost sales.

Duration

We now present three different duration options. This refers to how long economic output will be at a depressed level before beginning to rebound – more or less, how long intense quarantining will persist. The short, medium and long trough assumptions are 4 weeks, 10 weeks and 26 weeks, accordingly.

The medium duration (10 week quarantine) is probably most likely, to the extent developed-world countries are already hinting that they will likely have to extend social distancing for longer than previously envisioned. Betting markets appear to tilt in this direction, too. It all comes down to how quickly the virus can be controlled. Some tentative research argues that the arrival of warmer weather may help to contain the virus.

But the other two scenarios are also possible. It is always darkest before the dawn, and while the likes of Italy report grim statistics today, the country could well be within a few days of its viral peak. That was the Chinese experience. While a vaccine is likely some distance away, a variety of therapeutic drugs are already in testing, and it is possible that one or several could significantly dim the danger of COVID-19, eliminating the need for quarantine. It is entirely possible that the quarantine duration could be a short 4 weeks.

Lastly, there is the possibility of a much longer quarantine – a 26-week (half year) economic trough – should developed-world isolation efforts prove insufficient, with the deadlock eventually solved via any of:

- governments giving up on isolation efforts
- the achievement of herd immunity
- a slower therapeutic drug roll out, or even
- a faster-than-expected vaccine solution.

The forecasts

Finally, we present the actual growth forecasts for the nine scenarios (see table below).

COVID-19 scenarios – 2020 U.S. real GDP forecast

			Duration		
			Short	Medium	Long
			4 week trough	10 week trough	26 week trough
Depth	Shallow	-5% trough	1.0	0.5	-0.9
	Medium	-15% trough	-1.2	-2.8	-6.9
	Deep	-30% trough	-4.6	-7.8	-16.1

Note: Assumes rapid decline into trough versus much lengthier recovery period. **Source:** RBC GAM

The nine scenarios vary quite significantly. A shallow depth paired with a short duration would even allow the U.S. economy to keep growing in 2020 (+1.0%). Conversely, a deep trough paired with a long duration might translate into a nearly unfathomable decline (-16.1%). The level of uncertainty is very high. Most likely are more moderate assumptions such as a medium depth and medium duration that would result in a 2.8% decline in 2020 GDP. Even this is a very significant decline, slightly worse than 2009 and the largest annual drop since 1946. Disaggregated into quarterly terms, the second quarter 2020 decline may well prove the largest on record.

Context

To be clear, this is not a forecast of a depression. Depressions refer to a deep economic decline that then persists for many years. While this could well meet the depth definition, it is less likely to meet the duration definition to the extent that pandemics do not usually last for many years and much of the economic pain is being artificially induced by quarantining rather than something more fundamentally wrong with the structure of the economy.

These forecast scenarios are specifically for the U.S., but can also be used to get an approximate sense for the impact elsewhere in the developed world. Keep in mind that U.S. growth likely would have been around +2% in 2020 without COVID-19. Thus, the gap between +2% and the forecasts in the table above represent the size of the shock, and these shocks can reasonably be applied to other countries. Europe and Canada may suffer modestly more than the U.S., because of the severity of the disease in Europe and the additional blow of low oil prices in Canada.

Rebound

But what about any subsequent economic rebound? We are working with the assumption that any rebound should be faster than usual.

This isn't to say that the bounce will be as abrupt as the initial decline – that's virtually impossible given supply chain complications and the like. But China has already demonstrated that it is perhaps 80% of the way back to normal a mere month after restarting its economy. Key to this is that the primary hit to labour supply and product demand is due to government edict that can be rapidly reversed at some future date.

Furthermore, policymakers are certainly delivering impressive amounts of stimulus – another key consideration that should limit the duration of economic suffering.

Reflecting all of this, our tentative 2021 GDP forecast assumes quite an impressive rebound.

Employment

The labour market is unlikely to dodge this economic blow. The employment bad news is already starting to roll in. U.S. regional jobless claims are already running around 10 times higher than normal. The Canadian numbers are also surging.

However, with large businesses feeling pressure not to lay off workers and perhaps even government policies intended to keep workers nominally “employed”, we assume that the

relationship between economic output and unemployment will be weaker than usual. Whereas a 1ppt increase in the output gap normally adds 0.5ppt to the unemployment rate, we presume this relationship will be half as strong as usual. In turn, and referring back to our three depth options:

- A shallow 5ppt reduction in economic output might increase the unemployment rate by 1.25ppt
- A medium 15ppt economic blow would increase the unemployment rate by 3.75ppt
- A deep 30ppt economic hit would increase the unemployment rate by 7.5ppt.

Is the cure worse than the disease?

Given all of this potential economic damage, it would be irresponsible not to ask the provocative question – is the cure possibly worse than the disease? Worded more clearly, is all of this economic damage a fair trade for the number of lives that will be saved?

In the end, governments are likely doing the right thing. The potential human toll is not fully understood, and it would be dangerous to gamble that the disease proves less deadly than feared.

From a hardhearted financial perspective, even if the fatality rate lands in the relatively low 0.5% to 1.0% range, the potential lives saved from aggressive preventative action are such that the economic sacrifice comes down to a (very, very rough!) US\$200,000 per life saved. That might sound like a large sum for a single person, but legal judgements and other precedents argue that it is a reasonable price. Of course, what gets missed in this analysis are the deleterious effects of increased isolation and additional poverty from social distancing and a weaker economy, respectively.

Is this unprecedented?

Is this experience unprecedented in modern history? Yes and no. It is true that there is no exact analog for a virus forcing much of the world into the shelter of their homes for an extended period of time. However, unprecedented and calamitous episodes of various types occur semi-regularly, and none have managed to interfere with a growing global population and rising prosperity for long.

Disease:

- The Spanish flu killed roughly 40 million people in 1918. It is unlikely that COVID-19 will unleash the same death toll.
- It is still very much an open question whether COVID-19 will even match the fatalities associated with the barely remembered Asian Flu of 1958 (which, incidentally, prompted many students, including my father, to miss several weeks of school) or the Hong Kong Flu of 1968—1969.
- Malaria still kills more than 400,000 people per year, in comparison to the 12,777 felled so far from COVID-19.
- The AIDS death toll was 770,000 in 2018 alone, with more than 32 million deaths recorded over its history.

Economic upheaval:

- The Great Depression will very likely remain a more serious economic shock than COVID-19, lasting as it did for many years and lacking the social safety nets of today.
- While COVID-19 may or may not ultimately deliver a bigger economic hit than the global financial crisis, the world's biggest mortgage market is not simultaneously melting down and banks and battle-tested policymakers are in a much better position to withstand a large shock today.

Natural disaster:

- Japan's 2011 earthquake/tsunami caused considerable infrastructure damage and prompted industrial production to fall by 16% -- a very large sum. But the economy was growing again within two quarters and the economic slack that formed was eliminated by the beginning of the next year. Japanese financial markets enjoyed a very strong performance over subsequent years.

War:

- The two World Wars had a massive effect on people and economies across the developed world, destroying property, realigning trading relationships, repurposing businesses for the war effort, pulling workers out of their professions and into the military and ultimately resulting in significant loss of life. And yet as soon as these wars had ended, economies snapped back to their proper alignment and growth resumed.

Individual liberty:

- To the extent COVID-19 feels unprecedented from the perspective of individual liberties lost – the inability to go outside and aggressive government edicts – let us not forget about past events that abruptly changed human rights.
- Wars sometimes rely upon conscription – people forced not just from their homes and jobs, but into a very dangerous environment.
- Since 9/11, airport and border security has become significantly more intrusive, and government monitoring via the internet is also allegedly significantly higher.
- In Canada, the 1970 October Crisis briefly resulted in the implementation of the War Measures Act, with greatly enhanced police powers of arrest and other restrictions imposed upon Canadians.

Regional examples:

- Regional examples are imperfect because there is always the opportunity for affected people to move elsewhere in a country, but they nevertheless demonstrate that enormous economic shocks do occasionally land.
- Hurricane Katrina struck New Orleans in 2005, causing the city's population to fall by half and the unemployment rate to rise by 10ppt. This was an enormous shock, but the economy only briefly fell by 2.3%, and has since returned to growth.
- The U.S. Dust Bowl of the 1930s forced the migration of millions of Americans and was an economic disaster for an entire region of the country.
- The Cod Moratorium in Newfoundland in 1992 caused 12% of the province's labour force to lose their jobs overnight.

Furthermore, many emerging nations go through shocks such as these with a disturbing regularity, be the event famine, natural disaster or economic calamity. Most find a way to return to growth.

The point of this lengthy list is to make the observation that COVID-19 is one whopper of an economic hit that undeniably changes our world. But it isn't the first and it won't be the last. History provides ample evidence that economies eventually recover as people and companies find ways to thrive.

Financial market implications

Finally, we turn to the financial market outlook.

We are watching several things, any of which could provide the key turning point for financial markets. The list starts with developments that could theoretically arrive fairly soon, and finishes with items that will likely take longer to achieve:

- Further significant enhancements to containment, border control and disease testing efforts
- Further major government stimulus announcements
- A decline in the number of new daily cases in Italy
- A decline in the number of new daily cases in the U.S.
- A decline in the daily fatality rate
- A decline in the total number of people actively sick
- The development of an important therapeutic treatment for COVID-19
- The end of quarantining
- A return to economic growth
- The development of a vaccine

It is unclear which of these developments markets will glom onto with the most enthusiasm, but they all represent important milestones. There is reason to think markets may not wait until the economy is growing again – Chinese markets began outperforming as soon as the daily number of new cases began to decline.

From a short-term perspective, the outlook remains highly uncertain. At RBC Global Asset Management, we certainly remain active within portfolios, taking advantage of opportunities as they present themselves. We also continue to address portfolio drift within our balanced products – a practice that has historically yielded positive returns.

From a longer-term perspective, the valuation gap between equities and sovereign debt is now back to financial crisis-era levels, presenting what could be a remarkable opportunity for investors with longer-term time horizons (see chart).

Valuation gap between U.S. equity and 10-year bond



Note: As of 3/20/2020. **Source:** Bloomberg, RBC GAM

Lastly, among other efforts, we have now generated eight different scenarios for the U.S. stock market over the coming several years, and from them estimate prospective returns ranging from 6% to 31% per year. These are attractive numbers, particularly when compared to 10-year yields that are below 1% in most markets.

-With contributions from Vivien Lee and Graeme Saunders

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