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Handicapping the Paths for the Pandemic Economy

INTRODUCTION

The worst of the catastrophic blow to the global economy caused by the COVID-19 pandemic is over. The severe downturn that has engulfed the global economy since the beginning of the year likely hit bottom in May. This assumes there will not be a serious second wave of the virus later this year to disrupt businesses again or spook businesses and consumers back into their bunkers. It also assumes that global central banks and governments continue to provide the substantial support needed by their economies. These are admittedly big assumptions. Even when the pandemic is over—after an effective vaccine or therapy for the virus is widely distributed and adopted—the global economic recovery will not be a straight line forward. There has already been too much structural damage to the economy. Given the enormous uncertainties, just how the global economic outlook will play out is difficult to handicap. This paper considers a range of potential scenarios, which we have quantified using our global macroeconomic model of more than 100 countries.

Handicapping the Paths for the Pandemic Economy

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Weathering the storm

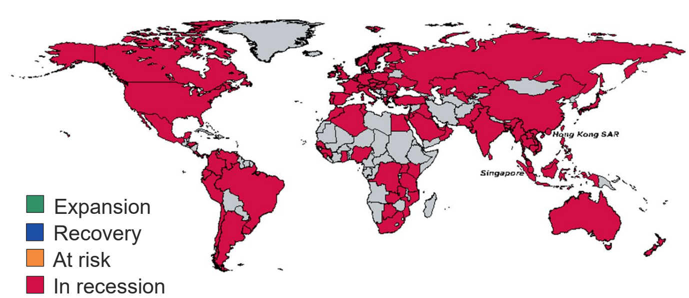
The severity and breadth of the COVID-19 global recession is without precedent. While there is no official arbiter of global downturns, in our judgment the peak of the last economic expansion was January 2020, with the nadir of the recession in May 2020. The four-month downturn is the shortest in the past century, but other than the early-1930s recession that ushered in the decade-long Great Depression, it is the most severe. Global real GDP is expected to decline by at least 10% from peak to trough between the fourth quarter of 2019 and the second quarter of 2020. This is approximately three times the peak-to-trough decline in GDP during the global financial crisis just over a decade ago.

The breadth of the decline in economic activity across the globe is stunning. Based on assessments made by our economists tracking more than 100 countries, as of May, every one of those countries was struggling with recession (see Chart 1). In all past global downturns, there was at least one significant part of the world that managed the economic troubles with reasonable grace and was critical to the subsequent recovery as a catalyst for global growth. China played this role during and after the financial crisis as it used its considerable monetary and fiscal resources to support its large economy and—given its central role in the global supply chain—much of the rest of the world. No part of the world appears set to play this leading role in this pandemic.

While the pandemic has slammed economies everywhere across the globe, some have weathered the storm better than others. The U.S. economy has the ignominious distinction of suffering more than any other, at least as measured by the increase in unemployment (see Chart 2). The U.S. unemployment rate was near 15% in April, and closer to 20% after accounting for a misclassification error acknowledged by the Bureau of Labor Statistics that inappropriately counted millions of unemployed people as actually employed. Next closest is Canada with a 13%

Chart 1: Pandemic Upends Global Economy

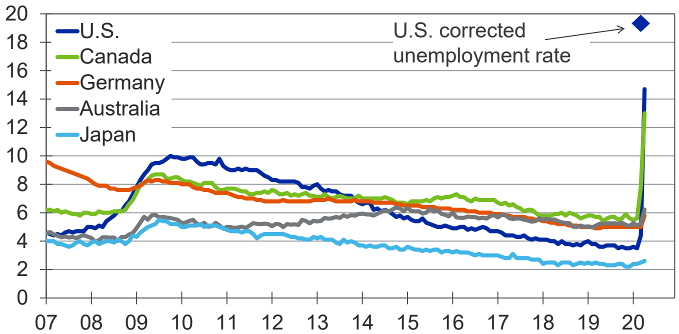
Business cycle status as of May 2020



Source: Moody's Analytics

Chart 2: U.S. Economy Struggles Most

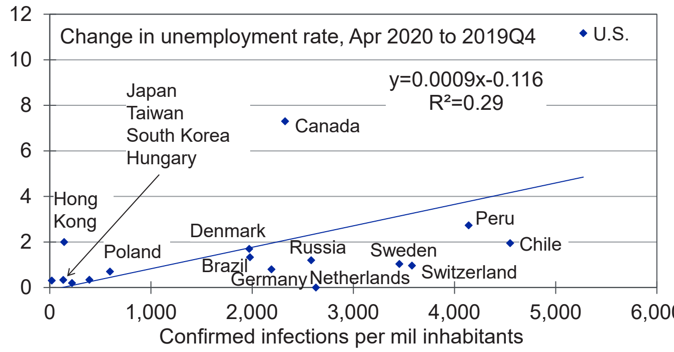
Unemployment rate through Apr 2020, %



Sources: National statistical bureaus, NBER, Moody's Analytics

Chart 3: More Infections, Worse Downturn

For countries with unemployment rate data available for Apr 2020



Sources: WHO, government sources, Moody's Analytics

unemployment rate, Germany and Australia have rates close to 6%, and Japan's unemployment is still near 3%.

The extraordinary loss of jobs in the U.S. and the high unemployment rate owe in significant part to the poor management of the pandemic by the federal government. It was late to acknowledge the threat posed by the virus, and then ultimately ceded the bulk of the crisis management to state governments, which led to a patchwork response that was slow to get going. In contrast, throughout much of Asia the management of the health crisis was much more aggressive early on and the subsequent testing and contact tracing more comprehensive. Asia's economy has been hit hard by the pandemic but not nearly as seriously.

Based on the relationship between confirmed COVID-19 infections and unemployment rates across countries, every 1,000 additional infections per million inhabitants has resulted in an approximately 1-percentage point increase in the unemployment rate (see Chart 3). This suggests that if the U.S. had simply experienced infections consistent with the average country, the U.S. unemployment rate would have been nearly 3 percentage points lower in April. That is, instead of close to 20% unemployment, it would be 17%. This translates into almost 5 million fewer job losses. And if the U.S. had experienced infections consistent with the group of countries that have been most successful at containing the virus—mostly in Asia—then U.S. unemployment would have risen only to 15%, saving 8 million jobs. Still very high, but magnitudes better.

The outsize surge in U.S. unemployment compared with elsewhere in the world is also due in part to the fiscal policy response. Many other countries implemented various wage subsidy programs that partially paid worker wages, allowing businesses to avoid mass layoffs (see Table 1). This has worked especially well in Europe, where job losses have been more modest and unemployment much lower. Canada's wage subsidy program was tardily implemented, which reduced its take-up and helps explain Canada's higher unemployment rate.

The Paycheck Protection Program, the U.S. version of this type of program, was successful in getting money out quickly, but only small businesses with fewer than 500 employees are eligible to participate. Moreover, the PPP funds have not been well targeted to help those areas of the country hit hardest by the virus or to help very small businesses that do not have the banking relationships necessary to avail themselves of the program. If the U.S. had adopted wage subsidy programs comparable to most other G-7 countries and had been able to keep COVID-19 infections down consistent with the average country, U.S. unemployment would likely still be in the single digits and over half of the peak-to-trough job losses would have been avoided.

Reopening and recovery

The catalyst for the quick end to the COVID-19 recession is the quick reopening of businesses across the globe. China and other Asian economies reopened first, beginning in earnest in March, and are now about as open as they will be until there is an effective vaccine. This is still well short of operating at full tilt. Broad measures of economic activity are back near 90% of pre-COVID-19 levels, with some narrow measures still far from typical. Beijing subway ridership, for example, is still at best only two-thirds of what it was pre-COVID-19. Asia also continues to grapple with flare-ups of the virus, which has caused some nations—Singapore, Malaysia and Thailand being good examples—to shut down businesses and borders again.

European and North American businesses began their reopenings in May, and by the end of June they should be operating as close to capacity as they will get while the virus remains a threat. Google mobility data provide a reliable, real-time and consistent indicator of how countries are opening up. For example, activity at workplaces in Germany is still 30% below the typical level, but that is far better than the level just a few weeks ago of more than 50% below the usual. Retail and recreational place activity is still 25% below typical, compared with over 60% when the virus first struck full force in March. In Italy, the original epicenter of the pandemic in Europe, workplace activity has climbed to 30% below typical. Surprisingly, Italian retail and recreational place activity is almost back to normal.

The U.S. is also reopening very quickly. As of the end of May, only about 800 of the nation's counties were still on lockdown, accounting for approximately 10% of GDP. But this compares with 2,500 countries and 30% of GDP at the peak of the lockdowns in April (see Chart 4). By mid-June, few counties will still be completely shuttered. The Northeast corridor and the West Coast, where the virus has struck hardest, are the slowest to reopen, but even there the process is now well underway. New York will be the slowest state

Table 1: Global Wage Subsidy Programs

	Scheme	Eligibility	Entitlements	Maximum duration	Latest estimate of workers registered	% of workforce	Estimated cost
Germany	Kurzarbeit	Employees who have lost at least 10% of their pay	60% of net wages in first four months; 70% from fifth to seventh month (77%); 80% after seventh month (87%)	21 mo	10.1 mil as of Apr 30	22.2	EUR70 bil
France	Chômage Partiel	Fixed-contract employees who cannot work or have had hours cut below national minimum	70% of gross hourly wages (84% of net wages), 100% for those on minimum wage, capped at 4.5x minimum wage	1,000 hrs per yr per employee (from Mar 1)	11.7 mil as of May 4	37.1	EUR58 bil
Italy	Cassa Integrazione Guadagni	Firms with more than five employees forced to suspend or reduce work hours. All those employed on Feb 23, 2020.	Up to 80% of wages	12 mo	7.7 mil as of May 21	34.8	EUR15 bil
Spain	Expediente de Regulación Temporal de Empleo (ERTE)	Firms forced to suspend or reduce work hours due to force majeure. All employees eligible, including those on temporary contract.	Up to 70% of wages	No maximum	3.3 mil as of May 5	15.5	EUR18 bil
U.K.	Job Retention Scheme	Any type of contract, but firms must furlough employees for more than 21 days (reduced hours not allowed)	80% of wages, up to GBP2,500 per mo	4 mo (from Mar 1)	8 mil as of May 19	24.2	GBP42 bil
Denmark	Tripartite agreement on temporary wage compensation	Firms that must furlough at least 30% of staff	75% of wages up to EUR4,000	3 mo (from Mar to Jul)	160 ths as of Apr 28	5.46	DKK3.8 bil (USD570 mil)
Canada	Canada Emergency Wage Subsidy	SMEs facing a reduction in revenues from 15% to 30% (depending on benefits period)	75% of wages	3 mo (from Mar 15 to Aug 29)	2.8 mil as of May 18	13.87	CAD10 bil (USD7.5 bil)
Australia	Jobkeeper Payment	SMEs with a 30% fall in turnover, and larger businesses with a 50% fall	AUD1,500 biweekly	6 mo	3.5 mil as of May 25	25.80	AUD60 bil (USD85 bil)
New Zealand	Wage Subsidy and Extension Scheme	Firms facing a 30% decline in revenue	NZD585.80 per wk for full-time workers, NZD350 per wk for part-time workers	12 wks, with possible extension for another 8 wks	1.4 mil as of May 15	50.97	NZD12 bil (USD18.2 bil)

Source: Moody's Analytics

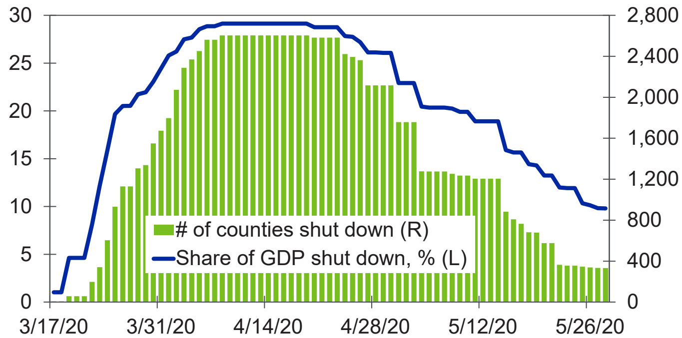
to get back up and running. Google mobility data there show workplace activity at about 50% of pre-COVID-19 levels.

The reopening of businesses will power a bounce in global growth beginning in June and extending through much of the third quarter. Global real GDP, which is expected to decline well over 20% at an annualized pace in the second quarter, is expected to *increase* by close to that pace in the third quarter. The rebound would be even stronger if not for continued struggles in much of the emerging world. Brazil, India and Russia are still battling rising infections and deaths. Some of these economies have responded by shutting down activity, while many others have not, deciding instead to let businesses continue to operate. Regardless of the strategy taken, most EM economies are not expected to turn the corner on the virus and their economies to begin recovering in earnest until this fall.

Alternative scenarios

How quickly and fully the global economy recovers on the other side of the business reopenings is extraordinarily uncertain. Our baseline scenario—the one most likely—is that after this summer's bounce in growth, the economy will go largely sideways until

Chart 4: U.S. Businesses Reopen Quickly



Sources: BEA, The New York Times, Moody's Analytics

there is a widely distributed and adopted vaccine or at least a highly effective treatment, which we assume by this time next year. Less than a handful of countries will be able to avoid outright declines in real GDP this year, and global real GDP is expected to fall 4.5% (see Table 2). This is an unprecedented change from the outlook at the start of the year.

While the global economy should enjoy sustained growth on the other side of the pandemic—fueled by the unleashing of pent-up demand and the need to rebuild depleted inventories and global supply chains—it will take until mid-decade for the economy to return to full employment. Even then, the global economy will have been diminished by the virus.

However, the economic outlook may go in a multitude of other directions depending on how a range of hard-to-handicap forces play out. Most obvious of these is the future epidemiology of the virus. Will there be a second wave? Given the rapid reopenings and apparent breakdown in social distancing, it is difficult to see how a second wave will be avoided. But how big and virulent will the next wave of the virus be? When will the world get a vaccine that is widely distributed and adopted, if ever, or perhaps an effective treatment?

The near-term recovery also depends on how quickly and strongly demand comes back to life. This in turn depends on the collective psyche of businesses and consumers, and their willingness to invest and spend. Weakened job markets and diminished wealth, conflating with an aging global population, will almost certainly weigh on demand. Central banks and governments have had and will continue to have substantial impacts on demand. They have admirably propped up demand until now but could eventually work to stimulate it.

Longer run, the global recovery depends on whether the crisis does meaningful structural damage to the economy. And that depends on the severity of coming business failures and other credit problems. It could take years to work through all the defaults, repossessions and foreclosures. There is also the fallout on globalization, including trade, immigration and foreign investment, which has been on its heels since the financial crisis and may be further stunted by the COVID-19 crisis. Then there is

Table 2: Moody's Analytics Baseline Global Economic Outlook

2020 real GDP growth

	May baseline	Jan baseline	Change, ppts
World	-4.5	2.6	-7.1
North America	-5.7	1.8	-7.4
Canada	-4.6	1.4	-5.9
U.S.	-5.7	1.8	-7.6
Mexico	-6.8	1.2	-8.0
South America	-6.2	1.6	-7.7
Argentina	-7.3	-1.4	-5.9
Brazil	-6.0	2.2	-8.2
Chile	-5.4	1.5	-6.9
Colombia	-4.0	3.3	-7.4
Peru	-5.1	3.0	-8.1
Venezuela	-14.6	-5.6	-9.0
Euro zone	-7.0	1.3	-8.4
Austria	-6.6	1.3	-7.8
Belgium	-4.9	1.3	-6.2
Finland	-5.4	1.2	-6.6
France	-9.0	1.3	-10.3
Germany	-5.6	1.0	-6.6
Greece	-7.3	2.3	-9.6
Ireland	-6.5	4.1	-10.6
Italy	-9.0	0.6	-9.6
Netherlands	-4.7	1.4	-6.1
Portugal	-5.7	1.5	-7.2
Spain	-6.7	1.8	-8.5
Other Europe	-6.0	1.3	-7.3
Denmark	-4.2	1.3	-5.5
Sweden	-3.1	1.5	-4.6
Switzerland	-5.0	1.5	-6.5
U.K.	-7.4	1.0	-8.4
Eastern Europe	-6.0	2.8	-8.8
Czech Republic	-6.5	2.9	-9.4
Hungary	-4.8	3.9	-8.7
Poland	-4.4	4.1	-8.5
Russian Federation	-7.3	1.8	-9.0
Turkey	-5.2	3.7	-8.9
Oceania	-0.7	2.4	-3.1
Australia	-0.5	2.4	-2.9
New Zealand	-2.3	2.4	-4.6
Asia	-2.0	4.4	-6.3
China	-2.3	6.2	-8.5
Hong Kong	-10.1	-0.8	-9.3
India	0.5	6.3	-5.8
Indonesia	1.7	5.0	-3.3
Japan	-3.3	0.6	-3.8
Malaysia	-0.6	4.1	-4.7
Philippines	-1.8	6.9	-8.7
Singapore	-4.7	2.6	-7.3
South Korea	-1.4	2.4	-3.8
Taiwan	0.0	2.3	-2.3
Thailand	-2.3	2.7	-5.0

Source: Moody's Analytics

the fiscal health of sovereigns that are using all their resources to fight the virus and will eventually need to rein in their debt loads. Considerable fundamental changes to the way we live and work are also likely to shape the long-run recovery.

Given this mélange of factors for the global economic outlook, it is most productive to consider a range of alternative scenarios. We have constructed and maintain a dozen scenarios based on simulations of our model of the global economy (see Box). These scenarios are driven by different assumptions regarding the epidemiology of COVID-19, demand-side factors including monetary and fiscal policies, and longer-run structural forces such as sovereign debt loads and globalization, which we consider in the discussion that follows.

COVID-19 EPI assumptions

Critical to the global economic outlook is the very uncertain epidemiology of COVID-19. Our baseline forecast rests on the benign assumption that there will not be a serious second wave of the virus that disrupts businesses again or spooks skittish businesses and consumers back into their bunkers for fear of getting sick. While a resurgence of the virus in coming months seems more likely than not, since social distancing is already breaking down in many of the countries that are opening up, our assumption is that any increase in infections will be modest and manageable. Healthcare systems will be better prepared, and there should be enough testing and contact tracing to contain the worst of the outbreaks.

The baseline also assumes that an effective vaccine or therapy is widely distributed and adopted by this time next year. It is not difficult to be more or less optimistic about this. Global pharmaceutical companies and universities are working feverishly to develop a vaccine with some success by early indications. Health officials are talking of a vaccine as early as late this year. However, developing effective vaccines typically takes years, and in some cases a vaccine remains frustratingly elusive.

Worldwide, under our baseline, total confirmed infections are expected to ultimately reach nearly 10 million, and deaths will approach 650,000, resulting in a 6.5% measured death rate (see Table 3). The actual mortality rate is likely meaningfully lower, as there will be many infections that will never be confirmed by a test, but it is high enough to be disconcerting to people and cause them to change their behavior. In the U.S., total confirmed infections in our baseline are expected to reach 2.4 million, and deaths will rise to more than 150,000.

Given the extraordinary uncertainty around the path of the virus, it is important to consider alternative scenarios that are based on different epidemiological assumptions. The upside scenarios, S0 and S1, assume that the virus will soon play itself out or an effective therapy or vaccine is developed unexpectedly quickly. Conversely, in the downside scenarios, S2, S3 and S4, we assume second waves of the virus of varying magnitudes beginning imminently. Under the most pessimistic S4 scenario, worldwide infections increase to over 20 million and there are 2.25 million deaths, resulting in a measured death rate over 10%. In the U.S., under S4, there are over 4 million infections and a disturbing nearly 400,000 deaths.

Our epidemiological assumptions across the alternative scenarios depend on the current rate of new infections. There is little variation in the epidemiological assumptions across scenarios in China and Japan given that they have few cases today, while the assumptions vary considerably across scenarios in Brazil and India, as they are still in the midst of their outbreak.

Demand-side tug-of-war

The global economic outlook also depends on how the powerful headwinds and tailwinds currently buffeting business and consumer demand net out. The major headwinds include the loss of jobs and wealth and the fragile state of the collective psyche. Just how fragile is evident in the collapse in our weekly survey of global business sentiment. Businesses are deeply pessimistic. There have been more negative responses to the nine questions posed in the survey than positive ones for the past three months. Sales are weak, and pricing remains soft with businesses unable to raise prices for their goods and services (see Chart 5). Hiring and investment are moribund. North American businesses are the most downbeat respondents, followed by Latin American and European businesses. Asian businesses are the least worried.

The principal tailwinds to business and consumer demand are highly supportive monetary and fiscal policies. Major global central banks have pushed short-term interest rates much lower—and firmly negative in Europe and Japan; are aggressively buying long-term bonds and expanding their balance sheets; and, in the case of the Federal Reserve, are standing up a plethora of credit facilities to backstop credit markets. At least so far these efforts have been successful in calming financial markets and maintaining sufficient credit flows. Equity markets are

Table 3: Epidemiological Assumptions Under Different Scenarios

	S0 (4% Upside)		S1 (10% Upside)		Baseline (50%)		S2 (25% Downside)		S3 (10% Downside)		S4 (4% Downside)	
	Infections	Deaths	Infections	Deaths	Infections	Deaths	Infections	Deaths	Infections	Deaths	Infections	Deaths
Brazil	713,557	39,533	1,093,607	66,031	1,667,795	118,462	2,540,584	214,942	5,790,028	586,838	13,051,354	1,536,981
China	84,177	4,641	84,231	4,645	84,285	4,650	84,340	4,657	84,449	4,670	84,559	4,687
EU	1,483,085	169,454	1,547,233	178,614	1,614,105	191,869	1,684,444	209,581	1,833,514	247,250	1,996,935	296,833
Japan	16,881	893	17,093	907	17,308	927	17,527	953	17,973	1,006	18,433	1,072
U.K.	296,587	40,736	319,820	44,837	346,469	51,166	375,547	59,875	440,691	79,478	517,521	106,930
U.S.	1,954,376	112,246	2,189,319	129,147	2,405,341	151,573	2,678,365	185,392	3,314,667	264,684	4,104,899	380,836
World	6,949,505	414,760	8,160,416	505,134	9,575,940	648,551	11,245,416	859,018	15,453,718	1,394,531	21,238,274	2,253,795

Sources: JHU, Moody's Analytics

Box: Moody's Analytics Alternative Scenarios

Moody's Analytics has developed and maintains 12 alternative scenarios for the U.S. and 10 scenarios for more than 100 other countries, based on simulations of our model of the global economy. The scenarios are driven by the principal risks to the economy at the time they are constructed, which at the current time are dominated by COVID-19. The scenarios include:

Baseline scenario—This is the most likely scenario that is designed to be in the middle of possible economic outcomes. There is a 50% probability that the actual economic outlook will be better than this scenario, and a 50% probability it will be worse.

Alternative scenarios S0, S1, S2, S3 and S4—The alternative scenarios are designed to be on different points in the distribution of possible economic outcomes. S0 and S1 are upside scenarios with a 4% and 10% probability that the actual economic outlook will be better, respectively. S2, S3 and S4 scenarios are downside scenarios with a 25%, 10% and 4% probability that the actual economic outlook will be worse, respectively. These scenarios are generated based on different assumptions regarding the epidemiology of COVID-19, business and consumer sentiment, the monetary and fiscal policy response, and the extent of the structural economic damage caused by significant business bankruptcies and other corporate and household credit problems, onerous sovereign debt loads, and diminished globalization.

Consensus scenario—This scenario captures the consensus view of the economic outlook. It is based on consensus forecasts from Focus Economics and government sources that vary be country. In the U.S., for example, economic forecasts from the Congressional Budget Office and Federal Reserve Board are used to fashion the consensus outlook.

Slower-Trend Growth scenario—This is a secular stagnation scenario characterized by slow global potential growth due to moribund labor force and productivity growth. Japan is a good example of a country long plagued by secular stagnation. This scenario envisages that much of the rest of the world struggles with the same issues as the pandemic undermines investment and global supply chains.

Stagflation scenario—The stagflation scenario combines slower trend growth with higher inflation. Stagflation was a feature of much of the global economy in the 1970s and 1980s, ignited by oil embargoes and spiking oil and other commodity prices. Stagflation is generated in this scenario by shortages of goods and services as businesses disrupted by the pandemic are forced to operate well below their capacity. Global central banks also monetize large government deficits, ultimately causing inflation expectations to become untethered.

Next Recession (U.S. only)—The Next Recession scenario plays out over a longer period of time than our other downside scenarios. Hoped-for cures for COVID-19 are found to be flawed, and new infections and deaths rise again, forcing governments to consider new shutdowns, causing business and consumer confidence to drop once again. The monetary and fiscal policy response is not sufficient to forestall another downturn a couple of years from now.

Low Oil Price—The Low Oil Price scenario envisages persistently depressed oil prices given weak global demand due to fallout from the pandemic and an insufficient response to rationalize oil production by the globe's major producers, including Saudi Arabia, Russia, and the U.S. fracking industry.

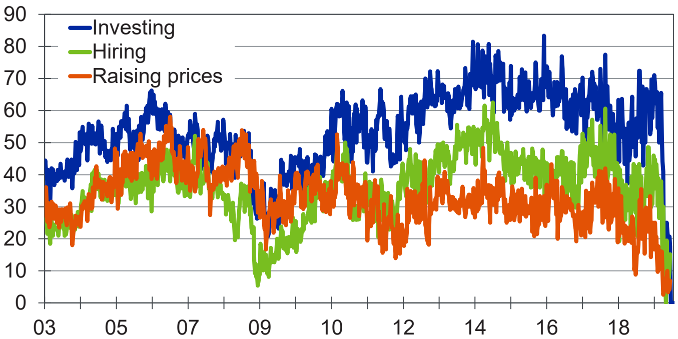
Constant Severity (U.S. only)—The Constant Severity scenario is designed so that the severity of the downturn remains constant over time, but the associated probability of the scenario changes as the economy moves through the business cycle.

Global Debt Crisis—This scenario reflects the mounting threat of a sovereign debt crisis on the other side of the pandemic. With global growth prospects diminished, and sovereigns running massive deficits and experiencing rapidly increasing debt loads in response to the pandemic, global investors demand compensation for the mounting risk that they will not be paid in a timely way. Extraordinary measures are necessary to quell the debt crisis, and the result is a global depression.

These scenarios are updated each month, except for the Global Debt Crisis scenario, which is currently updated when economic conditions and client demand warrant.

Chart 5: Global Businesses Shell-Shocked

% of Moody's Analytics global bus. survey respondents that are…



Source: Moody's Analytics

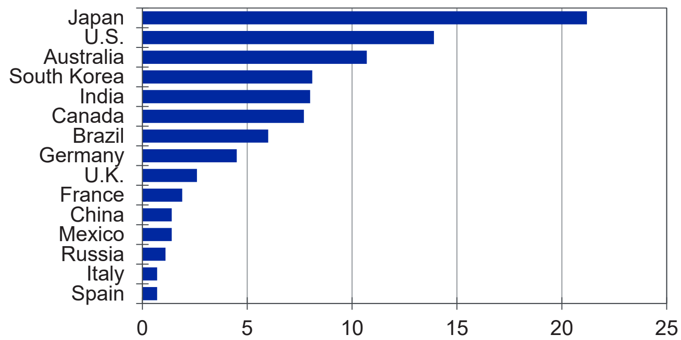
well off their lows, and credit spreads are not nearly as wide as they were just a few weeks ago.

Governments are also using all of their resources to prop up their economies. To date, funds appropriated by sovereigns to finance increased government spending and tax relief total approximately 5% of global GDP. Japan has been far and away the most aggressive, providing fiscal support equal to over 20% of that nation's GDP (see Chart 6). U.S. lawmakers have provided fiscal support equal to 14% of GDP, which is already substantially greater than the total amount of help provided during and after the financial crisis. The massive increase in unemployment insurance benefits, other income support, and so-called stimulus checks should just about offset the loss of wage income through the third quarter of this year.

Under our baseline, we assume that these crosscurrents impacting aggregate demand continue to largely wash out. In the U.S., this will require Congress and the Trump admin-

Chart 6: Aggressive Global Response

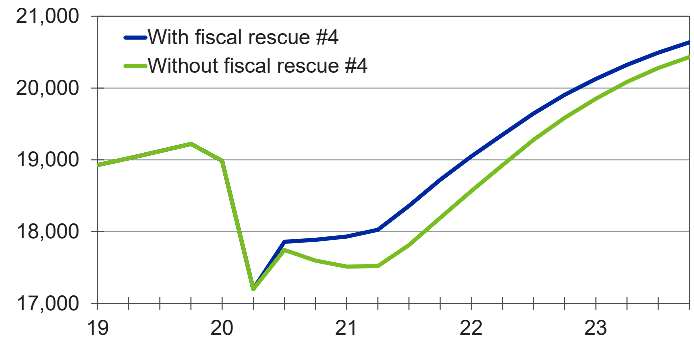
Fiscal support as of Apr 2020, % of 2019 GDP



Source: Moody's Analytics

Chart 7: Double-Dip Recession w/o Support

U.S. real GDP, 2012$ bil



Sources: BEA, Moody's Analytics

istration to soon come to terms on another package of fiscal support totaling close to $1 trillion. About half of this is assumed to go to fill the gaping budget holes nearly all state and local governments are now coming to terms with. The other half goes to fund more income support, including more unemployment insurance and another round of stimulus checks.

Simulations of our model of the global economy with and without this next fiscal rescue package demonstrates how critical the package is to the outlook. With it, which is our baseline, the U.S. economy avoids backtracking into recession (see Chart 7). Without the rescue package, as we assume in our downside scenarios, the economy suffers a double-dip recession later this year. And if there is a serious second wave of infections on top of no additional fiscal support, as we assume in the S4 scenario, the U.S. economy will be crushed, suffering what we would call an economic depression—more than two years of double-digit unemployment (see Chart 8). The rest of the global economy will be following close behind.

Structural damage

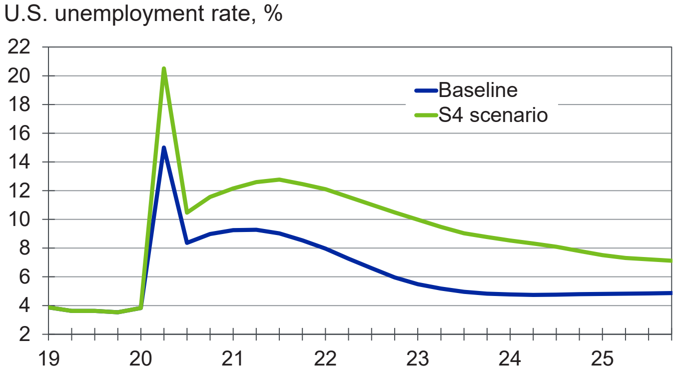
The longer-term outlook for the global economy hinges on how much structural damage is being done to the economy now, during the pandemic. That is, changes to the economy that are more or less permanent—that cannot be reversed, but must be adjusted to. Most obvious is the impending surge in business bankruptcy and failure. Chapter 11 business bankruptcy filings of large U.S. companies are already rivaling the peak during the financial crisis (see Chart 9). A big part of corporate America was overleveraged prior to the crisis. So-called leveraged lending—lending to below-investment-grade companies—had surged in recent years, fueled by very low interest rates and the booming collateralized loan obligation market. CLOs are securitized leveraged loans. These leveraged companies could manage their debt obligations when times were good, at least for the most part. But now they cannot; their sales have collapsed in the COVID-19 crisis. The Federal Reserve's credit facility backstopping the corporate bond market and its just-started Main Street Lending facility may forestall some bankruptcies. For many, though, obtaining some credit now will only delay the inevitable.

Very small businesses with just a few employees are also expected to fail en masse—they are too small to use bankruptcy court—since they had few financial resources before the crisis and have been unable to avail themselves of the PPP. Of the 8 million business establishments operating prior to the crisis in the U.S., it would not be surprising if close to a million do not make it. New businesses will eventually form, and the economy will recover, but that process will take years, not months.

Another likely casualty of the COVID-19 crisis with substantial long-term economic

Chart 8: Economic Depression

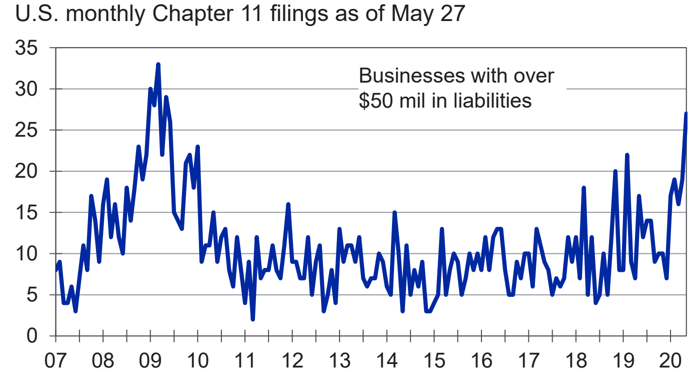
U.S. unemployment rate, %



Sources: BLS, Moody's Analytics

Chart 9: Business Bankruptcies Surge

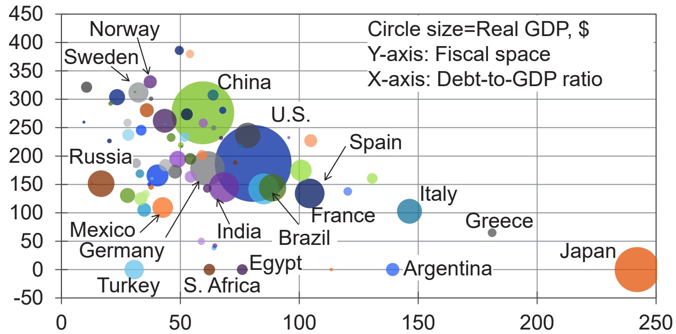
U.S. monthly Chapter 11 filings as of May 27



Sources: Bloomberg, Moody's Analytics

Chart 10: Running Out of Fiscal Space

Sovereign borrowing capacity given current yields



Source: Moody's Analytics

implications will be globalization, including international trade, foreign immigration and foreign investment. Globalization was already on its heels in the wake of the financial crisis, and of course, President Trump is no fan given his anti-immigration stance and ongoing trade war with the U.S.'s largest trading partners, most recently China. His virulently populist and nationalistic perspective has been on the ascendancy in many parts of the world. Persistently high unemployment, particularly among those in low- and middle-income groups, will surely fan these sentiments further.

Most countries have curtailed international travel and immigration to protect themselves from the virus. Trade and cross-border investment have been severely impeded. Lowering the figurative border walls that have been erected across the globe will be difficult, even on the other side of the pandemic, because governments will remain nervous and suspicious. Globalization creates winners and losers, but on net, it has been a boon to the global economy in recent decades. Just how badly globalization is diminished by the COVID-19 crisis will thus impact how badly the global economy's long-term growth potential will suffer.

The massive increase in government budget deficits and debt loads across the globe also poses a serious long-term threat to the economy. Sovereigns have had a Hobson's choice in dealing with COVID-19, with effectively no good option but to borrow heavily to support their economies during the shutdowns. The result, however, is that governments will soon teeter under the weight of their indebtedness. An increasing number of countries have already run out of fiscal space—the difference between their actual debt-to-GDP ratios and that debt-to-GDP ratio above which global investors will lose faith that they will be paid by sovereigns in a timely way. Once out of space, interest rates will rise, pushing up governments' interest payments, adding to their debt loads, and making investors even more nervous. A vicious cycle is ignited. Determining this tipping point is difficult and very uncertain, but many emerging economies such as Argentina, Egypt, Greece, South Africa and Turkey are by our estimate already there (see Chart 10). Some developed economies are also quickly reaching this point, most notably Italy, but other major European nations do not have much room to maneuver.

To maintain access to global capital markets, sovereigns will need to take extraordinary steps to address their tenuous fiscal situations. Some already are. The Europeans have begun to mutualize their debt, something that prior to the COVID-19 crisis seemed impossible. Even harder choices on government spending and taxes will be necessary once the pandemic is over. It will not be easy to strike the appropriate balance between just enough fiscal austerity to avoid the wrath of global investors but not so much that it undermines economic growth and governments' finances. In our baseline outlook, we expect that, after some struggles, sovereigns get it roughly right and are able to avoid the darker scenarios. But we also consider the alternative in our Global Debt Crisis scenario, which results in a decade-long economic depression. The stakes will be high.

Handicapping the paths

It is heartening to think that the worst of the global economic shock from the COVID-19 crisis is behind us, the recession is over, and the job losses and increase in unemployment have peaked. Though it is hard to imagine the global economy kicking fully back into gear until there is an effective vaccine or therapy that is widely available and adopted, with continued aggressive support from global central banks and governments, the economy should be able to hold its own until that time. Once on the other side of the pandemic, the global economy will quickly get back up and running, and although it will be diminished by the virus, the economy will after a few years find its way back to full employment. However, there are many other alternative paths, some more optimistic and many that are not. Each one is difficult to handicap given the extraordinary, even unprecedented uncertainty posed by the pandemic. Our scenarios consider the range of possibilities.

About the Author

Mark Zandi is chief economist of Moody's Analytics, where he directs economic research. Moody's Analytics, a subsidiary of Moody's Corp., is a leading provider of economic research, data and analytical tools. Dr. Zandi is a cofounder of Economy.com, which Moody's purchased in 2005.

Dr. Zandi's broad research interests encompass macroeconomics, financial markets and public policy. His recent research has focused on mortgage finance reform and the determinants of mortgage foreclosure and personal bankruptcy. He has analyzed the economic impact of various tax and government spending policies and assessed the appropriate monetary policy response to bubbles in asset markets.

A trusted adviser to policymakers and an influential source of economic analysis for businesses, journalists and the public, Dr. Zandi frequently testifies before Congress on topics including the economic outlook, the nation's daunting fiscal challenges, the merits of fiscal stimulus, financial regulatory reform, and foreclosure mitigation.

Dr. Zandi conducts regular briefings on the economy for corporate boards, trade associations and policymakers at all levels. He is on the board of directors of MGIC, the nation's largest private mortgage insurance company, and The Reinvestment Fund, a large CDFI that makes investments in disadvantaged neighborhoods. He is often quoted in national and global publications and interviewed by major news media outlets, and is a frequent guest on CNBC, NPR, Meet the Press, CNN, and various other national networks and news programs.

Dr. Zandi is the author of *Paying the Price: Ending the Great Recession and Beginning a New American Century*, which provides an assessment of the monetary and fiscal policy response to the Great Recession. His other book, *Financial Shock: A 360º Look at the Subprime Mortgage Implosion, and How to Avoid the Next Financial Crisis*, is described by The New York Times as the "clearest guide" to the financial crisis.

Dr. Zandi earned his BS from the Wharton School at the University of Pennsylvania and his PhD at the University of Pennsylvania. He lives with his wife and three children in the suburbs of Philadelphia.

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