

THE REAL ECONOMY

VOLUME 68



**NO VACCINE, NO
RECOVERY: THE
LONG ROAD BACK**

**POLICY CLIFFS APPROACHING AS
ECONOMY SLOWS**

**THE ALTERNATIVE: BUSINESSES STRAINED BY
COVID-19 SHOULD PREPARE FOR HURRICANE SEASON**

**INDUSTRY SPOTLIGHT: AS CARS BECOME
INCREASINGLY CONNECTED, THE PREVALENCE
OF AUTONOMOUS VEHICLES WILL GROW**

**MIDDLE MARKET TREND WATCH: HIRING
AND COMPENSATION**

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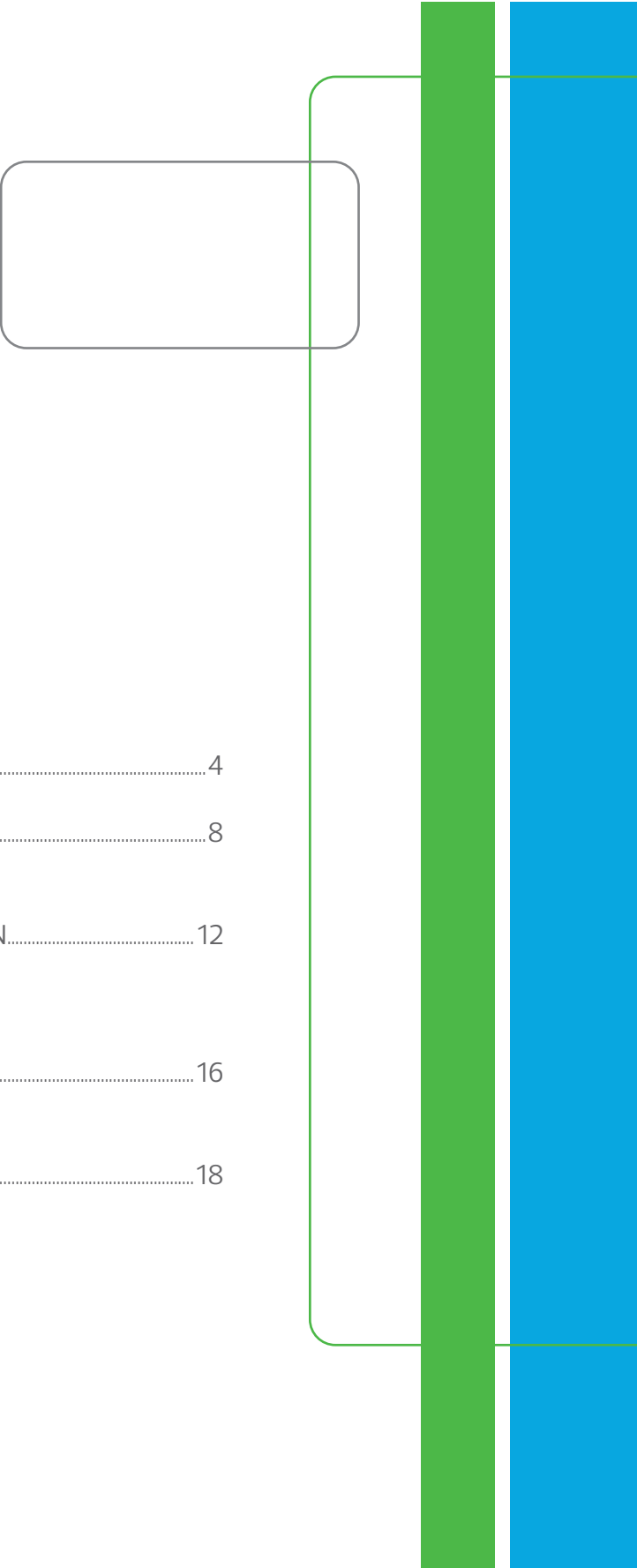


TABLE OF CONTENTS

NO VACCINE, NO RECOVERY: THE LONG ROAD BACK.....	4
POLICY CLIFFS APPROACHING AS ECONOMY SLOWS	8
THE ALTERNATIVE: BUSINESSES STRAINED BY COVID-19 SHOULD PREPARE FOR HURRICANE SEASON.....	12
INDUSTRY SPOTLIGHT: AS CARS BECOME INCREASINGLY CONNECTED, THE PREVALENCE OF AUTONOMOUS VEHICLES WILL GROW	16
MIDDLE MARKET TREND WATCH: HIRING AND COMPENSATION.....	18

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NO VACCINE, NO RECOVERY: THE LONG ROAD BACK

BY JOSEPH BRUSUELAS, ADAM LOHR AND BRANDON KOESER

IT IS BECOMING quite clear that absent an accessible and widely distributed coronavirus vaccine there will be no complete economic recovery. What originally was thought to be a 15-week problem has quickly evolved into something that looks more like a 15-month challenge. The premature reopening of the U.S. economy has resulted in an intensification of the pandemic, which is now causing growth in the economy to slow. The spread of the disease has resulted in a rollback of normal social and economic activity; this poses significant risk to already subdued utilization of the full capacity to produce around the economy. Thus, any discussion of a full reopening and recovery of the domestic economy must be discussed within the context of a viable timetable that includes a vaccine.

No vaccine, no recovery

The rebound in financial markets began in late March; by April, an end to the economic free fall had occurred. Since then, investors have been pricing in hopes of a vaccine in 2020, which we see as a premature expectation for a near-term solution to the overwhelming challenges associated with the pandemic. In short, a market recovery initiated by a robust policy response has been sustained by overzealous expectations for a vaccine to end the spread of a pandemic that has killed more than 650,000 people globally, including 150,000 in the United States.

According to the World Health Organization, there are 23 COVID-19 vaccines currently in human trials, and many more in development globally. Over the past several days, encouraging announcements include a report in the British medical journal *The Lancet* that the University of Oxford and AstraZeneca Plc have seen promising results in phase II trials of their recombinant adenovirus vaccine, known as AZD1222. The Oxford-Astra vaccine has been shown to stimulate both arms of the immune system, the neutralizing antibodies as well as the T-cells that directly target the virus, according to Adrian Hill, head of Oxford's Jenner Institute. Last week in the United States, Moderna Inc. announced initial results of its mRNA-1273 vaccine, targeted to protect against COVID-19. The results show that neutralizing antibodies were induced, which would attack the "spike" protein the coronavirus uses to enter human cells. And in Abu Dhabi, China-based Sinopharm Group has started the world's first phase III clinical trials involving a vaccine based upon an inactivated form of the actual SARS-CoV-2 virus.

THE DRUG DEVELOPMENT JOURNEY

Within the context of these promising developments, it is important to keep in mind that:

- The failure rate of novel drugs under standard conditions approaches 90%
- The historical time frame for development of a novel drug is about a decade
- Due to the potential for global distribution of a vaccine, safety and efficacy must be sufficiently vetted
- Effective phase III clinical trials of a vaccine rely on sufficient numbers of at-risk subjects (typically thousands), which could be difficult to conduct given variations in affected populations and the ebb and flow of infection waves

While we have had some positive news, views on a realistic time frame for a vaccine vary widely. Seventy-three percent of health care industry leaders polled in a Lazard survey believe a vaccine will not be widely available until the second half of 2021. This stands in stark contrast to comments from Goldman Sachs analysts who suggest investors have not fully appreciated the chances of a vaccine being approved in 2020, as reported by Bloomberg on July 17.

This divergence of opinions is playing out in the real economy as equity valuations continue to rise, even while the United States sees record numbers of COVID-19 cases, deaths and the reinstatement of lockdowns that had been prematurely eased just weeks ago. North Carolina, Louisiana and Kentucky reported record case counts on July 19.

To be clear, the resurgence of the virus is not a second wave. The increase in testing indicates this is simply a continuation of the initial spread that shuttered the economy in March. As a result, over the last four months approximately 51 million Americans have filed for first-time unemployment claims, as trillions of dollars of fiscal aid and liquidity commitments have been put forward by the Federal Reserve to stabilize the economy, and Congress is debating additional aid as several deadlines are approaching.

MIDDLE MARKET INSIGHT

The unfortunate reality is that COVID-19 has been so devastating to the real economy, our society and the national psyche, that we as a collective group have yet to consider a reality that may not include a near-term vaccine and the substantial challenges associated with an impaired economy.

The science hasn't gotten any easier

Scientists and researchers around the globe have been moving at an unprecedented pace toward a vaccine, looking to cut years off a development timeline that often takes the better part of a decade.

According to Joseph A. DiMasi, director of economic analysis at Tufts Center for the Study of Drug Development, only an estimated 12% of new drugs entering clinical development are approved for marketing. The limited number of drugs that make it to phase III clinical trials face a 54% failure rate, with 57% of those resulting from a lack of efficacy, according to a 2016 study published in the *Journal of the American Medical Association*.

That efficacy is inexorably tied to safety, and a trial must identify a dosage that balances the health benefits and risks to the patient. In the case of Moderna's vaccine, initial phase I findings on a population of 45 healthy adults between 18 and 55 indicate that the vaccine did induce an antibody response. However, recipients of a larger dose (250-µg) did not develop a significantly better antibody

WHILE WE EXPECT A VACCINE TO EVENTUALLY COME TO MARKET, THE LONG ROAD BACK FOR THE ECONOMY REQUIRES INDIVIDUAL DISCIPLINE, AND STATE AND NATIONAL POLICY PREDICATED ON SCIENCE.

response as compared to a smaller 100- μ g dose, and the larger dose was associated with more negative side effects. While that may mean younger populations can receive a lower vaccine dosage with the same antiviral benefits, adults over 65 may need a higher dosage to garner necessary immunity, according to a 2014 study of dosage efficacy for the influenza vaccine. This presents a challenge, as seniors—who represent the majority of COVID-related deaths—are less resilient to negative side effects of these drugs. The phase III Moderna trial will involve a 100- μ g dose, and will be the true test of efficacy.

Reading too much into phase II results is problematic as they are generally of a small sample size (less than 100 individuals), not placebo-controlled and are focused on establishing proof of concept, initial safety and efficacy, while also identifying side effects. Phase III trials, which Oxford/AstraZeneca started in conjunction with phase II, and Moderna plans to start on July 27, consist of thousands of subjects across multiple locations; they are placebo-controlled, and aim to confirm safety and efficacy, while monitoring adverse reactions from long-term use. According to reports from the vaccine developers, many are expected to announce phase III results and receive emergency use authorization (EUA) from the Food and Drug Administration later in 2020 or early 2021.

Although more than 160 coronavirus vaccines are in various stages of development globally, this alone may not be enough for the markets to hedge against extremely high failure rates, and an aggressive time frame for approval. In addition, even if EUA is granted, will that be sufficient from a safety perspective to allow distribution on a widespread basis to healthy individuals?

Market recovery decouples from economic recovery

In our observation, much of the discussion dominating headlines is simply due to the rebound of markets from the overselling that took place in February and March that priced in two major factors: the worst possible outcome of the virus on the U.S. economy, while little was known, and the robust policy response from fiscal and monetary authorities to ensure adequate liquidity and access to capital for not only Wall Street but also Main Street.

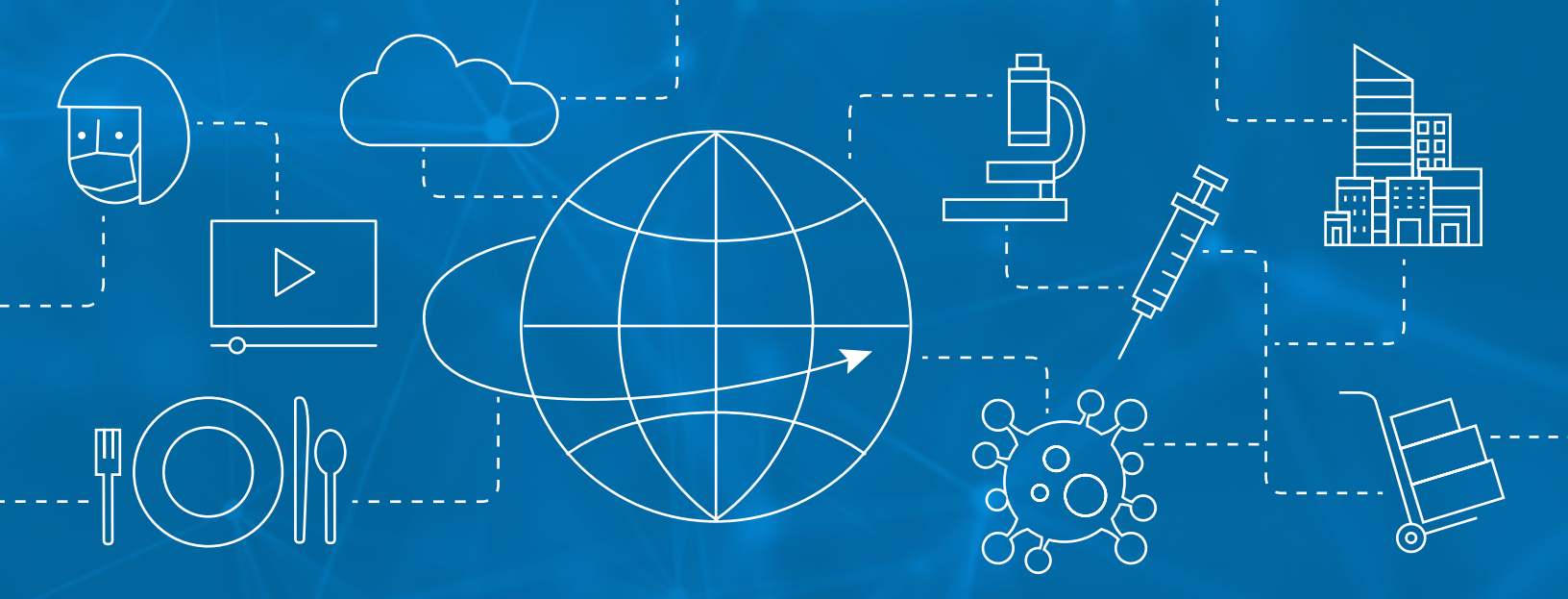
Unfortunately, the recovery of the real economy has lagged the market recovery. It is becoming more apparent that the decoupling of the markets from economic reality is now hinged on the hope for a vaccine that could allow children to safely return to school and bring consumers out of their homes and back into the economy. The market is now trading on headlines rather than economic and financial fundamentals; this, of course, is not sustainable and poses risks to the economy.

U.S. pharmaceuticals and the S&P 500

SPDR PHARMA ETF AND THE S&P 500 INDEX



Source: S&P; Bloomberg; RSM US LLP



The disconnect was most vividly illustrated on July 14 when Moderna Inc. announced initial phase I results of its COVID vaccine. While an impressive milestone, the market reaction to this announcement completely overshadowed the other economic news, as the United States reached 3.7 million confirmed COVID cases, the Big Six U.S. banks announced a collective \$35 billion in bad debt reserves, and general corporate earnings commentary indicated businesses and the economy have a long road ahead to reach recovery. "Right now we are seeing nothing that is consistent with an 11% unemployment rate," said Bank of America CEO Brian Moynihan. This was a measurable market reaction to vaccine news that even with the best possible outcomes faces significant hurdles before any vaccine is deemed safe for administration to billions of healthy people.

In short, given the known challenges in developing a safe and effective vaccine, and based upon our review of industry specialists, our view is that markets' assumption of a widely available vaccine in 2020 is highly presumptive.

Reality check

Absolute economic recovery rests on the eradication of COVID-19.

In the absence of a vaccine, the only way to move toward economic recovery is by stemming the virus's spread by continued physical distancing, the use of personal protective equipment such as face masks, and increased testing. While we expect a vaccine to eventually come to market, the long road back for the economy requires individual discipline, and state and national policy predicated on science.

The unprecedented amount of capital and scientific effort being applied to the development of a vaccine is likely to produce at least one that will receive EUA, allowing the FDA to make unapproved drugs available during a health crisis. However, the questions are still numerous: how large and frequent a dose will need to be administered to support an immune response, how effective (what level of protection) will the immunity be, how long will immunity last, and most importantly, how long will it take for a vaccine to be widely produced and distributed in sufficient numbers to effectively vaccinate a population? Several companies have already begun to ramp up manufacturing capabilities to produce millions of doses in anticipation of EUA later this year. We must keep in mind that any production will first be allocated to those at the highest risk—health care workers, first responders, the elderly—before being made available for broader distribution.

These challenges and questions are not intended to cause concern, only to raise awareness of what may lie ahead. Equity valuations and public statements by political actors all imply a vaccine will be made available in 2020 and allow the economy to quickly recover to pre-pandemic levels. The reality is that the timeline, efficacy, cost and distribution of a vaccine all introduce a significant number of factors that we do not believe are appropriately reflected in the markets and in public sentiment. Our concern is that while the markets rise, Main Street continues to struggle; when a second wave or market correction comes, it will be the American household and the real economy that suffer. ■



POLICY CLIFFS APPROACHING AS ECONOMY SLOWS

BY JOSEPH BRUSUELAS

WHILE WE ANTICIPATE that Congress will approve a fifth round of fiscal aid to support the economy as the pandemic intensifies, it is now clear that this aid will not be put in place in time to prevent an air pocket in the economy later this summer.

The lapse in aid to 20 million Americans that pumped roughly \$116 billion into the economy in June alone will result in a slower rebound in overall economic activity during the current quarter. That puts at risk our forecast of a 14.2% increase in U.S. gross domestic product in the third quarter.

Through the first week of July, households at the bottom of the income ladder—the three lower-income quintiles—have reduced their spending by only 1.9% compared to the 10.8% reduction among upper-income households and 6.8% overall.

This goes directly to the heart of why fiscal aid was targeted at the unemployed—40% of households making under \$40,000 per year have experienced job and income losses—rather than to the employed through tax cuts. It shows just how critical that aid is to supporting the economy. Absent a sufficient round of aid, investors

should anticipate a significant slowing in household spending and another round of permanent job losses.

The last thing the economy, which began to level off in late June as the pandemic began to cause pullbacks, needs is a policy-induced downturn leading to rising unemployment and a slower pace of consumer spending.

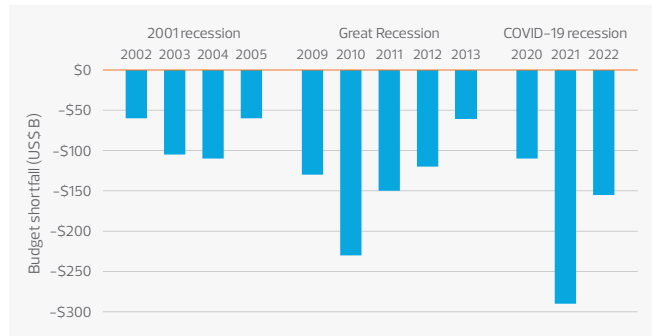
MIDDLE MARKET INSIGHT

Although we think the worst of the economic shock is in the rearview mirror, this economy is not yet out of recession and could very well remain in negative terrain if there is not sufficient policy support.

While bills for subsequent relief legislation move through Congress, the additional \$600 per week aid to the unemployed under the Federal Pandemic Unemployment Compensation expired on July 25, just one day after the end of the federal moratorium on evictions, which puts at risk roughly 22 million people.

State budget shortfalls during recent recessions

IN 2020 DOLLARS IN EACH YEAR AFTER START OF RECESSION



Source: CBPP calculations and 2020–22 estimates; RSM US LLP

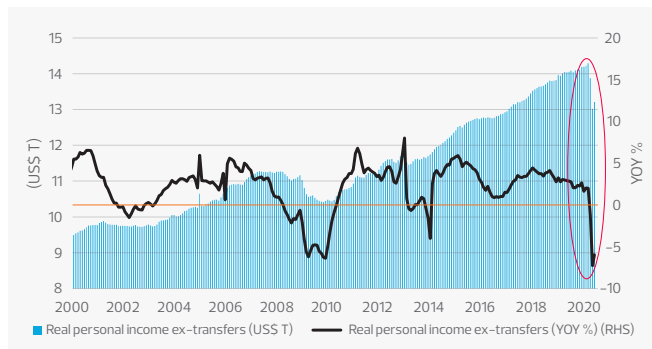
At best, we think that there will be no legislation on this until mid-August, with a substantial delay in actual payments showing up in pocketbooks.

We cannot overemphasize just how important the next several weeks are for the domestic economic outlook. Beyond the expiration of the eviction moratorium, foreclosure moratorium and unemployment assistance, Aug. 8 represents the final day to apply for Paycheck Protection Program loans despite \$132 billion remaining on the books.

Moreover, the hole that has been blown in the balance sheets of state and local governments because of declining tax revenues will require direct aid from the federal government. The Center on Budget and Policy Priorities estimates that there will be a \$110 billion shortfall in state and local budgets this year, \$290 billion next year and \$135 billion in 2022. One way to ensure a disappointing recovery or to cause a double-dip recession is to not address this critical issue.

U.S. real personal income excluding government transfers

IN 2012 DOLLARS AND YEAR-OVER-YEAR PERCENT CHANGES



Source: BEA; Bloomberg; RSM US LLP

It is important to note that Congress and the administration acted decisively by unleashing about \$1.2 trillion into the economy between April and June. But those programs are set to expire, dropping by \$1 trillion over the course of the next six weeks, as reported by The Washington Post.

So once again, a confluence of events—the expiration of programs designed to maintain income and consumer spending during the pandemic—could have disastrous consequences for households and a significant impact on the depth of the recession and the length of time before the economic recovery begins.

Why prop up the economy?

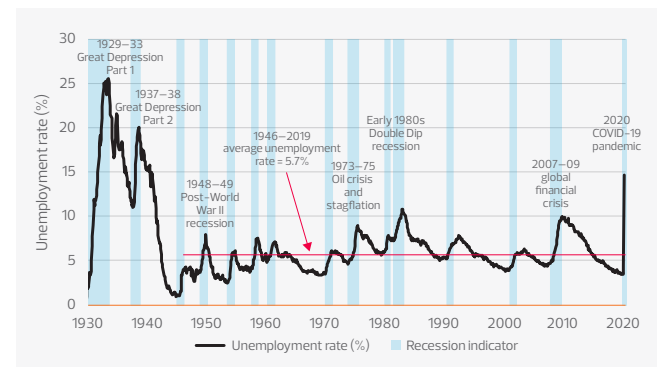
Americans' real personal income (excluding government transfers) began its decline in March at the start of the staggering loss of employment, and then fell by 7% in April and 6% in May as shown in the first figure below. Without government support, Americans are seeing a major contraction in their incomes at a time when the pandemic is already causing consumers to constrict their spending.

More than 52 million people have filed for unemployment insurance benefits over the past 18 weeks, with the unemployment rate jumping to unprecedented heights in the postwar industrial era.

The following figure shows how the economic shutdown during the pandemic caused the unemployment rate to approach 15% of the labor force before dropping to 11.1% in June as local economies began to reopen.

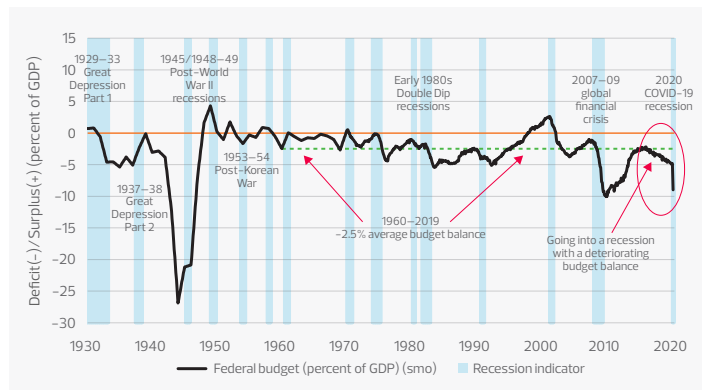
U.S. unemployment rate before and after recessions

AND EPISODES OF SIGNIFICANTLY GREATER THAN NORMAL LEVELS OF POST-WAR UNEMPLOYMENT



Source: BLS; NBER; RSM US LLP

U.S. federal budget balance before and after recessions



Source: BLS; NBER; RSM US LLP

But can we afford to prop up the economy?

The answer is yes, but that is probably the wrong question. The fact is that we the people are facing an existential threat not unlike the Spanish flu of 1918. The coronavirus pandemic has already claimed 650,000 lives worldwide and 150,000 in the United States, and that has happened in only six months. The right question, therefore, is can we afford to not prop it up?

As the figure shows and as we mentioned, the federal budget deficit typically improves during business cycle upswings (as tax revenues increase along with income levels) and then deteriorates during economic slowdowns (as workers are furloughed, social safety-net outlays increase and tax revenues decrease).

Since then, and because of the sudden increase in unemployed workers, the federal deficit has ballooned to 9% of GDP. But as the figure shows, that is nowhere close to the 27% deficits of the war effort in 1943.

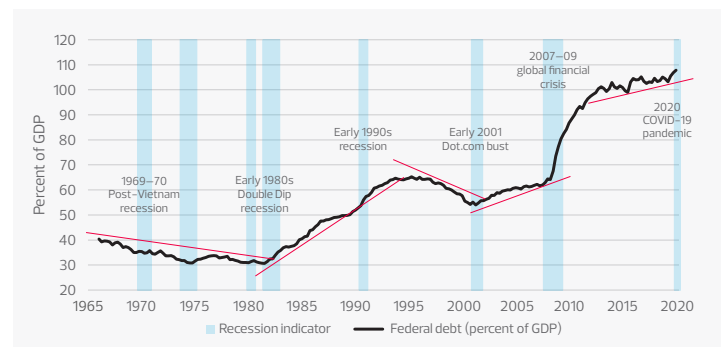
The next figure shows that the federal debt is now greater than 100% of GDP, a level once reserved for Japan and its lost decade of growth. Overlooked, however, is that debt relative to the level of GDP has been increasing since the 1980s, first when welfare reform and supply-side economics became the *raison d'être* for tax cuts, bringing about reductions in funds necessary to operate the government.

And by the second decade of this century, management focus had shifted to maximizing stock valuation, which benefited from the offshoring of manufacturing, followed by the offshoring of corporate profits to tax havens to reduce U.S. tax liabilities.

At this point, there is no empirical evidence that rising deficits crowd out investment or will cause interest rate shock, debasement of the dollar or a decrease in the use of the greenback as the world's primary reserve currency. We estimate that given the shape of the yield curve, the United States is well positioned to tap global debt markets to support the economy as it transitions through a pandemic that has yet to run its course. ■

U.S. federal debt as a percent of GDP

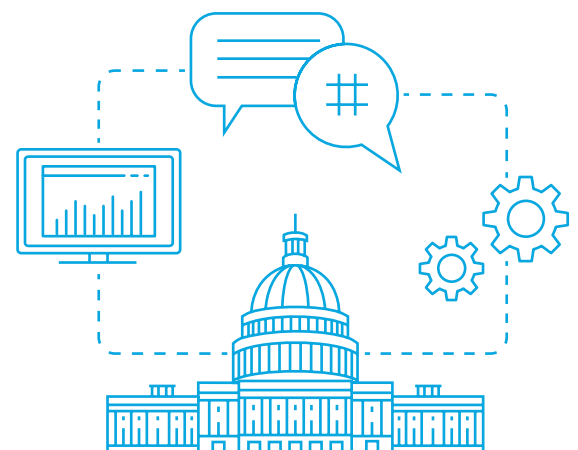
INCLUDING RECESSION AND RECOVERY PERIODS



Source: FRED; RSM US LLP

Deadline	Fiscal stimulus
July 24	Eviction moratorium expires: 22 million households at risk
July 25	\$600 per week federal unemployment expires: \$116 billion dispersed in June
Aug. 8	Congressional recess begins
Aug. 8	Deadline to apply for Paycheck Protection Program: \$132 billion out of \$659 billion put forward available
Aug.30	Foreclosure moratorium expires
Sept.30	End of payroll support for airlines: \$25 billion originally appropriated
Sept.30	End of freeze on student loan payments: \$42 billion deferred
Dec. 31	Deadlines for firms to seek payroll tax deferral: \$211 billion in payroll taxes likely to be deferred this year

Source: U.S. Treasury; Federal Reserve; U.S. Census Bureau; Small Business Administration; RSM US LLP



REAL BUSINESS INSIGHTS FOR MIDDLE MARKET COMPANIES

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- Financial services
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THE ALTERNATIVE

ALTERNATIVE ANALYSIS FOR INFORMED MIDDLE MARKET DECISION-MAKING

BUSINESSES STRAINED BY COVID-19 SHOULD PREPARE FOR HURRICANE SEASON

By DAVID MAMANE, LAURA DIETZEL, MATT WOLF, RICK KES AND JESSIKA GARIS

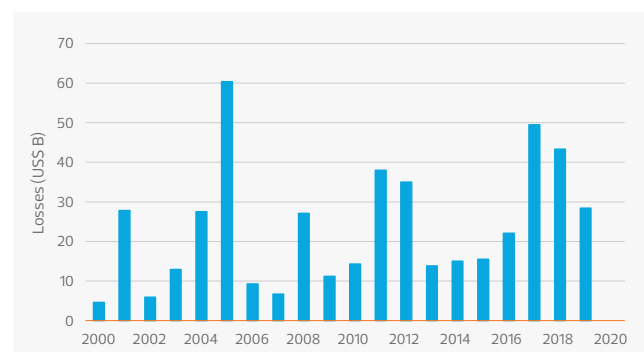
THE ATLANTIC hurricane season is already off to a busy start, with six named storms having formed as of early July. And it is likely to get worse. The National Oceanic and Atmospheric Administration predicts a 70% chance that this hurricane season will be worse than normal, with just a 10% chance of being less damaging than normal.

Anywhere from 13 to 19 named storms are expected to hit in a season that officially lasts through Nov. 30, according to NOAA. As many as six are projected to become major hurricanes, which are Category 3 or higher, the agency said. An average hurricane season has 12 named storms and three in the major category.

For businesses already stretched thin by the coronavirus pandemic, the grim forecast comes at a perilous time. Sectors such as insurance, real estate, hospitality and health care are particularly vulnerable.

To help understand the risks, RSM analysts are providing a look at how different industries can prepare for such a catastrophe—before it hits. Each industry faces its own challenges that require specific preparations.

U.S. catastrophic damage from hurricanes



Source: Verisk ISO and Bloomberg Intelligence; RSM US LLP

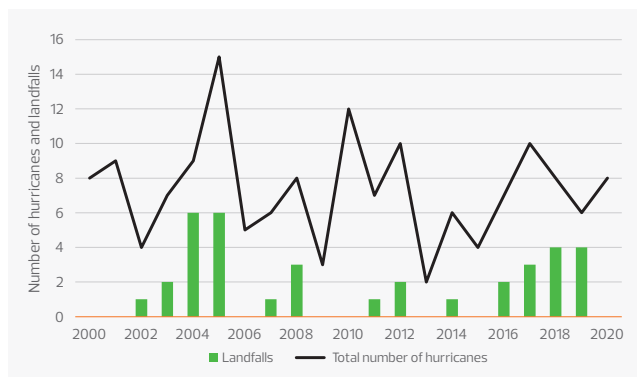
IN OUR NEW REGULAR FEATURE, "THE ALTERNATIVE," WE EXPLORE REAL-TIME, ALTERNATIVE, AND UNCOMMON DATA POINTS AND TRENDS TO PROVIDE RELEVANT FORECASTING AND INSIGHTS FOR MIDDLE MARKET BUSINESSES.

And the cost of not preparing could be high. Communities have already been weakened by the pandemic, which has strained the resources needed to mitigate the fallout from a storm. These resources include hotels, temporary housing and general contractors.

Then there is the threat to public health. Typical capacity of a school or hotel, where people are often housed during a storm, will be limited by physical distancing measures, further straining the system.

The damage of recent hurricane seasons is unsettling. In 2017, Hurricane Harvey had a devastating effect on Houston, throwing thousands out of their homes and severely straining emergency resources. And Hurricane Irma, also in 2017, created social concentrations of people seeking shelter that would pose a risk in an era of pandemic-induced social isolation.

U.S. hurricanes and landfalls



Source: Verisk ISO and Bloomberg Intelligence; RSM US LLP

Imagine if a Category 4 or 5 hurricane hit today in those areas. People would know they have to evacuate their homes. Many would try to flee north, but a large number of those would very likely not be able to. Their options would be more limited than before. They would end up in a gym or some sort of common facility where they would live, breathe and eat next to many other people, amplifying the potential spread of the coronavirus.

As the storm progressed, there would inevitably be people who get hurt or fall ill. But hospitals in Texas and Florida, to name two areas hardest hit by hurricanes, are already at or near capacity as COVID-19 cases have surged.

Even taking care of the healthy residents caught in the storm would be more difficult. Volunteers who hand out donations or help clean up roads and homes will have a harder time getting to the site, limited by travel restrictions. And when they are there, the pandemic will curtail their ability to interact with people.

The question, then, is how communities and business can better prepare for such a worst-case scenario. Here's a look at the industries that may be most affected and what they can do to prepare.

Insurance

A major hurricane would pose a significant risk to the insurance industry. As with other storms, property damage would be extensive—hardly a surprise. But it would come on top of the pandemic, which has already led to losses this year because of business interruption and other claims. In addition, insurers have been coping with property damage claims stemming from recent social unrest, which have been significant in some areas.

Many insurers are in the throes of litigation filed by corporations or organizations suing over vague policy language related to the pandemic coverage under business interruption policies. Regardless of how the lawsuits are resolved, the litigation is causing a drag on insurers' resources.

On the investment side, insurers are facing reduced income because of historically low interest rates.

In the end, this year's hurricane season will pose a major challenge for insurers, as they seek to cope with lower premium volumes, higher claims and reduced investment income.



So how can they prepare?

- **Rethink the catastrophe playbook.** The playbook—standard in the insurance industry—is a list of operational effects and challenges of large disasters, and includes several steps to follow in order to address these events. It covers the details of coping with disasters: which staff will switch from servicing business-as-usual claims to handling catastrophe claims, deployment of mobile response units to event sites, and the like.
- **Insurance companies need to reassess their assumptions in this environment.** For example, if a house is destroyed by a hurricane, the insurance company may cover the cost of a hotel, or a temporary apartment. But how does temporary housing work in a pandemic, and are hotels even open? Are they able to accommodate the same capacity as they used to? What if all the apartment complexes that would have provided emergency housing are run by landlords who are bankrupt?
- **Review claims servicing.** Will staff be available to process claims quickly enough to provide relief to their customers? New technology may be required to adjudicate claims remotely, perhaps with drones or satellite imagery. Companies may have to rethink how they address a surge in claims related to a hurricane if the areas affected are also pandemic hotspots.
- **Watch for reinsurer downgrades.** In general, reinsurers entered the year with adequate capital supported by well-developed enterprise risk management and hardening reinsurance pricing. But the economic turmoil caused by the pandemic has resulted in thinner capital buffers relative to the past few years, according to Standard & Poor's. And that could leave those with outsized hurricane exposures further exposed if 2020 is an above-average catastrophe year. If a large event resulted in reinsurer downgrades, it would have a potential

ripple effect on insurers that rely heavily on catastrophe reinsurance coverage for capital relief and further harden the reinsurance markets in future renewals.

Real estate and hospitality

The real estate industry has historically been an essential part of any community's emergency response plan when a hurricane or natural disaster strikes.

Hotels, apartment buildings—even sports arenas—are pressed into service. But this year, operators of multifamily buildings are exposed to the combined threat of the pandemic and an active hurricane season. They need to take additional precautions to ensure that their current disaster planning efforts are adequate. Some of these measures might include:

- Updating emergency contingency plans.
- Assessing business liquidity—if business income is interrupted, how long can the lights stay on?
- Reviewing insurance coverage.

The risks are considerable. Nearly 7.4 million single-family and multifamily homes, with more than \$1.8 trillion in combined reconstruction cost value, are at risk in the event of storm surges brought on by a severe hurricane season, according to Corelogic. Florida, Louisiana, New York and Texas bear the greatest risk in terms of exposure of homes that are vulnerable in a storm surge.

And, in a one-two punch, Miami, New York and New Orleans also have above-trend mortgage delinquencies brought on by damage facilitated by the coronavirus.

The outcome of a major storm may very well have outside repercussions for homeowners, lenders and insurers in these communities. Some considerations:

- **Look to underused spaces.** Empty hotels and college campuses could offer refuge and meet the guidance of maintaining shelters of fewer than 50 residents.

MOST HOSPITALS IN AFFECTED REGIONS HAVE ROBUST PLANS TO MAINTAIN OR TRANSFER OPERATIONS DURING A STORM. BUT FEW, IF ANY, HAVE PLANS THAT REFLECT THE NEW REALITY OF COVID-19.



- **Embrace technology.** States like Florida are thinking outside of the box by working on an app that will allow counties to pre-register residents for a hotel stay as an evacuation option. In a report presented by the state on the matter, using this option would require evacuations to start earlier to allow for social distancing at check-in and not overwhelm hotel staff. This option also places an increased strain on already squeezed state and local government budgets as contracts are negotiated with hotels to pay for up to seven days of lodging and meals expense.

Health care

The rising COVID-19 case counts and hospitalizations in the South, particularly in Texas and Florida, will add further complications to the already difficult business of treating acute and critically ill patients during a hurricane.

Consider the strains that have already been placed on health care in Florida. The intensive care units of more than 50 hospitals in Florida, and eight in Miami-Dade County, had reached their capacity and had no beds available as of July 20, according to Florida's Agency for Health Care Administration. And this doesn't even consider the challenge that hospitals are facing in staffing these units.

It all makes for a series of difficult choices if a major storm hits. Health care providers in general, and hospitals in particular, must revisit severe weather continuity plans. Among the considerations:

- **Maintain capacity.** Most hospitals in affected regions have robust plans to maintain or transfer operations during a storm. But few, if any, have plans that reflect the new reality of COVID-19. For example, many hospitals work to transfer patients inland or to other facilities with independent generators. Can or should hospitals transfer COVID-19 patients? Alternatively, if the destination hospital has a large census of COVID-19 patients, perhaps that destination should be re-evaluated. Bed capacity will become even more strained should a major storm make landfall.
- **Keep the lights on.** Electricity itself will most likely play an even more important role this season than in the past. Hospitals should evaluate their backup generator capacity within the context of their COVID-19 census. Will generators and fuel reserves last long enough for patients on ventilators? Are clinicians prepared to document on paper charts, if necessary? How might virtual health offerings be affected by a prolonged interruption to the power grid?
- **Provide shelter safely.** Hospitals that act as storm shelters have a unique burden. How can they protect those people who may not have other shelter while maintaining social distance and minimizing spread?
- **Stockpile equipment.** As hospitals struggle to maintain inventories of personal protective equipment for their clinicians, they may need to consider stockpiling supplies like PPE, bleach wipes and hand sanitizer for people seeking refuge as well. ■

MIDDLE MARKET INSIGHT

While different industries have different needs, they share the common goal of preparing for the worst-case scenario, before it happens. Anything less puts their businesses, as well as their employees and customers, at risk.



AS CARS BECOME INCREASINGLY CONNECTED, THE PREVALENCE OF AUTONOMOUS VEHICLES WILL GROW

BY KURT SHENK AND JASON ALEXANDER

IN RECENT YEARS, auto companies have developed more technologies that enable autonomy for their vehicles. As the number of sensors and technologies in cars has increased, so too has the amount of data available for machine learning algorithms to harness for potential innovation. These data points are sourced from a car's steering, braking and navigation systems. Once processed, the vehicle uses that information to adapt how it operates, giving it predictive—and increasingly autonomous—capabilities.

Adaptive cruise control is one technology that is essential for autonomous cars, and for which machine learning has paved the way. This technology uses a combination of sensors to identify the speed of the vehicle in front of a driver. As the car in front slows, another autonomous technology kicks in; automatic emergency braking systems use the sensors to predict when a collision is imminent and bring the car to a stop. Increased connectivity coupled with machine learning will enable some autonomous cars to come to complete stops and then resume automatically.

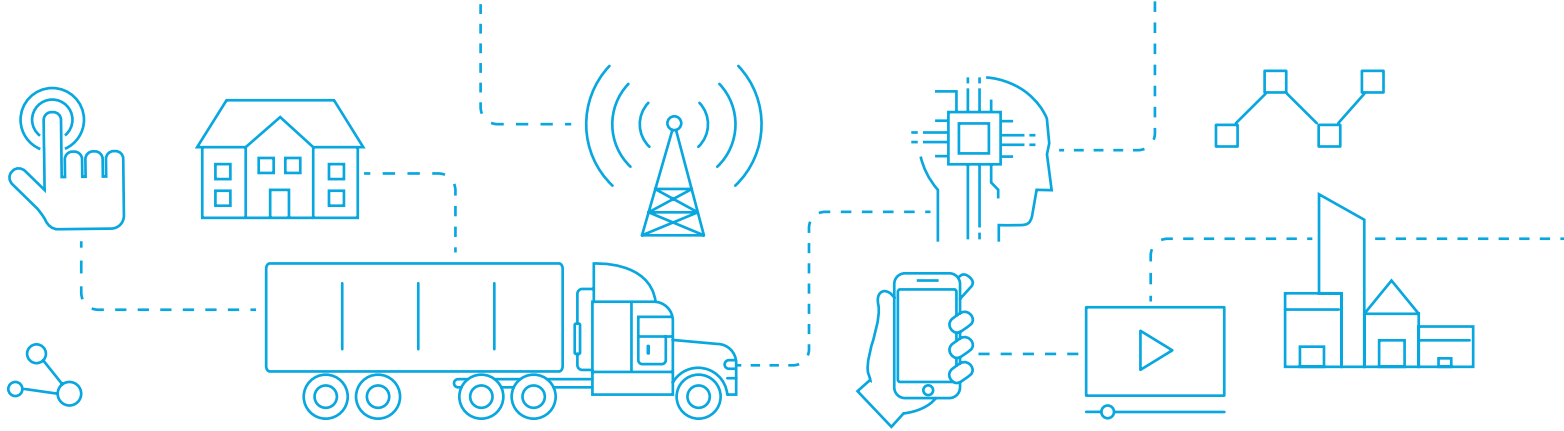
Another technology that is vital for autonomous vehicles is lane departure warning systems. Like adaptive cruise control and automatic emergency brakes, these systems use cameras and sensors to determine when a car drifts

into another lane and lets the driver know through a visual or audio signal. Some cars even nudge the driver back into the proper lane. As autonomy becomes more prevalent in the auto sector, this technology will become more and more important.

5G will improve telematics

Even with all the advanced technologies supporting autonomous cars today, there are still some serious blind spots. For example, inclement weather can cause an autonomous car to misinterpret its surroundings, which could mean the difference between life and death for its passengers as well as other drivers and pedestrians who might be nearby.

The new 5G technology is helping to mitigate against issues related to autonomous cars today; since 5G is becoming more ubiquitous, it will hopefully help to solve these problems. 5G will provide lower latency speeds, enhancing vehicle-to-vehicle connectivity and lowering the risk of collisions. Increased connectivity will benefit telematics, which is the transfer of data to and from a moving vehicle. As tactile data flows more efficiently from bumps in the road and visual sensors, autonomous cars will become safer and wider adoption of the technology is expected.



Is the subscription model coming for cars next?

Tech and car manufacturing companies continue to look for ways to monetize autonomous technology. Today, Porsche has a program that allows customers to rent from a variety of cars on a regular basis. With this service, customers can drive the 911 this month and trade it in for the Cayenne next month. When autonomous cars become more mainstream at a future date, we can reasonably expect the subscription model to follow. One way that some companies may do this is through providing consumers with the ability to subscribe to an autonomous car service. Such subscription packages would likely be many years in the making, but with rapid changes in the industry, the next car you buy could be one of the last cars you ever own.

COVID-19 gives micromobility a boost

In the current pandemic environment, developers and lawmakers have an opportunity to rethink the design of their cities. As a result of the pandemic, communities like New York, Austin and Denver have closed some streets to auto traffic, and it is possible that these streets will remain closed long term to make room for pedestrians and bicyclists. Short trips that use micromobility vehicles such as bikes and scooters account for 60% of the road trips in the United States, according to market intelligence company CB Insights. This has created an ideal opportunity for companies and innovators to change the way we travel in these short—typically less than five miles—distances.

B2C and B2B applications

Last-mile delivery entails getting products to customers in nontraditional ways. Popular food delivery services such as DoorDash, Grubhub and Uber Eats operate in this vertical.

MIDDLE MARKET INSIGHT

In the COVID-19 environment, the last-mile delivery concept is becoming increasingly popular with new mobile connectivity and platform technologies that allow users to get products delivered more efficiently and with less person-to-person contact than traditional delivery methods.

In the future, these on-demand options combined with autonomous cars will decrease delivery times. On our roads and highways, we might even eventually see a lane for cars driven by humans, and a slow lane for autonomous delivery vehicles driving 10 to 25 miles per hour.

Fleet management and telematics companies also use predictive analytics to increase efficiency in shipping speeds while increasing customer satisfaction. Advancements in fleet connectivity will also help increase efficiency in the delivery and ride sharing sectors while reducing costs.

How does your business prepare for the future of mobility?

Many companies in the industry have already adopted programs and initiatives around connectivity and autonomy. BMW, for instance, launched an innovation strategy called ACES that focuses research in the areas of autonomous vehicles and connectivity. Many companies are investing in innovative technologies such as automation and electric power to ensure that both their business model and product can continue to evolve to meet changes in customer buyer preferences.

Consumer demand for a more technology-enabled form of urban transportation shows no sign of slowing, and [5G technology](#) will allow for more possibilities for autonomous vehicles in the coming years. As telematics improves, the tech market opportunity in the automotive industry will continue to grow in areas such as car sharing, micromobility and public transportation. ■

MIDDLE MARKET TREND WATCH



HIRING AND COMPENSATION

ECONOMIC SENTIMENT among midsize companies has improved slightly as businesses slowly emerge from the pandemic shock, according to the June reading of the RSM US Middle Market Business Index, which ticked up to 108.9 from 106.1 a month earlier. Hiring and compensation data from the survey implies a mixture of uncertainty and promise. Note the following findings:



Forty-two percent expected better times ahead related to compensation.

On compensation, **29%** of participants indicated an improvement.

Intentions to hire slipped with only one-fourth of respondents indicating overall hiring level increases either somewhat or substantially.

A plurality of **42%** expect to boost hiring by the end of the year.

THE TAKEAWAY

Hiring and workforce uncertainty will likely continue for the coming months, but there are steps middle market companies can take to address the ambiguity. Evaluate current and future hiring needs considering multiple scenarios of economic slowdown and uptick, optimize remote workforce efforts to improve current employee connectivity and productivity, and explore technology strategies that automate repetitive tasks or augment current employee efforts. Check out our [resource center](#) to get more workforce dynamics insights.



Business insights to bolster your response to COVID-19

As middle market businesses like yours respond to the impact the coronavirus pandemic has had within organizations, it's important for you to stay on top of the evolving issues related to this crisis in order to mitigate risks and plan accordingly.

RSM can help you stay informed with the latest insights, ideas and countermeasures to minimize the outbreak's negative effects, as well as prepare you for future emergency events.

Visit our [Coronavirus Resource Center](#) to learn more and subscribe to our COVID-19 update newsletter. Or contact us today to speak with an RSM professional about your business recovery options.

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