

COVID-19 Economic Scenarios

United States Macroeconomic Service



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The economic impacts of a global pandemic

The outbreak of coronavirus (COVID-19) is having a considerable impact on the U.S. and global economies. The aim of this report is to provide a high-level overview as to the trajectories that the U.S. economy could follow. Due to the unprecedented nature of the event and lack of hard data, it is impossible at this point to be confident of the scale and duration of the outbreak and the economic consequences of the measures to limit the contagion. Hence, all forecasts will be subject to greater than usual uncertainty and volatility.

At the time of writing, our view is that the V-shape cases are, on-balance, the more likely trajectories based on the scale of response from the U.S. and other governments. We will continue to monitor developments and update this outlook accordingly.

In late-March, or early-April the majority of states issued restriction orders that hold at least until the end of the month. More recently, the U.S. government issued guidelines for a gradual re-opening of the economy, but compliance by state governors is not guaranteed. The uncoordinated nature of actions thus far adds to the risk that the virus may take longer to contain, leading to worse economic outcomes.

The U.S. government and the Federal Reserve (Fed) have announced extensive measures to mitigate the impact on households and businesses and, at the time of writing, it appears that further policies may follow. As well as, providing support to business and household finances, credit conditions have been relaxed and ample liquidity provided to the financial markets.

Key characteristics of the scenarios

How long it takes to bring the virus under control:

- Scope and length of state restrictions and the rate of compliance by households and businesses will influence the timelines around the peak and decline in cases.
- Pace and scale of resurgence once measures are relaxed. The ability to monitor and respond swiftly to a future resurgence in infections will be important.

How the government measures and guidelines are applied:

- Success of the implementation of the government measures and scope of mitigating the economic impact on households and businesses.
- The level of success of collective effort and timely guidance for re-opening the economy, along with level of compliance with the health experts' advice.
- Scope and speed of ease in the measures throughout the states.

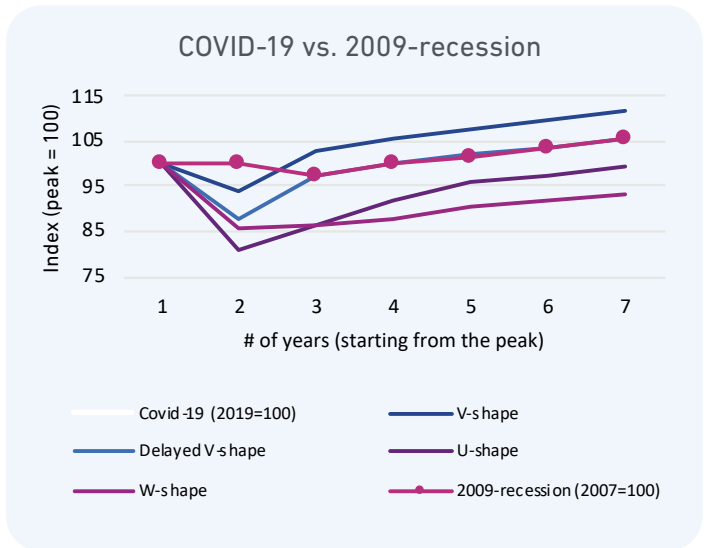
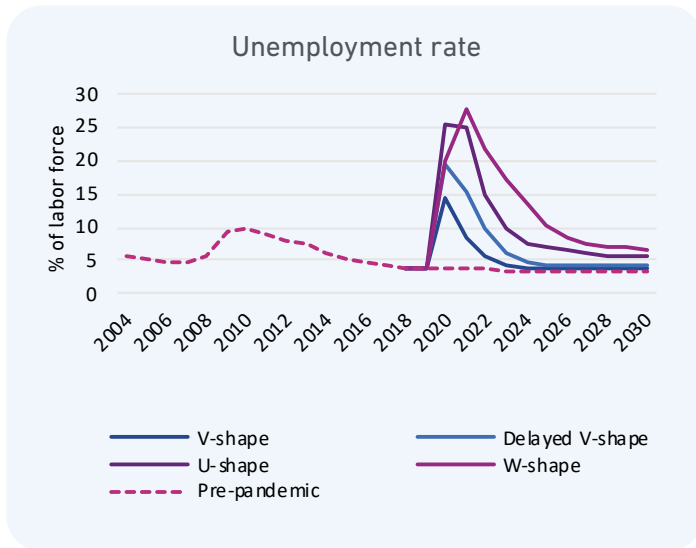
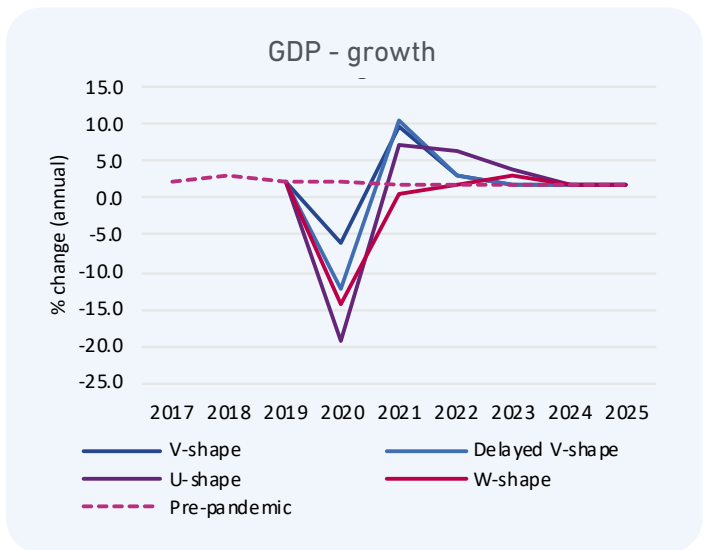
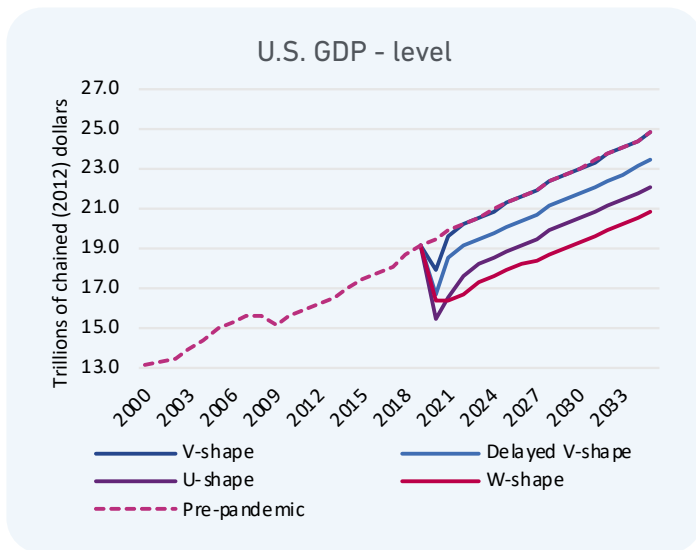
Timing and speed of the recovery – V, U shaped.

Global backdrop:

- Trade & supply chain impacts on industry.
- Financial markets performance and credit conditions.

Summary

The U.S. government and the Federal Reserve (Fed) have announced extensive measures to mitigate the impact on households and businesses and, at the time of writing, it appears that further policies may follow. As well as providing support to business and household finances, credit conditions have been relaxed and ample liquidity provided to the financial markets. Plans for a gradual re-opening of the economy have emerged but it is too early to assess whether these will be effective. Ongoing concerns that the virus is not yet under control could mean social distancing behaviors persist as households and businesses remain wary. Also there remains a real risk of a second wave of infections later in the year.



CASE 1

V-shape recovery

The COVID-19 outbreak is contained relatively swiftly allowing for an early opening of the economy. GDP rebounds strongly in a V-shape following a sharp decline in Q2, with minimal long-term scarring.

In levels terms, lost output in the first half of 2020 recovers over the second half of the year and the economy gets back on track quickly with little scarring.

Compared to the 2009-recession: Even though the drop in Q2 is far more severe than any quarterly decline in 2009, the loss in output is recovered at a much quicker pace than experienced at the previous crisis.

Unemployment: Fiscal measures are assumed to limit any further escalation in unemployment. The relatively short-lived time frame for the crisis leads to a swift rebound in economic activity and stabilization in labor market conditions. Unemployment will lag the economic recovery, but eventually returns to recent lows.

CASE 2

Delayed V-shape recovery

Containment measures are unwound more gradually than in case 1. This could be motivated by state authorities adopting a cautious approach to reopening. Alternatively, it could reflect lingering concerns over the virus leading businesses and households to voluntarily continue with social distancing. The overall impact is greater due to a longer period of lockdown and a delayed rebound in economic activity.

In levels terms, recovery will begin in the second half, with the impact concentrated later in the year and into 2021. The economy will return to its pre-crisis level in 2022. The scarring to the economy is more palpable in this scenario, as extended restrictions delay the recovery and lower the effectiveness of the support programs.

Compared to the 2009-recession: The downturn in 2020 is more much severe than the 2009 drop but recovery follows quickly and closely replicates developments after the financial crisis.

Unemployment: Fiscal measures help to limit the escalation in unemployment. However, prolonged restrictions, slower reopening of the economy and lingering caution will see unemployment remain high for a longer period before it starts decreasing. Unemployment does not return fully back to its pre-pandemic levels.

CASE 3

U-shape recovery

The strict restriction measures are in place over Q2, but level of severity between states differ and the re-opening of the economy happens unevenly. The extended restriction period will lower effectiveness of the fiscal measures and credit conditions will markedly tighten. Economic activity in 2021 picks up gradually and improves further in 2022 as a vaccine for the virus is secured. However, prolonged uncertainty and low consumer confidence on top of tightening credit conditions push out a meaningful economic recovery by the next few years.

Output levels in case 3 reflect a relatively sluggish recovery and deeper scarring impacts. The combination of an extended period of lockdown and layering on of an additional shock related to a marked tightening in credit conditions produce significant additional strain, stifling business investment and consumer confidence.

Compared to the 2009-recession: The initial loss in output and recovery trajectory for the economy is significantly weaker than the financial crisis.

Unemployment: Government measures to limit the economic impact are less successful, and the unemployment rate holds stubbornly high.

CASE 4**W-shape recovery***

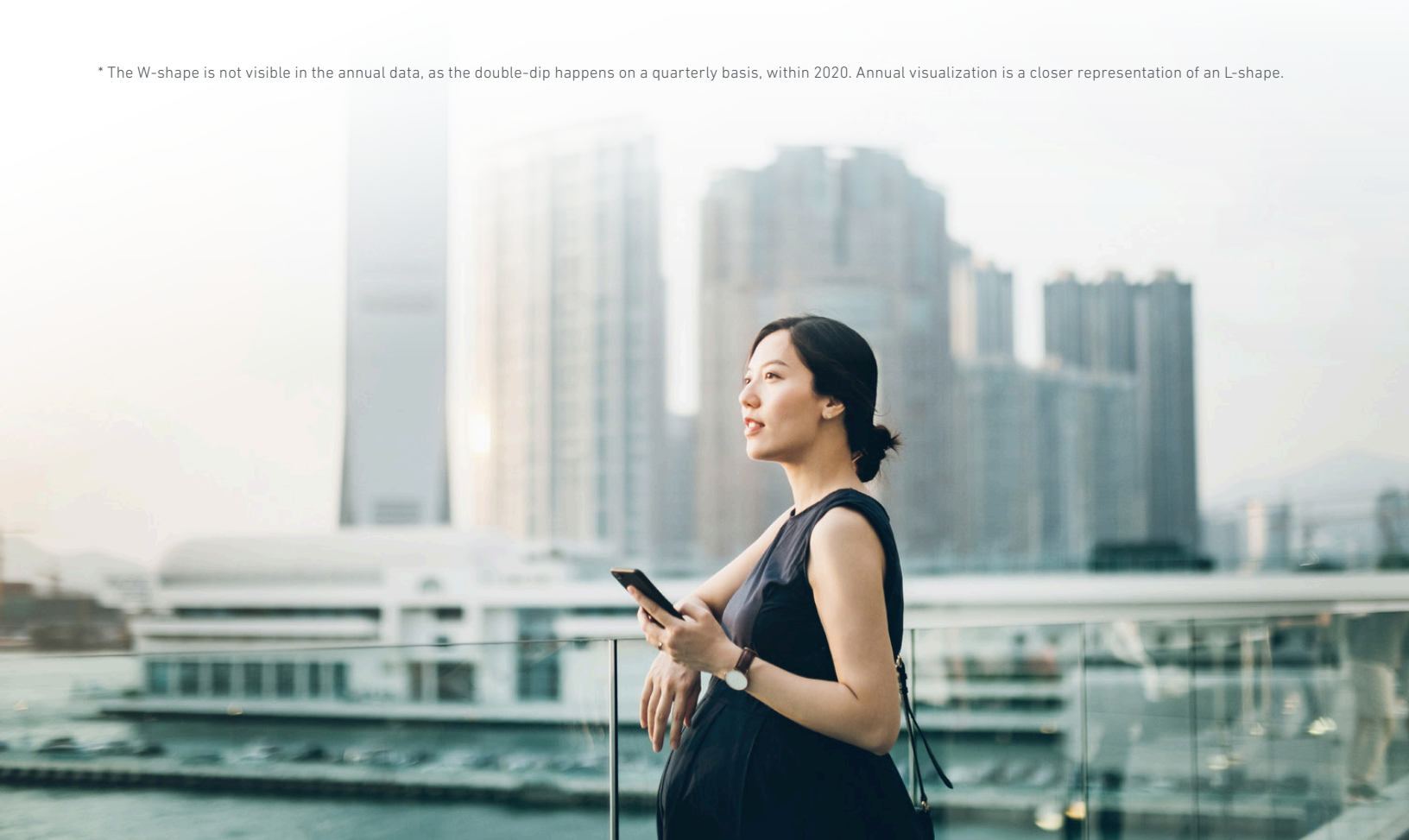
This scenario's initial trajectory is very similar to case 1, with an early reopening of the economy and quick turnaround in Q3. However, these actions prove to be hasty and lead to a resurgence in coronavirus cases in Q4, resulting in a second wave of business closures and restrictive measures. A second downturn results in a more lasting knock to consumer and business confidence, leading to persistently weak investment, hiring and household spending trends.

Output levels see less of a hit in 2020, but ends up below the other cases because of a slower recovery. The economy rebounds in Q3, but a resurgence in virus infection rates results in a second lockdown in Q4. Fiscal measures expire or become less generous. Credit conditions tighten and along with persistently high unemployment lead to a plummet in consumer confidence. Activity remains subdued in 2021 until a vaccine is secured. It takes the economy almost a decade to return to pre-pandemic levels.

Compared to the 2009-recession: The loss in output is very severe as the negative effects over two lockdowns accumulate. Economic activity is slower to recover as financial pressures limit business and household actions.

Unemployment: Similar initial reversal in unemployment as case 1 in Q3, as the economy reopens and activity recovers. However, that quickly reverses as a second lockdown is issued and unemployment spikes up again in Q4. Long-term scarring of the economy and the labor market will see a very slow recovery and much higher long-term unemployment rate.

* The W-shape is not visible in the annual data, as the double-dip happens on a quarterly basis, within 2020. Annual visualization is a closer representation of an L-shape.



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Scenario Narrative

The government has already announced a range of measures to mitigate the impact on households and businesses and, at the time of writing, it appears that further policies may be underway. The main direction they follow is to provide financial support to businesses (big and small), with some programs allowing loan forgiveness. Businesses in turn have to retain their staff and minimize job shedding. Unemployment benefits have also been extended, ensuring support for those who do lose their jobs. For households, the government has begun issuing stimulus checks to help them avoid severe consumption constraints and lessen overall uncertainty.

More details available in Appendix 2.

Scenario 1: V-shape recovery

In this case, the measures taken on social distancing and isolation are effective in containing the infection, enabling the economy to reopen by late Q2/early Q3. Technology and infrastructure are sufficiently enhanced to enable speedy tracking and response times, so infection rates stay low and incidents remain localized. Wholesale suppression strategies are avoided. Intensive global efforts secure a vaccine relatively swiftly and sufficient stockpiles are built to begin rollout to the 'at-risk' population group before the end of 2020.

Latest indications suggest the unemployment rate rose sharply in April as a range of sectors of the economy such as retail, leisure and hospitality, reduced staff. In this case, the fiscal response successfully prevents a further escalation in job shedding. Moreover, with the damage to business balance sheets limited, companies are able to refocus on expansion and hiring relatively swiftly. While the overall impact will be less than that of the last recession, because the effects are mostly concentrated in Q2, the hit is considerably higher than seen in any single quarter of the 2008 recession.

In this scenario, the economic impacts are limited by the optimistic timeframes involved in bringing the epidemic under control. The reduction in infection rates triggers a swift rebound in investor, business and consumer confidence. Financial markets recover and credit conditions ease, which in turn supports a turnaround in business conditions. Alongside this, the success of mitigation efforts by the government enables activity to recover relatively swiftly as workers are rehired, businesses re-open and delayed investments are restarted.

Key economic outcomes

During stay-in-shelter measures: Restrictive orders and policies trigger a sharp drop in output in 2020 Q2 as non-essential businesses and activities temporarily close. Job losses surge but are limited by government support measures. Consumer demand suffers as social distancing and low confidence leads to a big drop in discretionary spending, especially for big ticket items, recreation, leisure and travel. Sales of essential items rise sharply over this period due to stockpiling, but this is not sufficient to offset the decline in other areas, leading to an overall fall in spending. Investment declines as hits to business confidence and finances leads to the postponement/cancellation of projects. Exports are undermined by a fall in international demand for U.S. goods and services, as other countries also enforce lockdown measures against the pandemic. Supply side factors reinforce this trend, such as the temporary closure of factories and businesses and disruptions to supply chains. Imports mirror these trends.

After easing the restriction measures: The relatively short time frame for the suppression period in this scenario enables activity to spring back in Q3 following a V-shaped recovery with minimal scarring effects. The policies of the government and the Fed facilitate a quick recovery of business and household consumption. As firm's balance sheets improve, investment and job hiring picks up. Consumer confidence and demand rebounds with the revival in employment. The overall effect will generate a demand-led recovery. Credit market conditions gradually tighten as

the economic activity improves, but remains supportive as businesses and sectors get back on track. Trade and supply chains also improve as China, a key trade partner, and other Asian countries are already out of lockdown. Other partners will gradually follow as the virus spread is contained and restriction measures are eased.

Scenario 2: Delayed V-shape recovery

In this case, containment measures are unwound more gradually than in case 1. This could be motivated by inconsistent enforcement of the orders through the states, leading to disproportionate results and a prolonged delay in re-opening the economy on a national level. Alternatively, it could reflect lingering concerns over the virus leading businesses and households to voluntarily continue with social distancing. The overall result is a longer period of lockdown and a delayed rebound in economic activity.

The virus is successfully contained in Q2, allowing for gradual re-opening in Q3 though slightly more sluggish than in case 1. Similarly, the “restart” of the economy happens in a coordinated manner with safety measures limiting a second resurgence in place. Business activity gradually improves over the second half of the year and consumer confidence revives. The resurgence of cases is kept under control as the economy opens up completely, with enhanced technology and infrastructure allowing for speedy tracking and response times. The infection rate is low and localized. Wholesale suppression strategies are avoided. Intensive global efforts secure a vaccine over the next 6-8 months and sufficient stockpiles are built to begin rollout to the ‘at-risk’ population group in 2021 Q1.

Key economic outcomes

The economic impacts vary from the V-shape case mainly by the speed of how things develop – longer period under restriction orders, milder effects of government measures, slower pick-up in activity. Once the economy does eventually reopen, activity rebounds quickly. There would be some scarring to the economy – lost output and higher unemployment will take slightly longer to return to previous levels.

During the suppression: The prolonged lockdown triggers a sharp drop in output in Q2 as non-essential businesses and activities temporarily close. Some of the effects linger into Q3 leading to prolonged subdued confidence. Consumer demand suffers as social distancing and low confidence leads to a big drop in discretionary spending, especially for big ticket items, recreation, leisure and travel. Sales of essential items rise sharply over this period due to stockpiling, but this is not sufficient to offset the decline in other areas leading to an overall fall in spending. Investment declines as hits to business confidence and financial positions leads to the postponement or cancellation of projects. Exports are undermined by a fall in international demand for U.S. goods and services, as other countries also remain on lockdown. Supply side factors reinforce this trend, such as the temporary closure of factories and businesses and disruptions to supply chains. Imports mirror these trends.

After easing the restriction measures: As suppression measures are lifted gradually, consumer spending and business investment will be weak initially as some effects of the lockdown linger. However, the economy will still pick up in Q3 with overall activity gaining some momentum to turn into a meaningful recovery more confidently over Q4. The impact of government mitigation policies has a fair amount of success allowing for a quick revival in business activity, increase in hiring and gradual increase in consumer spending. The tightening in credit conditions is mild and short lived, avoiding any further shocks to the financial markets and economic activity. Trade will

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also improve, with China leading the recovery, which will have a favorable effect over the US. The overall result will show more job losses and business insolvencies than the V-shape case due to the longer containment. The economy will take longer to compensate for the lost output and bring down unemployment, with the process being accelerated by the availability of a vaccine.

Scenario 3: U-shape recovery

In this case, the timescales for addressing the pandemic threat take longer than the Delayed V-shape recovery case. As the virus spreads unevenly and hot-spots arise sporadically over Q2, the containment remain in place during Q3. As the period extends, the effectiveness of fiscal measures diminishes. Credit market conditions also tighten markedly, adding to the challenges faced by businesses and households. The economic impacts are more severe due to the additional financial shocks arising. This results in higher business failures and unemployment. We assume the development of a vaccine yields results over 2021, justifying gradual strengthening in economic activity thereafter.

Key economic outcomes

The economic impacts in the scenario vary from the delayed V-shape case by extending the containment period well into Q3, while credit conditions tighten more drastically and become more impactful. Economic activity will be weaker as government measures have less effect. This will stretch the economic “restart” over a couple of years underlined by higher uncertainty and low confidence in consumers and businesses. The development of a vaccine will help boost activity over 2021, with a return to the pre-pandemic levels taking 4-5 years.

During the suppression: Although the timeframe for containing the spread mostly overlaps with case 2, the scarring to the economy is more severe which prevents a quick rebound. Both Q2 and Q3 see a decrease in output, with the largest loss happening in Q2. Business activity is much weaker in Q3 and consumption is greatly suppressed. This will result in further insolvencies, depressed investment, persistently high unemployment and deteriorating consumer confidence. In addition, credit market conditions tighten to put additional strain on the businesses and consumers.

After easing the restriction measures: Economic revival will be slow and uncertain, stretching mostly over the next year. Surviving businesses emerge with greater debts and focus on balance sheet repair, with the hiring improving only slightly. Confidence is low, with very subdued investment and job creation. The development of a vaccine/drug over the next year will improve overall outlook and economic activity will start improving. However, the deeper economic costs borne in this scenario lead to a shallower recovery and output returning to the pre-pandemic over a course of 4-5 years. The recovery of the labor market will take even longer, as long-term scarring will see employment and wages growing only slowly, keeping the unemployment rate persistently high.

Scenario 4: W-shape recovery

The fourth scenario starts off on a similar trajectory to the first case. The economy opens up in Q3 and activity picks-up swiftly. However, in this case these steps prove to be hasty, triggering a second wave of infections from late Q3. This drives most states back to a lockdown in Q4. In terms of economic impacts, most of the developments from Q2 will be replicated, and even though they happen on a smaller scale, the negative impact will only accumulate and have longer term implications. This leads to a much longer period of recovery due to additional and more severe strains arising.

Key economic outcomes

The initial period of restrictions will replicate the developments in Case 1. The differences emerge from the caution exercised during the "re-opening" and the success of the measures to keep the spread under control. This case assumes insufficient technology and infrastructure allowing for speedy tracking and response times that leads to second wave of contagion in Q4. The second lockdown is expected to be shorter, as experience from the initial outbreak prove helpful. However, the improvement in Q3 are quite insufficient to deal with economic effects accumulating over in Q4, along with limited policy measures. The result will be a much slower recovery than in any of the other cases, as negative effects are compounded with the second lockdown and linger much longer due to a greater erosion in confidence.

After easing the restriction measures (modified from Case 1): Economic activity springs back in Q3 as the policies of the government and the Fed successfully help businesses and households keep afloat. Support to households supports confidence. Employment rebounds and investment recovers. As economic activity picks up, the infection rate starts rising exponentially as health measures prove insufficient or policy coordination fails. This triggers a quick reaction of the states, issuing a second lockdown in Q4.

During the second suppression: Businesses once again suffer from a sharp drop in demand and respond with job shedding and cutbacks in investment. The effects will be more severe than in Q2 since the policy measures may have expired or wound down.

Easing the restriction measures a second time: Restrictions will only be gradually lifted over 2021, as concerns persist over the virus until a vaccine is found. Against this backdrop, business and consumer confidence will remain low for longer. Credit conditions also take a greater toll than in case 1, limiting activity over the next couple of years. Employment growth will be slow resulting in persistently higher unemployment rates. With the lack of a meaningful rebound, the economy will need little almost a decade to recover lost output during the pandemic period. Improved trade relations could improve general outlook and bring recovery faster.




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Appendix

Key sectors at risk

To support the effectiveness of the virus containment, the government issued general guidelines while governors issued specific restriction orders on a state level. These measures lead to temporary closure of non-essential businesses and activities throughout the US. Similar measures across a range of other countries will also disrupt trade and supply chains.

The following sectors are most impacted:

 Hospitality	Hotels, nightclubs, bars and restaurants have all been severely impacted by the lockdown measures.
 Logistics	Many U.S. businesses have reported disruptions in their supply chains as some shipping and sea-lane routes are being closed, with many countries closing off ports. 80% of global goods are transported via ships, with China home to some of the busiest shipping container ports in the world.
 Travel and tourism	With transport restrictions and quarantine measures in place globally, this sector has been nearly shut down. Among all, airlines and air cargo carriers have been the most hardest hit.
 Food-and-drink	Stock-piling is increasing demand for goods domestically, but international trade is limited. In addition, uncertainty and drastic deterioration in labor market conditions will limit consumption to essentials only.
 Manufacturing	Some manufacturing sectors are highly dependent on international trade, and global restrictions will have a severe impact on them.
 Sports & leisure	Many social events have been postponed or suspended and this is projected to lead to serious losses to the sector.
 Education	Students are considering their enrollment options and leaning towards cheaper and closer-to-home alternatives. Colleges and institutions are facing difficulties as they now offer refunds to students. In addition, there is now a higher chance for an overall lower enrollment rate.
 Automotive	The globally interconnected nature of the sector means that supply chain disruption is inevitable. Demand for big ticket items such as cars is also falling.

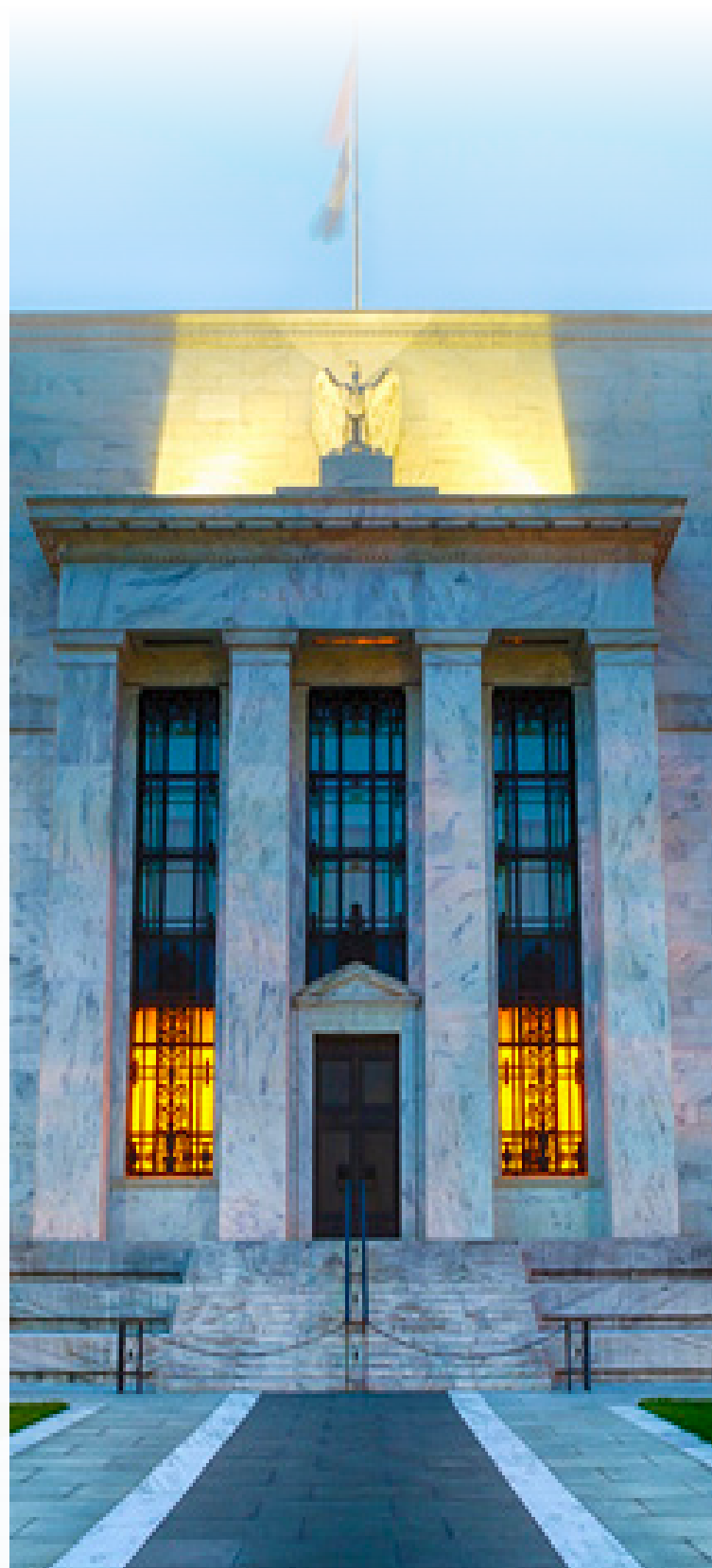
Government policy measures

This appendix outlines the series of substantive support measures announcement by the government and the Federal Reserve to mitigate the economic impacts of COVID-19.

The Federal Reserve

Since the beginning of the outbreak, the Fed has taken a series of measures to help mitigate the effects on the economy. On March 3rd, the Fed held an emergency and unscheduled meeting to lower the target range of the federal funds rate by ½ percentage point, to 1 – 1 ¼ percent. In a second emergency meeting on March 15th, officials at the Fed slashed rates by 1 percentage point, to a range between 0 – ¼ percent, and announced large-scale purchases of treasuries and mortgage-backed securities. These actions were taken to support consumer and business confidence and alleviate strain in the financial markets. In addition, it also arranged facilities to better support the economic agents and provide liquidity for a range of markets and instruments, covering big to small businesses, consumers, local authorities and municipalities. The Fed also lifted the reserve requirements and issued guidance to banks to be more flexible in providing loans to distressed customers. Further measures included delay in the implementation of some regulatory frameworks to avoid putting additional strains to the banks and allowing them to concentrate on dealing with the current economic situation.

The latest grand measures the Fed took were in coordination to the measures announced by the CARES Act. The central bank announced it will provide \$2.3 trillion in loans to support the economy. Those funds will be used to provide further liquidity to financial markets and facilitate the effective administration of the government programs through its facilities. The Fed expanded their functionalities to improve the cash flows to businesses and consumers on certain markers (the corporate credit and securities markets). Another aim of the measures is to ensure the financial system remains stable and has the scope to channel the required funds as per the government measures in the CARES Act. It will work to improve the effectiveness of the Paycheck Protection Program (PPP) and should limit job losses. The Main Street Lending Program (separate from the PPP) is a similar measure that provides 4-year loans to small and medium-sized businesses that can be deferred by a year, and the businesses in turn need to make a reasonable effort to maintain payroll and jobs along with some additional conditions.



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Fiscal policy measures

The government started introducing measures in early March. Providing a series of acts to mitigate effects from the outbreak.

The first major act is the "Coronavirus Preparedness and Response Supplemental Appropriations Act" allocating \$8.3 billion for providing medical supplies and research, grants to health agencies and organizations, loans to businesses and local authorities.

The next act with wide coverage is the "Families First Coronavirus Response Act" in mid-March which covers paid sick leave and unemployment benefits, tax credits, free COVID-19 testing, and further funds for healthcare. The measures for "paid leave" were focused towards businesses with less than 500 employees and allows for employees to take partially paid (sick or family) leave. In turn, employers who provide such leave will receive a payroll tax credit.

Final and most important act is the CARES Act (Coronavirus Aid, Relief, and Economic Security). It was signed into law on March 27th and included a wide range of measures to help support businesses, households, state and local governments, healthcare and education. The CARES Act provides \$2.2 trillion in aid to the economy as a response to the coronavirus outbreak with the main points being:

- \$100B are allocated to the Public Health and Social Services Emergency Fund for an immediate response to the coronavirus pandemic; other \$1.32B are distributed to community health centers and programs.
- Paycheck Protection Program for small businesses – provides loans up to \$10M to employers that should be used to cover payroll, sick leave, insurance premiums, rent, utilities, and mortgage interest payments. If the employers manage to retain full staff and payroll they get 100% forgiveness of the loan.
- Additional opportunities to small businesses include the Economic Injury Disaster Loan Emergency Advance – provides advances up to \$10,000 to struggling businesses that never have to be repaid; Express Bridge Loan Pilot Program – allowing quick access to funds for eligible firms, and SBA forgiveness of loan payments on existing loans over the next six months.
- \$500B in loans will be available for states, local governments, and distressed eligible businesses.
- Industry-specific loans
- For the households, the act provides stimulus checks – individuals making up to gross \$75,000 a year qualify for \$1,200. Those figures are doubled for married couples without children, while families with children receive further \$500 for each child.
- Unemployment benefits have been expanded – the length of the unemployment insurance has increased by 50% (to 39 weeks) and benefits have been increased by additional \$600 per week on top of what's already in place for four months. The coverage has also been extended to include freelancers, furloughed employees and gig workers.



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Authors

Mohammed Chaudhri
UK Chief Economist

Mohammed is our UK Chief Economist with over 10 years' experience of economic forecasting and analysis. He oversees Experian's UK macro and credit forecasting. Thanks to his forecasting, Consensus Economics ranked Experian as the most accurate UK forecaster in 2018. Alongside successfully leading the UK macro and consumer credit services, Mohammed's remit includes account management of key clients, new product innovations and supporting marketing activities.

Sunita Bali
Principal UK Economist

Sunita manages the suite of Economics Forecasting Products. She joined Experian in 2008 as a senior economist and in this role produced forecasts, scenarios and analysis on the UK economy and consumers. Prior to joining Experian, she worked as a Treasury Strategist at Rabobank and an International Economist with IHS Global Insight, where she held various roles related to modelling and forecasting global macro, industries and energy markets.

Nikoleta Koleva
Associate Analytics Engineer

Degree in Economics from Sofia University, "St. Kliment Ohridski". She joined Experian Bulgaria in June 2017 and has been working with the UK Economics team since. In her previous work she was responsible for preparing and presenting macroeconomic analysis.

Contact us

Reshma Peck
Senior Vice President, Marketing

Reshma.Peck@experian.com
experian.com/look-ahead-2020



Experian
475 Anton Blvd.
Costa Mesa, CA 92626
T: 1 855 339 3990
www.experian.com

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