COVID-19 has had a significant impact on both the U.S. and global economy, creating an economic fallout akin to the Great Depression of the 1930s. For insurers, this creates an unusual assembly of variables that will likely each have a significant and unique impact on workers’ compensation claims, both in the short term, and throughout the next few years as we move through what’s likely to be a lengthy recovery period. This paper examines three aspects of COVID-19’s effect on workers’ compensation claims:

- Recessionary impact on claims
- Recessionary impact on premiums and exposures
- Direct claims that result from COVID-19 infections
As COVID-19 took hold of the U.S. economy in the spring of 2020, unemployment rates soared. By the end of 2020, KPMG is projecting that Real GDP will have declined by 8 percent since 2019. In order to understand the effect of this economic volatility, we analyzed the Great Recession for insight into how this economic recession, and the subsequent recovery, will affect workers’ compensation claims in 2020 and beyond.

The Great Recession refers to the period of economic decline from late 2007 through 2009, during which the U.S. housing bubble burst, and a global financial crisis ensued. It was the most serious and longest lasting economic downturn since the Great Depression. Over that time, Real GDP dropped by more than 2.6 percent, and unemployment reached its peak in October of 2009 at 10 percent.

History has shown us that there is a clear correlation between changes in unemployment and GDP with changes in the frequency and severity of workers’ compensation claims. As people begin to lose their jobs and others fear the loss of theirs, frequency of workers’ compensation claims often declines. This effect is shown in the graph from the period of the Great Recession, which depicts how changes in the unemployment rate compared to the changes in frequency of workers’ compensation claims. Frequency, here calculated as ultimate claim counts relative to employee count, began to drop precipitously in the worst years of the recession. In 2009, as the unemployment rate reached its peak, claim frequency dropped by over 19 percent.

As the labor market contracts, the remaining employees are often more experienced, more knowledgeable of how to use equipment safely, and thus less likely to have minor injuries. Additionally, with people losing their jobs, workers in a declining economy are often less eager to file a claim for fear of antagonizing their employer.

As employment began to improve, frequency increased slightly in 2010 and then decreased subsequently at a much decelerated rate than during the recession period. Improvements in the labor market bring newer, less experienced employees to the work force, which often contributes to the rise in claims during a recovery period. Offsetting the shift in demographics was a continuation of some prerecession trends, including increases in safety protocols and a shift in the job market away from manufacturing and other high-risk positions. As such, this resulted in a slow decline in frequency beginning in 2011, even as the economy continued to recover from the Great Recession.

**Movements in Frequency versus Unemployment – Great Recession**

![Graph showing changes in unemployment rate and frequency over time](https://via.placeholder.com/150)

1 KPMG Office of Chief Economist
2 FRED Economic Data.
3 Based on aggregated statutory annual statements obtained from SNL
Movements in Severity versus Unemployment and GDP – Great Recession

<table>
<thead>
<tr>
<th>Year</th>
<th>Change in Unemployment Rate</th>
<th>Change in Severity</th>
<th>Change in Real GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>2008</td>
<td>-5.0%</td>
<td>-10.0%</td>
<td>-25.0%</td>
</tr>
<tr>
<td>2009</td>
<td>-10.0%</td>
<td>-15.0%</td>
<td>-20.0%</td>
</tr>
<tr>
<td>2010</td>
<td>0.0%</td>
<td>0.0%</td>
<td>2.6%</td>
</tr>
<tr>
<td>2011</td>
<td>1.8%</td>
<td>1.8%</td>
<td>2.5%</td>
</tr>
<tr>
<td>2012</td>
<td>0.0%</td>
<td>0.0%</td>
<td>2.6%</td>
</tr>
<tr>
<td>2013</td>
<td>0.0%</td>
<td>0.0%</td>
<td>2.5%</td>
</tr>
<tr>
<td>2014</td>
<td>0.0%</td>
<td>0.0%</td>
<td>1.8%</td>
</tr>
<tr>
<td>2015</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

The changes in severity during the Great Recession also follow very closely with the changes in Real GDP. As GDP fell in 2008 and 2009, severity also fell quite sharply. In 2010, GDP began to recover, increasing by 2.6 percent, and at the same time severity rose by 1.8 percent before both began to stabilize a bit in the recovery.

The cost per claim, or severity, began to increase in the years leading up to the Great Recession due to other factors such as medical cost trends; however, it continued to rise at an accelerated rate through 2009. There are several theories as to why claim severity rises during an economic downturn. One theory is that severity rises as a byproduct of the labor force contracting to a more experienced, higher-compensated and generally older population during times of great economic strain. Consequently, when an accident does occur, it is often more severe and may take the worker longer to recover. Another theory is that the uncertain job market extends the duration of payments. Workers who were injured both prior to and during the recession often have difficulty with finding a position to return to, particularly one that may allow them to do light duty due to their injury. The worker might also be inclined to stay on workers’ compensation longer in a recession, as it provides the cash flow security without having to worry about losing the next job position.

The bottom graph to the left shows the changes in claim severities during the Great Recession and its recovery period as compared to changes in each of the unemployment rate and GDP. As the economy began to improve in 2010, the severity of claims leveled off.

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6 FRED Economic Data.
7 Based on aggregated statutory annual statements obtained from SNL
As workers’ compensation is heavily tied to payroll, premium also follows closely with economic trends. However, it is interesting to note that while premium recovers along with the economy, it does so on a slight lag from the economic indicators of GDP and unemployment. In the below graph, we can see that while the economy was improving during 2010, earned premium only began to increase in 2011.

**Movements in Earned Premium versus Unemployment and GDP**

![Graph showing changes in Real GDP, Earned Premium, and Unemployment Rate from 2007 to 2019, with a notable lag in premium recovery compared to economic indicators.](image-url)
The Impact of COVID-19 on Workers' Compensation
The implications of the aforementioned trends as to what we can expect from the recession we are now entering are great, but we have to be cautious about the compounding impact of some of the more unusual aspects of COVID-19 and the associated recession. In the Great Recession, while many people lost their jobs, whole industries didn’t necessarily grind to a halt in the same way they have been in responding to COVID-19.

Government restrictions associated with COVID-19 have led to unemployment levels that far exceed the Great Recession, and have not been seen since the Great Depression. During the Great Recession, the four-week total jobless claims peaked at 2.64 million. In late March and early April of 2020, by comparison, well over six million unemployment claims were filed each week, with the total COVID-19-related job losses hitting over 40 million between mid-March and the end of May. While it is possible that this may lead to a speedier recovery once government restrictions are lifted, it is estimated that a significant portion of job losses will not come back for some time. Many businesses will fail during this period and file for bankruptcy. Other businesses that do reopen will have to do so at a far lower capacity, creating a need for, and the ability to compensate, far fewer employees. As such, we should expect to find unemployment levels relatively high for an extended period of time. The KPMG Office of Chief Economist has estimated that the unemployment rate will peak in 2020, but remain at historically high levels for the next few years.

Putting aside for now the effect of any COVID-19-specific claims, history indicates that high unemployment levels will contribute to a decline in frequency of claims. Compounding that is a change in the way those who are still employed are working, and the nature of the jobs that were lost in this period. The jobs that were lost during this period tend to be more manual labor intensive, with greater risk of a workplace accident. In other words, the remaining workforce tends to be in less hazardous jobs. Furthermore, due to shelter-in-place requirements, a large percentage of those employees remaining in the workforce are now working from home. As the uncertainty around the virus will not disappear for a while, the way we work as a society will evolve. Working from home will continue to become more and more acceptable, minimizing the risk of worker injuries. In addition to avoiding incidents like workplace slip and falls, work-related travel will also be significantly scaled back from previous levels for at least the remainder of 2020. The following graph shows our range of estimates for industry claim frequency between 2020 and 2022, as well as projected estimates of U.S. Real GDP over that period.

Frequency Projections – Excluding direct COVID claims

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KPMG Actuarial Analysis
KPMG Office of Chief Economist. U.S. Real GDP is a seasonally adjusted, annualized dollar amount.
While we anticipate declines in incident rates, we also anticipate rising severity for workers’ compensation overall. Similar to the Great Recession, it is expected that workers who are already on workers’ compensation will stay on workers’ compensation longer due to low job prospects. As in prior periods of economic downturn, return-to-work and other light duty options often disappear in a struggling job market. Unlike in prior recessions, however, we also are facing a dilemma in medical care. Difficulty, or fear, of obtaining medical services due to COVID-19 may also drive a possible spike in severity. Delays in treatments for existing claimants may result in increased severities as injuries may persist longer and become more severe without proper treatment. Additionally, other employees who otherwise would have obtained medical services for minor injuries and medical-only type claims might decline treatment altogether, removing less costly claims from the population and contributing to an increase in the overall average severity by default. Finally, as workers’ compensation courts have been forced to close due to COVID-19, reaching settlements and holding arbitrations may be increasingly difficult, contributing as well to longer durations. The following graph shows our range of estimates for industry claim severity between 2020 and 2022, similarly set against projected estimates of U.S. Real GDP over that period.

To help mitigate the concern regarding increasing severities, insurers should leverage the reduced claim inventory and focus their efforts on accurate reserving and evaluation of their strategy around settlements. With a desire for cash and the likelihood that court closures may delay any litigation to fairly far out in the future, plaintiffs may be more willing than ever to settle. If claims are more accurately reserved, then better decisions can be made to close the claims timely, which could help reduce costs.

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The Impact of COVID-19 on Workers’ Compensation

KPMG Actuarial Analysis
One key area of concern for insurers in this time is the impact of the recession on premiums. As we noted above, high unemployment rates lead to lower payrolls, which ultimately means lower premiums for insurers. This will create a decline in both audited premiums for 2020 as well as significantly reduced anticipated premiums for the coming years. Not only will it take a number of years for employment levels to rise back up to the level they were at in February 2020, but as we saw above, premium improvements also tend to lag these indicators a bit. As such, insurers need to examine their capital position and adjust their plans and expectations accordingly for this significant decline in anticipated revenue.
Workers’ compensation carriers are expected to see a significant influx of claims directly related to COVID-19. While policies generally exclude the “ordinary diseases of life,” as of May 2020 at least 25 states have either implemented executive orders, enacted legislation, or are currently debating in their legislature bills that require a presumption of compensability. These orders in effect override the exclusion. Even though the vast majority of these states are limiting these new rules specifically to first responders (inclusive of health care providers and protective service occupations), some states, such as California, have extended the presumption to compensate all employees for COVID-19 injuries sustained in the course of employment.

Given the ever-increasing likelihood that there will be claims filed specifically for COVID-19-related infections, we have evaluated the potential increase on workers’ compensation industry costs for both the U.S. total workforce and for first responders specifically. Our analysis followed the framework outlined in the National Council on Compensation Insurance (NCCI) white paper “COVID-19 and Workers Compensation: Modeling Potential Impacts,” published on April 22, 2020, with adjusted assumptions based on nationwide, occupation-specific data from a variety of data sources. We also sensitivity tested certain assumptions to develop a reasonable range of potential costs. The following table documents our key inputs to the model:

<table>
<thead>
<tr>
<th>Description of method</th>
<th>All workforce</th>
<th>First responders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share of population</td>
<td>100 percent</td>
<td>12.7 percent</td>
</tr>
<tr>
<td>COVID-19 frequency rate = Infection Rate*Report Rate</td>
<td>2.5–12.5 percent</td>
<td>2.5–25 percent</td>
</tr>
<tr>
<td>Fatality rate = Projected deaths/U.S. Population</td>
<td>0.34–0.61 percent</td>
<td>0.34–0.61 percent</td>
</tr>
<tr>
<td>Annual average salary = Mean annual wage</td>
<td>$53,490</td>
<td>$61,051 for Healthcare</td>
</tr>
<tr>
<td>COVID-19 total severity = Including Fatal and Non-Fatal benefits</td>
<td>$1,000–$60,669</td>
<td>$1,000–$60,669</td>
</tr>
<tr>
<td>Compensability rate = Judgmentally selected based on nationwide legislative changes</td>
<td>15–35 percent</td>
<td>100 percent</td>
</tr>
<tr>
<td>COVID-19 dollar impact on WC industry costs = Assessing the sensitivity of our estimates to varying infection rates</td>
<td>$9.7B–$25.8B</td>
<td>$8.5B–$19.0B</td>
</tr>
</tbody>
</table>

One of the key inputs to the analysis is the percentage of a given population that will be infected. While there is limited data available about COVID-19 infections among healthcare personnel, we projected the infection rate among first responders to range from 5 percent to 50 percent. Assuming first responders have higher infection rates than the general population, our estimates for all workers included a selected infection range of 5 percent to 25 percent.

12 Executive order N-62-20. Office of Governor Gavin Newsom (05/06/2020).
13 Includes First Responders
14 First Responders include healthcare workers and protective service occupations from the US Bureau of Labor Statistics
For the purposes of our testing, we relied on the following selected assumptions estimated by the NCCI: a reporting rate of 50 percent, a hospitalization rate of 10 percent and a critical care rate of 15 percent. The reporting rate estimates the percentage of people who contract COVID-19 who will be symptomatic. The hospitalization rate estimates the number of people that present with symptoms who will require hospitalization. The critical care rate estimates the percentage of the patients who are admitted to the hospital and will ultimately need a ventilator.

Based on CDC data as of May 1, 2020, COVID-19 total U.S. case fatalities range from 3.51 percent to 8.49 percent, equaling a 0.34 percent to 0.61 percent fatality rate across the 330 million of U.S. population. We applied the high end of that range to front-line workers and the average of 0.46 percent to all occupations.

The total medical costs for patients with pneumonia or influenza-like symptoms based on data from 2018 varied greatly depending on severity. We categorized our analysis into three groups and estimated medical severities as follows: without hospitalizations or complications ($1,000), with hospitalizations but without ventilation support ($13,763), with the intensive care unit and major complications ($60,669).

This analysis assumes that all first responders will be able to file a workers’ compensation claim and will have the benefit of a rebuttable presumption of the disease having arisen out of the course of their employment. For our analysis including the entire workforce, we varied the compensability percentage from 15 percent to 35 percent, which includes the 12.7 percent of the population who fall within the definition of a first responders.

Our analysis splits the first responders into healthcare workers and protective service employees. Separate average wages are used for each of those groupings, assuming an average annual salary of $49,880 for protective service occupations and $61,051 for healthcare workers. Indemnity benefits for two weeks were assigned to those people who do not require hospitalization, five weeks for those requiring hospitalization but no intensive care or ventilation, and 12 weeks for the most severe cases. Fatality benefits for all workers, based on the NCCI analysis, were assumed to be $341,411.

Our estimated range of potential liabilities for first responders is from $8.5 billion to $19.0 billion. To estimate this range, we estimated several scenarios of costs by varying the infection rates for each of healthcare workers and protective service members separately and stratifying the results. For all workers combined, inclusive of first responders, our estimated range of potential liabilities is from $9.7 billion to $25.8 billion. In determining this range we varied both the infection rate and the compensability rate. The selected low and high ends of our ranges are driven by the 25th and 75th percentiles of these indications, respectively.

Some resources highlight that COVID-19 may lead to long-term medical problems, increasing the lasting disabilities survivors will face. These long-term effects, not factored into the aforementioned costs for pneumonia patients, are currently unknown but may present additional workers’ compensation costs for insurers. We note that no provision for any potential additional costs of long-term disability resulting from COVID-19 is included in these findings.

18 Provision Death Counts for Coronavirus Disease (COVID-19). CDC (05/1/2020).
19 U.S. Census Bureau QuickFacts (7/1/2019).
22 George Citroner. What We Know About the Long-Term Effects of COVID-19. Healthline Media (04/21/2020).
Direct claims resulting from COVID-19 will have a significant short-term impact; however, the impact is likely less catastrophic than indicated by some other early estimations. Additionally, we anticipate that there will be an adverse recessionary impact on claims, exposures, and operations for insurers over the next few years. While the frequency will likely decline, increases in claim severities will likely increase loss ratios from their year-end 2019 levels even before layering in the impact of the direct COVID-19 claims.

The following graph shows the KPMG estimate of loss ratios through 2022 on an accident quarter basis, excluding any corrective pricing actions. Despite the recessionary effect initially indicating a decrease in loss ratios during 2020, the COVID-19 direct claims will cause substantial increases in loss ratios during Q2 through Q4 of 2020. While we anticipate that most of the cost for direct claims will be felt in the 2020 accident quarters, it is likely that there will be lengthy reporting delays for some of these claims that will cause insurers to not realize the full effect of COVID-19 claims immediately. Beginning in 2021, while we do not anticipate a significant effect from the direct COVID-19 claims, we still anticipate rising loss ratios driven by the continued recession.

**Overall findings**

Direct claims resulting from COVID-19 will have a significant short-term impact; however, the impact is likely less catastrophic than indicated by some other early estimations. Additionally, we anticipate that there will be an adverse recessionary impact on claims, exposures, and operations for insurers over the next few years. While the frequency will likely decline, increases in claim severities will likely increase loss ratios from their year-end 2019 levels even before layering in the impact of the direct COVID-19 claims.

The following graph shows the KPMG estimate of loss ratios through 2022 on an accident quarter basis, excluding any corrective pricing actions. Despite the recessionary effect initially indicating a decrease in loss ratios during 2020, the COVID-19 direct claims will cause substantial increases in loss ratios during Q2 through Q4 of 2020. While we anticipate that most of the cost for direct claims will be felt in the 2020 accident quarters, it is likely that there will be lengthy reporting delays for some of these claims that will cause insurers to not realize the full effect of COVID-19 claims immediately. Beginning in 2021, while we do not anticipate a significant effect from the direct COVID-19 claims, we still anticipate rising loss ratios driven by the continued recession.

**Industry loss ratio projections**

![Graph showing industry loss ratio projections](image)

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23 While we have used our professional judgment in all instances, projections of future ultimate loss and loss expense ratios are inherently uncertain because of the random nature of claims occurrences. They are also dependent upon future contingent events and are affected by many additional factors. Company claim reserving procedures and settlement philosophy, current and perceived social and economic inflation, current and future court and jury attitudes, improvements in medical technology, and many other economic, legal, political, and social factors all can have significant effects on ultimate claim costs. Additionally, rate actions taken can have significant effects on future premiums. We therefore cannot warrant that actual loss ratios will not vary from our projections, perhaps significantly.
While there is much uncertainty around the impact to workers’ compensation, there are certain actions that companies should consider taking to be responsive:

<table>
<thead>
<tr>
<th>Immediate actions</th>
<th>Near-term actions</th>
<th>Longer-term actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Examine workers’ compensation exposure to health care practitioners and frontline emergency workers.</td>
<td>Assess reserving approaches and consider alternative approaches to respond to changes in loss emergence patterns and disruptions in claims handling and settlements.</td>
<td>Incorporate external data to identify and react to macroeconomics and industry-specific trends.</td>
</tr>
<tr>
<td>Cross-reference exposures with external data on the size of the outbreak in that area and the specific state regulations regarding presumption of benefits to estimate the impact.</td>
<td>Incorporate predictive and proactive claim-level analytics to enhance models and better consider shifts in exposure base.</td>
<td>Enhance fraud monitoring and early warning indicators.</td>
</tr>
<tr>
<td>Separately identify, flag, and monitor COVID-19 and remote workplace claims.</td>
<td>Evaluate exposure to premium reductions and develop a financial plan.</td>
<td>Implement underwriting enhancements such as price monitoring and intelligent underwriting to help ensure that appropriate discipline is maintained as the exposures change.</td>
</tr>
<tr>
<td>Communicate with insureds who have the most significant risk of occupational exposure to COVID-19 to optimize supplies of personal protective equipment and sanitizer, train and educate personnel to implement infection controls, and take other necessary steps in order to protect the workforce.</td>
<td>Evaluate pricing approaches for continued reasonableness and reliability.</td>
<td>Develop support at the policy level for assumptions concerning exposures and exclusions.</td>
</tr>
<tr>
<td>Develop detailed claims-level dashboards to understand change in nature of claims and potential fraudulent behavior.</td>
<td>Develop support at the policy level for assumptions concerning exposures and exclusions.</td>
<td></td>
</tr>
<tr>
<td>Review reinsurance policies and develop a plan for recovery.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The Impact of COVID-19 on Workers' Compensation
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