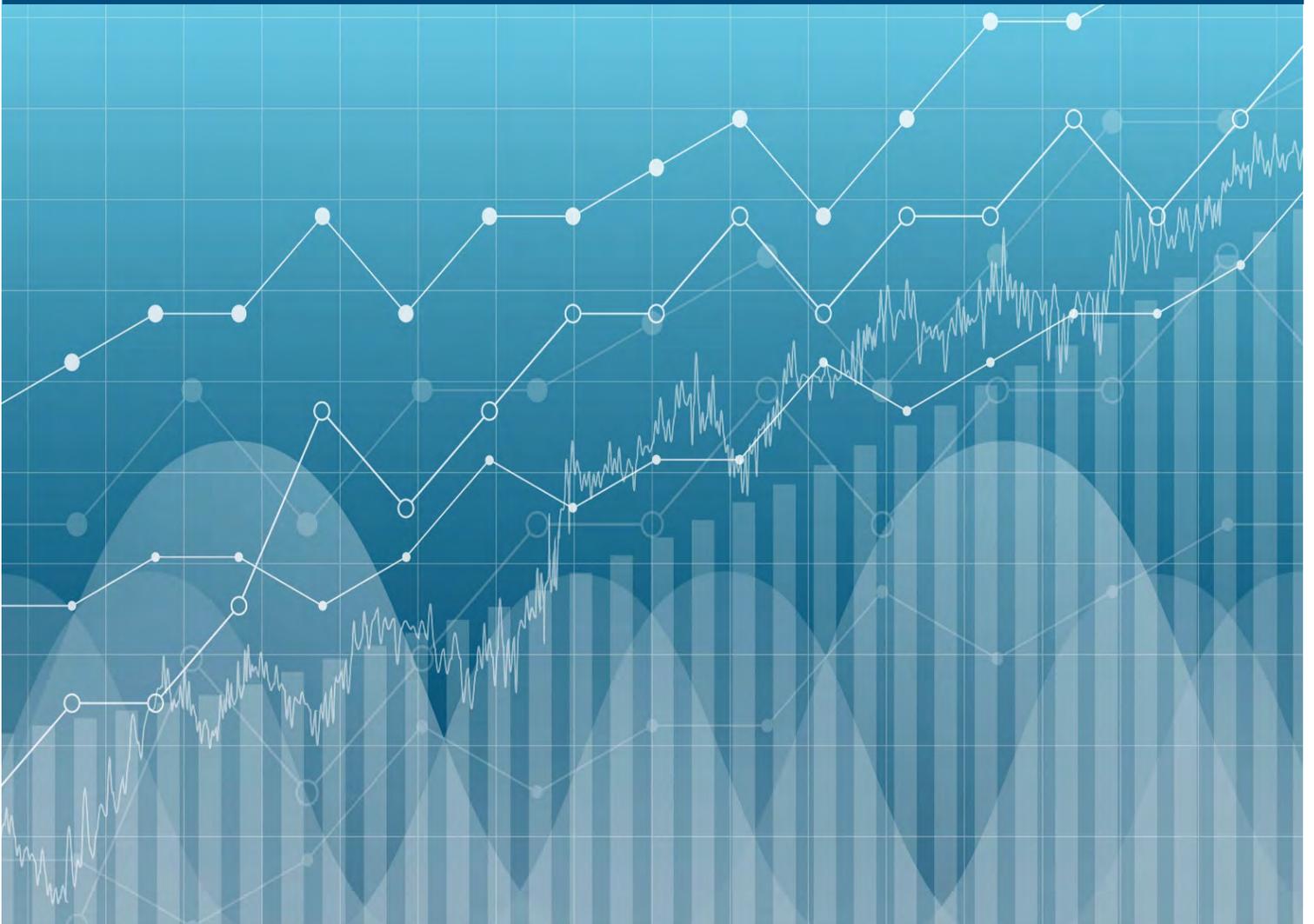


# COVID-19 Update: Economic and Asset Impact





# COVID-19 Update: Economic and Asset Impact

September 30, 2020

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# COVID-19 Update: Economic and Asset Impact

## September 30, 2020

### Introduction

The SARS-CoV-2 coronavirus, which causes the disease named “coronavirus disease 2019” (COVID-19),<sup>1</sup> was first identified in December 2019 in China, beginning a worldwide pandemic that continues. The pandemic has impacted businesses around the world, and financial markets and governments have reacted to the resulting lower levels of economic activity. Some countries placed restrictions on travel and trade to slow the spread of the virus and to retain critical supplies. While many countries that shut down early in the pandemic have reopened to various degrees, other countries have begun to experience the pandemic only more recently.

The Society of Actuaries (SOA) published its first COVID-19 research brief on March 10, 2020, followed by regular updates and expansions through June 12, 2020. The comprehensive report included a section of statistics that highlight the pandemic’s impact on economies in the U.S. and Canada. This report shows updates to the Economic and Asset Impact section of the comprehensive report with data through September 30, 2020.

### Macroeconomic Variables

#### **MONETARY AND FISCAL POLICY**

While China implemented stimulus measures starting in February 2020, March 3, 2020, marked the first of several U.S. Federal Reserve actions that quickly lowered the benchmark U.S. interest rate to nearly 0%.<sup>2</sup> Soon after, the Bank of England, Bank of Japan and European Central Bank loosened monetary policies.<sup>3</sup> These actions supported liquidity and stabilized the banking system.

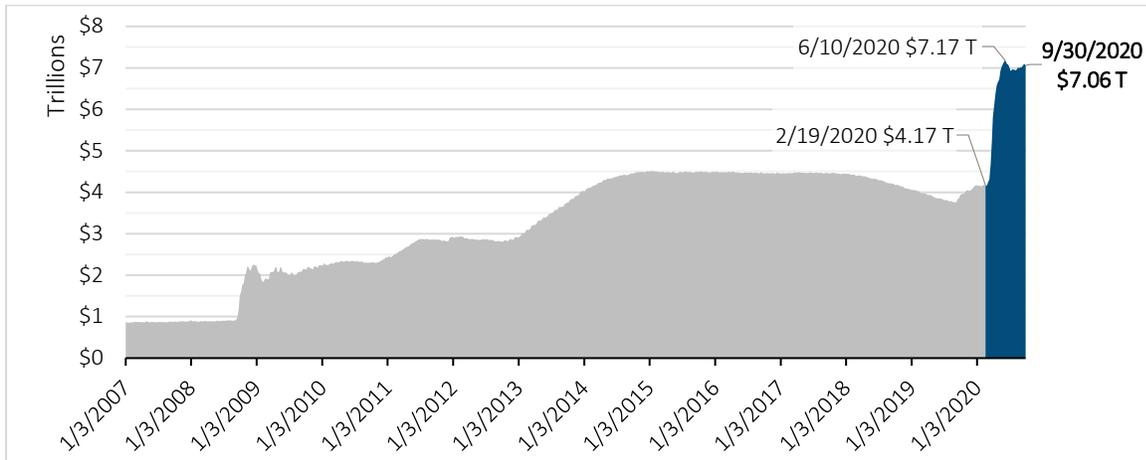
Central banks around the world have continued to use monetary policy levers to help stimulate economic activity. In March 2020, the Federal Reserve rolled out an array of temporary emergency lending programs so that companies and governments can cover current expenses and potentially avoid laying off employees. Many of these programs bring back those used during the Financial Crisis of 2007–2009, but some go further. The Treasury now manages entities called Special Purpose Vehicles (SPV) that are allowed to own assets that the Federal Reserve can’t, such as corporate bonds, asset-backed securities and municipal bonds. For the first time in its history, the Federal Reserve began buying corporate bonds, including fallen angels that started off as investment grade but later downgraded to junk.<sup>4</sup> On July 28, 2020, the Federal Reserve announced that it would extend the program—which had been set to expire at the end of September 2020—through December 2020.<sup>5</sup> Similar programs have been implemented by central banks in other countries. These actions provide liquidity for many asset classes utilized by insurers and pension funds.

Legislative branches of many countries also developed ways to use fiscal policy to maintain economic activity amid the COVID-19 pandemic. For example, the U.S. enacted a \$2.2 trillion economic stimulus law in late March. At the time of writing, federal lawmakers are attempting to negotiate a second stimulus package. European Union leaders agreed on July 21, 2020, to a €750 billion COVID-19 recovery package to help rebuild EU economies. Slightly more than half of the package will be grants that will not need to be repaid, and the remainder will be loans.<sup>6</sup>

While these policy changes help to offset the impact of low economic activity resulting from COVID-19, they come at a cost. Figure 1 looks at the U.S. Federal Reserve Bank total assets less eliminations from consolidation: Wednesday

level (WALCL) from 2007 to present. By June 10, 2020, the Fed’s balance sheet had increased to \$7.17 trillion, a significantly greater level than the height of the Financial Crisis of 2007–2009. As of September 30, 2020, the balance sheet stood at \$7.06 trillion.

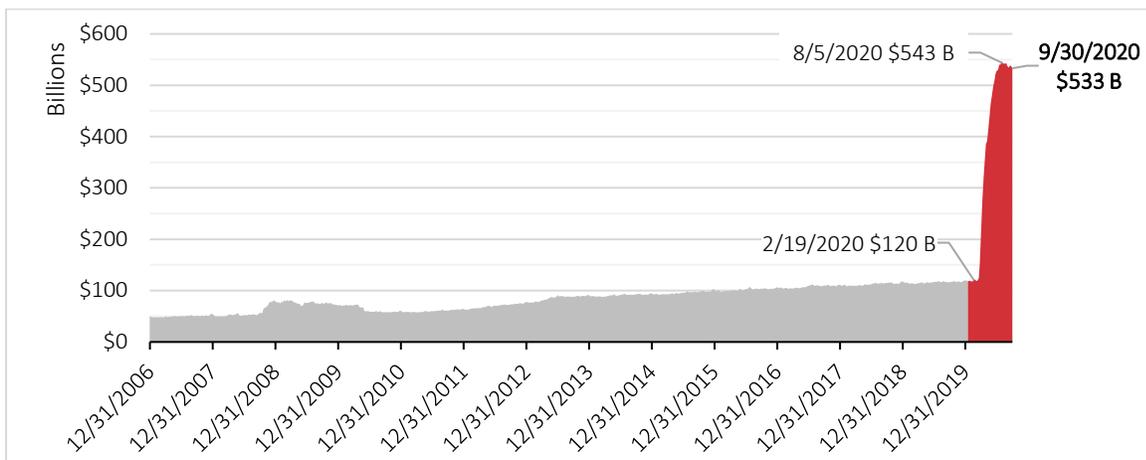
**Figure 1**  
**U.S. FEDERAL RESERVE BANK TOTAL ASSETS AND LIABILITIES (USD)**



Data source: FRED Economic Data, Federal Reserve of St. Louis, “Total Assets (Less Eliminations from Consolidation): Wednesday Level,” <https://fred.stlouisfed.org/series/WALCL>.

The Bank of Canada balance sheet (Figure 2) also spiked from \$120 billion CAD on February 19, 2020, to a peak of \$543 billion CAD on August 5, 2020. As of September 30, 2020, the balance sheet stood at \$533 billion CAD.

**Figure 2**  
**BANK OF CANADA ASSETS AND LIABILITIES (CAD)**



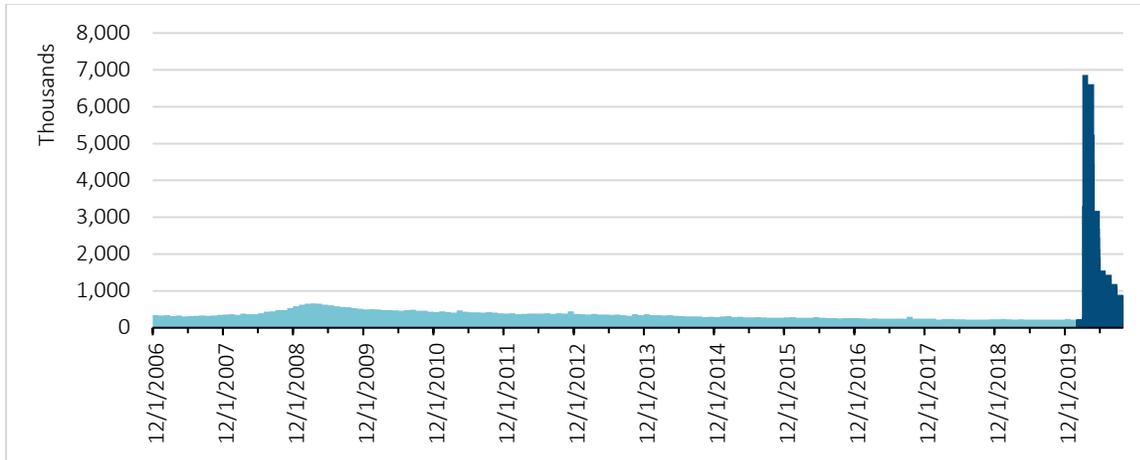
Data source: Bank of Canada, “Assets and Liabilities Weekly Series,” <https://www.bankofcanada.ca/rates/banking-and-financial-statistics/bank-of-canada-assets-and-liabilities-weekly-formerly-b2/>.

**EMPLOYMENT**

COVID-19 has heavily influenced employment in key economic markets around the world. With travel restrictions in place by government decree, employer policy or personal choice—and anticipated to be in place for extended periods of time—the transportation, travel planning, and leisure and hospitality labor sectors have been among the industries highest for reduced work or unemployment.<sup>7</sup>

Among the most dramatic and indicative economic reports received in many years were the series of U.S. Department of Labor’s (DOL) Unemployment Insurance Weekly Claims reports (Figure 3). Weekly claims reports from March 26 through July each reported millions of initial claims, despite some workers being called back to work as some businesses have reopened (Figure 4).<sup>8</sup> Weekly claims reports since August each reported greater than 850,000 initial claims. In June 2020, University of Chicago researchers project that “32 to 42 percent of COVID-induced layoffs will be permanent.”<sup>9</sup> Through July 2020, only 40% of small business employees who had been furloughed since March 2020 had been called back to work.<sup>10</sup>

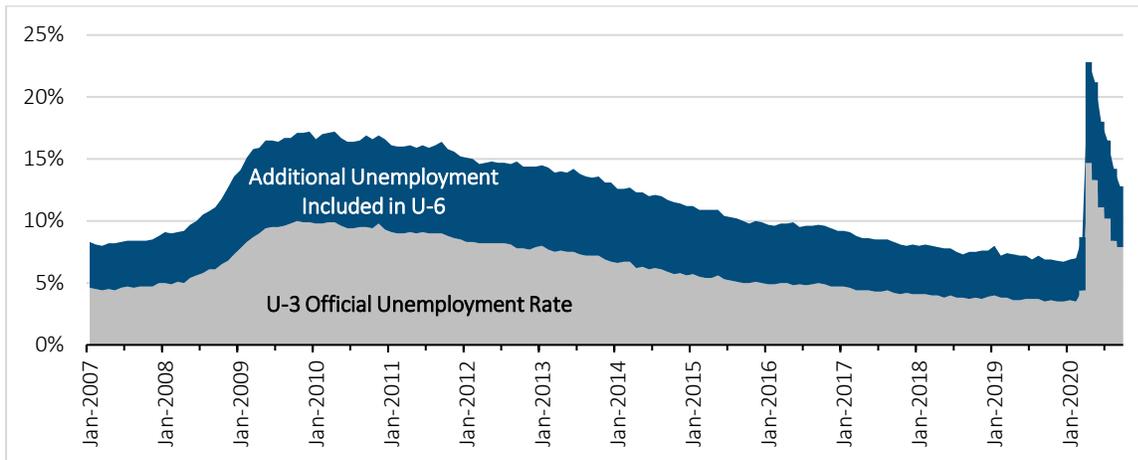
**Figure 3**  
**U.S. WEEKLY INITIAL UNEMPLOYMENT CLAIMS, SEASONALLY ADJUSTED, THROUGH SEPTEMBER 26, 2020**



Data source: Federal Reserve Bank of St. Louis, “Initial Claims,” <https://fred.stlouisfed.org/series/ICSA>, and U.S. Department of Labor, New Release, <https://www.dol.gov/ui/data.pdf>.

The U.S. official unemployment rate (U-3) more than tripled from 4.4% for March 2020 to 14.7% for April 2020, with all major industry sectors affected, especially the leisure and hospitality industry.<sup>11</sup> The unemployment rate that includes part time workers and all persons marginally attached to the labor force (U-6) increased from 8.7% for March to 22.8% for April. By September 2020, the official unemployment rate (U-3) had declined to 7.9%, and U-6 had declined to 12.8% (Figure 4). On September 16, 2020, the U.S. Federal Reserve projected that 2020 would end with an unemployment rate of 7.6%, down from their June projection of 9.3%. The Fed also predicted that output would contract by 3.7% during 2020, compared to a 6.5% contraction per their June 2020 prediction.<sup>12</sup>

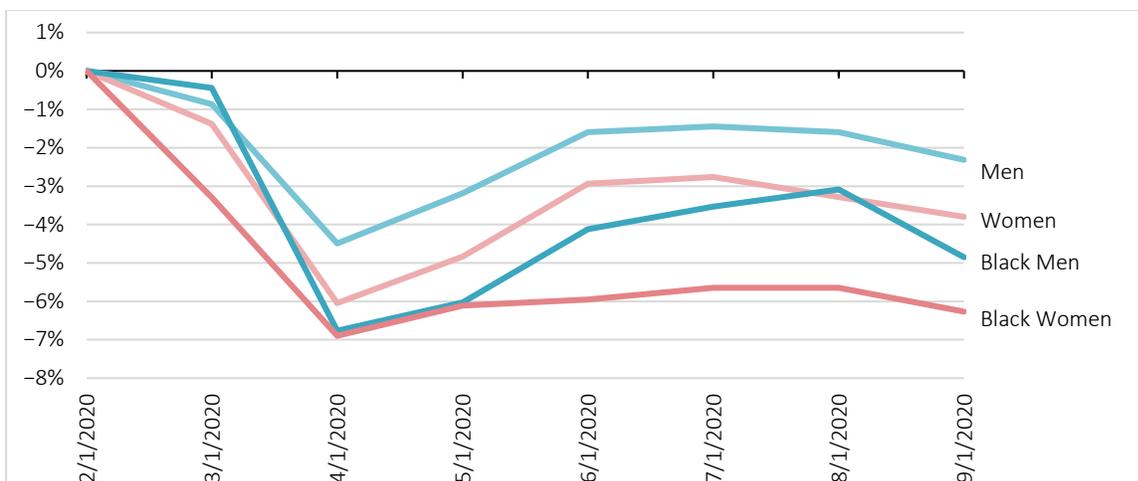
**Figure 4**  
**U.S. UNEMPLOYMENT RATES U-3 AND U-6, SEASONALLY ADJUSTED, THROUGH SEPTEMBER 2020**



Data source: Federal Reserve Bank of St. Louis, "Unemployment Rate," <https://fred.stlouisfed.org/series/UNRATE> and "Total Unemployed, Plus All Persons Marginally Attached to the Labor Force, Plus Total Employed Part Time for Economic Reasons, as a Percent of the Civilian Labor Force Plus All Persons Marginally Attached to the Labor Force (U-6)," <https://fred.stlouisfed.org/series/U6RATE>. Bureau of Labor Statistics, October 2, 2020, "News Release," <https://www.bls.gov/news.release/pdf/empst.pdf> and "Economic News Release," <https://www.bls.gov/news.release/empst.t15.htm>.

Unemployment experience in the U.S since the pandemic began varies by race and gender (Figure 5). Women have suffered greater unemployment than men. In addition, black people have experienced unemployment more severely than the population as a whole, and black women have suffered more than black men. Compared to their levels on February 1, 2020, September 1, 2020, labor force participation rates for black women were down 6.3%, and down 4.9% for black men, whereas the rates for women and men in total were down 3.8% and 2.3%, respectively.

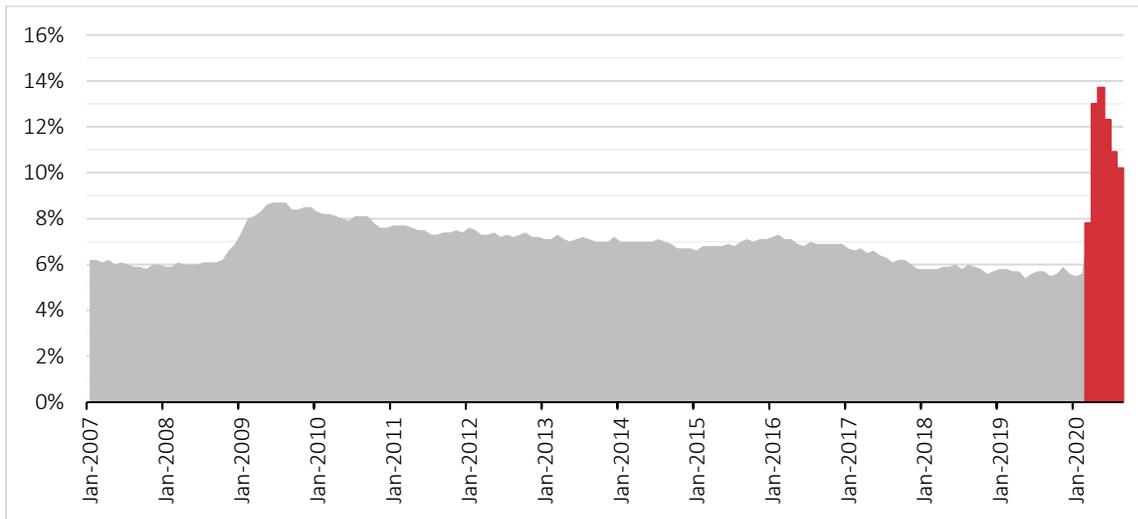
**Figure 5**  
**CHANGE IN U.S. LABOR FORCE PARTICIPATION RATES SINCE FEBRUARY 1, 2020**



Data source: Federal Reserve Bank of St. Louis, "Labor Force Participation Rate," Accessed October 5, 2020, <https://fred.stlouisfed.org/categories/32449?t=african-american&rt=african-american&ob=pv&od=desc>.

The overall employment situation in Canada is similar to the U.S. Statistics Canada reports the overall seasonally adjusted unemployment rate having increased from 5.6% for February 2020 to 13.7% for May before declining to 10.2% for August 2020 (Figure 6).

**Figure 6**  
**UNEMPLOYMENT RATE: AGED 15 AND OVER: ALL PERSONS FOR CANADA, THROUGH AUGUST 2020**

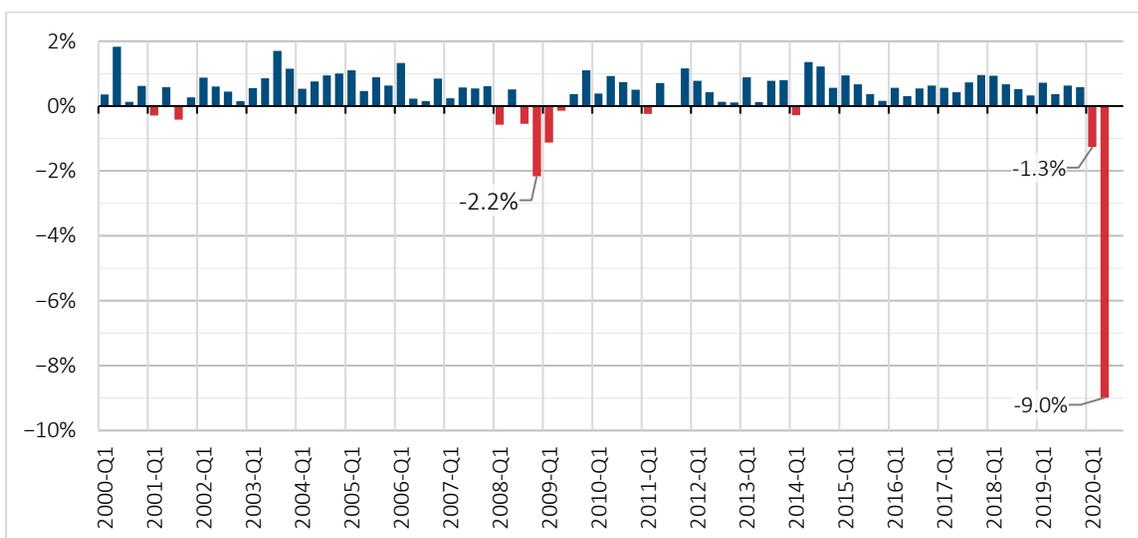


Data source: Federal Reserve Bank of St. Louis, “Unemployment Rate: Aged 15 and Over: All Persons for Canada,” <https://fred.stlouisfed.org/series/LRUNTTTTTCAM156S>, and Statistics Canada, (2020, Sept. 4), “Labour Force Survey, August 2020,” <https://www150.statcan.gc.ca/n1/daily-quotidien/200904/dq200904a-eng.htm>.

**GROSS DOMESTIC PRODUCT**

On June 8, 2020, the National Bureau of Economic Research determined that the U.S. economy entered a recession in February 2020, ending a record-length 128-month expansion.<sup>13</sup> The Bureau of Economic Analysis (BEA) announced on September 30 that second quarter 2020 GDP fell at an estimated annual rate of -31.4%.<sup>14</sup> For comparison, during the Great Depression, from the peak in August 1929 through the trough in March 1933, GDP fell a total of 30%.<sup>15</sup> Figure 7 tracks GDP changes by quarter since 2000. The BEA is scheduled to release its third quarter estimates on October 29, 2020.

**Figure 7**  
**QUARTERLY CHANGES IN U.S. GDP, 2000–2ND QUARTER 2020**



Data source: Bureau of Economic Analysis, “Current-Dollar and “real” Gross Domestic Product,” <https://www.bea.gov/data/gdp/gross-domestic-product>, and author’s tabulations.

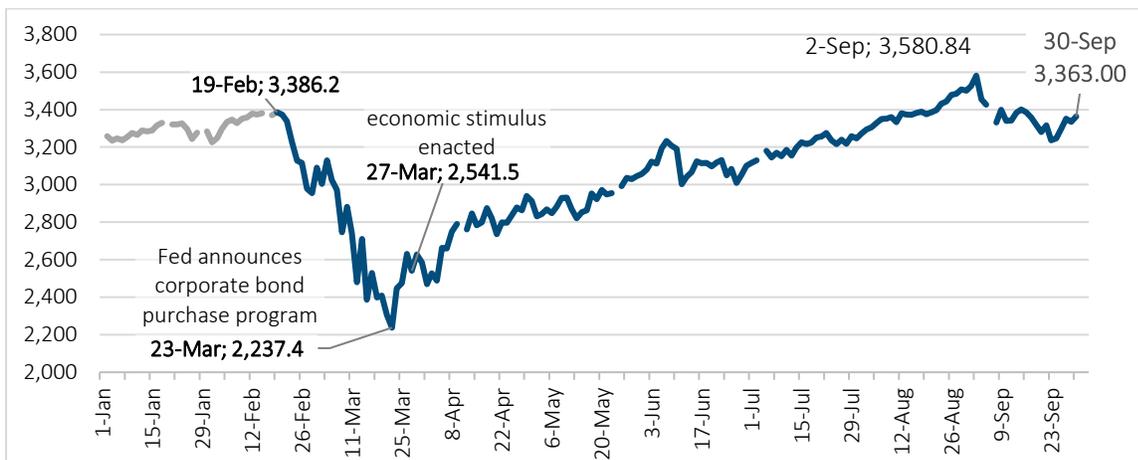
In June 2020, the International Monetary Fund projected global growth for 2020 of -4.9%, significantly lower than its April prediction of -3.0%. The June report also projects global growth for 2021 of 5.4%.<sup>16</sup> The IMF’s next report is anticipated to be released in October 2020.

### Asset Values and Volatility

International financial markets have reacted to COVID-19 as some investors sought increasing shelter in government bonds amid uncertain future economic activity arising from the impact of COVID-19. U.S. markets have been volatile since February 19, 2020, the date generally recognized as the start of COVID-19 impact on U.S. financial markets.

Figure 8 shows the S&P 500 since January 1, 2020.<sup>17</sup> By March 13, when the U.S. declared the COVID-19 outbreak a national emergency, the S&P 500 was down 20% from February 19. On March 23, the S&P 500 bottomed at 34% below its February 19 level, when the Fed announced that it would purchase corporate bonds of U.S. companies that were investment grade as of March 22.<sup>18</sup> September 2 marked the S&P 500’s highest point to date in 2020, at 5.7% above its February 19 level. The S&P 500 closed on September 30 at 0.7% below its February 19 level.

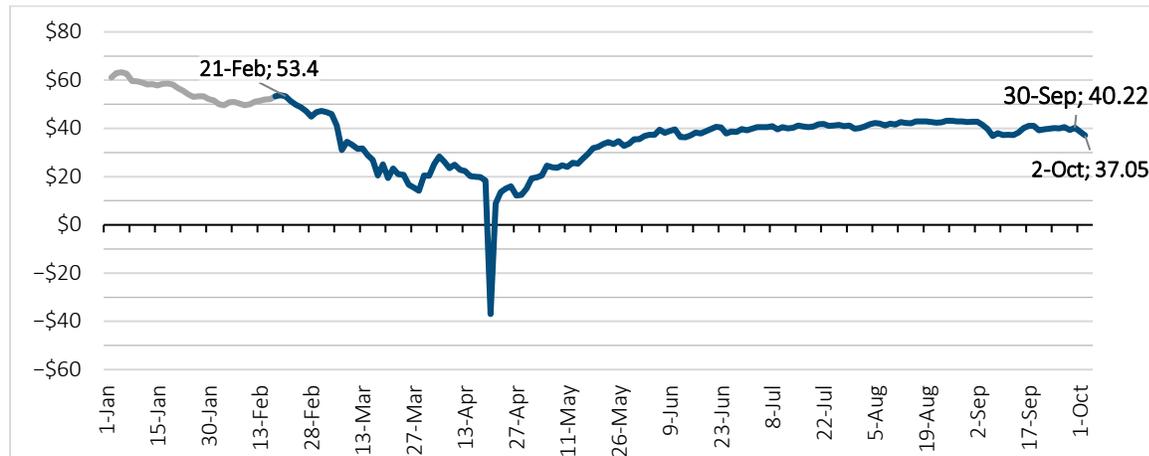
**Figure 8**  
**S&P 500 DURING 2020**



Data source: Federal Reserve Bank of St. Louis, “S&P 500,” <https://fred.stlouisfed.org/series/SP500>.

One of the most unique asset value occasions triggered by COVID-19 economic activity was the negative price of West Texas Intermediate (WTI) crude oil futures. The pandemic strongly reduced oil demand around the world while oil producers maintained high levels of supply, and WTI spot oil prices had dropped. May WTI oil futures contracts expired on April 21, and on April 20, traders who were not equipped to take physical deliveries rushed to sell their futures contracts to buyers who had storage capacity. Owners of WTI futures without storage were paying buyers to take their oil, sending the price into negative territory.<sup>19</sup> Subsequently, crude oil prices generally rose through May and have essentially stabilized from June through August before fluctuating some during September. WTI crude oil prices closed on September 30, 2020, at \$40.22 per barrel and fell to \$37.05 by October 2, 2020 close (Figure 9).<sup>20</sup>

**Figure 9**  
WEST TEXAS INTERMEDIATE CRUDE OIL PRICE PER BARREL



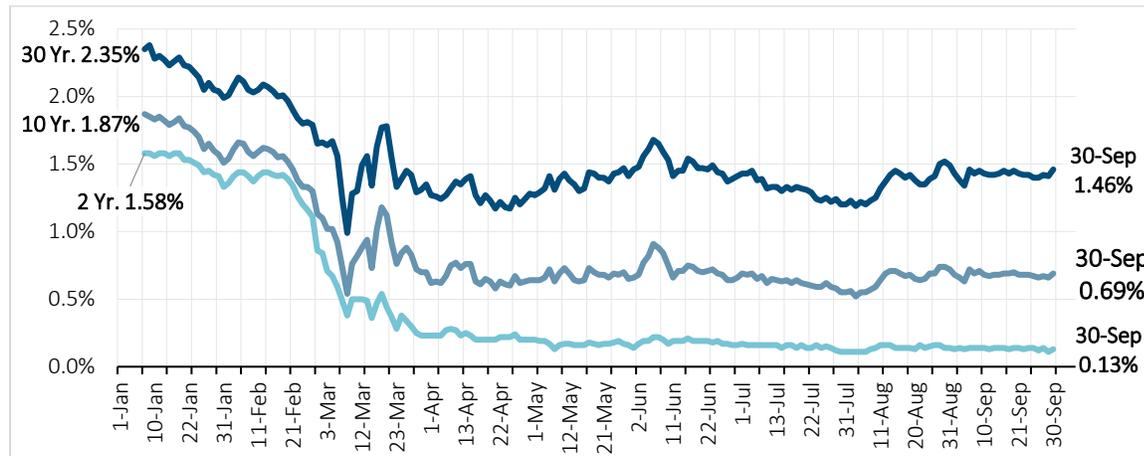
U.S. Energy Information Administration, "Cushing, OK WTI Spot Price FOB," (Accessed October 5, 2020), <https://www.eia.gov/dnav/pet/hist/rwtcD.htm>; and Business Insider, "Oil (WTI) Historical Prices," (Accessed October 5, 2020), <https://markets.businessinsider.com/commodities/oil-price?type=wti>.

The Fed provided a backstop to the financial ecosystem with its March 23 actions. Since then, results have diverged between Wall Street, as measured by financial markets, and Main Street, as measured by GDP growth and unemployment. Analysts will want to consider this dichotomy when contemplating stress tests and other scenario-planning exercises.

## Low Interest Rate Environment

Low interest rates for investment in major international financial markets have been more the norm over recent years, and the impact of COVID-19 has further driven down interest rate levels. In early March, benchmark Treasury yields in the U.S. fell nearly 100 basis points from February 19 levels (Figure 9).<sup>21</sup> The benchmark 10-year Treasury yield temporarily reached a record low of under 0.40% and the 30-year Treasury moved below 1.00% for the first time ever.<sup>22</sup> By the end of March, some reversion had occurred from the lowest interest rate levels, and the yield curve had steepened. Rates continue to be lower than the first two months of the year, and the curve remains steeper than it was at the start of the year. On August 27, 2020, the Fed indicated significant changes in its monetary policy that could result in continued low interest rate for some time.<sup>23</sup> As of September 30, 2020, compared to their February 19, 2020 levels, 30-year Treasury rates were down 55 basis points (bps), 10-year Treasuries were down 87 bps, and 2-year Treasuries were down 129 bps.

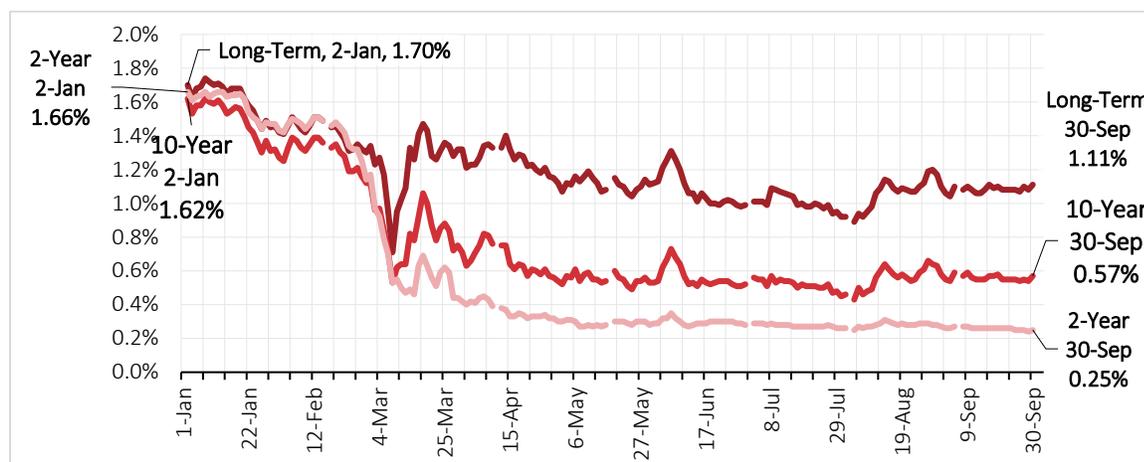
**Figure 10**  
**SELECTED U.S. DAILY TREASURY CURVE RATES DURING 2020**



Data source: U.S. Department of the Treasury, "Daily Treasury Yield Curve Rates," <https://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yieldYear&year=2020>.

Similarly, Government of Canada Benchmark Bond yield rates dropped significantly in late February and early March. After a brief but steep increase from early to mid March, rates followed a generally declining trend through July. Rates rose some in August before levelling off through September. As of September 30, 2020, the 10-year benchmark bond was 0.57%, 78 bps lower than at the start of 2020, and the long-term benchmark bond was 1.11%, 123 bps below its 2020 start.

**Figure 11**  
**SELECTED GOVERNMENT OF CANADA BENCHMARK BOND YIELD RATES DURING 2020**



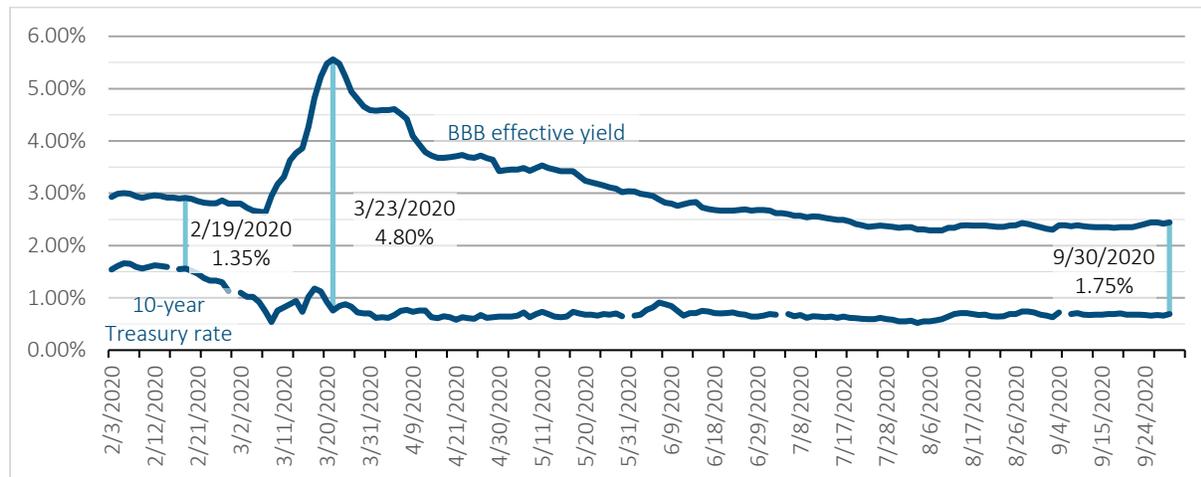
Data source: Bank of Canada, "Canadian Bond Yields: 10-Year Lookup," <https://www.bankofcanada.ca/rates/interest-rates/lookup-bond-yields/>.

## Reinvestment and Default Risk

Corporate spreads widened substantially during March in both the U.S. (Figure 10) and Canada (Figure 11). At their highest point to date in 2020, credit spreads were still below those seen in the Financial Crisis of 2007–2009, but higher than those seen in other economic environments such as the tech bubble and Enron/MCI WorldCom

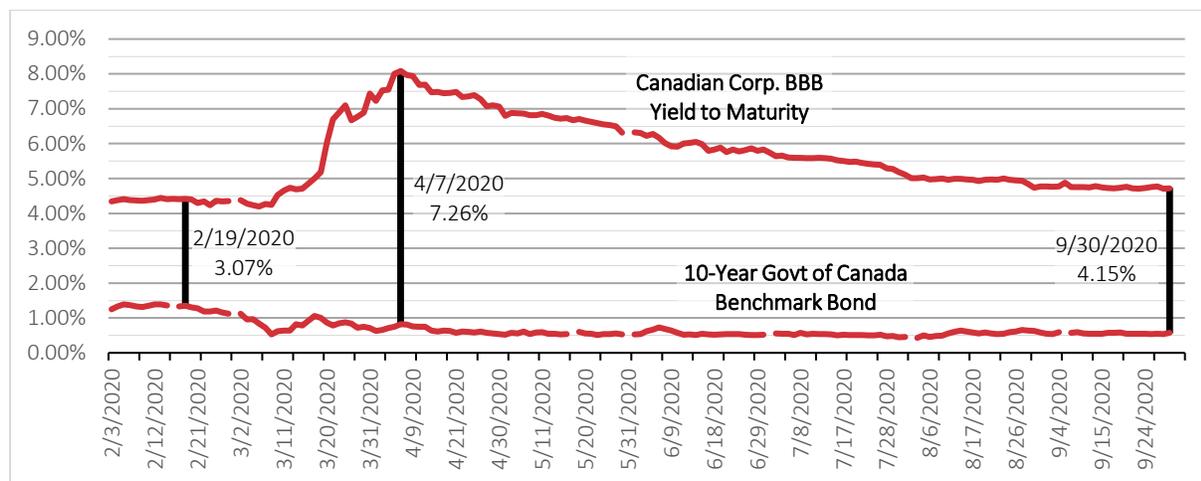
accounting crises of 2002.<sup>24</sup> Credit spreads widen due to anticipated higher risk of defaults and an increasing probability of some bonds being downgraded to be below investment grade. While credit spreads have narrowed significantly from April through September, they continue to exceed the spread on February 19, 2020.

**Figure 12**  
**U.S. CORPORATE BBB EFFECTIVE YIELD COMPARED TO 10-YEAR TREASURY RATES**



Data source: Federal Reserve Bank of St. Louis, "ICE BofA BBB US Corporate Index Effective Yield," <https://fred.stlouisfed.org/series/BAMLC0A4CBBEY> and U.S. Department of the Treasury, "Daily Treasury Yield Curve Rates," <https://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yieldYear&year=2020>.

**Figure 13**  
**CANADIAN CORPORATE BBB YIELD TO MATURITY COMPARED TO GOVERNMENT OF CANADA 10-YEAR BENCHMARK BOND YIELD RATES**



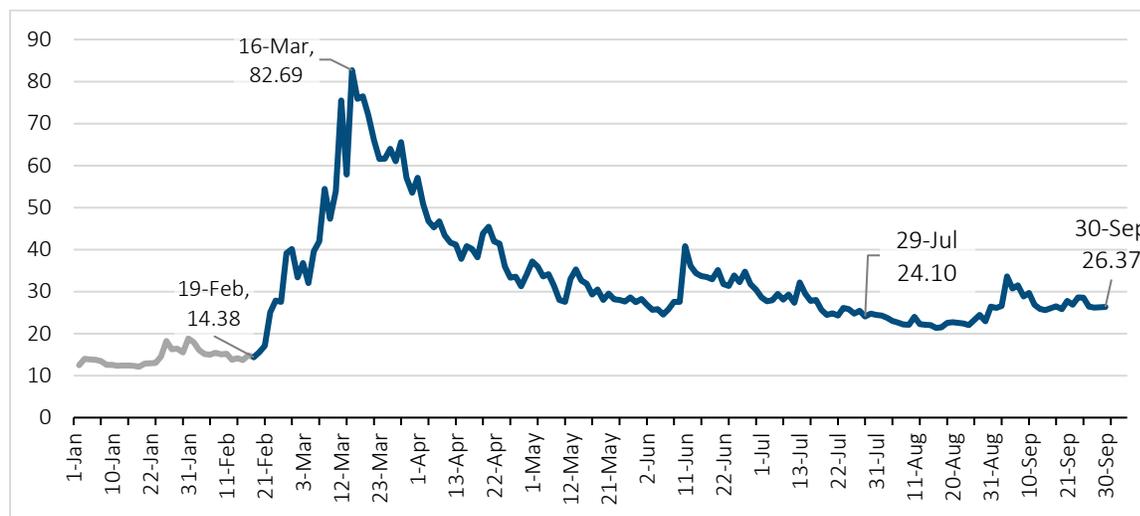
Data source: S&P Dow Jones Indices, "S&P Canada BB-B High Yield Corporate Bond Index," <https://www.spglobal.com/spdji/en/indices/fixed-income/sp-canada-bb-b-high-yield-corporate-bond-index/#overview> and Bank of Canada, "Canadian Bond Yields: 10-Year Lookup," <https://www.bankofcanada.ca/rates/interest-rates/lookup-bond-yields/>.

As economic pressures have increased, quality levels and the risks of default will continue to be monitored in both publicly traded and private placement investments. Higher debt levels from consumers, changes in consumer confidence and reduced levels of disposable income have been benchmarks historically indicative of companies having cash flow issues and potentially defaulting on debt payments. Many retail, entertainment and travel-related companies have declared bankruptcy since the pandemic began while others relied on subsidies. Some analysts

expect many more bankruptcies during 2020 and 2021.<sup>25</sup> As of August 31, 2020, 60% of businesses on Yelp have permanently closed since March 1, 2020, up from 55% through mid July.<sup>26</sup> Some researchers at Harvard University believe that many more small businesses closed permanently because of the pandemic.<sup>27</sup>

The Chicago Board Options Exchange created the Cboe Volatility Index, or VIX, to measure the level of the expected volatility in the market for the next 30 days (Figure 13). Greater VIX values indicate expectations of greater volatility.<sup>28</sup> VIX values in the range of 18 to 35 are typical.<sup>29</sup> On February 19, 2020, the VIX closed at 14.38, before a steeply increasing trend that culminated on March 16 at 82.69. On September 30, 2020, the VIX closed at 26.37, indicating greater expected volatility than on February 19, 2020, although it is well within the typical range.

**Figure 14**  
CBOE VOLATILITY INDEX (VIX) DURING 2020



Data source: Cboe, "VIX Historical Price Data," <http://www.cboe.com/products/vix-index-volatility/vix-options-and-futures/vix-index/vix-historical-data>.

The current interest rate environment enhances the strong need for insurers to be aware of these evolving risks, including the interactions between interest rates, credit spreads and defaults to construct products that emphasize risk management practices through financial modeling of the company’s assets and liabilities. Life and health insurers typically use cash flow testing methods to perform regulatory asset adequacy analysis, as well as for internal risk management practices. Many insurers are required to perform an Own Risk and Solvency Assessment (ORSA) where they describe how they manage risk within their strategic plan. Strong scenario testing within insurance companies includes the ability for actuaries to identify key assumptions for asset modeling, as well as to be able to model assets and liabilities with contingent cash flows and risks. Strategies to mitigate these risks may also involve the use of interest rate forwards, futures and swaps.

In an April survey on cash flow testing, most responding life insurance companies assume a mean reversion point between 3% and 4% in their stochastic models. More than half of respondents had updated or were considering updating their mean reversion target, and most will assume that credit spreads will narrow over time. Almost all respondents said they had not been modeling negative interest rates. Also, two-thirds of respondents considered the current environmental implied level scenario worse than moderately adverse.<sup>30</sup>

In a September survey on asset and liability management changes in response to COVID-19. Top concerns included reinvestment rates (81% of companies surveyed), new business yields (77%) and ability to support in-force guarantees/in-force margins (65%).<sup>31</sup>

In a different September survey, responding SOA Investment Section members indicated the most concern over a one-year timeframe about default risk (65.8% were very concerned), volatility (63.4%), and U.S. equity risks (51.3%). Over a five-year horizon, respondents were most concerned about inflation, default risk, and global equity risks.<sup>32</sup>

## Wrap-Up

In the end, actuaries in all practice areas will need to determine how to best reflect the impact of the COVID-19 pandemic into their specific work products. The information provided in this report is intended to pull together a variety of economic metrics that may help provide context to the challenge.

## End Notes

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With roots dating back to 1889, the *Society of Actuaries* (SOA) is the world's largest actuarial professional organization with more than 31,000 members. Through research and education, the SOA's mission is to advance actuarial knowledge and to enhance the ability of actuaries to provide expert advice and relevant solutions for financial, business and societal challenges. The SOA's vision is for actuaries to be the leading professionals in the measurement and management of risk.

The SOA supports actuaries and advances knowledge through research and education. As part of its work, the SOA seeks to inform public policy development and public understanding through research. The SOA aspires to be a trusted source of objective, data-driven research and analysis with an actuarial perspective for its members, industry, policymakers and the public. This distinct perspective comes from the SOA as an association of actuaries, who have a rigorous formal education and direct experience as practitioners as they perform applied research. The SOA also welcomes the opportunity to partner with other organizations in our work where appropriate.

The SOA has a history of working with public policymakers and regulators in developing historical experience studies and projection techniques as well as individual reports on health care, retirement and other topics. The SOA's research is intended to aid the work of policymakers and regulators and follow certain core principles:

**Objectivity:** The SOA's research informs and provides analysis that can be relied upon by other individuals or organizations involved in public policy discussions. The SOA does not take advocacy positions or lobby specific policy proposals.

**Quality:** The SOA aspires to the highest ethical and quality standards in all of its research and analysis. Our research process is overseen by experienced actuaries and nonactuaries from a range of industry sectors and organizations. A rigorous peer-review process ensures the quality and integrity of our work.

**Relevance:** The SOA provides timely research on public policy issues. Our research advances actuarial knowledge while providing critical insights on key policy issues, and thereby provides value to stakeholders and decision makers.

**Quantification:** The SOA leverages the diverse skill sets of actuaries to provide research and findings that are driven by the best available data and methods. Actuaries use detailed modeling to analyze financial risk and provide distinct insight and quantification. Further, actuarial standards require transparency and the disclosure of the assumptions and analytic approach underlying the work.

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