Market Decline Will Have Diverse Repercussions For Cos.

By Jordan Milev (April 23, 2020, 6:06 PM EDT)

In the last days of 2019, the World Health Organization was alerted to a pneumonia case of unknown origin in the city of Wuhan in China’s Hubei province. On Jan. 8, 2020, Chinese researchers identified a new coronavirus as the cause of what appeared by then to be a cluster of pneumonia-like cases.[1] The first known death from COVID-19 occurred two days later.[2]

Around that time, stock markets around the world were making steady progress toward new all-time highs. And while the indices tracking certain industries began to decline in late January,[3] the S&P 500 Index, a proxy for the overall market, continued to rise higher even as the outbreak spread.[4] The S&P 500 Index peaked on Feb. 19 to close at a record high of 3,386.15, a level not seen since then.[5]

The recent market decline in light of the COVID-19 outbreak is likely to usher in a new wave of litigation and prompt companies to reassess risk of exposure to directors and officers, or D&O, claims. The U.S. Securities and Exchange Commission has urged companies to provide information on how COVID-19 impacts their business. Companies might face questions with respect to the adequacy and timeliness of statements made about COVID-19.

Statements regarding the effect of COVID-19 and future business risk may give rise to many types of claims. The proper assessment of the effect of COVID-19 on company prices and valuation is shaping up to be an important element of these types of matters. Securities class action litigation involving COVID-19-related disclosures has already been filed.

The quantitative analysis of the potential effect of COVID-19, as opposed to timely developments in business prospects and third-party factors, may also be relevant in other types of matters. In value impairment and M&A litigation, rapid changes in market conditions could affect the relative value of merging entities. Potential litigation may, therefore, involve adequate disclosure, the exact merger terms and the issue of whether COVID-19 can be considered a material adverse effect.

In bankruptcy proceedings, issues may involve the degree to which COVID-19 and other timely factors affected business prospects and whether the interests of creditors were appropriately considered in actions taken prior to declaring insolvency. Companies themselves might also need to reassess their own degree of exposure and whether their current D&O structure and limits provide adequate coverage for issues that may lie ahead.

The effect of COVID-19 on stock markets and select industries and companies will be consequential for the foreseeable future. At this point, the following preliminary observations can be made.
Market Fear Returns

Through January, market observers had started getting used to markets with relatively less historical volatility, especially as compared to the market gyrations experienced during the global financial crisis 10 years prior. With the fall of historical volatility, expectations of future volatility also fell.

Expected volatility cannot be observed directly. It can be inferred from the prices of financial instruments, such as options, that derive their value from volatility. CBOE Global Markets Inc.'s volatility index, the VIX, is a measure of 30-day expected stock market volatility calculated using the prices of call and put options on the S&P 500 Index. Because market volatility is synonymous with downside volatility, the VIX is colloquially known as the Fear Index.

Fear seemed to be tamed through 2019 as markets continued to march to new highs. In the second half of February and early March 2020, certain indications of volatility began sounding the alarm. As COVID-19 cases continued to spread and fears of the potential effect of a global outbreak grew, markets also began to slide.[6]

On Feb. 23, the first major outbreak of COVID-19 was identified in Italy. The following day, the VIX jumped above 20, a value it had respected on more than 95% of days in 2019.[7]

News coverage of COVID-19 seems to have spooked markets, sending them into a tailspin. The S&P 500 Index fell on 13 out of the 16 trading days between its Feb. 19 high of 3,386.15 and its March 12 low of 2,480.64.[8]

CBOE Market Volatility Index
January 2, 2019 – April 2, 2020

Notes and Sources: VIX Index data compiled by CBOE.
Is There More Than a Single Culprit for the Decline?

The initial news coverage of the markets during the downturn invariably pinned the overall market decline on the anticipated negative effect of the virus on various aspects of the economy.[9]

However, an initial review of the data shows that other factors also may have had, and continue to have, a measurable contribution to the overall market decline. For certain industries, preliminary analysis suggests that oil, not COVID-19, might be a major, if not the primary, factor behind some of the price declines observed so far.

The COVID-19 pandemic unfolded against the backdrop of intensifying geopolitical tension between Russia and Saudi Arabia. The Organization of Petroleum Exporting Countries had previously announced plans to limit oil production, but on March 6, its chief outside partner, Russia, announced that it would not participate.

In turn, on March 10, the Saudi Arabian Oil Co., or Saudi Aramco, unexpectedly announced plans to dramatically increase the supply of oil to the market in response to a political battle with Russia.[10]

In less than a month, between Feb. 20 and March 18, the price of the WTI Light Sweet Crude Oil Futures Contract traded on the CME Globex platform declined by 59%. [11] A decline of such magnitude had never occurred previously in such a short period of time.[12]

**WTI Crude Oil Continuous Futures Prices**
December 1, 2019 – April 2, 2020

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**Notes and Sources:** Data are from FactSet Research Systems.
**Analysis**

Event study analysis could be used to identify the degree to which the decline in the market can be explained by various contemporaneous factors, such as news about the progression of the COVID-19 pandemic and the effect of faltering oil prices.

We control for the evolution of our knowledge of how COVID-19 affects sentiment and the economy by two types of measures: direct and indirect. The direct measure relates to numbers of mortalities due to COVID-19 in different geographies. The indirect effect measure derives from changes in Google searches for the term “coronavirus symptoms.”[13]

We also control for the evolution of news about oil production cuts by tracking changes in the WTI Light Sweet Crude Oil Futures Contract traded on the CME Globex platform.[14]

Preliminary regression analysis shows that at certain times the decrease in oil prices accounts for more than half of the decline in the S&P 500 Index since its peak. For example, on March 10, the day Saudi Aramco announced plans to increase the supply of oil, the decline in oil prices explains 58.9% of the drop that had occurred in the S&P 500 Index up to that point.[15]

### The Value of the S&P 500 Index and the Value of the S&P 500 Index Predicted Using Returns of WTI Crude Oil Futures

February 19, 2020 – April 2, 2020

![Graph showing Price vs. Time for S&P 500 Index and S&P 500 Index Predicted by WTI Futures Returns]

As of March 10, 2020, the decline in WTI Crude Oil Futures could explain 58.9% of the cumulative decline in the S&P 500 Index since its peak.

**Notes and Sources:** Price data are from FactSet Research Systems. Additional regression data from Google and the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) Humanitarian Data Exchange.

The effect of oil prices seems to vary among different industry sectors of the S&P 500 Index. Oil prices seem to have the largest effect on companies in the energy sector. The relative magnitude of the effect of oil prices on companies in that sector seems to be almost twice the effect oil prices...
had on companies in the next most-impacted industry sector, the financial sector. On the other hand, oil price changes had the least effect on companies in the consumer staples, utilities and health care industry sectors.

**Relative Impact of WTI Futures Returns for Different Industries**

Public sentiment about COVID-19 also has differing effects across firms in different industry sectors. In order to quantify public sentiment, researchers often use data showing the number of searches for a phrase on Google. One potential interpretation of this variable is as a measure of public awareness and research into the progression of the COVID-19 pandemic by way of people researching symptoms of the newly discovered disease.

Changes in the number of Google searches for “coronavirus symptoms” had the greatest estimated effect on prices of firms in the finance and energy sectors, while they had the smallest estimated effect on firms in the healthcare and real estate sectors. Note also that in this first-cut analysis the effect of this variable across sectors is relatively more uniform than the effect of the oil price decline.

**Notes and Sources:** Regression data from FactSet Research Systems, Google, and the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) Humanitarian Data Exchange. Estimated sensitivities to oil price changes for different industries are shown as a percentage of the sensitivity for the energy sector (the largest coefficient).
Relative Impact of "Coronavirus Symptoms" Google Search Activity for Different Industries

Notes and Sources: Regression data from FactSet Research Systems, Google, and the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) Humanitarian Data Exchange. Estimated sensitivities to changes in "coronavirus symptoms" Google search activity for different industries are shown as a percentage of the sensitivity for the energy sector (the largest coefficient).

There may be many ways to quantify and control for the evolving progression of the COVID-19 pandemic. For instance, metrics like the number of deaths and total infections can be separated by country or by region and need to be considered carefully. Properly quantifying what represents new information to the market requires careful modeling of these variables, including their expectations.

The present analysis controls for changes in the daily rate of increase in deaths from COVID-19 by country and adjusts these changes for the magnitude of the outbreak. This variable, too, can have varying effects across sectors.

For example, changes in the rate of death in Italy have the strongest effects for the financial sector, but that effect is weakest for companies in the communications sector. Like the effects of public sentiment toward COVID-19, these effects seem to be more uniform across sectors than that of the oil price decline.

Given the nature of the concerns during this particular market rout, some firms may have fared better than others. Commentary has focused on factors such as a firm's cash cushion[16] and ability to raise funds.[17] The precise way one models expectations about the progression of the COVID-19 pandemic could have important implications about the measured effect of coronavirus-related news on the prices of individual issuers.
Conclusion

Events relating to COVID-19 and other factors affecting markets are unfolding rapidly. For the moment, the broad market in the U.S. has staged a recovery in light of government stimulus efforts to fight the COVID-19 crisis.

Price and value declines observed to date may form the basis of certain claims in securities litigation, value-impairment contract disputes, issues to be resolved in bankruptcy proceedings, and the possible course of D&O claims.

The preliminary analyses presented here illustrate that rather than assuming the answer based on what features most prominently in news headlines alone, practitioners need to think carefully about the reasons for the price declines and let the data speak.

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[5] As of the time of writing, despite a remarkable recovery in response to stimulus news, the S&P 500 Index had closed more than 17% down since its peak.


[8] The low represented a drop of 27% from the high and was met with "bear territory" news references. "Bear territory" is a colloquial term referring to a decline above 20%.


[12] Prior to this year, the largest decline WTI futures had experienced over a 30-day period had been 40.9%, in the fall of 2008.

[13] The search term “coronavirus symptoms” was chosen to track sentiment about COVID-19 rather than consumer searches about the effect of coronavirus on the economy.

[14] Although oil prices could be driven down by the anticipated demand pullback, the vast majority
of news coverage at the time discusses the oil price decline in relationship to the lack of agreement about production cuts, a supply story. Further analysis can be used to analyze the secondary-order effect: what portion of the decline in oil prices might itself be due to oil demand pullback due to COVID-19.

[15] The decline is calculated using the natural logarithm of the price decline, a method commonly used by researchers. According to this methodology, oil can be shown to explain even greater portions of the S&P decline for certain points in time, and care must be taken to properly address these instances in the greater context of the overall market condition.
