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COVID-19 hit stock markets as it spread from country to country

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As Covid-19 spread around the world, stock markets in individual countries took a major hit—yet stock markets in China where the disease first struck avoided significant falls—researchers at Lero, the

Science Foundation Ireland Research Centre for Software found.

A research paper Immune or at-risk? Stock markets and the significance of the COVID-19 pandemic by a Lero team based at University of Limerick confirmed that the growth in COVID-19 cases largely explained changes in stock prices, but surprisingly did not have the same impact in China or on the global index (MSCI World).

The results of the study, to be published in the *Journal of Behavioral and Experimental Finance* in June, suggest that the implied volatility of the respective markets, often used as a proxy for investor sentiment, played a greater role in explaining market prices than COVID-19 growth.

Lead author Niall O'Donnell said the current pandemic provides us with a unique opportunity to identify the effect that pandemics have on financial markets.

"Our findings indicate that investors began to act before any realized financial damage was observed, highlighting again the significance of investor sentiment and the expectation of returns, rather than real revisions in financial returns. We additionally find that changes in the Chinese SSE 180 index and the MSCI World index prices were not significantly explained by COVID-19 growth.

"Instead, these indices were largely influenced by conventional market drivers linked to economic growth such as crude oil, bond yield spreads and implied volatility. We theorize based on these results, that among these factors, early interventions by China may have played a role in index price fluctuations also," added Mr O'Donnell.

The research team point out that global stock market losses of $16 trillion were observed in less than a month as the pandemic took hold and as fears rose of a worldwide recession.

Lero's Dr. Barry Sheehan, a co-author on the study and course director of the MSc in Machine Learning for Finance program at UL's Kemmy Business School, said: "Our analysis into the determinants of global stock market indices as COVID-19 spread provides valuable insights into the evolving market dynamics and price drivers during times of crisis and uncertainty."

Dr. Darren Shannon, also of Lero and UL, said the work carried out by the team found that markets in Spain, Italy, the UK, and the USA were found to be negatively and significantly related to the total number of COVID-19 cases. This occurred despite controlling for other market drivers.

"However, COVID-19 cases did not significantly influence the sharp fall and subsequent rise of the Chinese SSE 180 index. Instead, fluctuations in market prices were explained by trading volumes, Brent crude oil price, implied market volatility, among other factors. Similarly, COVID-19 cases did not significantly influence the MSCI World index," he added.

More information: Niall O'Donnell et al, Immune or at-risk? Stock markets and the significance of the COVID-19 pandemic, *Journal of Behavioral and Experimental Finance* (2021). DOI: 10.1016/j.jbef.2021.100477

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