Pandemics and their impact on global economic and financial systems

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Editorial

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The ongoing COVID-19 pandemic has caused an unprecedented damage to the global economy. This special issue on "Pandemics and their impact on global economic and financial systems" of the journal MethodsX is distinct because of the following two reasons. First, MethodsX is an open access interdisciplinary journal and, therefore, it provides an opportunity for readers across all disciplines to better understand the impact and consequences of the COVID-19 pandemic on global economic and financial systems. Second, this special issue includes papers that focus on descriptions of methods for economics and finance researchers and these methods can be used to study not only COVID-19 but any pandemic for that matter.

This special issue contains nine papers. These papers were selected following the journal's usual peer review process. Out of the nine papers, four examine the effect of COVID-19 on stock markets, three investigate the effect of COVID-19 on the economy, one assesses the impact of COVID-19 on the energy market, and one examines the impact of COVID-19 on the foreign exchange rate market.

The first paper by Paresh Kumar Narayan is a commentary on a method for testing resistance to shocks. This commentary is developed based on an earlier work of Narayan [4], which investigated the persistence of exchange rates to COVID-19 shocks. However, in this commentary, the author nicely shows a step-by-step application of his persistency test by using hourly crude oil price data.

The next two papers are on the predictability of stock returns. In the second paper, Susan Sunila Sharma demonstrates a step-by-step application of Westerlund and Narayan's (hereafter, WN, 2012, [2]) predictability test. More specifically, the author uses the WN predictability test to examine whether oil price and COVID-19 significantly predict stock returns of four Asian economies. The author lucidly explains the merit of the WN predictability test over the standard ordinary least squares

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test. By using daily stock returns data, the author shows that both COVID-19 and oil price do not predict stock returns in the case of Japan, Russia, and Singapore. However, the COVID-19 pandemic significantly predicts stock returns in the case of South Korea.

The third paper by Mudeer Ahmed Khattak, Mohsin Ali, and Syed Aun Rizvi predicts European stock market returns during the COVID-19 pandemic. The authors consider 21 external and internal predictors and use a novel machine learning predictability technique. The authors identify some of the key predictors, which do influence European stock markets during the COVID-19 pandemic. Further, they also reveal that these predictors are significantly different for both before and after the announcement of the COVID-19 pandemic by the World Health Organization.

The fourth paper by Bernard Njindan Iyke and Sin-Yu Ho investigates the impact of investor attention during the COVID-19 pandemic on African stock markets. To address this research issue, the authors use 14 African stock returns and daily investor attention indices. This dataset is unique dataset because it is based on Google search trends. By employing the EGARCH model, the authors document that an increase in investor attention reduces stock returns in three African countries (namely, Botswana, Nigeria, and Zambia) and increases stock returns in two African countries (namely, Ghana and Tanzania).

The next two papers focus on India. The fifth paper by Vaseem Akram, Badri Narayan Rath, and Pradipta Kumar Sahoo examines whether COVID-19 cases follow similar transition paths across Indian states. To do so, the authors use the Phillips and Sul [3] panel club convergence test and their results show evidence that COVID-19 cases follow different transition paths across Indian states. The sixth paper by Biplab Kumar Guru and Amarendra Das examine the impact of COVID-19 on the volatility spillovers of sectoral indices in the Indian stock market. By employing Diebold and Yilmaz's [1] methodology, the authors find evidence of dynamic volatility spillovers of ten major sectorial indices listed on the Bombay Stock Exchange. They conclude that the energy, and oil and gas sectors are the major net volatility transmitters, whereas the FMCG sector remains largest net recipient of volatility spillovers during COVID-19 pandemic.

The seventh paper by Shan-Ju Ho, Wenwu Xing, Wenmin Wu, and Chien-Chiang Lee investigates the impact of COVID-19 on freight transport in the case of China. By using monthly data of 13 provinces, the authors document a positive effect of COVID-19 on the growth of freight (both road and waterway) transport turnovers. Furthermore, the authors reveal that the impact of COVID-19 on freight transport growth is more pronounced during the sub-period with the highest number of confirmed COVID-19 cases and low gasoline production.

The eighth paper by Devi Prasad Dash, Narayan Sethi, and Aruna Kumar Dash examines the impact of the COVID-19 pandemic on the economies of Brazil, Russia, India, China, and South Africa (the so-called BRICS economies). The authors make use of the Differences-in-Differences (DID) method and document that strict government measures along with people with heart diseases lead to high COVID-19 testing in BRICS economies.

The nineth paper by Neluka Devpura examines the influence of oil futures price on the Euro–United States Dollar (Euro/USD) exchange rate. By using an hourly dataset and a predictive regression model, the author finds that oil futures price influences the Euro/USD exchange rate, but the evidence is very limited. She finds that the influence of oil futures price on the Euro/USD exchange rate vanishes conditional on the COVID-19 pandemic, meaning that the pandemic affects the exchange rate.

In a nutshell, the COVID-19 pandemic may continue for another year or more and, thereby, will have a prolong impact on the global economy and financial markets. Although there are voluminous studies on the impact of COVID-19 on economic and financial systems over the last six months, there is still a long way to go, particularly with regards to assessing the magnitude and contagion effect of COVID-19 on an economy. In this regard, this special issue does not only highlight some adverse effects of the COVID-19 pandemic, but also pitches thoughts that can be considered for future research. First, measuring the persistency of key macroeconomic indicators due to the ongoing pandemic or any shock will be imperative for any country from the policy perspective. Therefore, a step-by-step approach to testing for persistency developed by Paresh Kumar Narayan can be used for other macroeconomic and/or financial system indicators, such as gross domestic product (GDP), interest rate, commodities prices, capital flows, etc. Second, the WN predictability test can help

researchers to better predict not only stock returns but also other key economic and financial variables like business cycles, investment, firm's valuation, market capitalisation, and other factors amidst the ongoing pandemic.

Third, there is not much research on the impact of COVID-19 on financial markets, specifically focussing on investor attention. Thus, the contribution to this research objective made by Bernard Njindan Iyke and Sin-Yu Ho is unique. This issue can be further tested in other financial markets by using Google search trend data. Fourth, there is a lack of research on the impact of COVID-19 on a country's productivity and long-run growth. The main reason for the lack of research on this theme is mainly due to lack of data on output, input, employment, and GDP post announcement of the COVID-19 pandemic. Thus, researchers can make use of the COVID-19 convergence paper by Akram, Rath and Sahoo to further obtain the determinants of growth and the speed of convergence/divergence in different economies during or post pandemic phase. Finally, the use of machine learning approach to predict stock markets during a pandemic is scanty. Hence, researchers can explore predicting other financial and economic indicators using this novel technique.

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