Quantitative Asset Management and Epidemiology vs. Covid-19

Stockholm (HedgeNordic) – All too often in asset management, an ESG approach is geared to pleasing investors, a cheap marketing stunt or just plain green-washing. There are, of course, also those whose deep personal convictions, and indeed those of the entire firm, do strive to put their skills, powers and resources behind a cause for the greater good. One such case, led to a multidisciplinary approach leveraging insights from quantitative asset management and epidemiologyto gather and interpret large amounts of data for a better understanding of the effectiveness of measures in response to Covid-19.

In a combined effort, the London School of Hygiene and Tropical Medicine and researchers from IPM Informed Portfolio Management have published a study on pandemic control by studying the impact of non-pharmaceutical interventions (NPIs) on SARS-CoV-2 in community transmission across countries and territories.

Christian Morgenstern and James Kelly, both recently joined the Swedish quant-driven asset manager IPM from Goldman Sachs to develop the Swedish asset manager's risk premia offering. With several other researchers, Morgenstern and Kelly studied interventions used to reduce the transmission of the novel coronavirus that has been affecting societies and economies at their core. The researchers assessed the effectiveness of these non-pharmaceutical interventions around internal containment and closure, international travel restrictions, economic measures, and health system actions on COVID-19 transmission in 130 countries and territories.

The study used panel regressions to estimate the effectiveness of 13 categories of non-pharmaceutical interventions in reducing SARS-CoV2 transmission. Data used covered the period of January to June 2020. The study finds strong evidence for an association between two interventions – school closure and internal movement restrictions, especially travel between regions and cities – and reduced reproduction numbers.

Another three interventions, namely workplace closure, income support and debt or contract relief, had strong evidence of effectiveness when ignoring their level of intensity. Public events cancellation and restrictions on gatherings, in contrast, had strong evidence of their effectiveness only when evaluating their implementation at maximum capacity. Restrictions on more than 1,000 people gathering were not effective, whereas restrictions on less than ten people gathering turned out to be effective.

Evidence supporting the effectiveness of stay-at-home requirements, public information campaigns, public transport closure, international travel controls, testing and contact tracing was inconsistent and inconclusive. "The effectiveness of school closure and internal movement restrictions appears robust across different model specifications taking into account these effects, with some evidence that other non-pharmaceutical interventions may also be effective under particular conditions," concludes the study. "This provides empirical evidence for the potential effectiveness of many although not all the actions policy-makers are taking to respond to the COVID-19 pandemic."

The team presented this work at the Data Science Conference on COVID-19 (DSCC-19), organised by the National Institute of Statistical Sciences, at the end of August.