WILL CORONAVIRUS CAUSE A GLOBAL RECESSION?

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On March 23, 2020, the outbreak of the coronavirus disease (Covid-19) had spread to 195 countries or territories. The virus had infected 382,057 people worldwide, and the number of deaths is around 16,565. The most severely affected countries outside of China include Italy, USA, Spain, and Germany. Having largely ignored Covid-19 as it spread across China, global financial markets reacted strongly last week when the virus spread to Europe and the Middle East, stoking fears of a global recession. Since then, Covid-19 risks have been priced so aggressively across various asset classes that the clouds of global recession hanging over for the last two months are becoming clearer on the darkened sky.

The statistical projections and indices won't be able to give a reliable forecast of GDP on the virus trajectory, effectiveness of containment efforts, and consumers' and firms' reactions are not known. Therefore, there is no single number that credibly foresees Covid-19's economic impact.

However, we should take a careful look at the market signals across asset classes and relate these signals to the history of epidemics and shocks, to foresee the future path of economy. Three major market signals point towards the global recession.

1. Last week's brutal drawdown in global financial markets might seem to indicate that the world economy is on a path to recession. Valuations of safe assets have spiked sharply, with the term premium on long-dated U.S. government bonds falling to near record lows at negative 116 basis points — that's how much investors are willing to pay for the U.S. government bonds. As a result, term structure models have signaled for the upcoming recession as evident in Figure 1.

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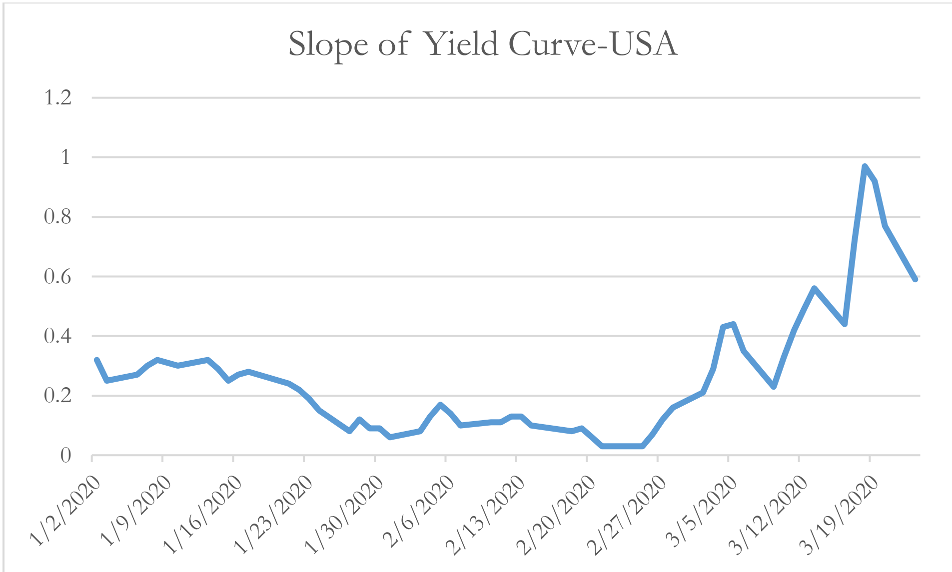


Figure 1: The figure shows the spread between 10-year and 1-year bond yields in the US market. Source Author Calculation based on US FED data.

2. On the other hand, volatility in the global stock markets have signaled the greatest strain, after the global financial crisis of 2008 as evident in Figure 2.

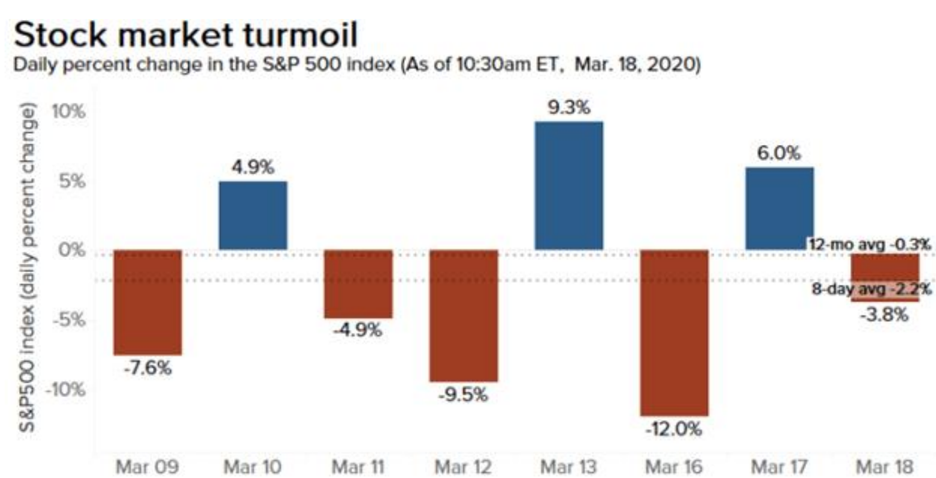
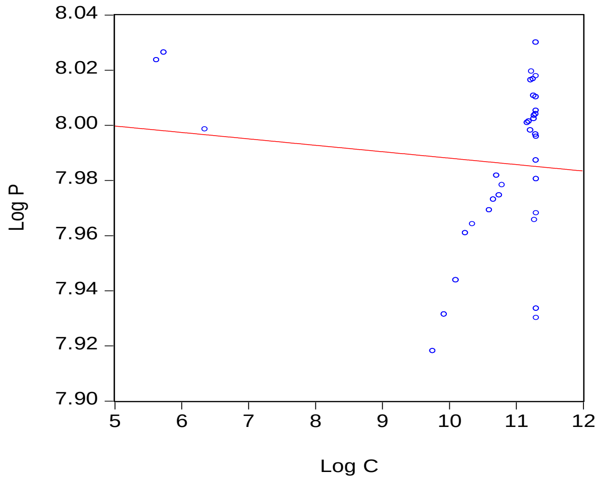


Figure 2: Stock Market Volatility
Source: FactSet, CNBC

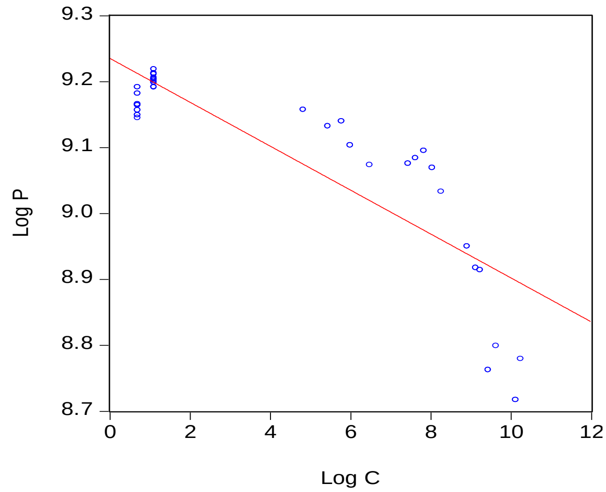
3. The scatterplot and panel regression analysis of COVID-19 cases and stock market indices analysis in figure 3 and table 1 of the nine countries that are severely affected by Covid-19 suggests that there is negative relationship between the number of COVID-19 cases and stock

market performance. The overall elasticity in nine major economies (using panel fixed effect model) is about 0.102 as can be evident in the following equation.

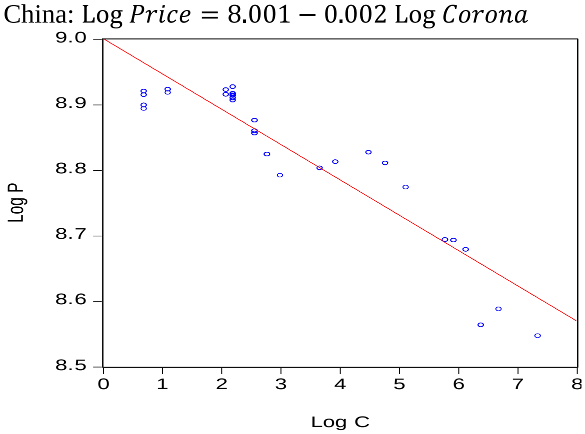
$$\text{Log}\,\widehat{Price} = 9.307 - 0.102 \text{ Log } Corona$$



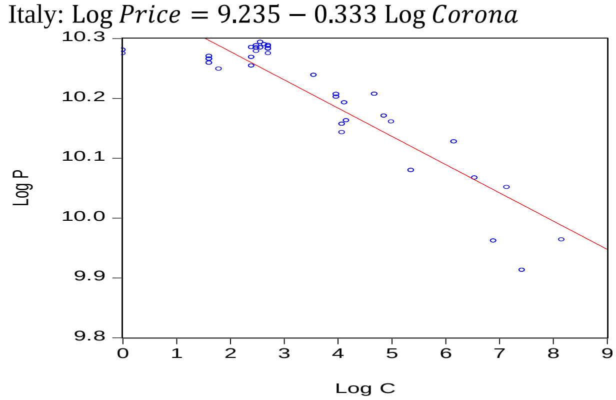
China: Log $Price$ = 8.001 − 0.002 Log $Corona$



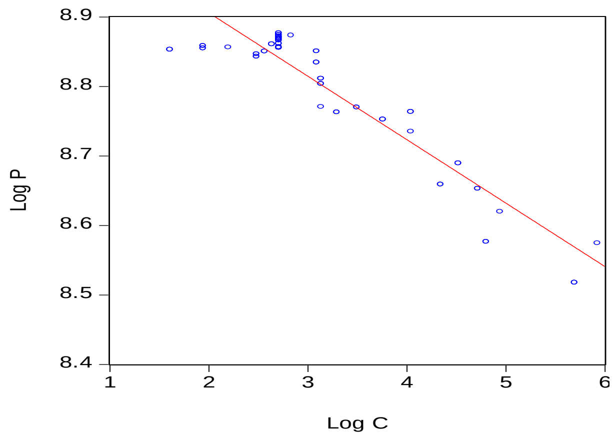
Italy: Log $Price$ = 9.235 − 0.333 Log $Corona$

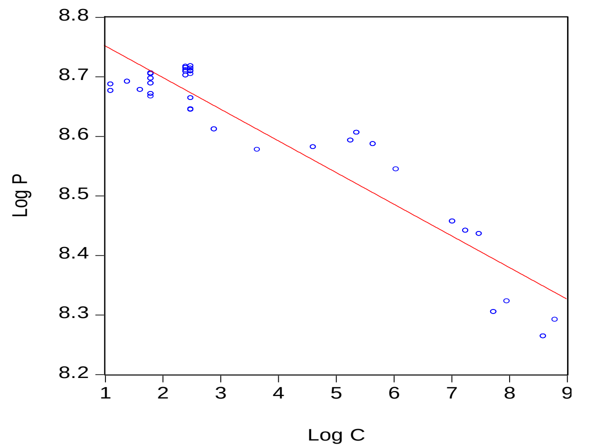


UK: Log $Price$ = 9.001 − 0.054 Log $Corona$

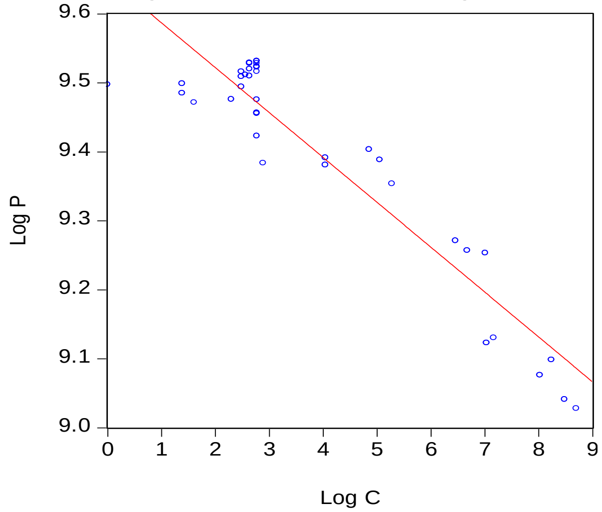


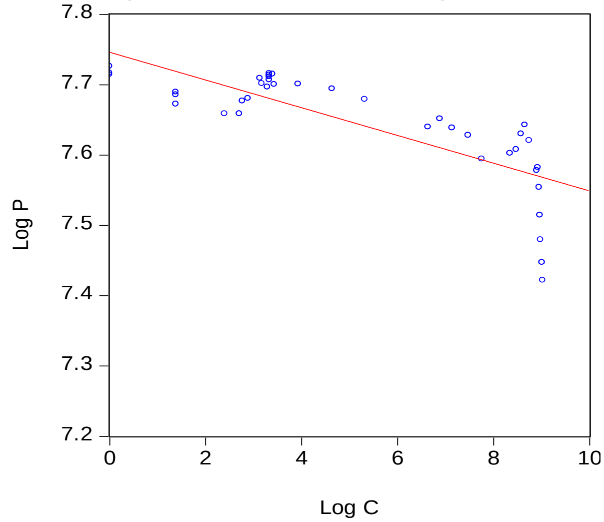
US: Log $Price$ = 10.371 − 0.047 Log $Corona$



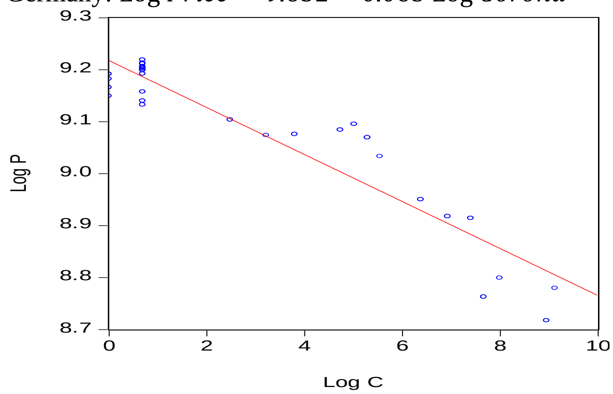


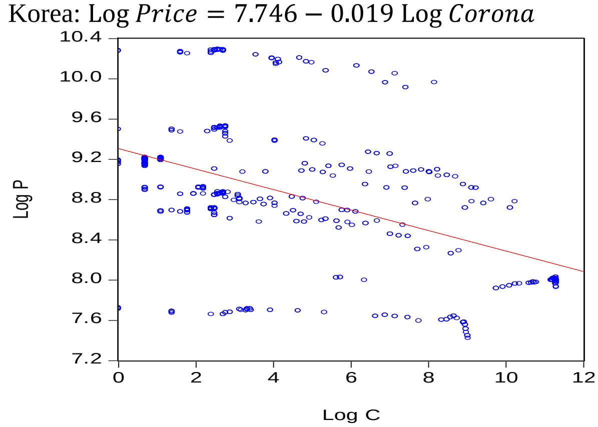
Australia: Log *Price* = 9.008 − 0.091 Log *Corona* France: Log *Price* = 8.805 − 0.053 Log *Corona*





Germany: Log *Price* = 9.652 − 0.065 Log *Corona* Korea: Log *Price* = 7.746 − 0.019 Log *Corona*





Singapore: Log *Price* = 9.217 − 0.045 Log *Corona* Panel data: Log *Price* = 9.307 − 0.102 Log *Corona*

Figure 3: The figure shows the scatter plot along with the regression line between Log value of stock index (denoted as Log P) and Log value of Corona cases in nine major economies of the world.

Table 1

Dependent Variable: Log Price

Method: Panel Fixed Effect (GLS)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	9.0416	0.0072	1247.970	0.0000
LCRONA	-0.0429	0.0014	-29.9958	0.0000

Furthermore, the one month ahead forecast analysis of the stock market indices based on the state space framework of logarithmic values of stock indices indicate in figure 4 that the markets seem to go down in the near future.

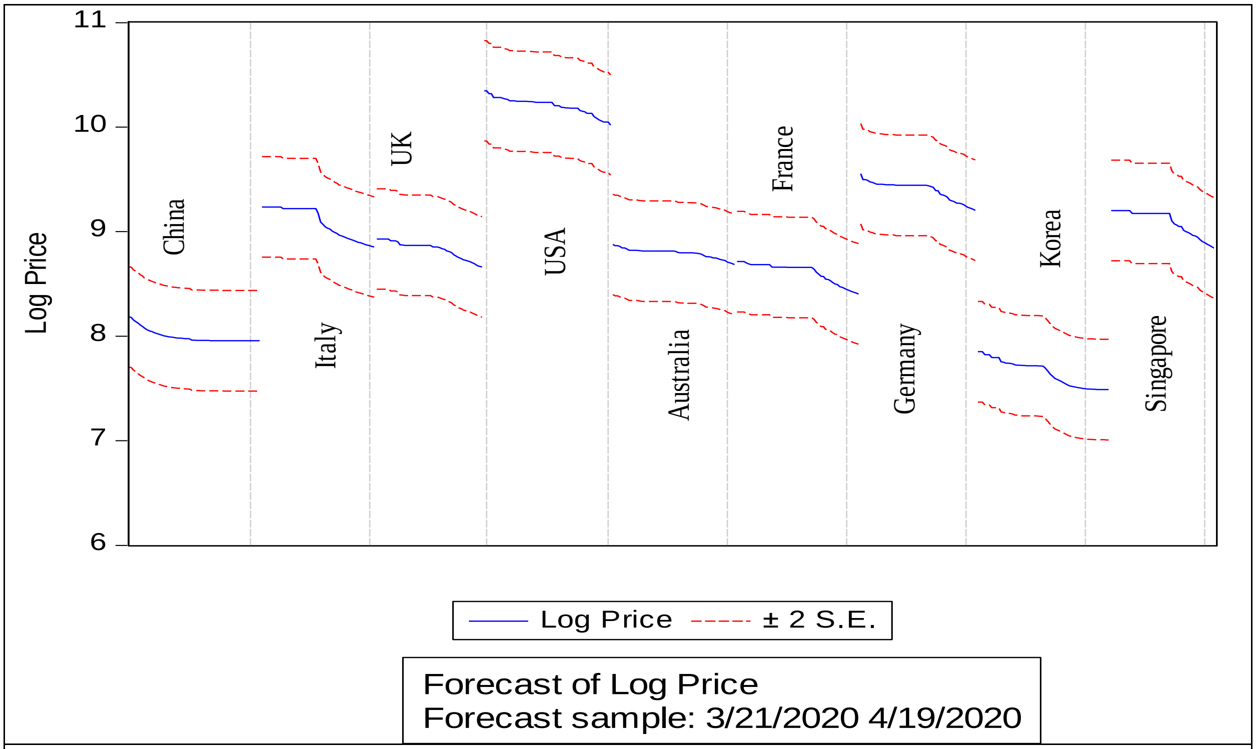


Figure 4: The figure shows the Log Price (logarithmic value of stock indices) forecasts for the one month ahead (March 21,2020 to April 19,2020) based on the in sample data form January 21, 2020 to March 19, 2020 using the State Space framework of latent factors.

Overall, a closer look to all indicators reveals that a recession should be a foregone conclusion. However, in history one out of every three bear markets is non-recessionary. Over the last 100 years, we have seven such instances where bear markets did not coincide with recessions. Though the signals may be misleading, however, the recessionary risk is real. The vulnerability of major economies has risen as growth has slowed and the expansions of various countries are now less able to absorb shocks.

To avoid the recession, the path under Covid-19 depends on a range of drivers, such as the degree to which demand will be delayed or foregone, whether the shock is truly a spike or lasts, or whether there is structural damage, among other factors.

Finally, whatever is the outcome of Covid-19, history suggests that the global economy after Covid-19 will likely be different in several significant ways and we will have a very different world and economy. Covid-19 crises can spur the adoption of new technologies and business models as the SARS outbreak of 2003 is credited for the adoption of online shopping. Now as schools have closed in most part of the world could bring a revolution in the e-learning and e-delivery of education in the world. Furthermore, the digital efforts in Wuhan to contain the crisis via smart-phone trackers could also lead to the invention of new powerful public health tool.