

Modeling economic futures during the Covid-19 pandemic

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Hypothesis:

Through modeling past natural disasters, pandemics and other unnatural events we can model the economy's reaction and responses throughout the remainder of the Covid-19 pandemic providing insight into a future of the economy.

This topic is important because it has a direct effect on everyone that interacts with the economy right now. As we see the pandemic continue with measures such as social distancing and lock downs, the economy has taken a negative turn with many losing their jobs. Modeling the situation with past data on natural disasters, past pandemics and other economic recessions I would like to model the current situation to provide insight into a potential forecast to our current economic landscape. This would be insightful as it could help show when the economy may turn back to positive or continue its negative trend.

Papers:

Generalized logistic growth modeling of the COVID-19 outbreak in 29 provinces in China and in the rest of the world by Ke Wu et al.

This paper models the Covid-19 pandemic in the first outbreak cities with different logistic map models for modeling the containment of the pandemic.

The Economics of Natural Disasters by Barbara Flowers

This paper shows how the microeconomies of the states and cities were impacted when natural disasters occurred.

What Will Be the Economic Impact of COVID-19 in the US? Rough Estimates of Disease Scenarios by Andrew Atkeson

This paper shows the SIR model of the first infected cities and then uses this to predict the growth of infected people in the US with these models.

Ramelli, Stefano and Wagner, Alexander F., Feverish Stock Price Reactions to COVID-19 (April 4, 2020). Swiss Finance Institute Research Paper No. 20-12. Available at SSRN: <https://ssrn.com/abstract=3550274> or <http://dx.doi.org/10.2139/ssrn.3550274>

This paper shows the general stock market analysis of different sectors over the time period before the pandemic, when it started and now in its current state.

Intentions (Each bullet point should take around 3 days):

- Model relations between economy and past natural disasters (this will be a micro-economy comparison) and similar events to forecast length and potential cost.
- Use projected models of duration with SIR to forecast length of pandemic
- Compare economic status now and past with the Covid-19 spread using logistic models.
- Use data from comparisons to predict economic response during and after covid.