

conclude that the slope coefficient is positive, and the positive impact of hiring incentive doesn't have a statistically significant boost on the post-period earnings.

For the multivariate regression of post-period earning on hiring incentives group, the estimated slope coefficient is 40.3, but the p-value is 0.36341, much larger than 0.05. Thus, we cannot conclude that the slope coefficient is positive, and the positive impact of hiring incentive doesn't have a statistically significant boost on the post-period earnings.

3 Project Brainstorming

3.1 Idea 1 – COVID-19 and Political Systems

I would like to explore the effect of governing on the shape of the COVID-19 confirmed case curve. The independent variable, condition of the government, could be measured by, for example, by the democracy index developed by EIU (could be found here, I can also explore similar measures). There are five subcategories, addressing functioning of government, and I plan to do regression analysis on each of these indices. For example, the functioning of government might alleviate the pandemic, while civil liberties could aggravate the pandemic.

On the other hand, the severity of the pandemic might be harder to measure. Since the virus has not reached its peak in most countries, (maximum) proportion of infected people in the population might not be a good measure. I'm considering using the growth rate. However, in different stages of the virus, the growth rate could be dramatically different, if using the rate in an early state, effect of government might not be distinctive, but, as stated, if use the growth rate at a late stage. One option might be using the half-life of the growth-rate or the average time the growth rate halves.

Other variables need to be controlled include:

1. weather/temperature
2. population size
3. proportion of urban population
4. number of doctor per million (or general medicare level)
5. average GDP
6. condition of transportation
7. expected life (or general national health condition)
8. air quality

These datasets are generally available via international organizations (World Bank, UN, etc), and the countries' respective websites. Still with a limited understanding on regression, I am thinking what's the effect if some of the factors are partly colinear (GDP & number of doctor). Since we're not interested in their coefficients, it might not be a problem, but what if some variables are colinear with the democracy index?

3.2 Idea 2 – Structure of Mass Ideology

Are left-right ideological division shaped by the environment or the intrinsic structure of those ideas. For example, leftists tend to believe in environment protection and promote health, is it due to the unique political environment of the US or there are some intrinsic connection between these ideas?

I have a dataset of a political survey on Chinese young people online, and it includes their attitudes on most of the important cultural, political, and economic questions of interest. I have also learned the existence of similar dataset in the US. For example, I could set their attitude to environment protection as Y, and set opinion on universal medicare, nationalism, and capitalist market, estimating their respective slope coefficient. A similar regression could be done for the dataset of China, US, and preferably other countries. If similar slope coefficients are observed, it provides strong support to the "intrinsic value" hypothesis.