

COVID-19: Global Trends in Social Protection, Unemployment, and Economic Stimuli



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INTRODUCTION

Global shutdown of economies in response to COVID-19 are causing businesses to make drastic employee cuts. The United States and Canada have already seen an increase in unemployment rates of 10.7% and 7.9%, respectively¹, whereas other countries like Denmark and Japan have maintained a stable unemployment rate of less than 1% change since late 2019². Most countries have responded to the economic crisis with large stimulus packages and social protection policies, but how effective these measures are in fighting unemployment spikes remains unclear. My aims for this study are two-fold:

- I aim to visualize the global relationship between economic stimulus spending, implementation of social protection plans, and changes in unemployment rates.
- I aim to model the effectiveness of economic stimulus packages regarding unemployment in 2020.

METHODS

Data Collection

Two databases were combined for analysis; the "Oxford COVID-19 Government Response Tracker" dataset³ run by Oxford's Blavatnik School of Government and updated daily with information pulled from various government websites; and the "World Economic Outlook Database" published by the International Monetary Fund (IMF) in April 2020⁴. All data wrangling and analysis were done in Python 3.6.9. All interactive visualizations were made in Tableau and are available online⁵.

Covariates

Gross domestic product (GDP) values and unemployment rates for 2020 were modeled by the IMF in April 2020⁴. The unemployment rate changes between 2019 and 2020 were calculated using real data from 2019 and predicted data for 2020⁴. Economic stimulus spending³ is measured as percentage of 2020 GDP⁴. Social protection is measured by income support for households (0=no support, 1=less than 50% salary replacement, 2=more than 50% salary replacement) and debt or contract relief for households (0=no relief policy, 1=narrow relief, 2=broad relief)³. Effectiveness is measured as economic stimulus spending (percent GDP) divided by the unemployment rate change.

METHODS (continued)

Exclusion Criteria

The original merged dataset consisted of 139 country entries^{3,4}. Countries with missing data for unemployment (n=52), a difference in unemployment rate between 2019 and 2020 of less than 0.5 percent (n=18), and countries that have not initiated any economic stimulus were excluded (n=5). The remaining cohort for analysis consisted of 64 countries. Outliers in the data were verified with additional government sources and two erroneous data entries for both Slovenia's and France's total economic stimulus spending were corrected.

RESULTS

Descriptive Statistics

The median spending on economic stimuli is 1.8% GDP and the maximum 20.8% (Italy). There is a total of 5 countries with a stimulus expense over 15% GDP; Italy; Hungary; Japan; UK; and Luxembourg. The median unemployment rate increase is 2.4% and the maximum 10.3%, representing Mauritius, a small country in West Africa and the only country with an expected unemployment increase of more than 10%. The median effectiveness score is 0.7 and the minimum very close to 0. Japan and the UK were the only two countries with an effectiveness indication over 10, scoring 28.4 and 16.8, respectively.

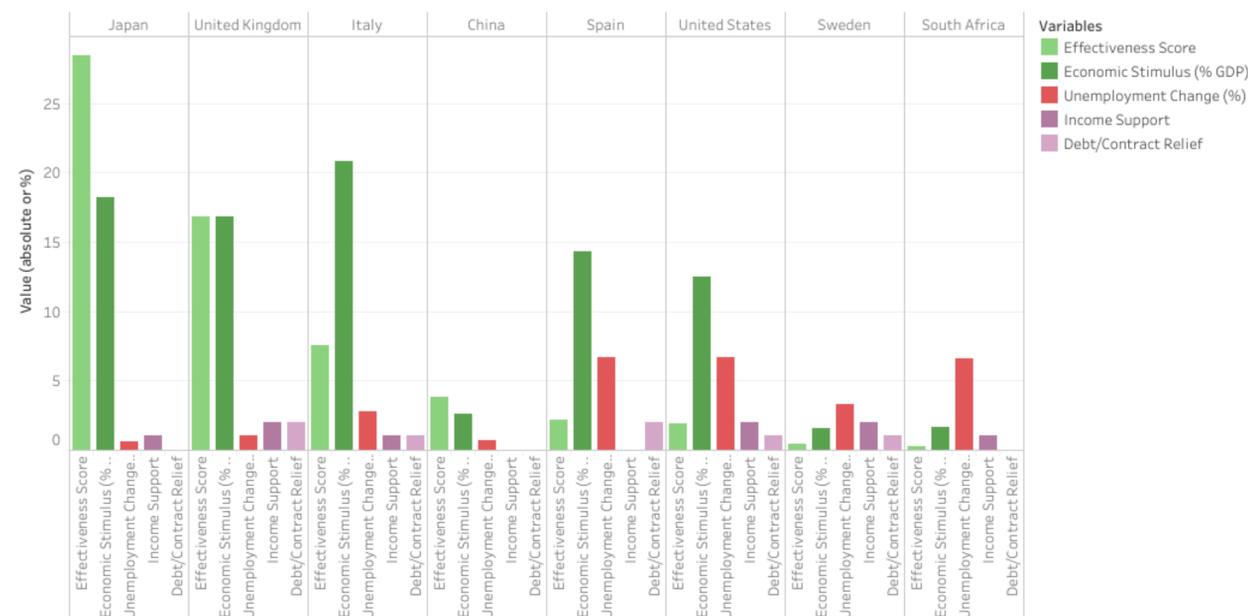


FIGURE 1. Stimulus Effectiveness, Unemployment Rate Change, and Social Protection for 8 Countries

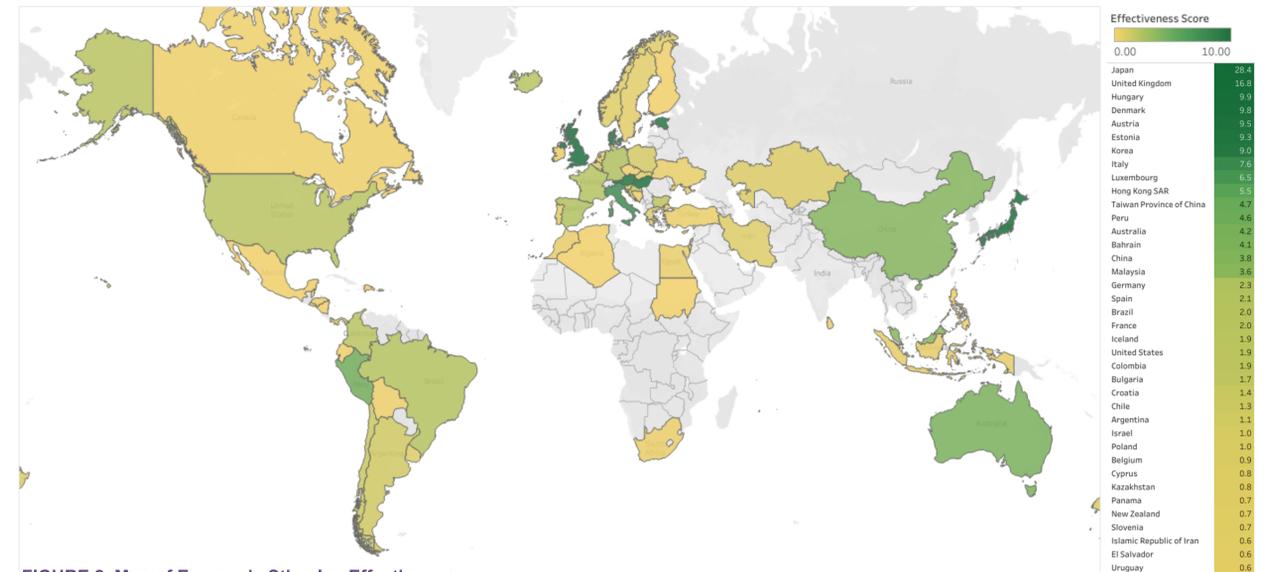


FIGURE 2. Map of Economic Stimulus Effectiveness

DISCUSSION

Figure 1 shows that Italy spent the most, relative to their GDP, on stimulus packages and had an above average unemployment increase of 2.8%, leading to a high effectiveness score. However, this does not ensure high social protection as they implemented a narrow debt relief policy and replaced less than 50% of the average salary. Similarly, Japan is the third biggest spender, has a low unemployment rate (0.64%), and the highest effectiveness score of 28.4, but they score low on both social protection measures. Perhaps the social protection is not yet imminent as unemployment remains low. Two countries with high stimuli and bigger social protection policies are the UK and US. The large difference between their effectiveness scores (UK=16.8, US=1.9) is due to differences in unemployment. The UK is projected to have an increase of 1%, whereas the US was projected to increase with 6.7%. While current unemployment data for the UK are unavailable, we know the US actual unemployment increase from 2019 to April 2020 is 10.7%¹. This rate decreases the actual effectiveness score of the US to a 1.2, which is still above average. Spain also scores above average on effectiveness. However, they are projected to experience an unemployment increase of 6.7% and even though their stimulus package is among the top 10 biggest spenders, they have no unemployment protection policy in place. Sweden has strong social protection (income support=2, debt relief=1), but scores low on effectiveness (0.47). This is because there is only a small portion of money pledged to economic stimulation (1.5% GDP) compared to the projected increase in unemployment of 3.3%. Sweden could still make a larger amount of money available, but this decision might occur later since they started implementing various other COVID-19 related policies later than the rest of Europe as well. China scores high on effectiveness (3.8) because they have a low projected unemployment change (0.7%). However, they currently have no income protection or debt relief policies in place. Finally, South Africa, a country with one of the highest levels of unemployment¹, is projected to face a 6.6% increase in unemployment in 2020. This could have detrimental effects on their people and economy as they have weak income protection and no debt relief funds.

OUTLOOK

Studying an ongoing pandemic involves working with modeled data. I used predicted 2020 GDP values and unemployment rates⁴. This was partly out of necessity as real GDP data is unavailable. However, I chose to use modeled unemployment data because actual 2020 data was only available for 9 countries¹. The IMF data was modeled in April 2020 and the effects of the pandemic were taken into consideration. The fact that half the data used in this study consist of predictions should be kept in mind when interpreting the results. Redoing a similar analysis when real data is available will be a valuable follow-up. Another meaningful expansion of this study would include in-depth analysis of the economic stimulus packages as countries like Japan, China, and Spain, that implemented substantial economic stimuli, have weak income support programs and debt relief policies. A more detailed analysis of global unemployment support would provide more insight into the different responses and priorities across countries. The IMF has a detailed global policy tracker, which is updated regularly, but the data is not available in a format appropriate for analysis yet⁶. Creating such a dataset with quantifiable variables of social protection during COVID-19 did not fit in the scope of this study, but it would make a meaningful follow-up project.

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