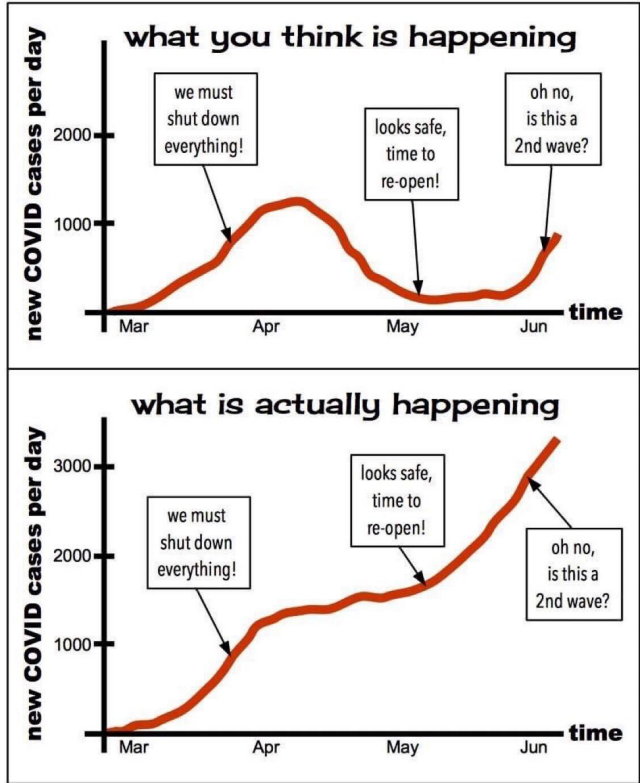

the Effectiveness of Governments' Policies on the COVID-19 Pandemic

— Jeffrey Lai, Xiaolu Qian, Jiyu Wang —

The Efforts Towards Slowing Down the Pandemic



- The COVID-19 has rapidly spread across the globe and is poised to cause millions of deaths worldwide.
- No current vaccination is available nor does proven pharmaceutical treatments.
- Non-pharmaceutical interventions are the only options.
- However, those measures are expensive and disruptive.
- How effective are those governments' policies is needed to be understood.

Motivation

We aim to use visualization to show the effectiveness of governments' policy responses towards the COVID-19 pandemic in different countries.

We looked at three different major categories of policies: containment and closure policies, economic policies, and health system policies. Within each category, there are different levels of stringency which were also taken into consideration.

For the evaluation of the effectiveness of those policies, we considered comparing the moving average of the cases before and after the date the policy gets implemented for each country. In addition, we compared across each policy for the average cases per 100k with other countries' cases per 100k.

Data

We used two different datasets for our storytelling and visualization.

Oxford Covid-19 Government Response Tracker (OxCGRT) (<https://github.com/OxCGRT/covid-policy-tracker>) is what we used for all the policy information including start date, end date, country, policy type, etc.

The other dataset we use for the country-level number of cases daily are from European Centre for Disease Prevention and Control. (<https://www.ecdc.europa.eu/en/publications-data/download-todays-data-geographic-distribution-covid-19-cases-worldwide>).

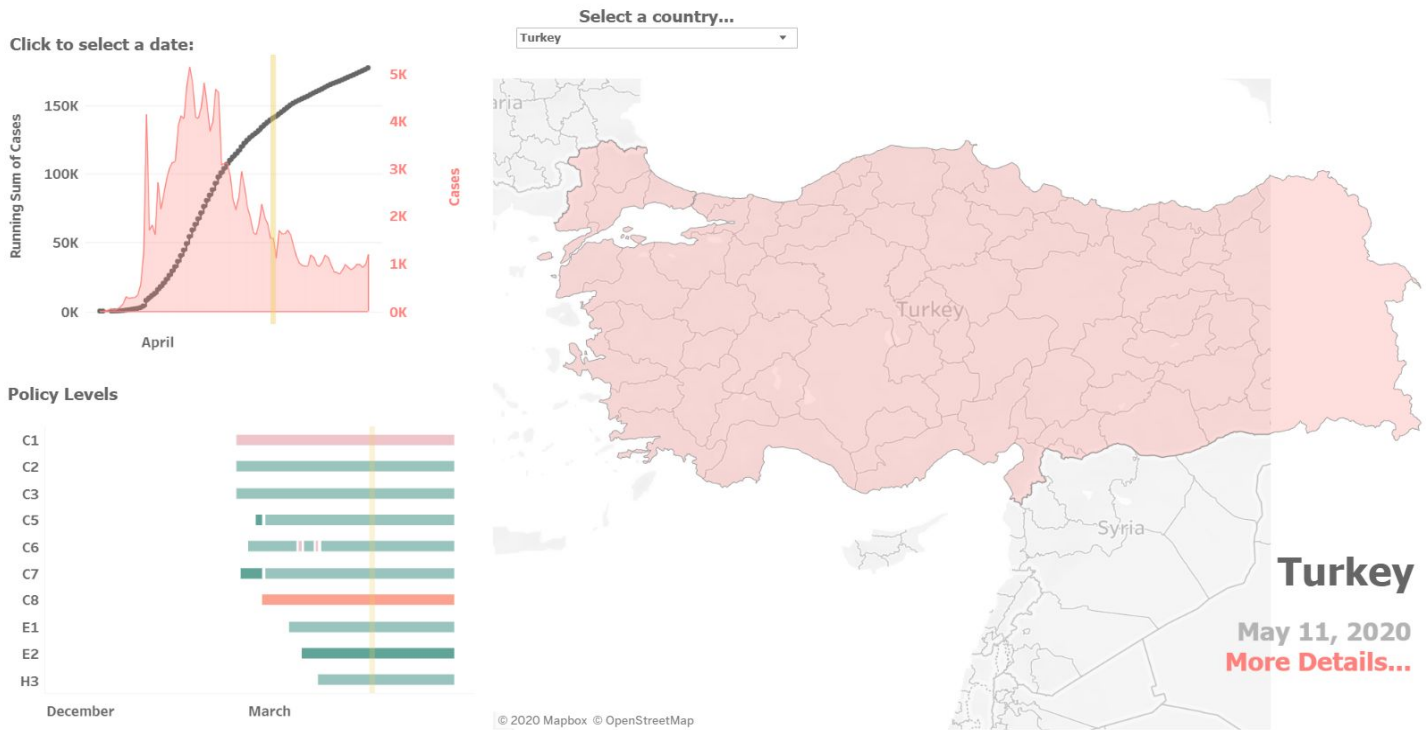
Both datasets are publicly available.

Policy Measures and Policy Levels

Eight of the policy indicators (C1-C8) record information on containment and closure policies, such as school closures and restrictions in movement. Four of the indicators (E1-E4) record economic policies such as income support to citizens or provision of foreign aid. And five indicators (H1-H5) record health system policies such as the Covid-19 testing regime or emergency investments into healthcare.

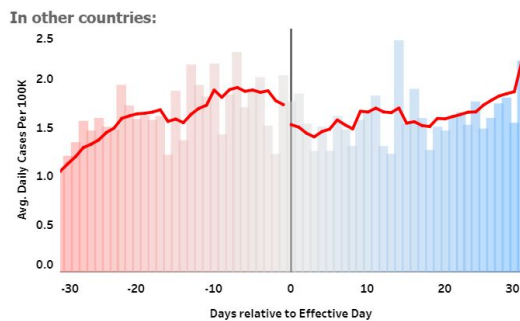
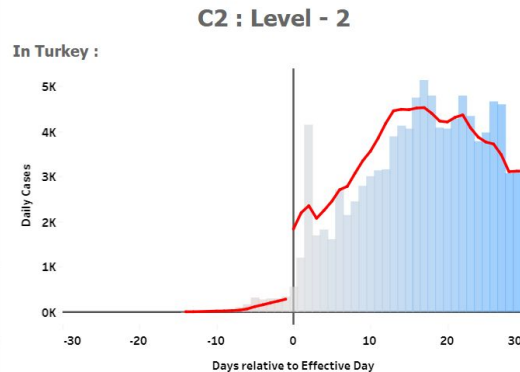
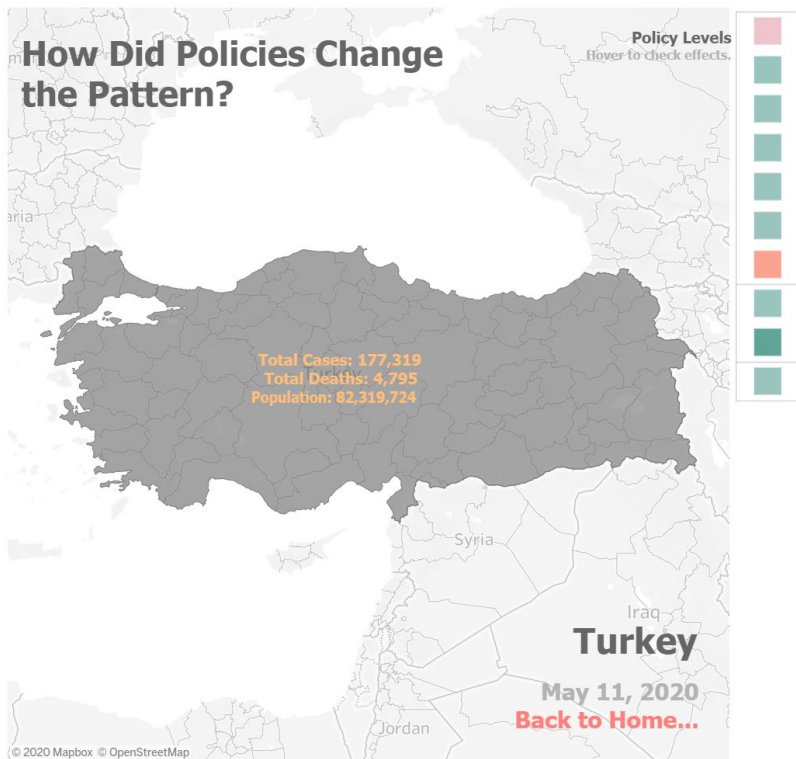
Main Dashboard

How Did Policies Change the Pattern?



Click on “More Details...” to see the second Dashboard

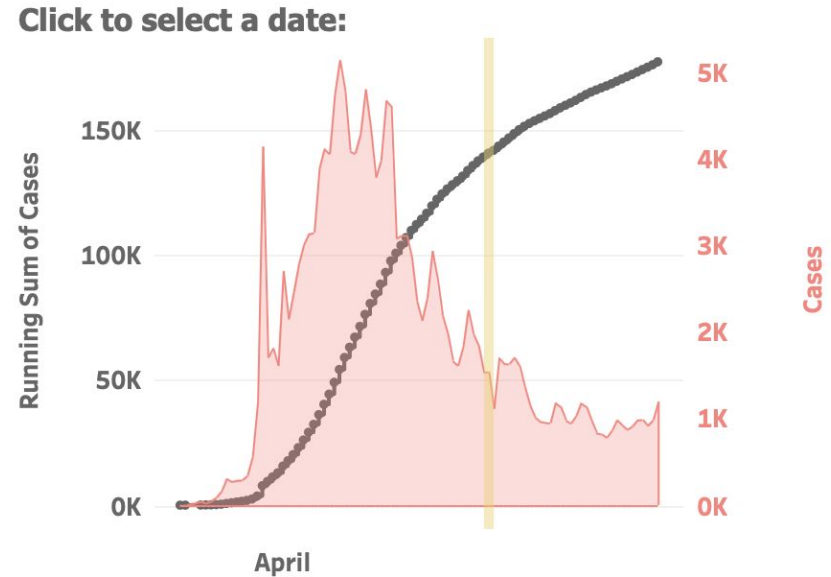
Policy-Comparison Dashboard



* 0 day is the 10th day of the starting date of the policy

Reported Cases of the Selected Country

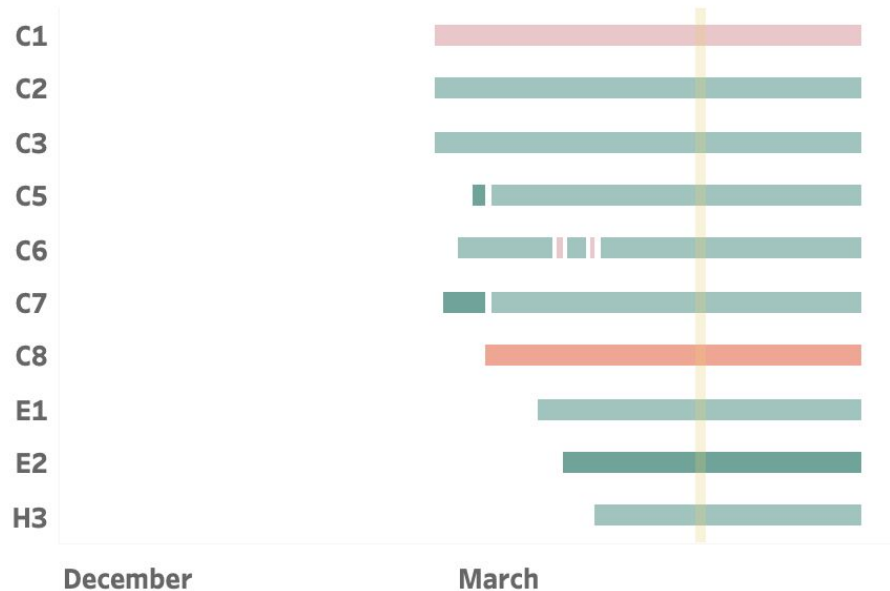
We displayed the number of new COVID cases daily and the cumulative cases for the user selected country.



Policy Status of the Selected Country

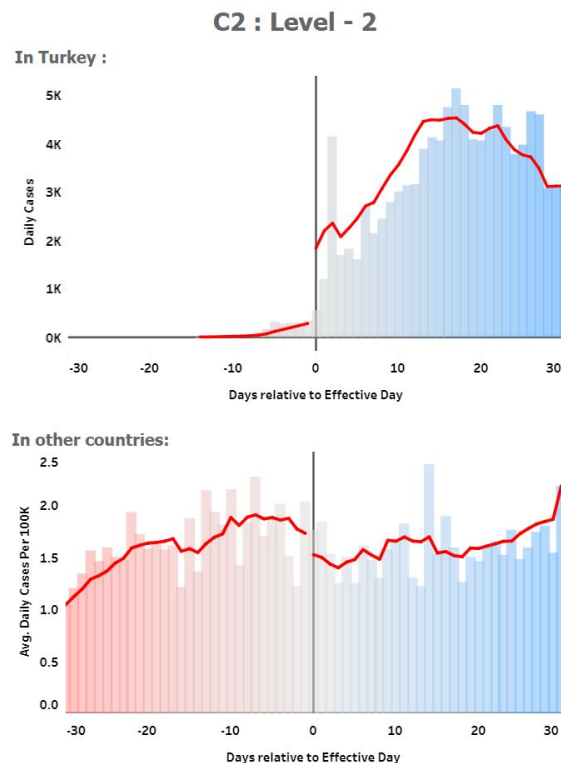
We then showed the information for all the policies and the categories of those policies that a country implemented (see slide 5 for more details). The duration of each policy and their overlaps were shown through the gannet chart.

Policy Levels



Observation of Effects of a Policy

On the second dashboard, users can hover over different policy type from the colored squares. The graph on the top shows the dates vs daily new COVID cases. "0" on the x-axis indicates the date when the policy is effective (we assume it to be the 10th day after the policy started). The graph on the bottom shows the effect of the same policy in other countries.



Take-aways

We use interactive dashboards to show the effectiveness of different policies for different countries on the COVID-19 pandemic, which measure the cases of COVID-19 after the 10 days of the effective day and compare it with the pre-implementation phase.

Reference

Cascella M, Rajnik M, Cuomo A, et al. Features, Evaluation and Treatment Coronavirus (COVID-19) [Updated 2020 May 18]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2020 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK554776/>

<https://github.com/OxCGRT/covid-policy-tracker>

<https://www.ecdc.europa.eu/en/publications-data/download-todays-data-geographic-distribution-covid-19-cases-worldwide>