The Unemployed States of America

by **Hassam Ali, Leo Tang**

In 2020, a global economic recession was triggered by the COVID-19 pandemic. According to International Monetary Fund's estimates, the global economy had contracted by 3.5% during the year [1]. Public health measures such as government mandated lockdown were identified for causing supply shocks, one of the contributing factors to the economic downturn [2]. In this project, we attempt to investigate the impact of lockdown on an economy, specifically the United States. By comparing lockdown and unemployment data between January and September 2020 on a map, we can illustrate this relationship in a spatial format.

UNEMPLOYMENT DATA

We first considered the type of visualization for our underlying data. Unemployment data was sourced from the U.S. Bureau of Labor Statistics [3]. It is shown in percentage instead of raw number to eliminate population bias from the most densely populated geographic units. To visualize this data, choropleth map was chosen for its ability to display aggregate variable within each geographic unit.

NAVIGATION FUNCTIONS

This map encompass data from both spatial and temporal dimensions. Accordingly we have offered our web visitors the ability to select the visualized data based on these two dimensions. These user selectable functions come in the form of a number of drop down menus on the upper portion of the map. Moreover, in order for our visitors to directly compare data from different period on the same page, the map also includes a sliding control function.

AUXILIARY DATA ELEMENTS

In addition to the unemployment data of the 50 states and District of Columbia, this map also provides local unemployment data from the 3,142 counties within the 50 states. For visitors that would like to examine the underlining data further, the map has implemented an onclick function, which enables the display of the entire January to September data upon activation of a trigger area.
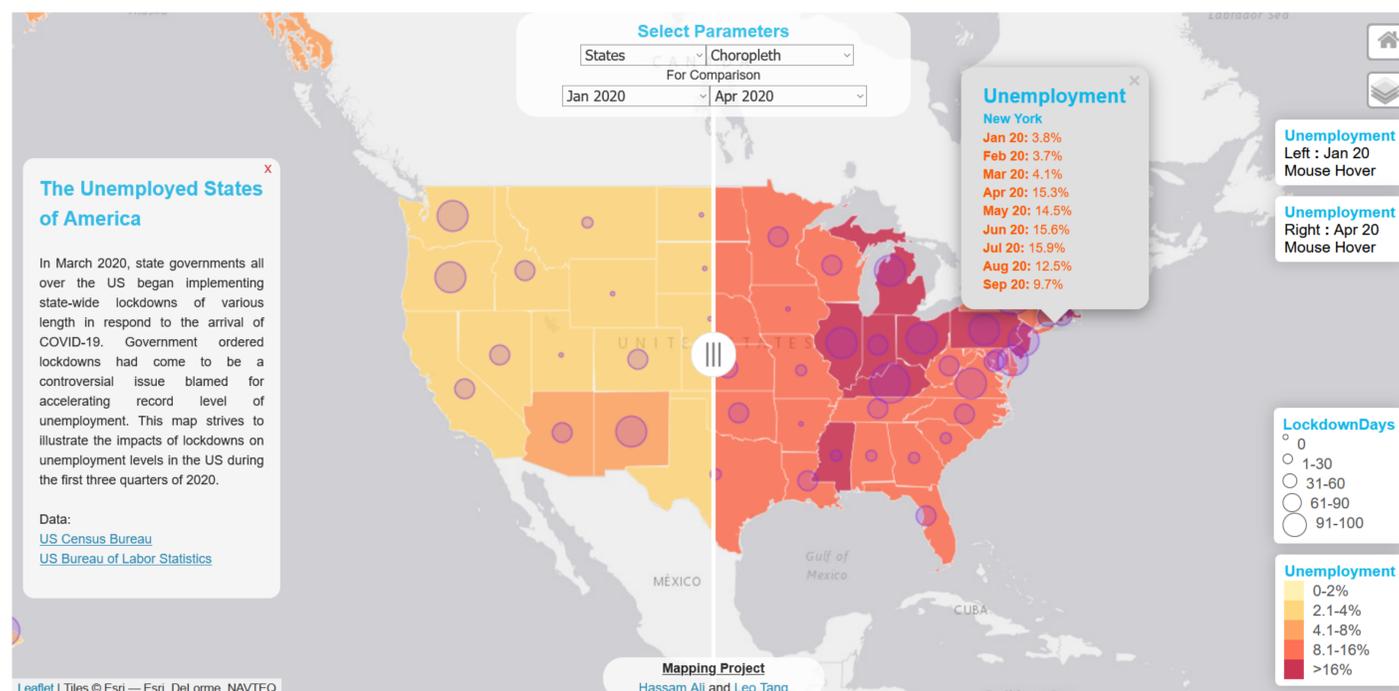
LOCKDOWN DATA

In the United States, the federal government had largely resisted to coordinate a nationwide lockdown program. Instead, lockdown orders are issued by state and local jurisdictions [4]. The lockdown data was aggregated from published orders from all 50 states and the District of Columbia's mayor office. We have decided to use proportional symbols to display this quantitative data set due to Its ease of supplementing the unemployment data in choropleth format.

LEGENDS

Considering the nature of our data and its distribution, we have experimented with a number of classification schema and agreed on a custom schema with 5 classes each based on logical groups. In this case by months of lockdown and the exponential increase of unemployment rates. We feel this approach offers the highest cognitive efficiency as it enables our visitors to identify observable, meaningful changes with minimal effort.

CONCLUSION

During the height of the lockdown in April, a record 20.5 million Americans lost their jobs [5]. Our goal for this project is to illustrate this devastation in an easy to understand format. As we can see here, a natural disaster on this scale can change a nation's fortune overnight. This episode highlights the fragility of our social economic system and may serves as a cautionary tale for our society to prepare for other lurking threats.

REFERENCES

[1] IMF, *World Economic Outlook Update*, 20 January 2021

[2] Harari, Daniel, et al., House of Commons Library, *Coronavirus: Economic impact*, 18 January 2021

[3] BLS, *Local Area Unemployment Statistics*, 5 January 2021

[4] Madhani, Aamer, et al., AP News, *Trump resists national shutdown, leaving it up to states*, 2 April 2021

[5] Long, Heather, et al., The Washington Post, *U.S. unemployment rate soars to 14.7 Percent, the worst since the depression era*, 8 May 2020

Technische Universität München   TU WIEN TECHNISCHE UNIVERSITÄT WIEN   TECHNISCHE UNIVERSITÄT DRESDEN   ITC UNIVERSITY OF TWENTE.   Erasmus+   cartographymaster.eu