Antiquated vs. Modernized Unemployment Insurance Systems During the COVID-19 Pandemic

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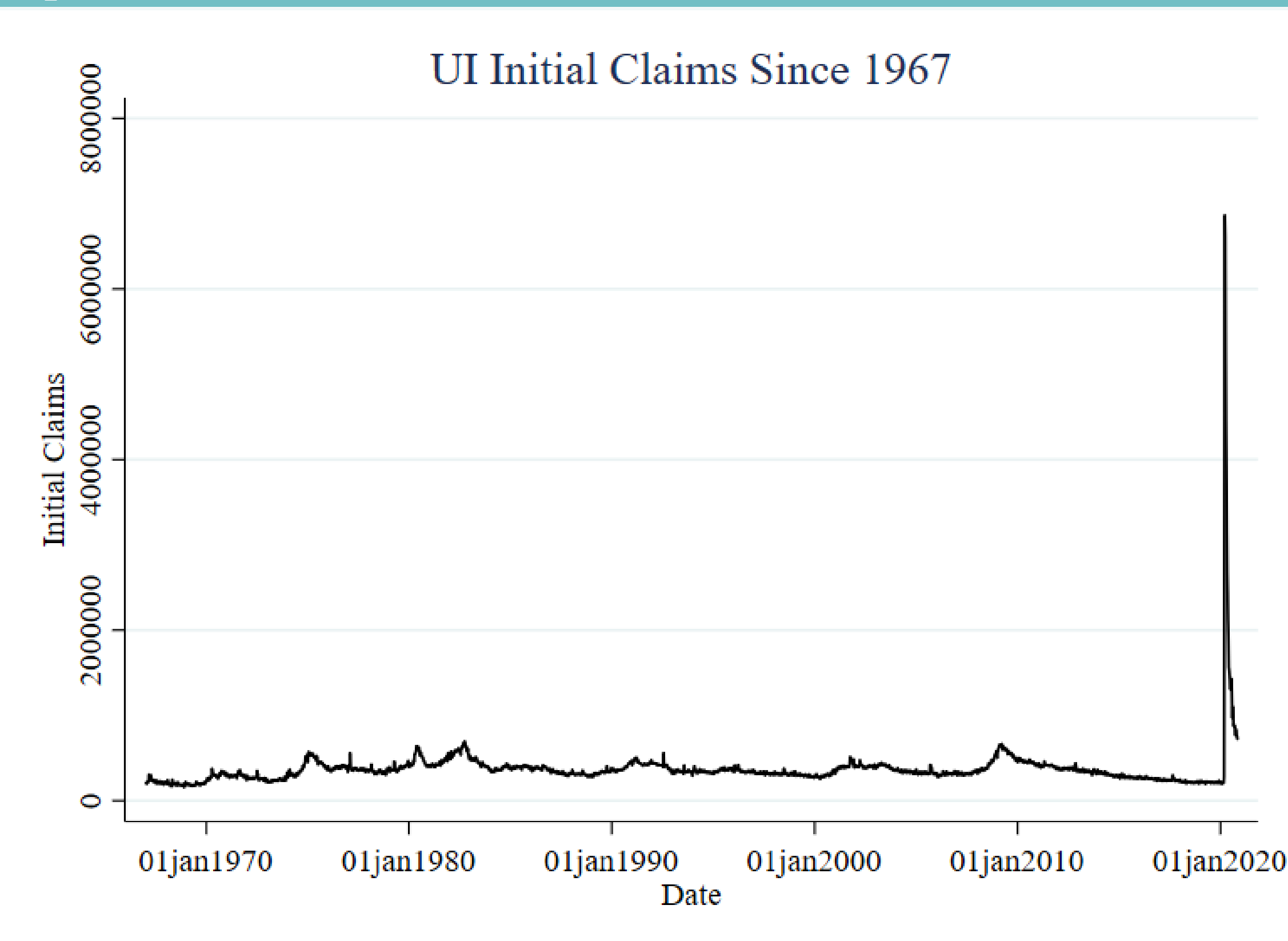College Park Scholars Academic Showcase, April 30, 2021

Site Information:

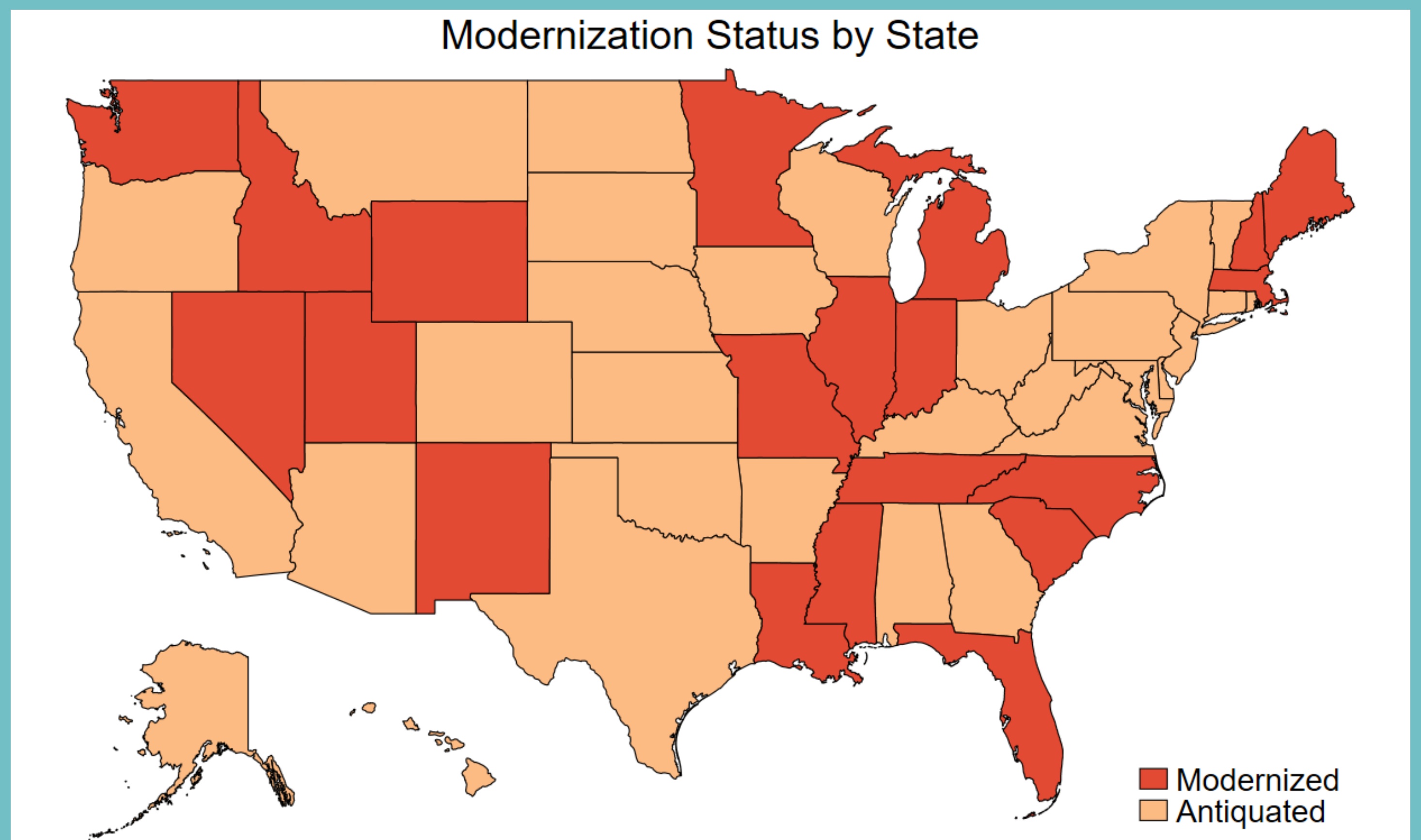Site: (Virtual) University of Maryland, College Park

Supervisor: Michael Navarrete

This graph describes the number of Unemployment Insurance Claims filed since 1967. Notice the slight increase during The Great Recession of 2008 as compared to the surge in claims in early 2020.
Graph by Michael Navarrete

Methods:

This project entailed determining the modernization status of each of the 50 states and Washington D.C. by using data from the UI Information Technology Support Center and contacting the IT departments of each state. A difference-in-difference approach was then used to show how consumer spending was higher in states with modernized systems. In addition to helping with state identification and gathering data, I also helped edit the paper that my mentor wrote for this project.

This graph demonstrates how consumer spending was higher in states with modernized mainframes.
Graph by Michael Navarrete

Introduction

COBOL is an antiquated programming language that is used for many U.S. state Unemployment Insurance (UI) systems. While efficient under "normal conditions", these systems were overwhelmed by the sudden spike in claims following the March 13th lockdown. The purpose of this project was to determine whether there was a difference in the UI benefit delays between modernized and antiquated states
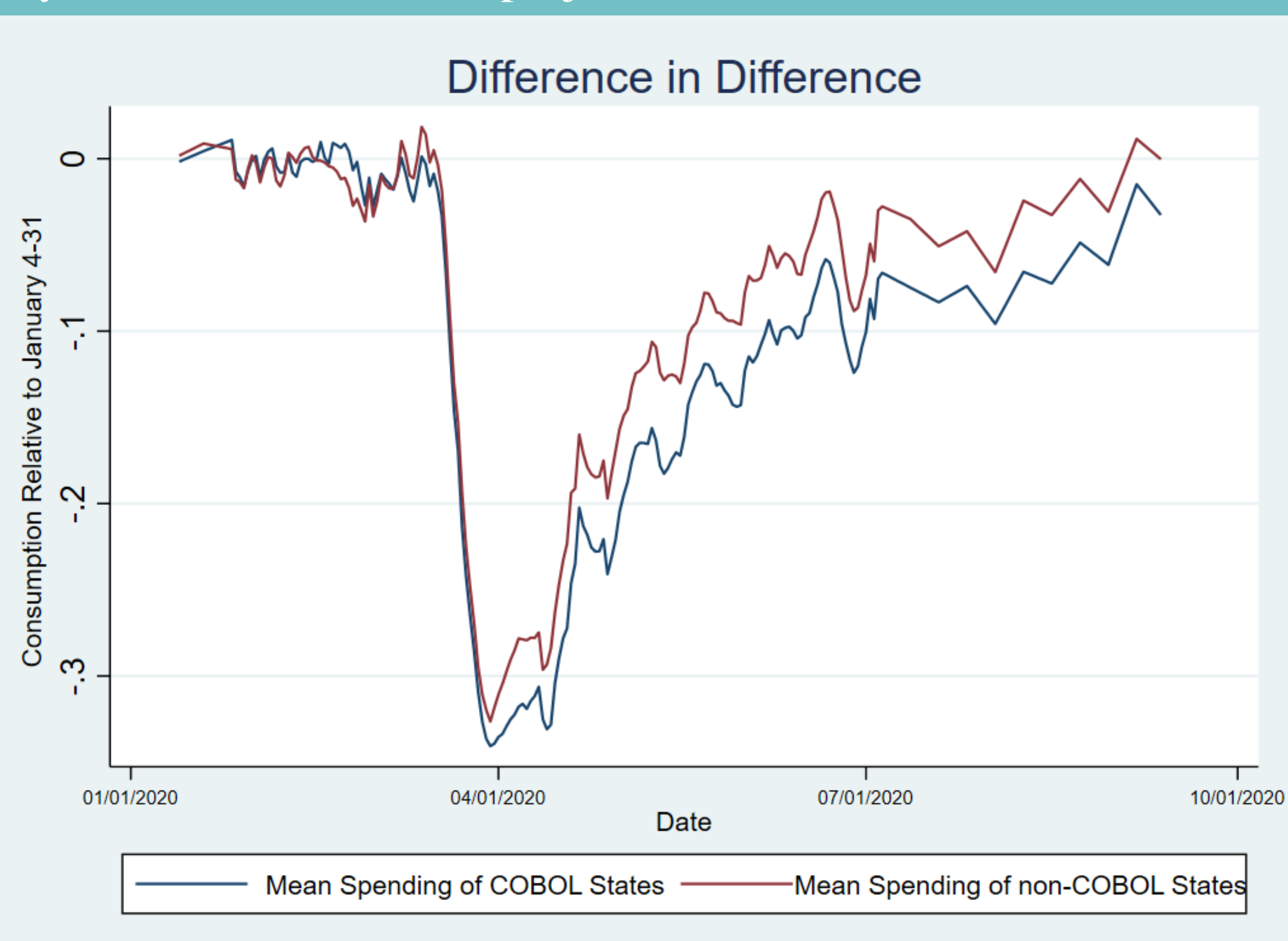

This map shows differentiates states with modernized and antiquated Unemployment Insurance mainframe systems.
Map created by Yonathan Melamed for this project.

Results:

The difference-in-difference model showed that consumer spending was higher in states that had modernized UI systems. This suggests that those states were able to provide UI benefits at a higher rate than states using COBOL. Thus, the results of this project show that states with modernized systems are better equipped to handle sudden surges in unemployment insurance claims.

Discussion:

Although the results of this project suggest that there is great benefit to having a modernized UI system, COBOL is well-equipped to handle claims normally and an extreme spike in unemployment like we saw during the pandemic is very rare. Therefore, states may not feel that there is enough incentive to invest a large amount of money into transitioning their systems. For this same reason, the government may not feel that there is sufficient reason to prioritize subsidies for state UI mainframe modernization.

Future Work:

While the modernization status for each state was found, we still have not determined whether the state of Delaware uses COBOL for their UI mainframe system. This last piece of information would help to provide a full picture of the impact of COBOL usage specifically on UI benefit delays as opposed to modernized vs. antiquated systems.

Acknowledgments: