Making Macroeconomic Indicators Accessible

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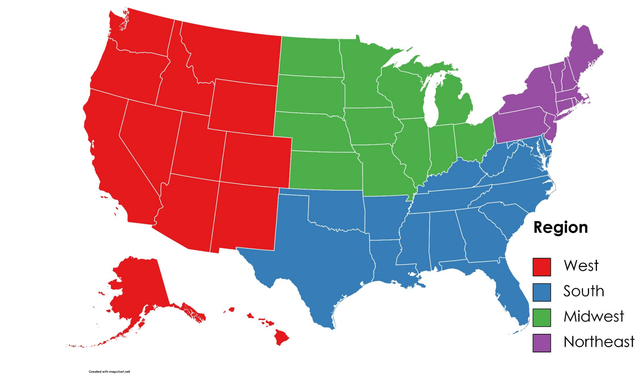
FURMAN COMPUTER SCIENCE

INTRODUCTION

- The Pew Research[1] depicts Americans as being interested in news stories that report the facts.
- This dashboard aims to present reliable, understandable data visualizations for use by the American public.
- **Inspiration**: The Opportunity Atlas[2], a shaded map of the United States that displays county level differences in upward mobility
- The atlas tells a richer story than if the data were aggregated at the national level.
- Similarly, this dashboard explores inflation trends, unemployment rates, and employment numbers at the regional and state level.

DATA



- **Source**: The Bureau of Labor Statistics[3]
- Three Major Indicators:
  - **Inflation** (*CPI-U*): Data from 2019-2023 at the regional level as defined above. Includes product fields.
  - **Unemployment Rate** (*LAUS*): Data from 2005-2023 at the state and county level.
  - **Employment Numbers** (*ENU*): Date from 2005-2023 at the state and county level. Includes Industry Fields.
- Computational constraints limited spatial resolution to the state level.

LINKS

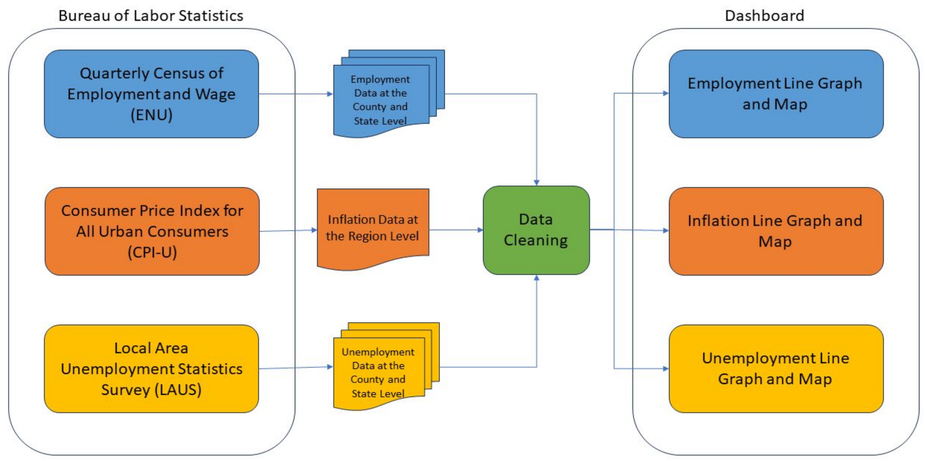
Github::
https://github.com/penguin-del/CSC-475_Project

Dashboard:
https://penguin-del.github.io/CSC-475_Project/

CITATIONS

1. Media Insight Project. How Americans describe their news consumption behaviors. https://americanpressinstitute.org/publications/reports/survey-research/americans-news-consumption/, 2018. Online; Accessed 13-Sep-2023.
2. https://www.opportunityatlas.org
3. https://www.bls.gov/
4. https://docs.bokeh.org/en/latest/index.html

PIPELINE



- **Bureau of Labor Statistics Reports**:
  - Quarterly Census of Employment and Wage (*Employment*),
  - Consumer Price Index (*Inflation*)
  - Local Area Unemployment Survey (*Unemployment*).
- **Visualization using Bokeh**[4]:
  - Line graphs (*Examples to the right*)
  - Maps (*Example maps below*)

DASHBOARD SPATIAL VISUALIZATIONS

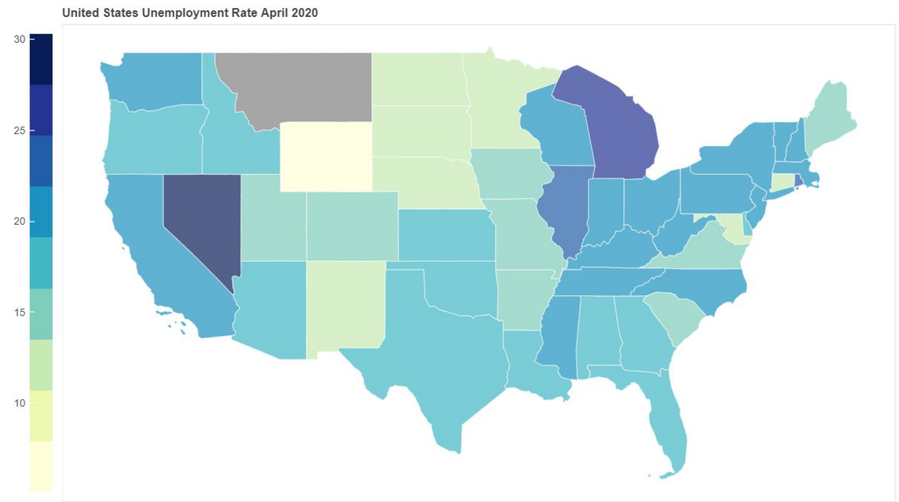


Figure 1: Unemployment rates across the United States in April 2020, following the Covid-19 lockdown.

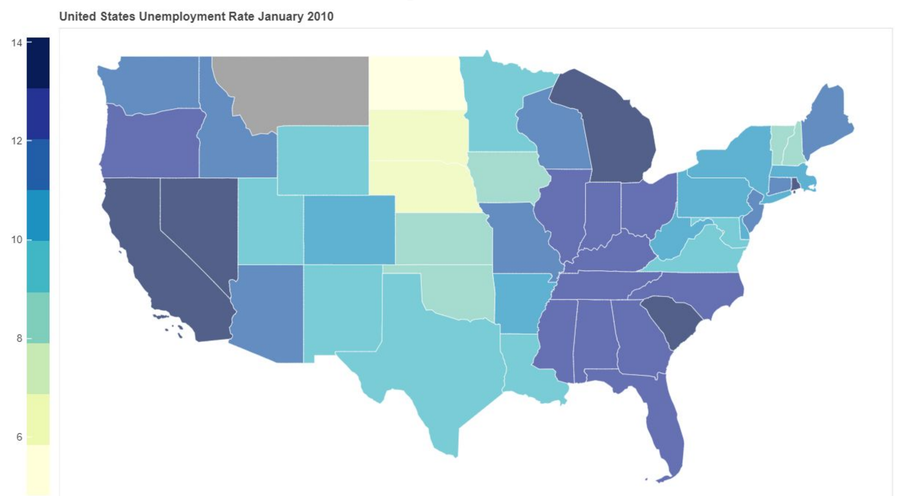


Figure 2: Unemployment rates across the United States in January 2010, when unemployment rates peaked following the 2008 housing market crash.

TEMPORAL VISUALIZATIONS

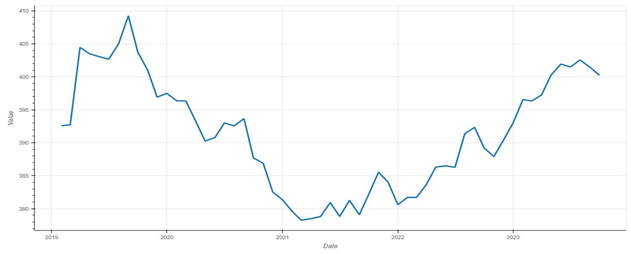


Figure 3: CPI values for medical commodities in the Northeast.

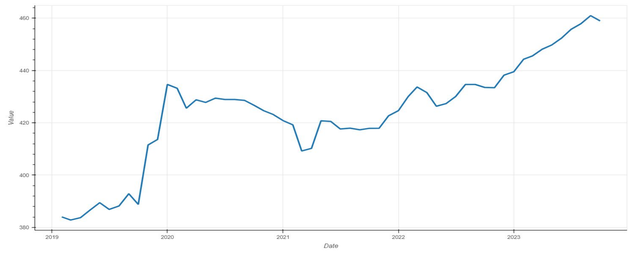


Figure 4: CPI values for medical commodities in the West.

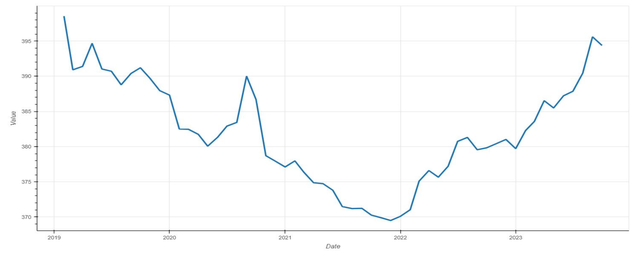


Figure 5: CPI values for medical commodities in the Midwest.

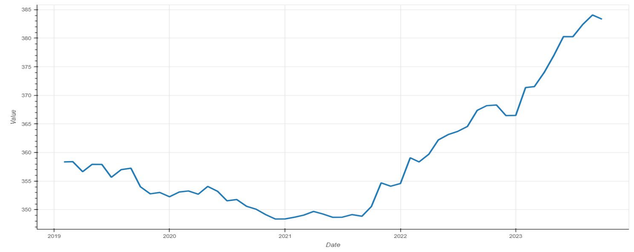


Figure 6: CPI values for medical commodities in the South.

- The temporal trends in the dashboard highlight regional differences and tell a more complete story than aggregate CPI values would. The line graphs above display CPI values for medical commodities (like medicine) from 2019 to 2023 in the four US regions.
- The spatial trends in the dashboard highlight relative impact. The two maps to the left display unemployment rates during the height of the 2008 recession and beginning of the Covid-19 pandemic.

CONCLUSION

- The dashboard displays nuanced information pertinent to the average American, despite reduced spatial and temporal trends.
- The dashboard can motivate interesting future research by highlighting non-intuitive trends.