



USMacroTrends.com

A Geospatial Analysis of Macroeconomic Trends

Nicholas Wray '17

Advised by: Professor Spezialetti, PhD.



Abstract

This project is a web-based interactive map display of macroeconomic indicators such as labor, capital, unemployment, and gross product. By examining the change in these terms over time, the map is colored as a heatmap and the elements can be compared against one another. Utilizing the graph database Neo4j, the data is represented in three node types, namely Counties, States, and Metropolitan Areas, and each has their own set of visualizations. For example, it is very easy to demonstrate which metropolitan area was hit the hardest by the Great Recession. In the front-end, Javascript provides quick map updates via display library D3, and when combined with the Cypher query to Neo4j, the map updates almost instantly. Front-end packages such as Bootstrap were utilized to make the design minimalist and appealing. The result is a dynamic, aesthetically pleasing map display that will be useful and interesting to the casual user and economist alike.

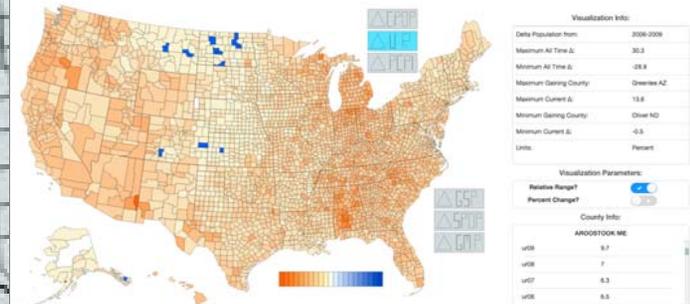
Database

USMacroTrends utilizes the graph database Neo4j to represent how economic entities are comprised of smaller entities. There are 3 node types and 3 relationship types.



- 3112 Counties
- IN 50 States
- 428 Counties
- MEMBER_OF Metropolitan Areas
- 53 Metropolitan Areas
- CONTRIBUTES_TO 50 States
- 600,000+ Properties

Visualizations

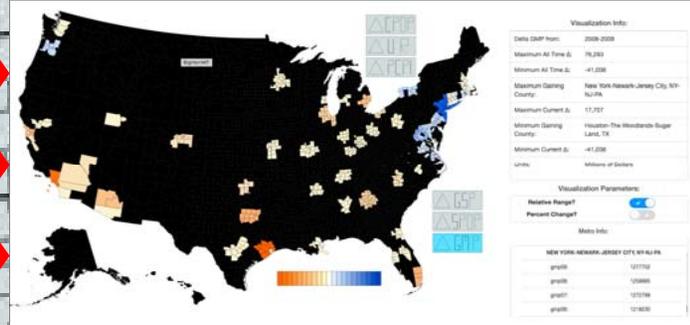
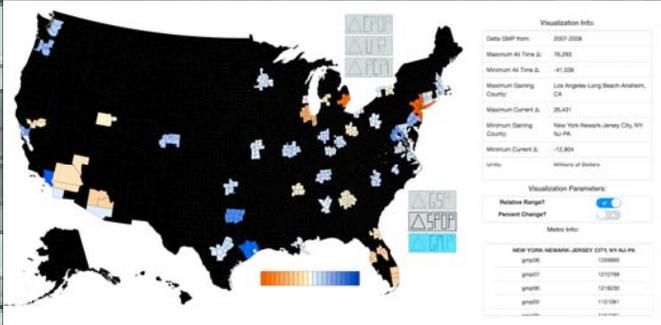


Motivation

USMacroTrends was inspired by a love of data, my work as a Economics major, and the European Union. In my Macroeconomic Theory course here at Trinity, the comparison was made between the EU and the US – both are comprised of smaller economic entities and share a common currency. This raised my critical questions:

- How do states, counties, and metropolitan areas change on a macro level?
- How do national crises like the Great Recession reflect themselves on a subnational level?

From there, the challenge was to visualize these trends.



Final Programs Used

Back-End



Visuals



Updates



Front-End



Data

Name	Level	Source
Population	State & County	Census Bureau
Unemployment	State & County	Bureau of Labor Statistics
Gross Product	State & Metropolitan Area	Department of Commerce
Per Capita Personal Income	County	Bureau of Economic Analysis

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