

COVID-19 Impact on the US Economy

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Question

How did COVID-19 impact the US economy?

Where we looked.

COVID - 19

Reviewed hospitalization data from the Centers for Disease Control and Prevention (CDC) from March 1, 2020, to December 30, 2023, to see impact of COVID on the population.

Unemployment

Unemployment data from the Federal Reserve Economic Data (FRED) from January 1, 2015, to June 1, 2024. Showing the monthly percentage of unemployment before and during COVID.

Inflation

Inflation data from the Federal Reserve Economic Data (FRED) from January 1, 2015, to January 1, 2024. Showing the monthly percentage of inflation before and during COVID.



Data

Coronavirus Disease 2019 Data

Source

We took data from the CDC showing the Monthly Rates of Laboratory-Confirmed COVID-19 Hospitalizations from the COVID-NET Surveillance System.

Review

Data was stratified by State, Season, Month and Year, Age Category, Sex, Race and Ethnicity, Monthly Rate, and Type.

Focus

Cleaned data to focus on the aggregated data for State, Month and Year, and Monthly Rate. This allowed us to match the other data sets.

State Unemployment Data

Source

We pulled data from the Federal Reserve Economic Data (FRED) API showing the monthly unemployment rate(%).

Review

The data collected showed the real time start, real time end, date,value(percent) and state.

Focus

Cleaned data to focus on the aggregated data for State, Month and Year, and Monthly Rate. This allowed us to match the other data sets.

CPI (Consumer Price Index) Inflation Data

Source

We pulled data from the Federal Reserve Economic Data (FRED) csv file showing the CPI Median Percentage.

Review

The data collected showed the the dates from 2015-01-01 to 2024-01-01 as well as the CPI Median Percentage changes each month.

Focus

I only had to rename the columns in order to clean up our raw data.

Data Merging

We took our three different data sets and combined them into three different dataframes.

	Date	Unemployment Percentage
State		
California	2015-01-01	6.8
California	2015-02-01	6.7
California	2015-03-01	6.6
California	2015-04-01	6.5
California	2015-05-01	6.4
...
Utah	2024-02-01	2.8
Utah	2024-03-01	2.8
Utah	2024-04-01	2.8
Utah	2024-05-01	2.9
Utah	2024-06-01	3.0



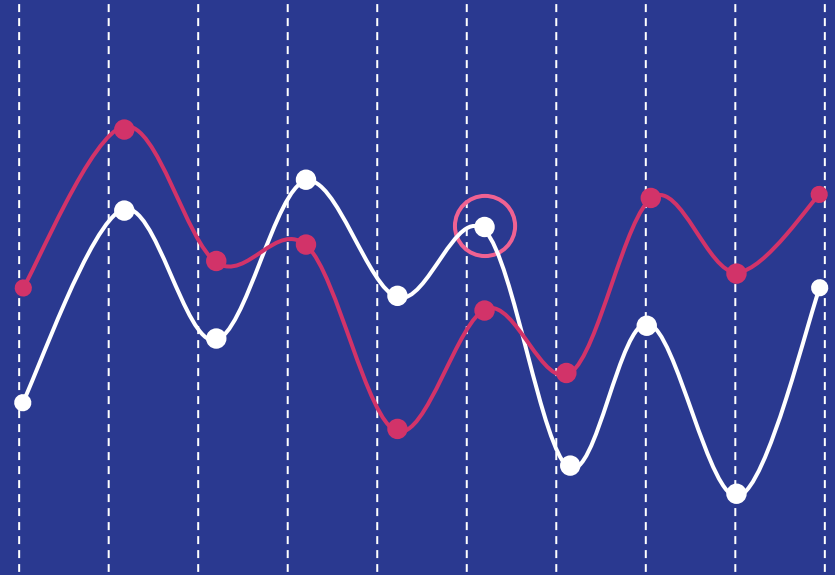
	State	Date	Monthly COVID Rate
22775	California	2020-03-01	8.6
22772	California	2020-04-01	13.4
22773	California	2020-05-01	10.3
22771	California	2020-06-01	13.9
22770	California	2020-07-01	31.8
...
15845	Utah	2024-03-01	7.2
15846	Utah	2024-04-01	4.7
15848	Utah	2024-05-01	3.1
15849	Utah	2024-06-01	5.3
15847	Utah	2024-07-01	4.0



	State	Monthly Covid Rate (by hundreds of thousands)	Monthly Unemployment Rate (by Percentage)
0	California	27.797826	5.693860
1	Colorado	31.267391	3.737719
2	Connecticut	53.139130	4.918421
3	Georgia	38.639130	4.444737
4	Iowa	50.088889	3.349123
5	Maryland	33.806522	4.055263
6	Michigan	35.263043	5.161404
7	Minnesota	34.941304	3.596491
8	New Mexico	40.228261	5.685088
9	New York	43.630435	5.301754
10	Ohio	20.658696	4.904386
11	Oregon	22.506522	4.684211
12	Tennessee	35.328261	4.331579
13	Utah	26.132609	3.106140

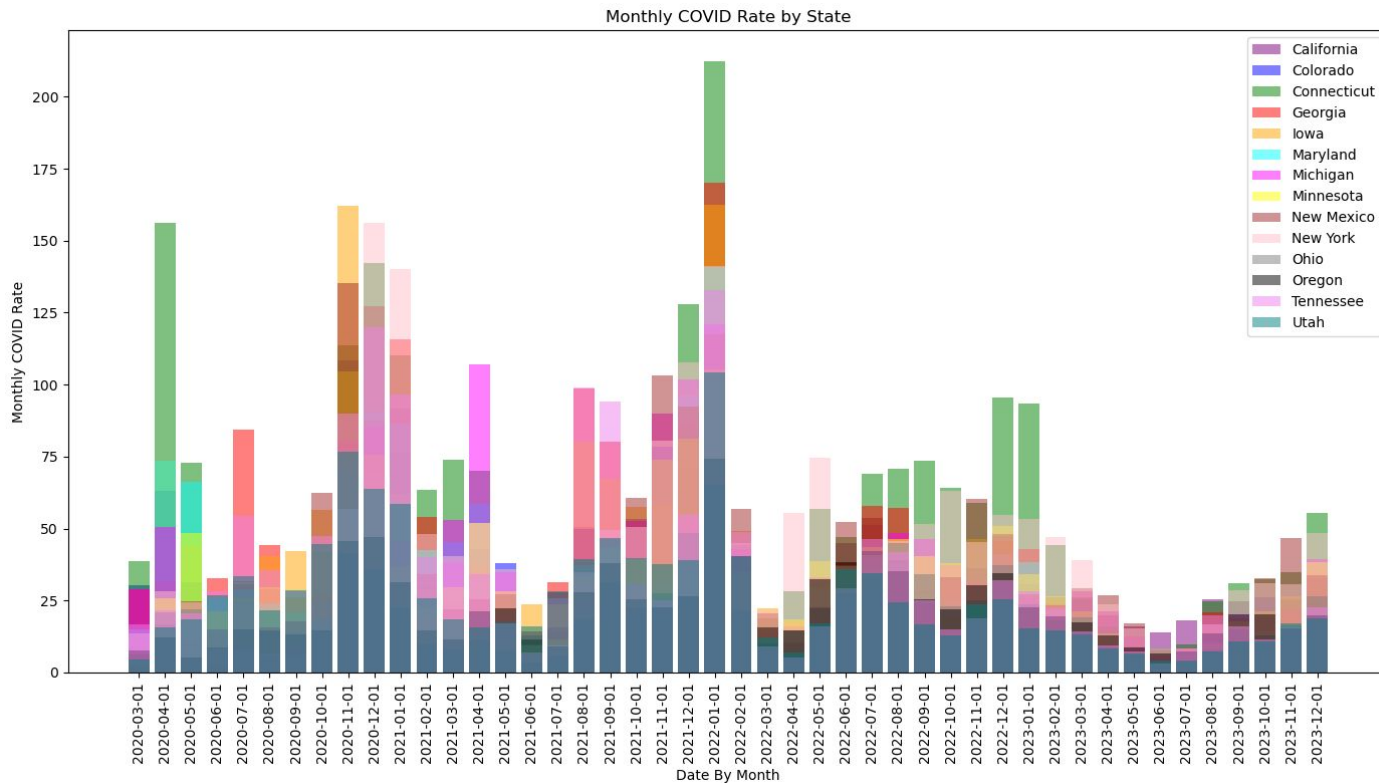
Merged Data

Visualizations

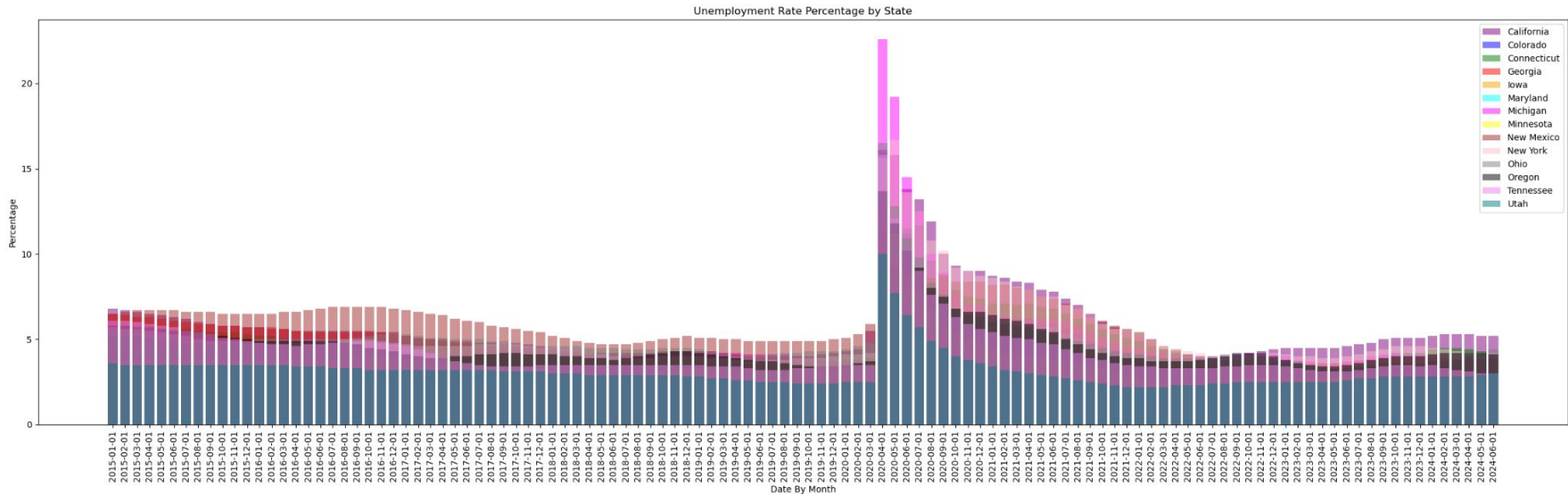


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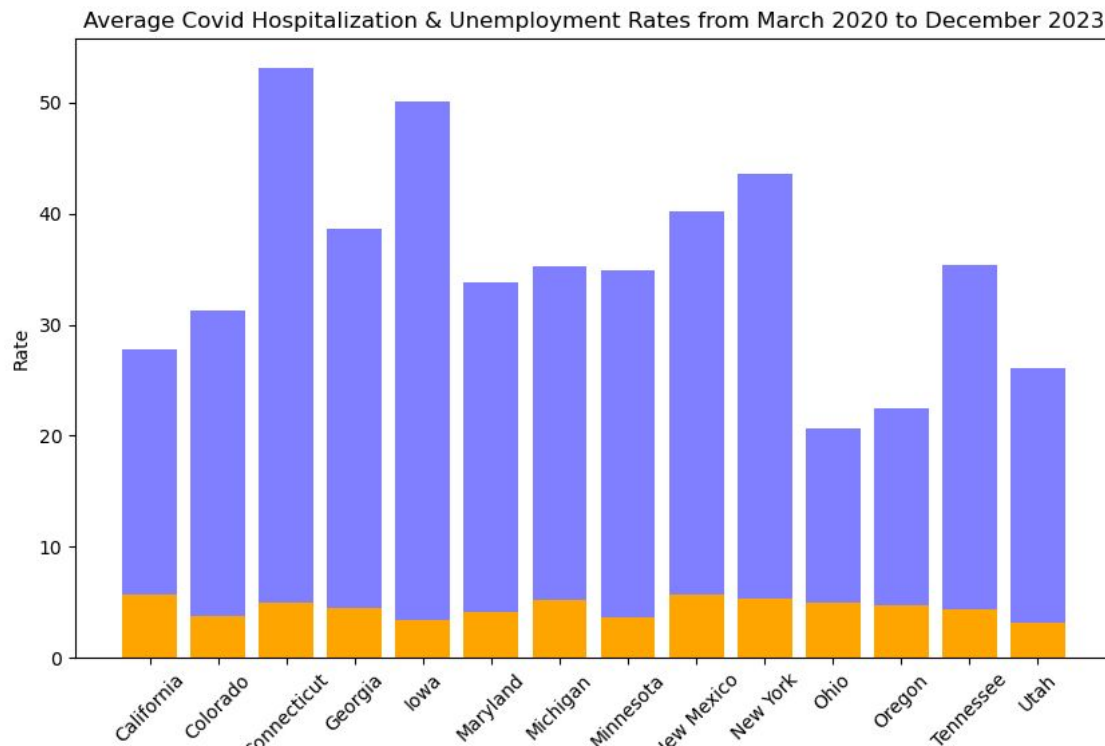
COVID Rate by State



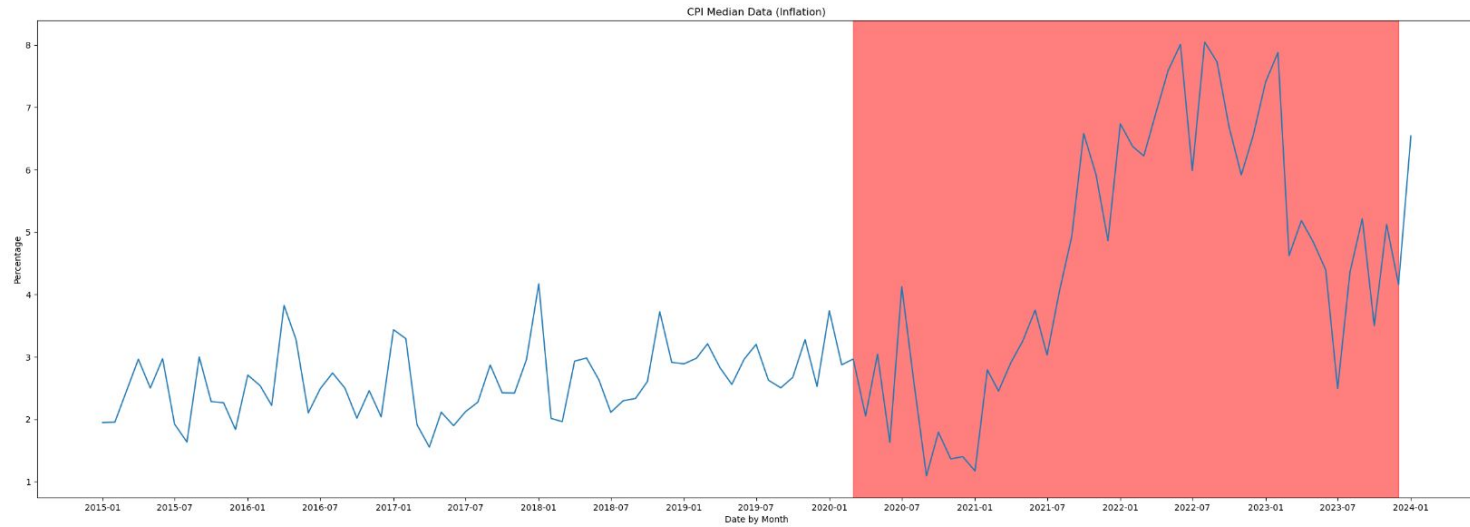
Unemployment by State: 2015 - 2024



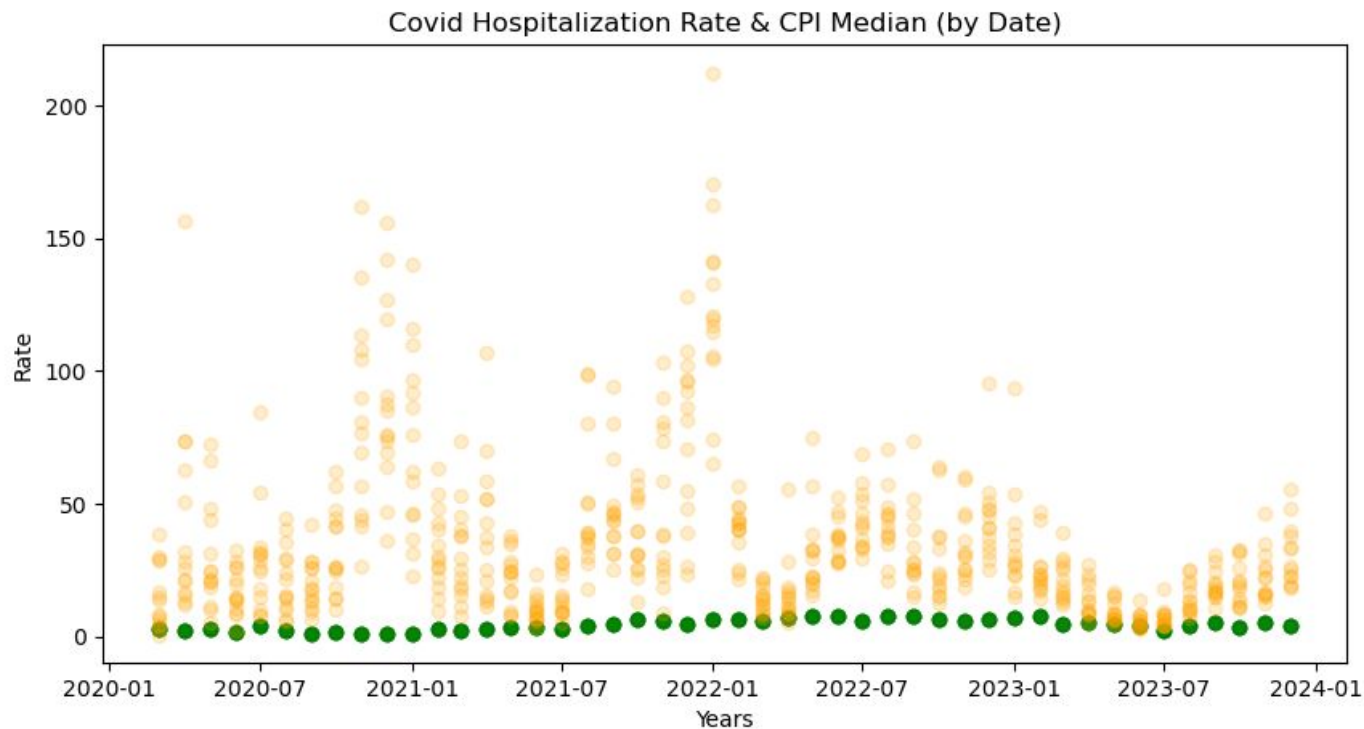
COVID Hospitalization & Unemployment Rates



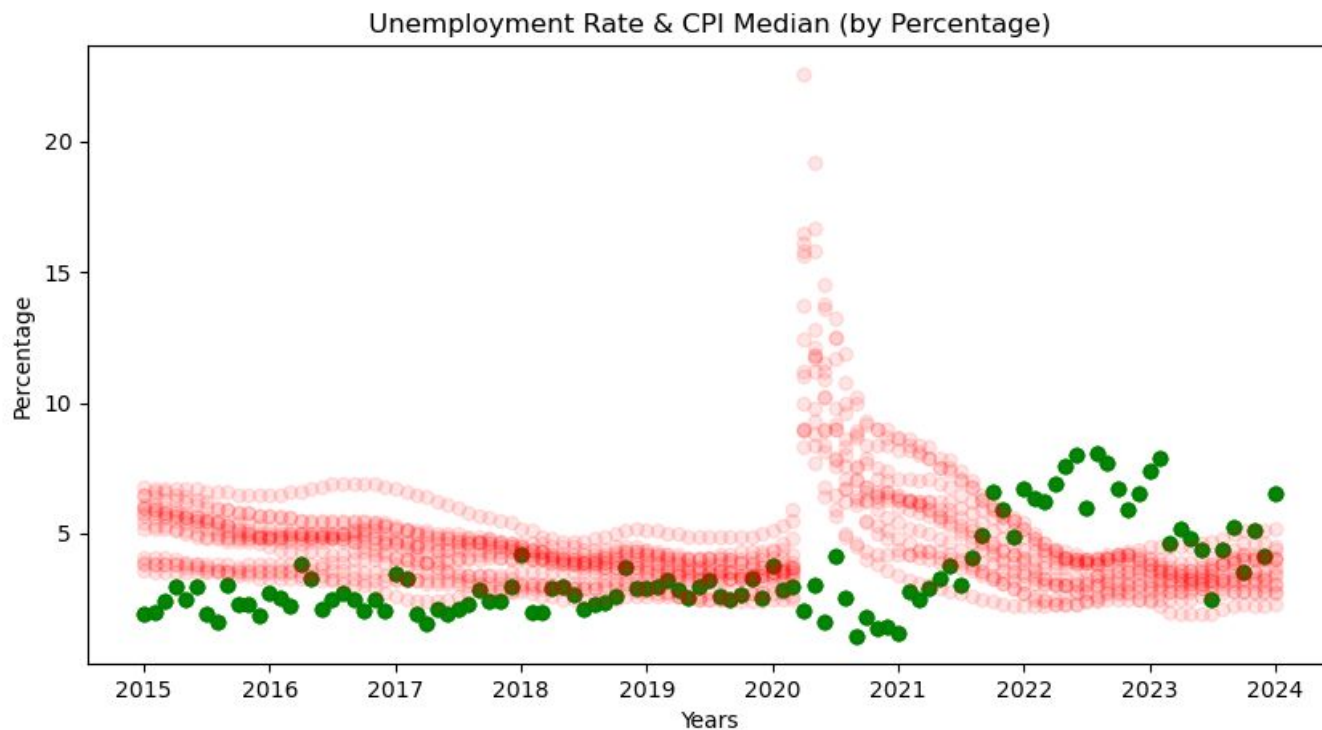
CPI Median Data



COVID Rate & CPI Median Data



Unemployment Rate & CPI Median Data



Analysis

What does this tell us?

There is a relationship between covid hospitalizations and the economy. As you can see before the COVID pandemic began in 2020 the unemployment rate stayed consistent around 6%. When COVID began spreading the unemployment spiked greatly to above 20% and took multiple years to come back down. Inflation rates shot up in 2021 doubling the highest inflation rate in previous years before COVID.





Questions?