

# Causal effect of the Great Recession (2007-2009) on Unemployment across the US

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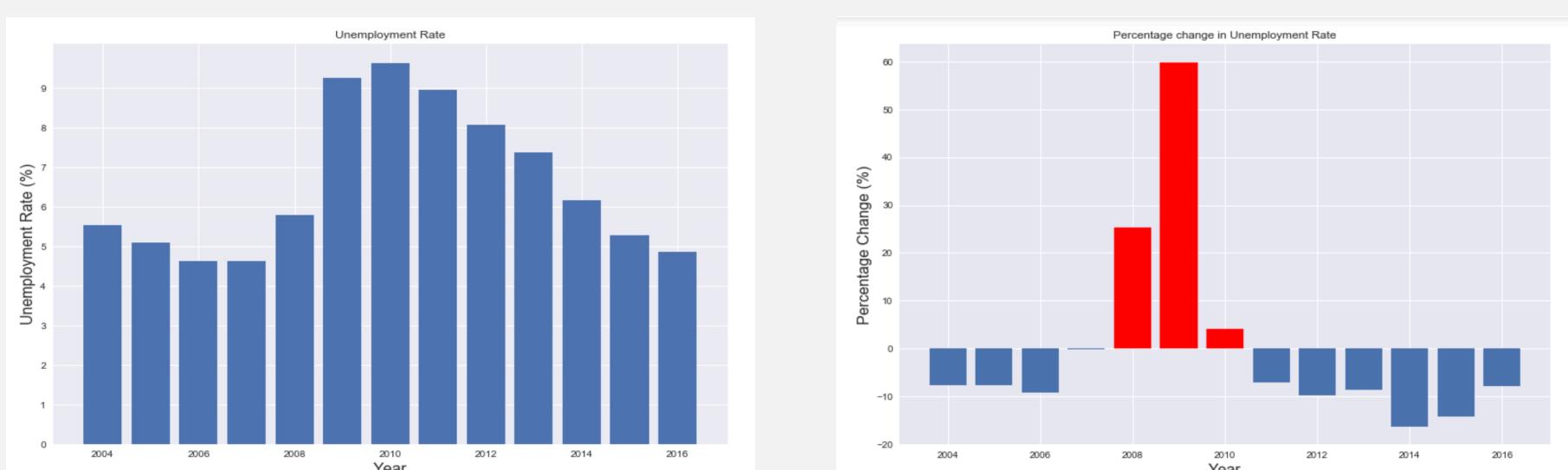
## ABSTRACT

The general perception of the American population is that the US economy is yet to recover from the Great Recession of 2007-2009.

Our goal is to understand and reflect on some of the key factors affected by the Great Recession - pay, inflation, and unemployment rates across the US. Leveraging these statistics we hope to debunk the misconception that the US people have with respect to the economic recovery.

## BACKGROUND

The U.S. economy faced one of its unrelenting economic difficulties in 2007, the Great Recession, which lasted until late 2009. This was the worst recession for the United States since the Great Depression of the 1930s. Americans suffered losses in wealth, especially in home investments, and annual unemployment rate hit an all time high of close to 9.5%



## MYTH AND BELIEF

*"A decade after Great Recession, one in three Americans still feel as they haven't recovered from the recession" – CNBC*

*"53 percent of Republicans think the unemployment rate has risen under Obama" – The Washington post*

*"In 2015, six years from the end of the recession, total U.S. employment was 148 million compared to a pre-recession peak of 146 million. Meanwhile the population of working age people rose by 17.5 million, more than the 1.7 million employment gain" – Forbes*

## OBJECTIVE

Understanding the correlation of various entities affected by the Great Recession:

- Unemployment rates across various states
- Unemployment rates across various demographics, job types, and education background
- GDP vs inflation vs unemployment rates
- Mapping the recovery of the US since recession

## OBSERVATIONS

### Workforce vs Unemployment rates

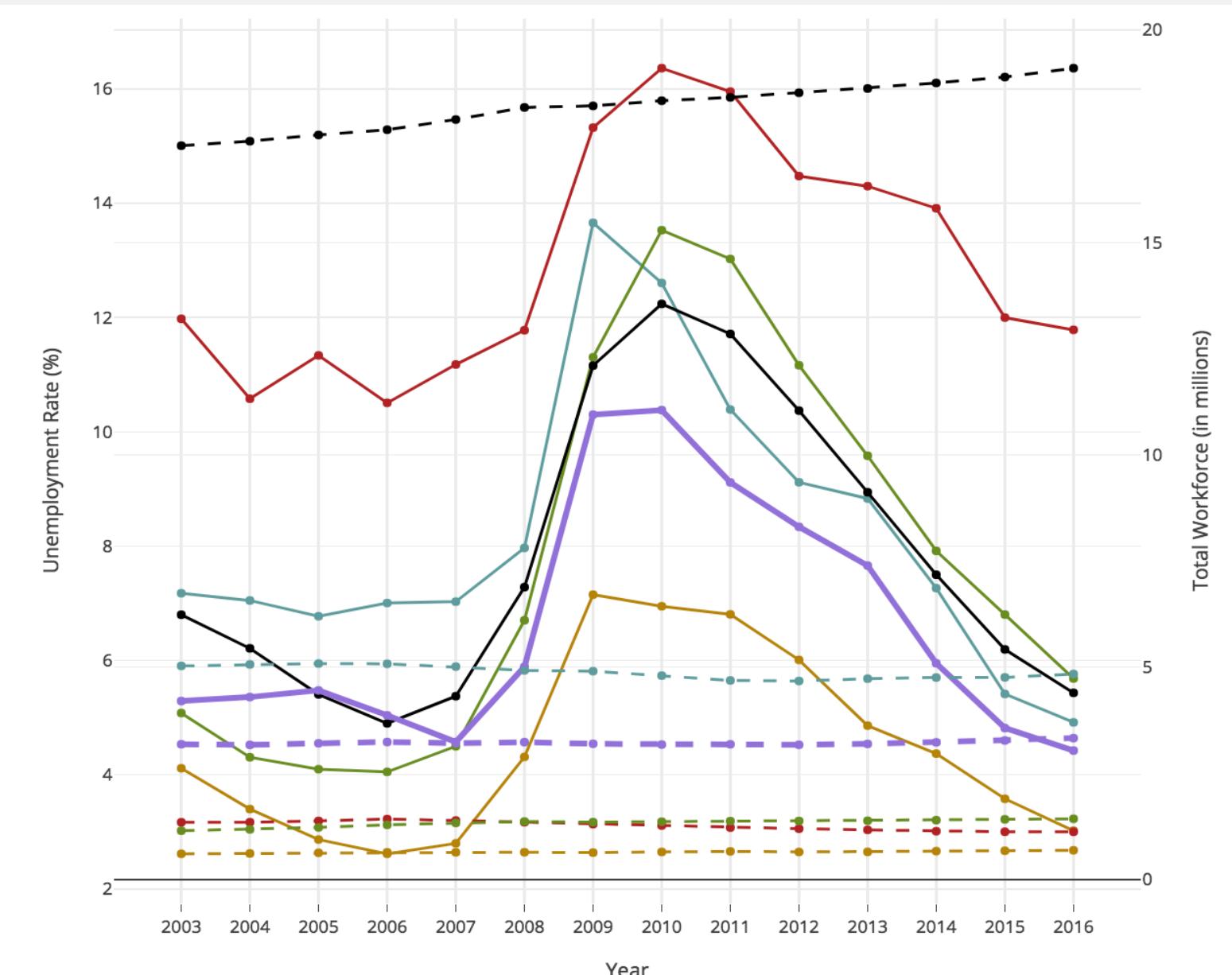


Fig: The dotted lines represent labor force and the solid lines represent the unemployment percent between 2003 and 2016.

Even with an increase in workforce, we see a decline in unemployment rate indicating a positive growth in the job market

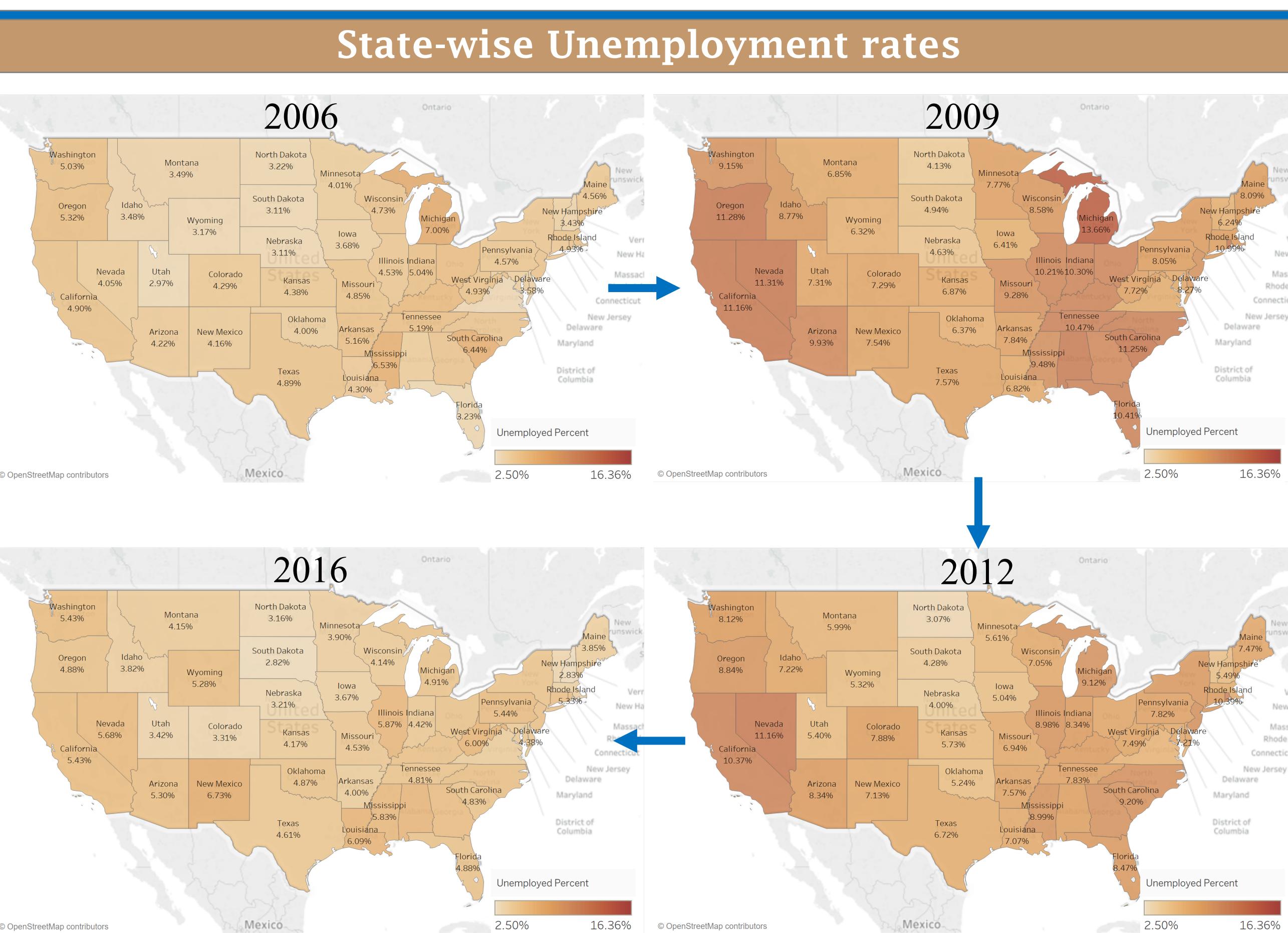
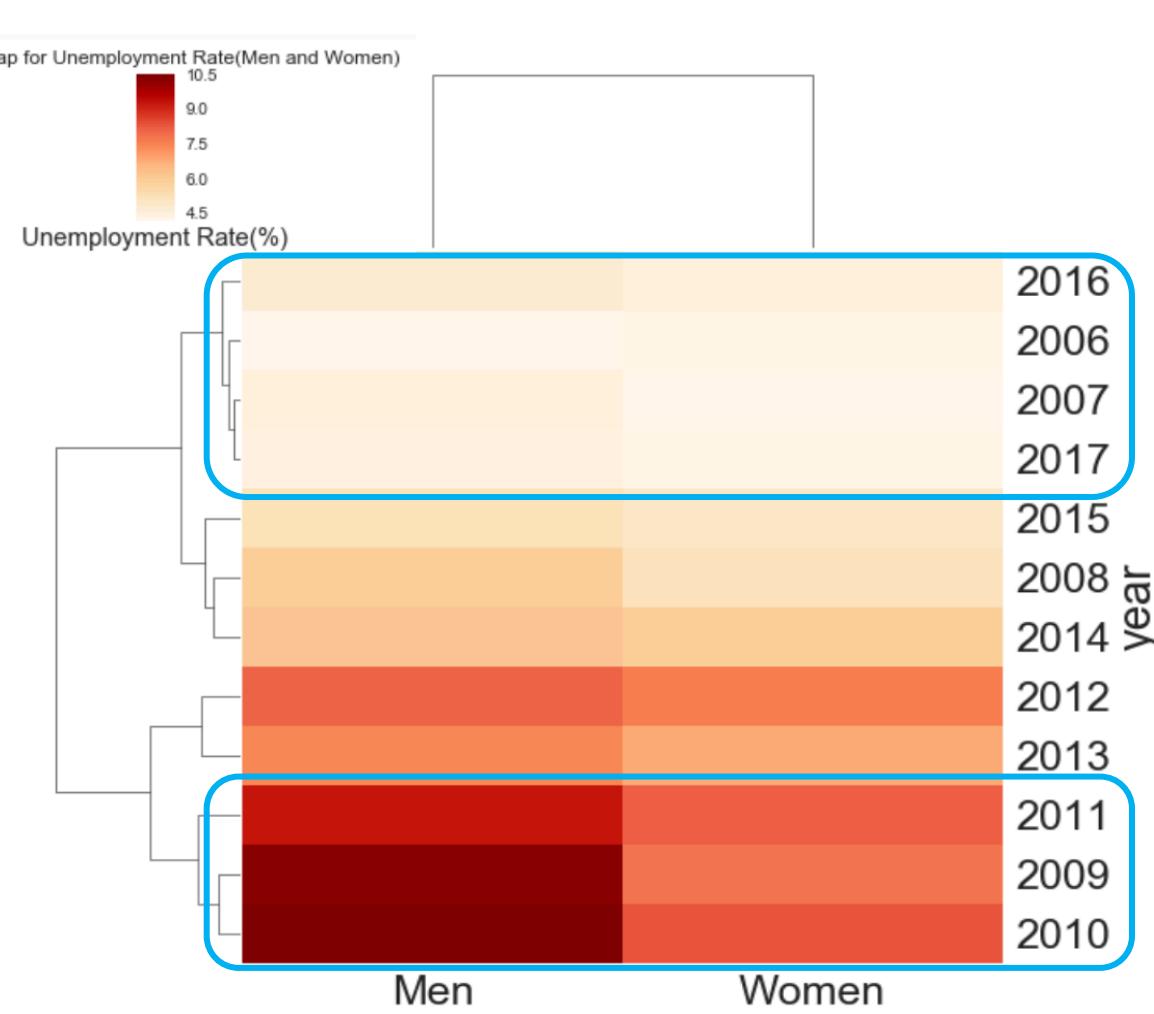


Fig: Change in unemployment rate over the years across various states in the US.

We observe a very similar unemployment rate in 2016 (post-recession) as compared to 2006 (pre-recession)

### Gender-wise Unemployment rates



### Race-wise Unemployment rates

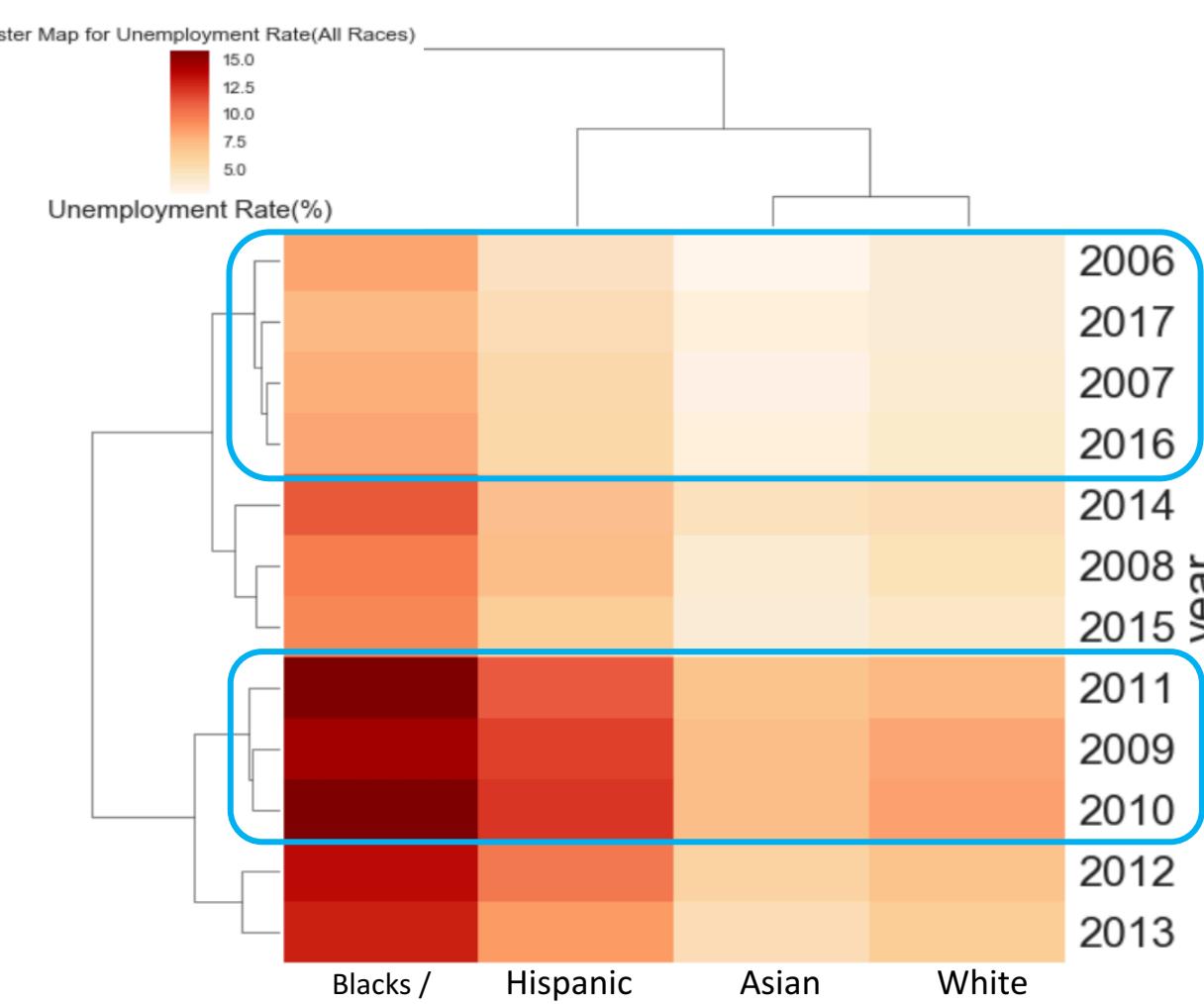


Fig: The cluster map forms a cluster (of years) based on similar unemployment rates.

The bottom two highlighted clusters indicates a higher unemployment rate (around the time of recession). Likewise, the upper two highlighted clusters indicate a lower unemployment rate (pre/post stability).

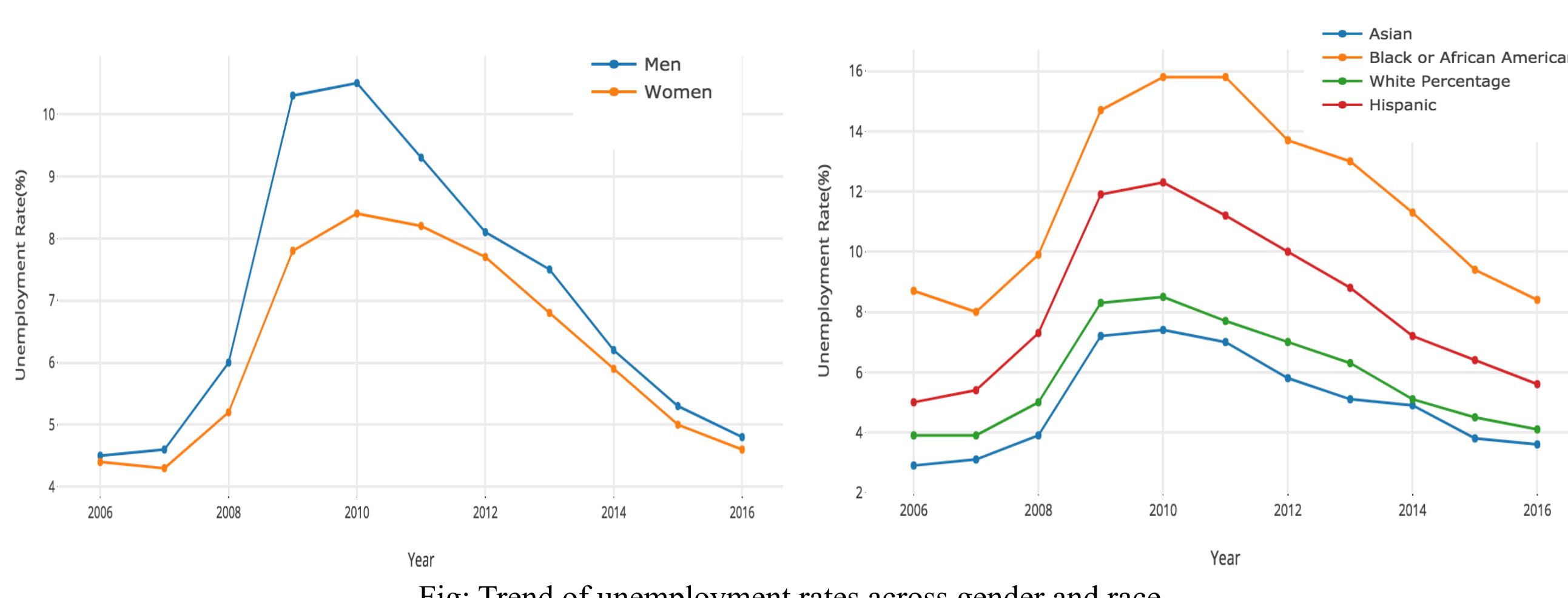


Fig: Trend of unemployment rates across gender and race.



Fig: YoY percentage change in unemployment rates across gender and race.

Men were affected more than women during the Great Recession.

Asians and Whites were affected more compared to the other races but they have recovered quicker than the rest.

### Unemployment rates across major Industries

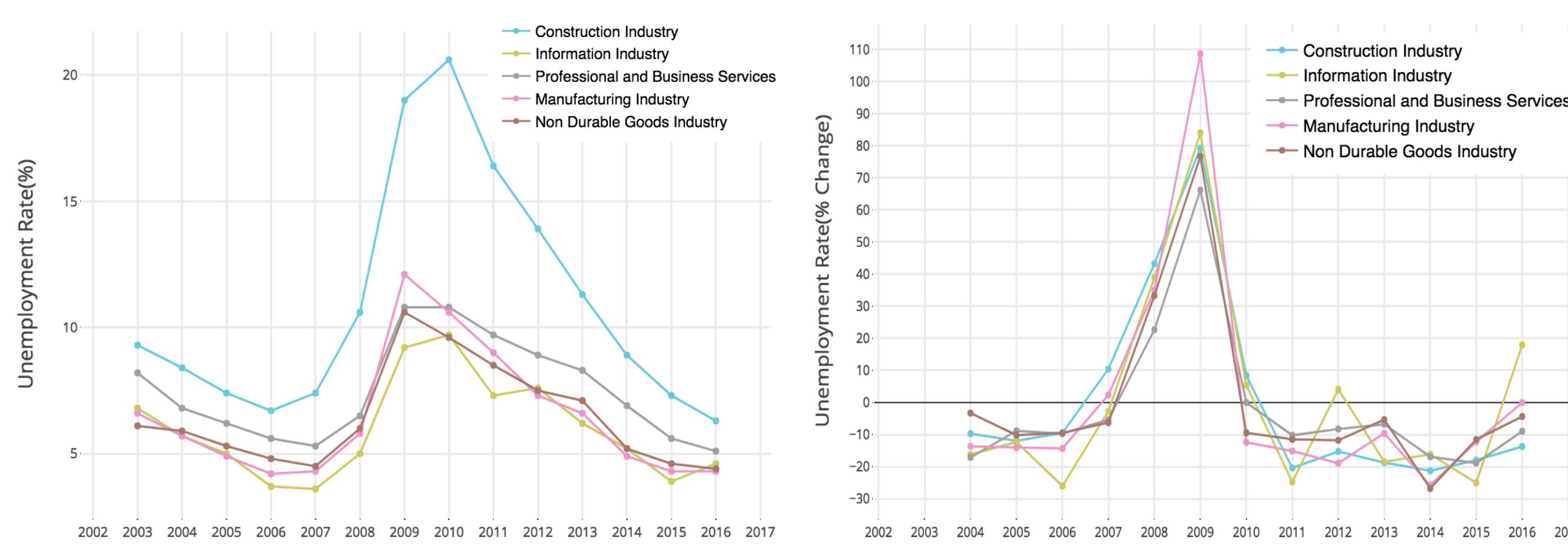


Fig: Unemployment rates across the five most affected industries in the US.

## Unemployment rates based on Educational Background

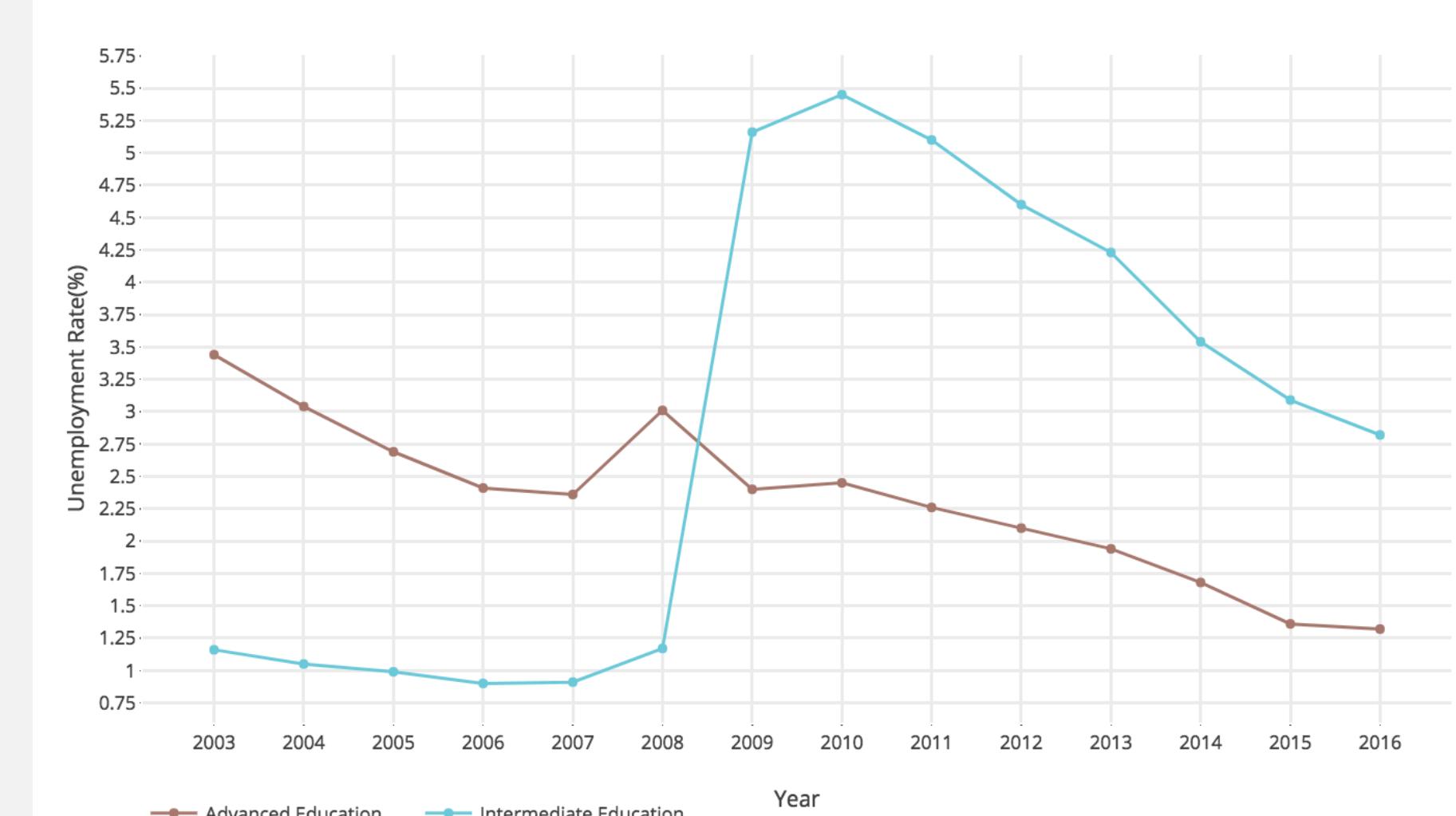


Fig: Change in unemployment rate years based on educational background. People with intermediate educational background were affected massively by the Great Recession and are still yet to recover. People with advanced education have fared better during the decade.

## GDP vs Unemployment Rates

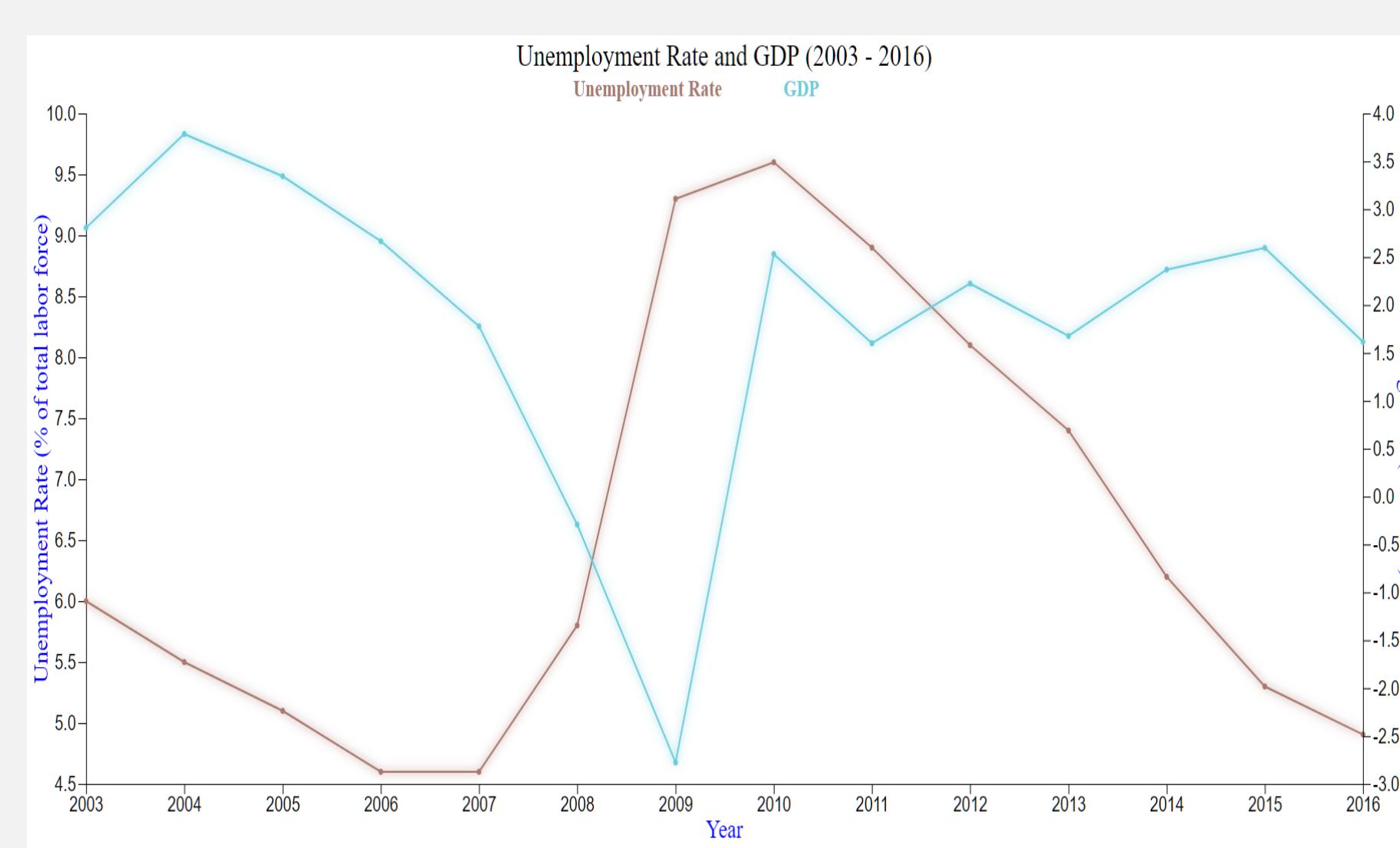


Fig: GDP growth rate vs Unemployment rate change.

GDP growth percentage started to decline in 2004 but 2007-2009 saw the greatest decline, starting the Great Recession. Since then, the US has greatly recovered compared to other countries around the world.

## Inflation vs Unemployment Rates

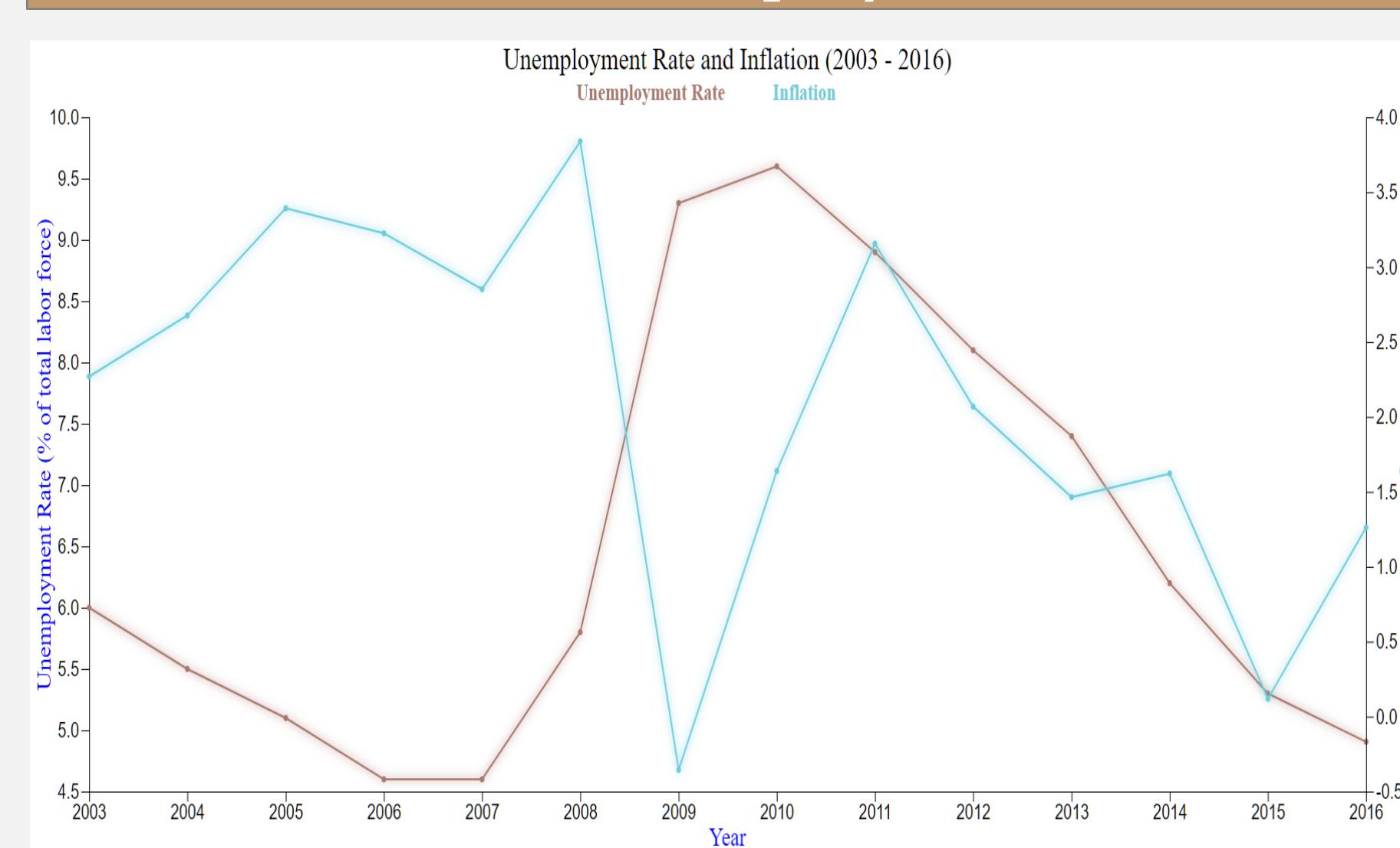


Fig: Inflation (consumer prices) with changes in unemployment rates. During the year 2008, US saw the maximum inflation which lead to a decline in GDP growth percentage starting the Great Recession. Since then, the inflation has fluctuated and caused instability in the US markets.

## CONCLUSION

Leveraging the detailed analysis and the statistics that we have plotted, we are able to conclude that the Great Recession is no longer in effect or has a very diminished effect on the overall unemployment.

Demographic statistics highlights majority of states to perform better than the pre-recession period. Even with the surge in workforce, strong decline in the unemployment rates indicates that more jobs are generated and the economy is having a stable growth.

We hope that this project is able to debunk the misconception that the people of US have about how the economy is yet to recover from the great recession.

## Acknowledgment

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