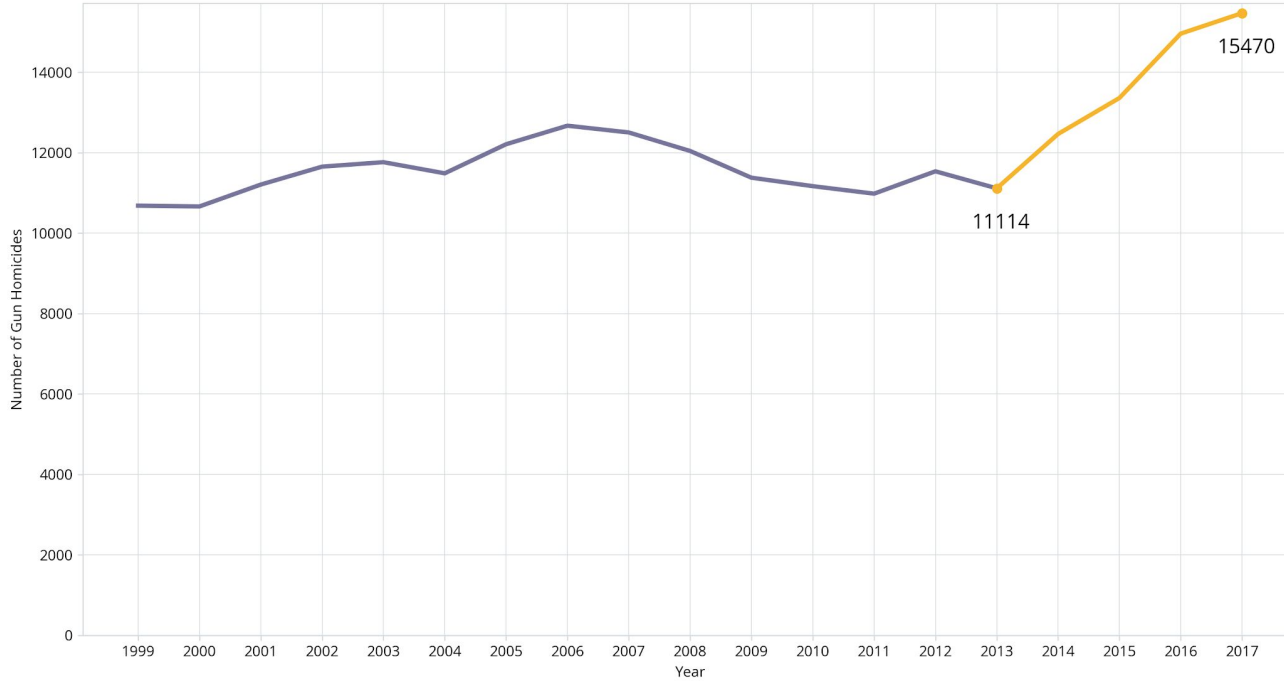


Gun Violence in the United States

Jonathan Shuai

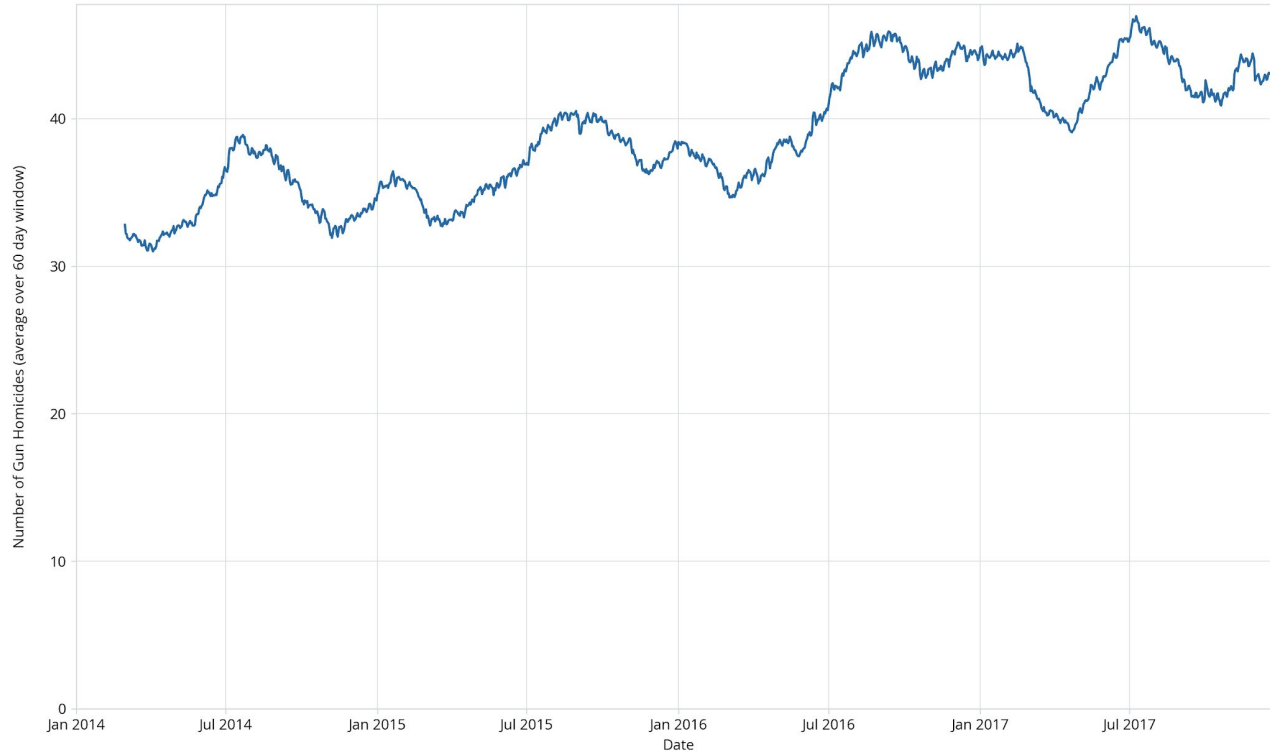


US Annual Gun Homicides (1999-2017)



The number of annual gun homicides in the United States has **increased by 39.1%** in the last 4 years.

US Daily Gun Homicides (2014-2017)

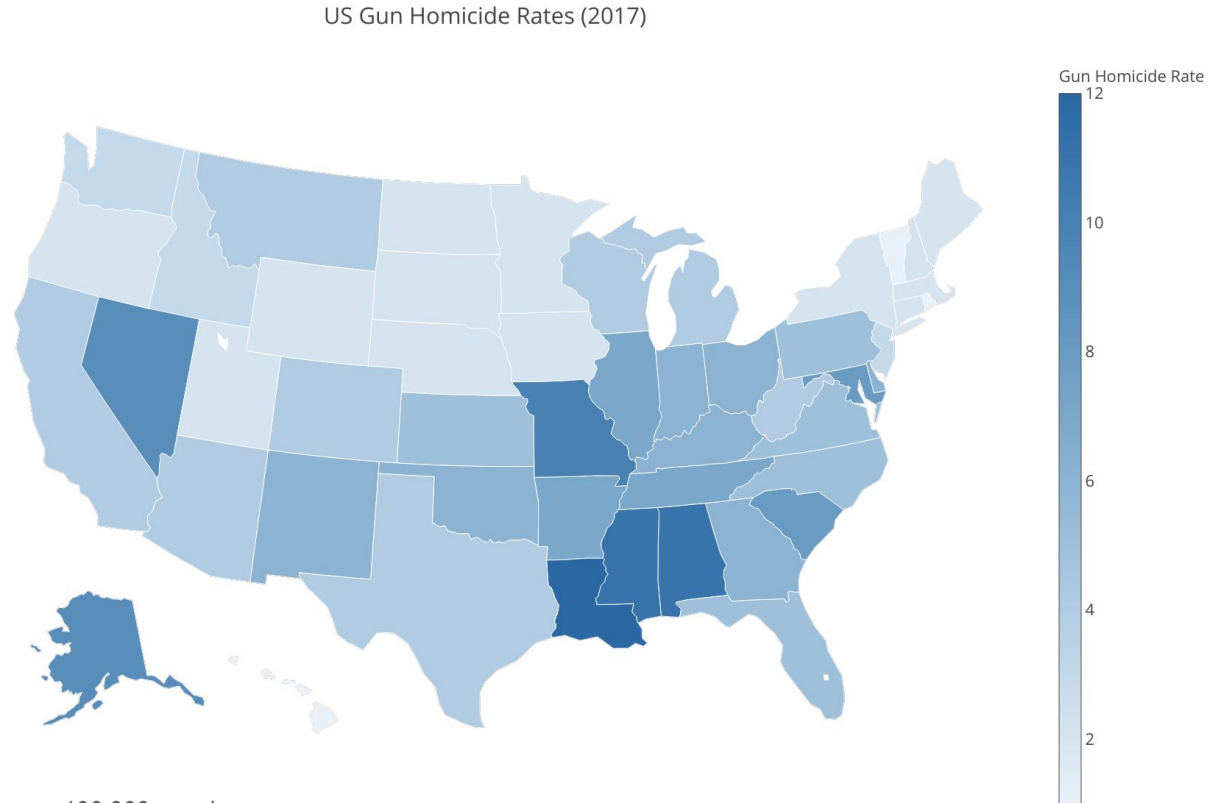


Gun violence **spikes** during **summers** and at the **start of each new year**.

Which states have the highest gun homicide rates*?

In 2017, **Hawaii had the lowest gun homicide rate at 0.57** homicides per 100,000 people. On the other hand, **Louisiana had the highest at 11.72**.

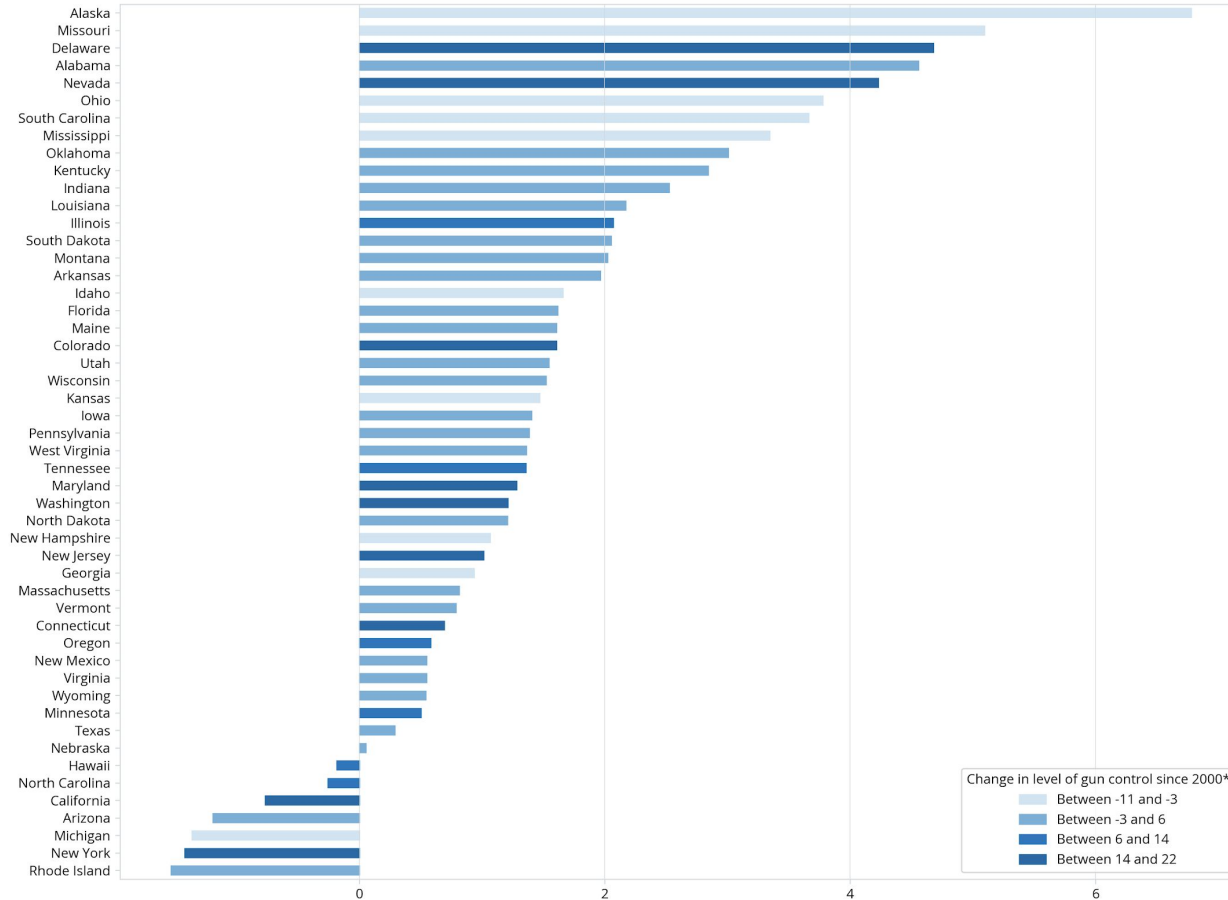
Hawaii has historically been the state with the lowest gun violence rates.



*Gun homicide rate is defined as number of homicides per 100,000 people

How has gun control contributed
to gun violence prevention?

Gun Homicide Rate Changes Between 2000 and 2017

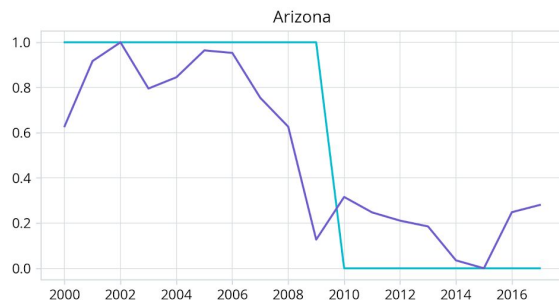
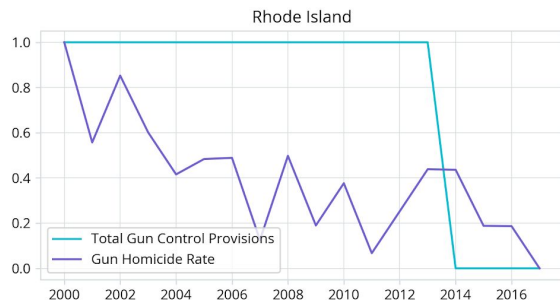


Only **7 states** have seen a decrease in gun violence from 2000 to 2017.

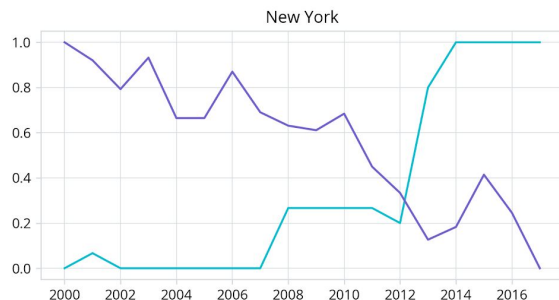
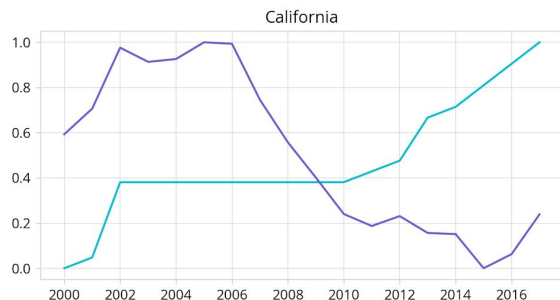
In general, states that have had **larger increases in gun control provisions** have also had **lower increases in gun homicide**.

*Gun control level is defined as total number of gun control provisions in place.

States with the largest decreases in gun violence rates since 2000

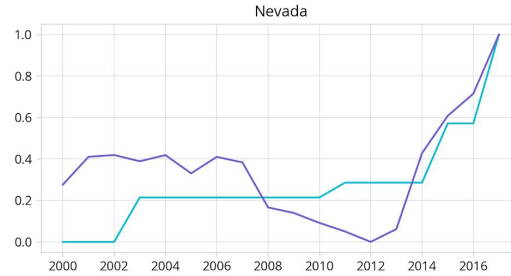
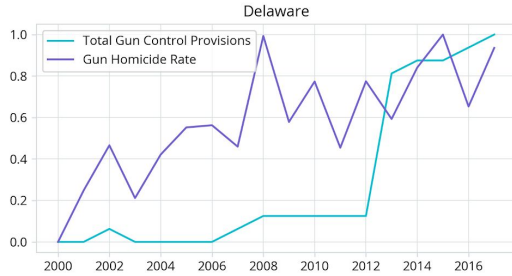


In Rhode Island and Arizona, **gun control laws become more lenient** when gun violence trends are already decreasing.

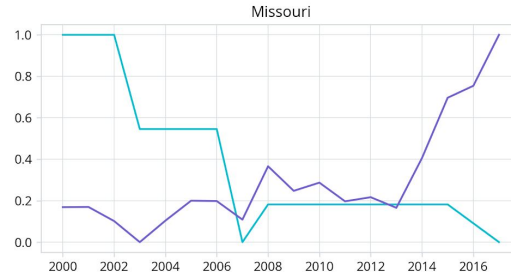
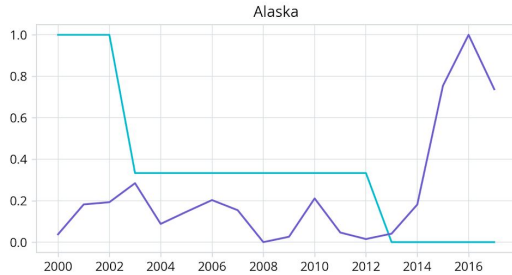


In California and New York, **as gun control become more strict, gun violence rates go down.**

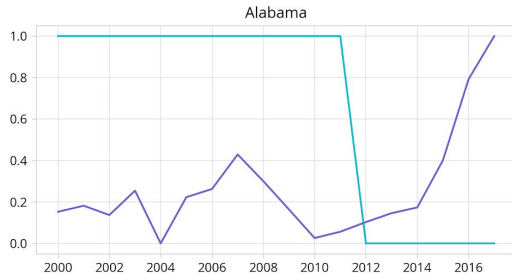
States with the largest increases in gun violence rates since 2000



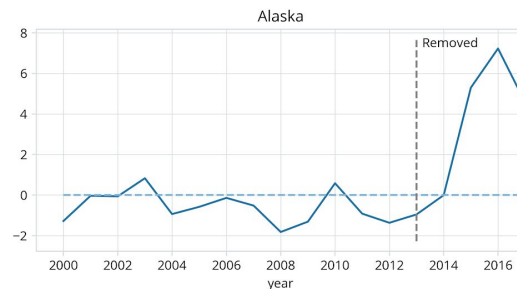
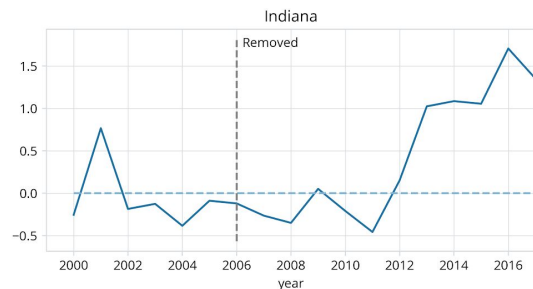
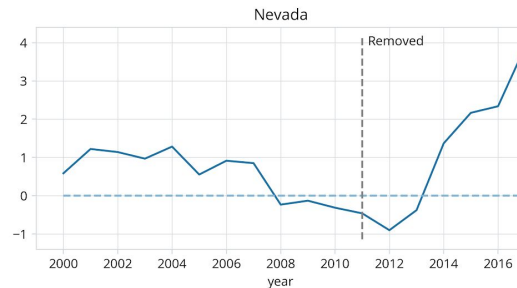
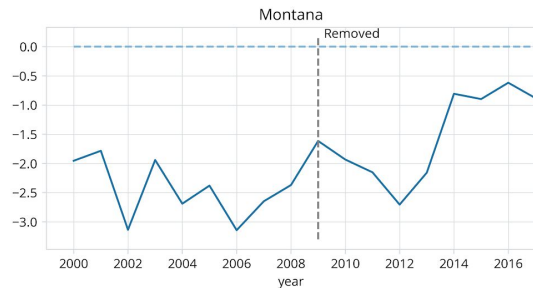
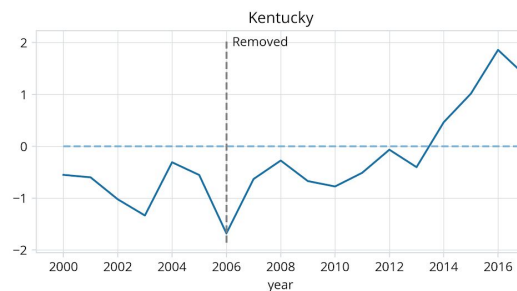
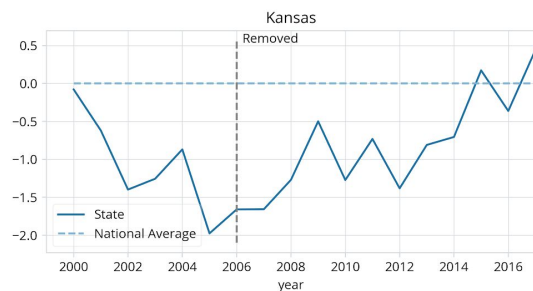
In Delaware and Nevada, **gun control provisions increase in reaction to increases in gun violence trends** (likely as a measure to reduce gun violence).



In Alaska, Missouri, and Alabama, **decreases in gun control provisions are followed by step increases in gun violence.**



Removal of the 'No Stand Your Ground' Provision

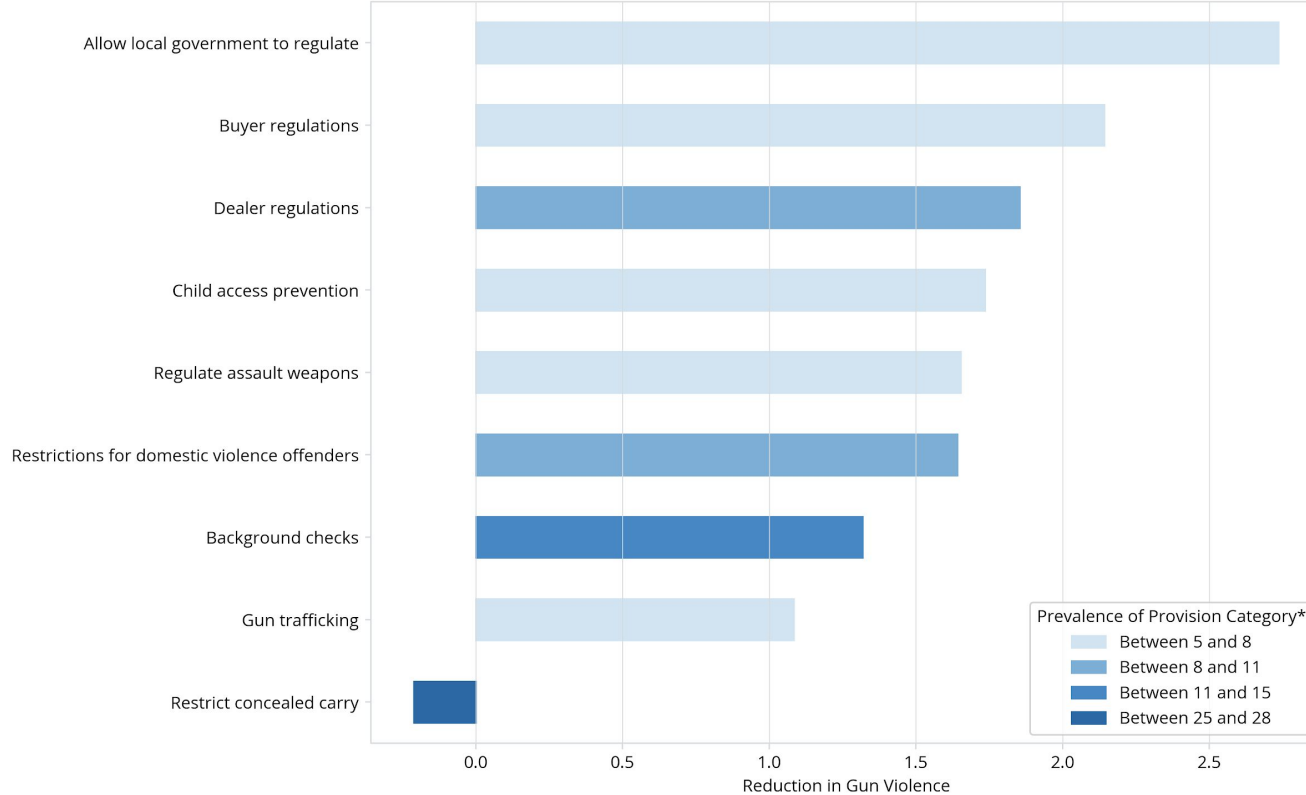


The **removal of the 'no stand your ground' provision** was correlated with the **highest increases in gun violence** compared to any other provision.

The 'no stand your ground' provision says that **use of deadly force may not be used as a first resort in public**.

Although this provision is not directly related to gun regulation, it seems to say something about the attitude towards gun usage in the states that remove this provision.

Effect of Provision Categories On Gun Violence (2017)



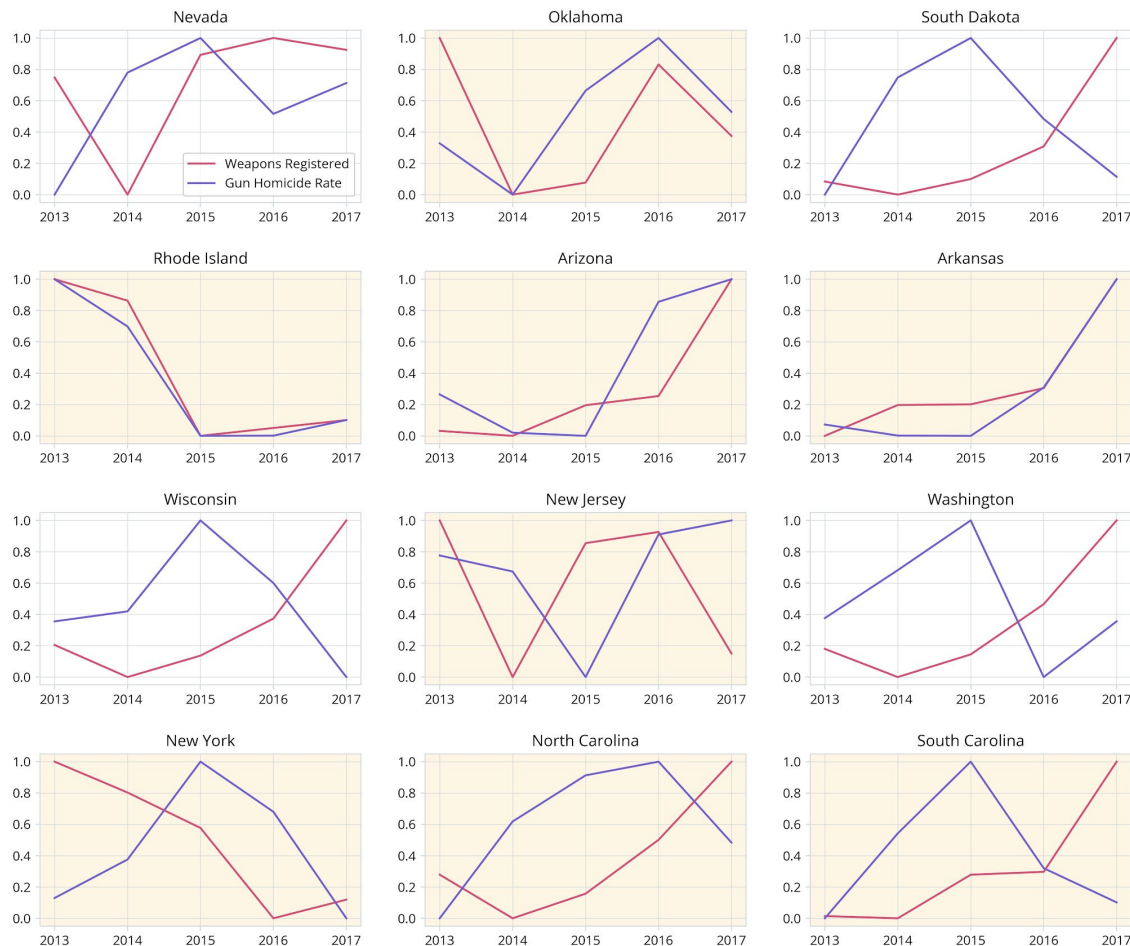
Gun control laws that **place regulations on buyers** and **allow local governments to regulate firearms** are most highly correlated with lower gun violence rates.

Laws restricting concealed carry have correlation with **slightly higher gun violence rates**. Though many states have laws concealed carry, the data shows it might not be very effective.

**Prevalence of a category is defined as the number of states that implement each provision in the category, on average.*

Are there other features
correlated with gun violence?

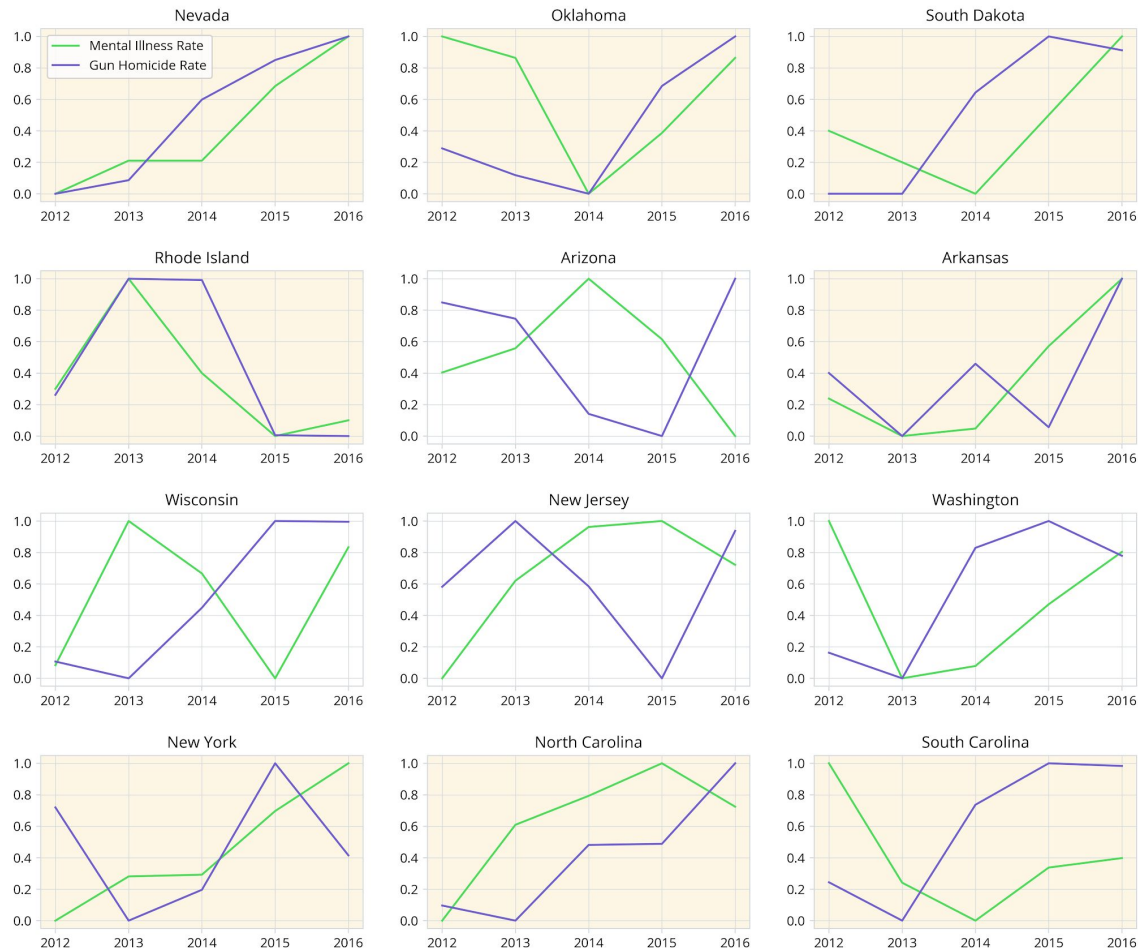
Weapons Registered and Gun Homicide Rate Trends (2013-2017)



We can see that **gun violence trends follow the number of weapons registered**, especially in the **highlighted states**.

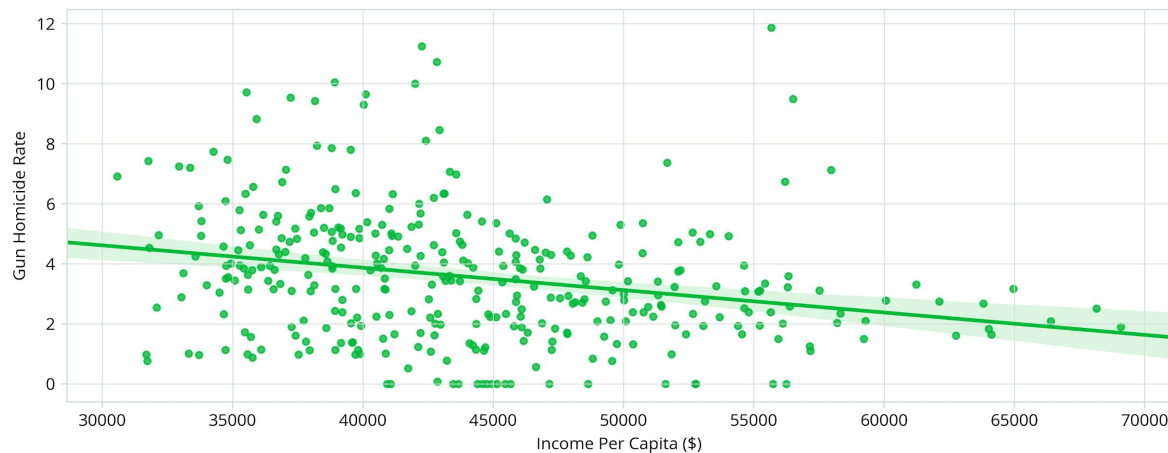
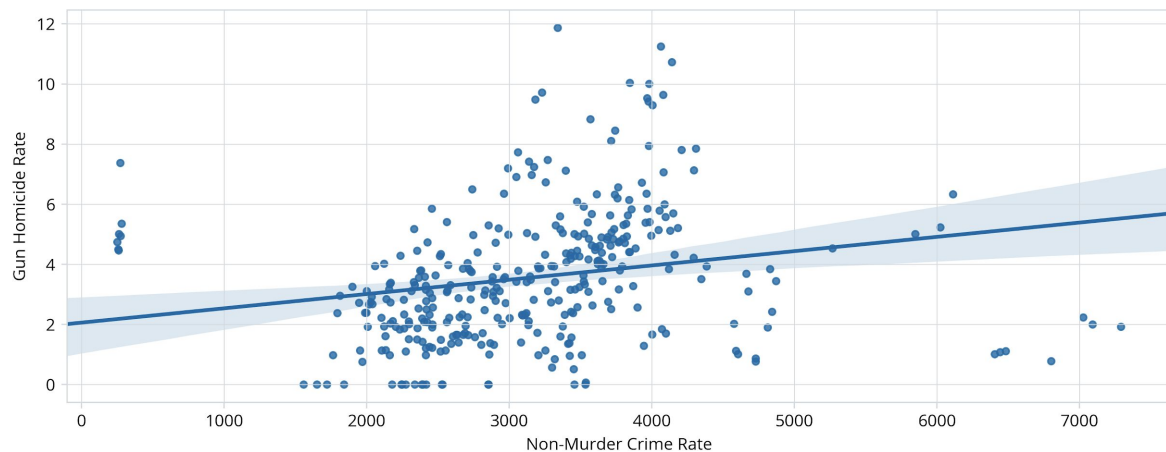
Here, the trends for weapons registered are plotted against gun homicide rate trends for a random subset of states.

Mental Illness Rate and Gun Homicide Rate Trends (2012-2016)



Again, we can see here that **gun violence trends follow the rate of mental illness** within each state, especially in the **highlighted states**.

Gun Violence Correlation With Other Features



In general, gun homicide rates are **positively correlated with other crimes (non-murder crimes)** and **negatively correlated with income**.

We were able to find some evidence of correlation between gun violence and features such as weapons registered and mental illness rates. More convincing correlations were found when looking at gun control provisions and how they correlated with gun violence rates in each state.

However, gun violence appears to be a very complicated problem that is determined by many factors, and no single feature can tell the whole story.